Back in Whack For Adults

Program Workbook

Holistic Weight Loss Program That Helps Adults Achieve a Healthier Weight for Life

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Back in Whack for Adults **[BiW4Adults]** is a Positive Patterns for Life Program
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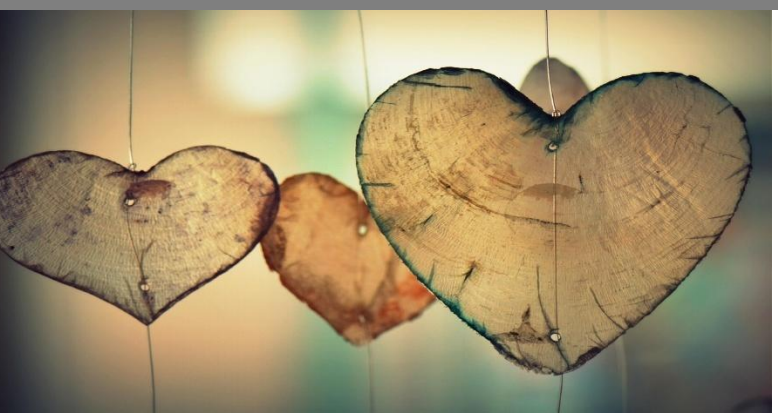
ACCESS PROGRAM VIDEOS!!

BiW4Adults is a multimedia program which utilizes interactive health coaching videos in combination with the program workbook. Both workbook and videos contain content that the other is missing. Using one without the other, greatly diminishes the effectiveness of the program.

PART ONE



LET'S GET STARTED

During *Part One – Let's Get Started*, you will find out how the Back in Whack for Adults [BiW4Adults] program works. You will find out about the different program components which are included in BiW4Adults. You will see a list of all the health coaching methods that are utilized during the program.

BiW4Adults is much more than just a weight loss program. Participants learn a multitude of important life skills. *Part One* lists out these life skills.

Each Action Step for Weight Loss includes 1) nutrition education, 2) body biology explained, and 3) power tools. You will find a program map in this section also.

You will learn about what Peak Health is and how this program supports Peak Health. You will be given an opportunity to explore what you want achieve when you reach the top of Peak Health.

Lastly, you will learn about body appreciation and why it is so important to develop and foster positive body appreciation. Self-talk is an important part of conveying body appreciation. Practicing positive self-talk supports positive body appreciation.

1.1 Program Introduction

Effective Weight Management Program Designed Specifically for Adults

This program is designed for adults with a high Body Mass Index (BMI). The BMI is a comparison of the height of the body to the mass (weight) of the body. When the mass of the body exceeds a certain percentage of the height of the body, it is called a high BMI.

A high BMI is the result of an energy imbalance within the body. In other words, the body's energy balance gets out of whack. This can happen when there is more energy available than can be used to move and heat the body during the day, so it gets put into storage (fat tissue). The body's energy balance can also get out of whack when there is a malfunction or imbalance with key hormones that control energy balance. If this happens repeatedly, excess stored energy (fat) starts to accumulate on the body. It is this excess stored energy that causes an individual's BMI to get high. High BMIs put adults at risk for developing serious health conditions. This is why high BMIs are called an unhealthy weight. Research has shown that adults with high BMIs have an increased risk for developing:

- Asthma
- Obstructive sleep apnea
- Decreased lung capacity
- Gastroesophageal Reflux Disease (GERD)
- Gallstones and gallbladder disease
- Fatty liver disease (chronic inflammation, lesions and scarring of the liver)
- Pancreatitis (inflammation of the pancreas)
- Hypertension (high blood pressure)
- Dyslipidemia (high cholesterol and triglycerides)
- Cardiomyopathy (thickening of the heart muscle)
- Congestive heart failure
- Metabolic syndrome (hypertension, hyperglycemia, and hyperlipidemia)
- Type 2 diabetes
- Stroke
- Suppressed immune function
- Long COVID
- Cancers (Endometrial, Breast (postmenopausal), Colorectal, Esophageal, Pancreatic, Kidney, Gallbladder, Liver, Ovarian, Thyroid, Prostate, Leukemia and lymphoma)
- Joint problems and joint pain – hips, knees, and ankles
- Osteoarthritis
- Infertility, particularly in women

- Erectile dysfunction in men
- Polycystic ovary syndrome (PCOS)
- Menstrual irregularities
- Low self-esteem
- Depression and other mood disorders

This is a really scary list!! But here's the thing, when adults take action to lower their high BMIs, the risk for all these chronic health conditions decreases.

Here's How the Program Works!

The *Back in Whack for Adults* **[BiW4Adults]** Program helps the you understand what is out of whack with your body's energy balance; what you can do to help your body's energy balance get back in whack; and provides habit change tools which helps you let go of old unhealthy habits and adopt new healthy habits. Upon completion of this program, you will have adopted long lasting healthy lifestyle and eating habits that will promote a lower BMI (lower weight) and support the maintenance of a healthy weight.

PROGRAM COMPONENTS

- Four-step nutrition plan [*Action Steps for Weight Loss*]
- Nutrition education & training [*Nutrition Education*]
- Explanation of how body biology works with or against weight loss efforts [*Body Biology Explained*]
- Physical activity plan tailored to fit your physical ability
- Actions to diminish the effects of stress on the body
- Habit change training - skills - tools [*Power Tools*]

HEATH COACHING METHODS

- Action plans to heal and/or combat health issues
- Self-discovery exercises
- Hands-on activities
- Self-improvement activities
- Positive thinking training
- Self-monitoring tools
- Empower adults with knowledge
- Self-assessments
- Program themes that support habit change
- Strategies that stimulate motivation

ADULTS LEARN IMPORTANT LIFE SKILLS

- Problem solving
- Combat negative thinking
- Understand mind-body connection

- Body acceptance & appreciation
- Learn to listen to your body
- Setting realistic achievable goals
- Positive thinking techniques
- Stress management
- Journaling to support health & wellbeing
- Practice health supporting visualizations
- Mindful eating
- Manage food cravings

The next page provides you with a wonderful visual of everything that is in the program. The action steps for weight loss start out with a few realistic changes in eating habits. Each step builds on the previous step(s). Notice how each step of the nutrition plan includes nutrition education specific to that step, an explanation of how body biology works with or against weight loss efforts, and a power tool(s) to be used to help support habit change during that step.

BiW4Adults Program Map

Action Steps for Weight Loss	Nutrition Education	Body Biology Explained	Power Tools (Habit Change Tools)
Action Step 1 - Eat Cleaner **C**ommit to eating cleaner **C**ut out sugar, HFCS, junk food + foods loaded with toxic ingredients **T**rack eating cleaner	**Nutrition Education for Step 1** **S**ugar **U**nhealthy fats **L**abel reading - part 1 **D**ecrease fat **B**etter beverages choices **D**rinking water **H**ealthy snacks **E**ating healthier away from home	**Body Biology Explained for Step 1** **I**nternal energy balance **F**actors that contribute to energy imbalance **B**iology behind step 1 **G**ut inflammation **T**oxins buildup + constipation	**Power Tools for Step 1** **W**rite successful goals **S**implest power tool **M**anage food cravings **J**ournaling
Action Step 2 - Burn More Than You Store **C**hoose slow-release energy foods **T**rack burn more than you store eating habits	**Nutrition Education for Step 2** **G**rains + fiber **V**eggies **P**rotein & meat **L**abel reading part 2 **P**ractice label reading	**Body Biology Explained for Step 2** **B**iology behind slow-release energy foods **P**ractice meal sequencing **C**arb sensitivity **W**hat about sleep **Manage stress** **Physical activity**	**Power Tools for Step 2** **P**ositive focus supports **H**abit change **P**ositive mind set **V**isualize success
Action Step 3 - Low Carb Nutrition Plan **E**at a balanced diet while eating fewer carbs **H**ow to use the low carb **F**ood log **T**rack food intake in low carb food log	**Nutrition Education for Step 3** **L**egumes **F**ruit **D**airy **H**ealthy fats **E**at fewer calories	**Body Biology Explained for Step 3** **B**uilding metabolic flexibility **N**utrition deficiency **W**orsens energy imbalance **N**utritional support of energy balance	**Power Tools for Step 3** **P**ositive affirmations **C**hange thought patterns **D**erail negative thinking **C**hange critical self-talk
Action Step 4 - Nutrition Plan for a Healthy Weight **E**at to meet caloric needs to sustain a healthy weight **L**og food intake	**Nutrition Education for Step 4** **H**ealthier kitchen **S**mart shopping tips **B**uild a healthy meal **M**enu planning	**Body Biology Bonus** **G**luten sensitivity **H**igh blood pressure **H**igh cholesterol **F**atty liver **E**dema	**Power Tools for Step 4** **P**roblem solving **G**etting around path blockers **S**taying motivated

The *BiW4Adults* program is specifically designed to help you adopt permanent lifelong healthy habits. You will need to continue practicing your new healthy lifestyle and eating habits even after you have completed the program. This will help you maintain your new trim healthy body.

Record Initial Measurements

Weight measurements should be taken at the same time of each day. It is best to weigh when you get up in the morning after you empty your bladder and before you start eating and drinking. Weigh yourself in light weight clothing or just your underwear. Bodies can have fluid fluctuations from day to day which can cause weight fluctuations from day to day. Because of this, it is recommended to only weigh once a week.

Record initial weight here: _____ Date:_____

Height should be measured without any kind of shoes. You should be standing flat footed, with shoulders back and chin level.

Record height here: _____ Date:_____

The guidelines for measuring waist circumference are the same as weighing yourself plus few additional rules. Take your waist measurement in a standing position. Measure at the level of your belly button. Make sure you do not have pants or underwear digging into your abdomen anywhere. Your abdomen should be relaxed, not sucked in, when you measuring waist circumference.

Record initial waste circumference here: _____ Date:_____

The Centers for Disease Control has one of the best BMI calculators. Go to this website and find out what your BMI is: https://www.cdc.gov/healthyweight/bmi/calculator.html

Record initial BMI here: _____ Date:_____

As you listen to program videos, you will hear Funky Frases. if you are working with medical provider or health organization that requires accountability for completing the program materials, you will need to listen for and record these Funky Frases found in the program videos. You will find the Funky Frases form in the Appendix. Use this form to write down the sets of Funky Frases found in the program videos.

THE MOMENT YOU COMMIT TO CHANGE IS THE MOMENT YOUR DESINY IS SHAPED!

1.2 Peak Health

Peak health is a state of complete physical, mental, social, and emotional flourishing that is unique to each individual. It goes beyond the absence of disease to include being able to handle life's stresses, work productively, and contribute to one's community.

Self-Discovery Activity: Peak Health

This is a list of some of the benefits you can experience when you have a mind and body in peak health. Read through the list below. Put a check mark in front of each benefit of peak health that you would like to experience:

1. BODIES in PEAK HEALTH **FEEL GOOD**
    a. _____ You are free from body aches and pains – headaches and muscle aches, etc.
    b. _____ It feels good to move your body – run, jump, dance, ride bikes, play sports, etc.

2. BODIES in PEAK HEALTH **ARE FULL OF ENERGY**
    a. _____ You wake up full of energy
    b. _____ You rarely feel tired during the day
    c. _____ You can be physically active for hours without needing to rest

3. BODIES in PEAK HEALTH **PERFORM WELL**
    a. _____ Easier to learn new skills – throw horse shoes, guitar playing, cooking, etc.
    b. _____ Easier to improve or perfect skills – ping pong, dancing, woodworking, etc.

4. BODIES in PEAK HEALTH **STAY HEALTHY**
    a. _____ You heal quickly - takes less than a week for scrapes and scratches to heal
    b. _____ You rarely catch colds, stomach flu, strep throat, or other contagious illnesses
    c. _____ You rarely get sick after being around someone who is sick
    d. _____ You rarely get cold sores, sinus infections, and bronchitis

5. BODIES in PEAK HEALTH **LOOK GOOD**
    a. _____ Your skin is radiant and clear
    b. _____ Your hair is glossy
    c. _____ Muscles are strong and toned

6. BODIES in PEAK HEALTH **HAVE BRAINS THAT WORK GOOD**
    a. _____ It's easier to learn new things
    b. _____ It's easier for you to remember things you see, hear, read, or have been taught
    c. _____ You can think clearly most of the time
    d. _____ You are creative
    e. _____ You have good problem-solving skills
    f. _____ You are able to stay focused on projects you are working on

7. PEAK HEALTH **PRODUCES HEALTHY EMOTIONS**
    a. _____ You feel happy most days
    b. _____ You rarely feel sad
    c. _____ You feel good about yourself most of the time
    d. _____ You rarely get mad or feel angry
    e. _____ You are not easily irritated
    f. _____ You are able to enjoy fun activities (i.e. picnics or parties or outings with family or friends)

What is Waiting for You at the Top of Peak Health?

Think about it! Then respond to each question below.

What positive changes do you want to see in your life when you reach the top of Peak Health?

How do you want to feel physically?

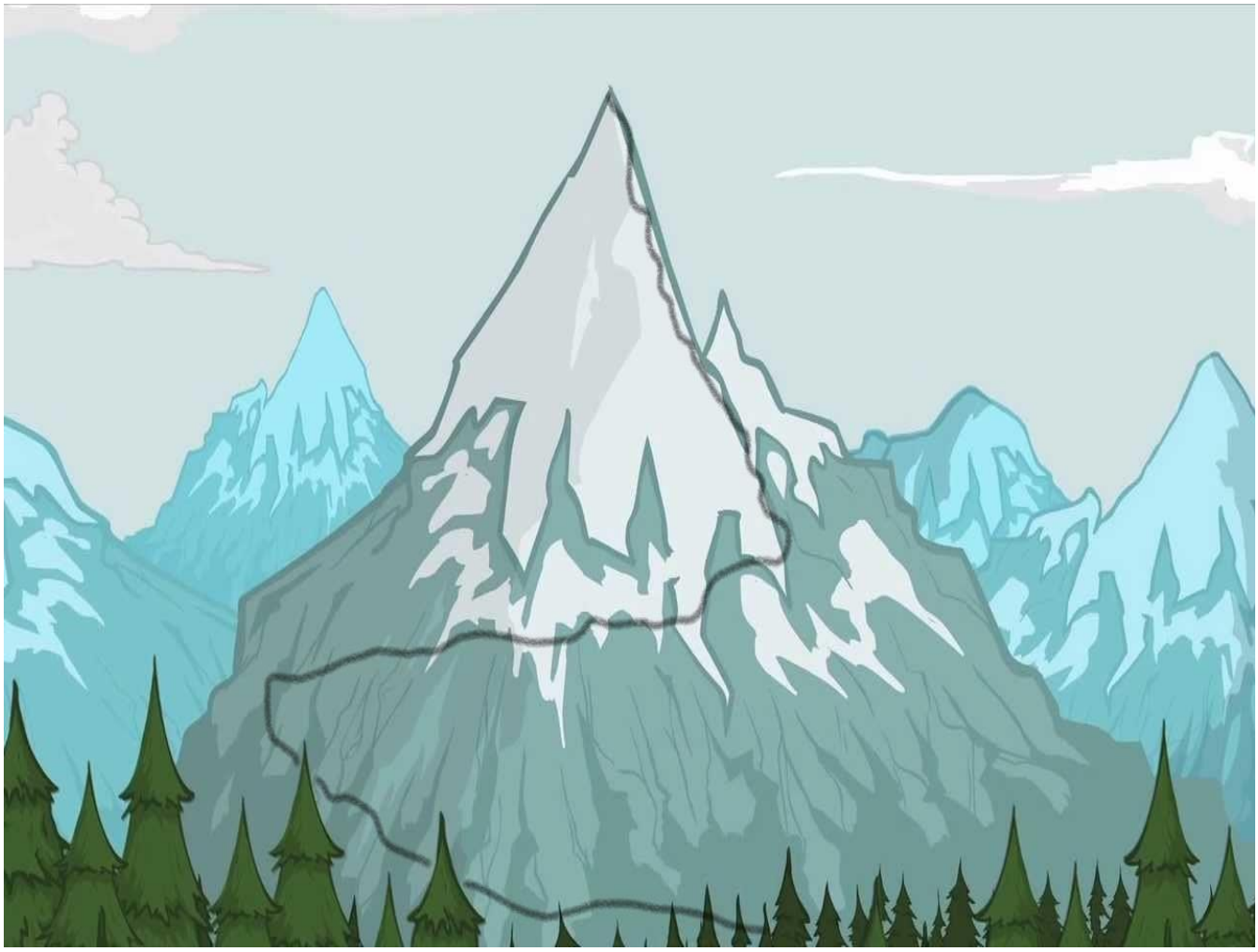
How do want to feel emotionally?

Part 1 – Let's Get Started

Do you have a health issue you are hoping will improve or be healed?

Is there a skill or activity you would like to be able to perform better?

On the picture on the next page, write the positive changes that you want to see in your life. Then pull this page out of the workbook and place it somewhere you will see it every day. For example, on your bedroom wall, on the inside of your closet door, inside the door of a kitchen cupboard, etc. It is important to remind yourself every day, why you are on working so hard to make it to the top of Peak Health.



Back in Whack Program is the path that will take you to the top of Peak Health!!

1.3 Body Appreciation

It is hard to take good care of an object you don't like. If there is an object you dislike, which requires care above and beyond normal care, it can seem like an impossible task to care for this object. Let's say this object is a plant that you find to be ugly and unattractive. How likely is it that you will keep up on watering this plant? Now let's say this plant that you dislike needs to have water drizzled on it once in the morning and then again in the evening. Plus, it needs to be placed in a window with indirect sunlight in the morning and moved out of the window when the sun is shining directly on the plant. How difficult is it going to be for you go above and beyond what most plants require for care, just to care for a plant you don't like?

You are naturally going to lack motivation to take extraordinarily good care of this plant you don't like. You most likely will find it to be a most difficult task. The exact same thing happens to people who don't like or appreciate their body. They find it difficult to take good care of their body. And then if their body requires extra care measures, above normal care, they find it to be an impossible task.

It is very important that we take some time to explore signs of body appreciation and how body appreciation and self-love are vital for successful adoption of new health habits. Self-talk or the way we talk to ourselves, provides great insight as to a person's level of body appreciation and self-love.

Self-Discovery Activity: Become Aware of Self-Talk

Have you ever stopped to think about the things you say to yourself? Let's do that now. This self-discovery exercise will help you become more aware of how you talk to yourself. Stop and think about each situation before responding. For each of the following situations, write what you would typically say to yourself:

1. You are ready to leave the house for the day and look in the mirror one last time.

2. You receive a message from your boss, saying that they would like to talk to you today.

3. Someone at the grocery store, who you don't know, keeps looking over at you.

4. A friend tells you they think you are a good person.

5. A careless driver runs a stop sign and almost hits you. You react quickly and prevent an accident.

6. You are in a rush and don't look both ways before pulling out onto a busy street. You almost get hit.

7. You make up a new recipe and it turns out delicious.

8. You make up a new recipe and it is disgusting. You throw it away and everyone eats sandwiches for dinner.

Go back through these statements. What would you say in each situation, if it was someone you cared about like a family member or a friend, instead of yourself? Would you talk differently to that person as compared to how you talk to yourself?

9. If you answered yes, you may have a problem with body appreciation and self-love. Honestly, you should be your own best friend. You should treat yourself as good as you would treat a loved one. You should talk as kind to yourself as you do to others. Read the next 2 questions and answer each one as honestly as possible.

    a. What is the difference between how you talk to people you care about and how you talk to yourself?

    b. If you were your own friend, would you want to stay friends with yourself based on how you talk to yourself?

We All Talk to Ourselves

Our self-talk makes an impression on our unconscious mind and our emotions. The words we use to communicate with ourselves can uplift or depress our emotional and mental states. The words you choose during self-talk can instantly change any emotional experience. The words we attach to our experiences, become our experiences. Words shape our perceptions and impact our actions, including our self-care actions. We need to consciously identify negative, disempowering words we use during self-talk and replace them with uplifting, empowering words. Not only can you change your own emotional and mental state with the words you choose, but you can also improve body appreciation and self-image. Self-love can start to blossom which motivates you to want to take better care of yourself.

Positive Empowering Words

The words we use in our thoughts and speech produce biochemical effects. Powerful words produce powerful biochemical effects, and evoke meaningful images and emotional responses. These associated images and emotions can be positive and empowering or negative and destructive. It is so important that we choose positive, empowering words when communicating with ourselves, about ourselves, and about our situations.

Take a look at the following lists of positive empowering words. Try incorporating several of these positive empowering words into your self-talk vocabulary on a regular basis.

adored	energized	passionate
amazing	extraordinary	phenomenal
awesome	explosive	precious
brilliant	empowered	relish
beautiful	fascinating	remarkable
blessed	fantastic	resilient
captivating	fabulous	sensational
confident	gifted	smart
charmed	gorgeous	super
creative	hurray	special
dynamite	invincible	smashing
excited	incredible	spectacular
ecstatic	intelligent	tremendous
excellent	jazzed	terrific
exuberant	magnificent	unique
exhilarated	marvelous	vivacious
enthralled	outstanding	vibrant
enraptured	outrageous	winner

Self-Improvement Activity: Positive Self-Talk

Choose 3 positive empowering words from the lists above. Write an uplifting or kind message to yourself, with each word.

1. _____

   _____
2. _____

   _____
3. _____

   _____

Neutralizing Words

Words can neutralize negative situations. Instead of saying that you are angry, you could say you're disenchanted. Maybe you're energized instead of nervous. Being misunderstood is much less hurtful than being rejected. Here are some other examples of neutralizing words:

Negative Word	Neutralizing Word
Irritated	Stimulated
Overwhelmed	Challenged
Lost	Searching
Lazy	Storing energy
Anxious	Expectant
Disgusted	Surprised
Failure	Leaning
Embarrassed	Receiving attention
Impatient	Anticipating
Insecure	Questioning
Exhausted	Recharging
Pissed off	Passionate
Insulted	Misinterpreted
Rejected	Unappreciated

Self-Improvement Activity: Neutralizing Negative Words

Write down 3 negative words that you use on a regular basis to talk to yourself. Next, think of and write a neutral word next to each negative word.

1. _____ _____
2. _____ _____
3. _____ _____

The good news is that by thinking differently about yourself and your experiences, you can change the conversation inside your head from negative to positive. This shift in perspective will help improve all areas of your life. You'll become happier. Your confidence will increase. You'll better understand yourself and make better decisions. You will find that you are naturally motivated to take good care of your body. Most importantly, your mental – emotional – physical health will be positively impacted.

These are some bold statements about the power of positive self-talk. You might wonder how so many benefits can come from the simple act of talking to yourself with kind, encouraging words. Here is a fascinating fact about your body and brain, that will help make sense of this mystery. **Your brain is the boss of your body.**

Here's how it works. You know what a cell is – they are the tiny building blocks that make up our tissues (like muscles) and organs (like your heart). Every cell in your body has little ears to hear and listen to the thoughts and emotions that are produced in your brain. Each thought and emotion you have produces an electrochemical message. The cells' ears are actually receptor sites for these electrochemical messages. Cells throughout your body can listen to what you are thinking and feeling. Negative thoughts and emotions send out toxic messages to the cells of the body and positive thoughts and emotions send out health supporting messages.

Add Compassionate Action to Positive Self Talk

Up to this point we have just been focusing on how we talk to ourselves. Now let's combine positive loving words with compassionate action. If you struggle with body appreciation, this next exercise will help you develop a deeper love and appreciation for your body. It is called the **Body Love Hug**.

Self-Improvement Exercise: Body Love Hug

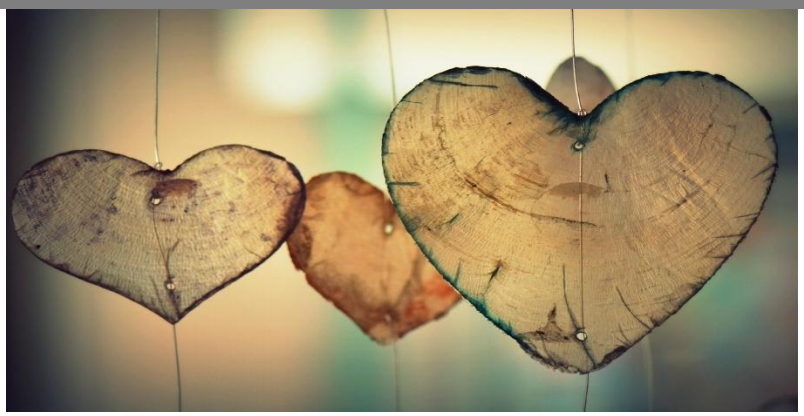
1. Place your left hand on your right upper arm
2. Place right hand on left rib cage
3. Inhale slowly and pause for 2 seconds with your lungs full
4. As you exhale do these 3 things:
   - Let the air rush out of your lungs, but don't force it out
   - Tightly hug yourself at the end of the exhale for 2 seconds
   - While hugging yourself, say, "I love you!"
5. Repeat this breath/hug pattern for a 1 minute or longer if you like.
6. Practice this exercise most every day for a month for the best results.

You truly do have an amazing body and it is worthy of good self-care and love.

Struggle with Negative Self Talk?

If you find that you frequently have mean and demeaning things you say to yourself, then check out Power Tools for Step 3. This section has some practical ideas to help you combat negative self-talk.

PART TWO



ACTION STEPS FOR WEIGHT LOSS

Part 2 will walk you through, a step-by-step nutrition plan for eating cleaner, choosing foods that promotes fat burning, and restricting carbohydrates to promote additional fat burning. Step 4 will provide a balanced, healthy diet for your ideal weight. If you are not yet at your ideal weight when you reach step 4, this nutrition plan will be deficient in adequate calories to support a high BMI and therefore will promote continued weight loss until you reach your ideal weight.

2.1 Action Step One Eat Cleaner

Action Step One is simple but not necessarily easy to do. It involves getting rid of some of the worst junk in a person's diet. This junk includes added sugars, high fructose corn syrup [HFCS], trans fats, and hydrogenated oils. Avoid foods with chemicals (toxins) listed in the ingredients and limit saturated animal fats. Foods that you will be cutting down on during Action Step One include candy, deserts, pastries, and junk food.

Nutrition Education for Step 1 will help you learn more about specific foods to avoid. Nutrition education will explain how sugar and unhealthy fats harm your body and roadblock successful weight loss. This section will provide you with a list of different types of added sugars. You will learn how to read labels to identify added sugars, HFCS, unhealthy fats, and toxins added to foods.

Foods that we eat are not the only place that these unhealthy ingredients are found. Our beverages can also be loaded with sugar, HFCS, extra unneeded calories, toxins, and even unhealthy fats. *Nutrition education for Step 1* will provide information about healthy beverage choices.

The other part of Action Step One is to adopt the 3:12MealPattern of eating. This means that you stop consuming calories 3 hours before going to bed, and you space your evening meal and breakfast 12 hours apart. You will learn about all of the wonderful benefits of the 3:12MealPattern in *Body Biology Explained for Step 1*.

Body Biology Explained will also help you understand how junk foods cause gut inflammation, which promotes weight gain and road blocks weight loss. You will learn how toxins slow your metabolic rate, and cause your body to burn fewer calories. When you are trying to lose weight, you want to burn more calories, not fewer. Lastly, these foods all add excess calories that will most likely be stored as fat.

Many people find that cutting sugar, HFCS, and different types of junk food is difficult because of food cravings. In the *Power Tools for Step 1* you will find instructions for how to create a food craving management plan. Lastly you will learn how to use journaling as an effective habit change tool.

Commit To Eating Cleaner 2.1.1

Action Step One – Eat Cleaner can be especially challenging for people who love sweets and junk food. If this describes you, you will want to take these following action steps to help you commit to eating cleaner. Here are some ideas that have proven to increase success with adopting new habits.

Set a start date. Allow your brain 3 to 7 days to mentally prepare to start eating cleaner. During this preparation period, several different things should happen.

First, commit to eating cleaner. Make a decision that this eating plan is a priority in your life. You will need to dedicate time and energy every day to this new priority. Another part of commitment is having a mind-set of persistence. Decide how badly you really want to reach this goal. Remember what you wrote at the top of Peak Health. Committing to eating cleaner will help you reach Peak Health. Believe that nothing will stop you from achieving your goal. Be determined to follow this eating plan through to the end. Be determined to find solutions when problems arise, instead of giving up when the going gets rough. The moment your commit to changing your eating habits, is the moment your destiny is shaped!! Commitment to your new eating habits will turn your dreams into reality.

Second, take time to identify the costs and benefits connected with eating cleaner. Costs are things we give up or discomforts we endure in order to reach our goals. Common costs include: time, energy, money, or the discomfort associated with giving up sweets and junk food. Benefits are something positive we receive as a result of our efforts. Some examples of benefits include: increased energy, uplifted mood, stronger immune system, more shapely body, improve blood pressure and cholesterol levels, preventing life-threatening diseases, and reaching the top of Peak Health. Make a list of anticipated costs and benefits. Carefully compare the two lists. Do the benefits outweigh the costs?

COSTS	BENEFITS

Third, use positive self-talk and body appreciation journaling to mentally prepare yourself for action. Pump yourself up for the start date.

Fourth, make a list of the actions steps you need to take to prepare for the start date of your goal. An example of action steps for eating cleaner might be get pop, candy and junk food out of the house. Bring home sugar free drinks or candies to help ease you through sugar cravings. Bring home healthier snack foods like whole grain corn chips or fruit. Make sure you have every detail worked out and everything you need for a successful start.

Fifth, tell your close friends and family members what you are trying to achieve and how you are trying to do it. If they don't understand what you are trying to do, they could become roadblocks. Ask friends and family for encouragement and support.

Sixth, consider getting a goal partner. People who work on goals with a partner tend to be more successful than those who go it alone. If someone else is counting on you, it acts as leverage to make yourself follow through with your plan.

Lastly, part five of this program is packed with power tools (habit changes tools) which will support you, improve your success with habit change, and help ease the discomfort of changing habits.

TRACKING: EAT CLEANER 2.1.2

On the next page you will find a chart that you can use to track cleaner eating. This chart provides clearly written goals for your brain. When the brain sees a written goal, it activates the control center of the brain. What the brain sees, it makes happen. In addition to this, tracking eating habits provides immediate feedback. Seeing your recorded accomplishments is a natural motivator which promotes successful habit change and increases sense of wellbeing.

Start using this tracker on your decided start date. Consider the first week as practice. During the first week of using the tracker, you will be learning about nutrition education, body biology, and power tools that all go with step 1. Consider this a practice week for eating cleaner. Work on eating cleaner for an addition 3 weeks. It takes 3 weeks (21 days) for you brain and body to start getting used to a new habit. It is important that you work on adopting cleaner eating habits for at least 3 weeks before moving on to step 2.

There are 9 "eat cleaner habits" on the chart on the next page. However, habit 9 is not actually an eating habit. It is a specific lifestyle approach that helps combat long periods of sitting. Break up sedentary time by walking around every hour. Incorporating short walks into your daily

routine, even for just a few minutes every hour, adds up to substantial health gains and helps counteract the negative effects of prolonged sitting. Use alarms or fitness trackers to remind you to get up and move every hour. (See pages 123 – 124 for a full list of health benefits.)

Under each "eat cleaner habit" are blank boxes. Write a plus sign (+) in these blank boxes, under the correct date, to document when you have successfully accomplished each habit each day.

TRACKING: EAT CLEANER **↙ Write days of the week in gray squares below ↘** **Month:**

							WK 1 Totals								WK 2 Totals
1 I eat foods without added sugars															
2 I eat foods without HFCS															
3 I eat foods without hydrogenated fats and without trans fats															
4 I eat foods with 3 or fewer chemicals in the ingredients list															
5 I practice the 3/12 meal pattern [Stop eating 3 hours before bed, 12 hours between super & breakfast]															
6 I drink beverages without added sugars or HFCS															
7 I drink beverages with 3 or fewer chemicals in the ingredients list															
8 I drink beverages without partially hydrogenated fats															
9 Break up sedentary time - walk around every hour															
Personalized Goal:															
Personalized Goal:															
Personalized Goal:															
Weight: **Date:**									**Weight:** **Date:**								

NOTES:

Part 2 – Action Steps for Weight Loss

TRACKING: EAT CLEANER **↙ Write days of the week in gray squares below ↘** **Month:**

							WK 3 Totals								WK 4 Totals
1 I eat foods without added sugars															
2 I eat foods without HFCS															
3 I eat foods without hydrogenated fats and without trans fats															
4 I eat foods with 3 or fewer chemicals in the ingredients list															
5 I practice the 3/12 meal pattern [Stop eating 3 hours before bed, 12 hours between super & breakfast]															
6 I drink beverages without added sugars or HFCS															
7 I drink beverages with 3 or fewer chemicals in the ingredients list															
8 I drink beverages without partially hydrogenated fats															
9 Break up sedentary time - walk around every hour															
Personalized Goal:															
Personalized Goal:															
Personalized Goal:															
Weight: **Date:**									**Weight:** **Date:**								

NOTES:

Evaluate Success with Eating Cleaner

At this time, you have been working on eating cleaner for four weeks. If most of your totals for week 4 are 5 or higher, you are ready to move to step 2. If you are still struggling to get the added sugar and HFCS out of diet, work on adopting cleaner eating for another few weeks before moving on. Use the chart on the next page to track your success.

TRACKING: EAT CLEANER **↙ Write days of the week in gray squares below ↘** **Month:**

							WK 5 Totals								WK 6 Totals
1 I eat foods without added sugars															
2 I eat foods without HFCS															
3 I eat foods without hydrogenated fats and without trans fats															
4 I eat foods with 3 or fewer chemicals in the ingredients list															
5 I practice the 3/12 meal pattern [Stop eating 3 hours before bed, 12 hours between super & breakfast]															
6 I drink beverages without added sugars or HFCS															
7 I drink beverages with 3 or fewer chemicals in the ingredients list															
8 I drink beverages without partially hydrogenated fats															
9 Break up sedentary time - walk around every hour															
Personalized Goal:															
Personalized Goal:															
Personalized Goal:															
Weight: **Date:**									**Weight:** **Date:**								

NOTES:

2.2 Action Step Two
Burn More Than You Store

During Action Step 2 you will continue to eat cleaner plus you will focus on eating slow-release energy foods from the starch group. Another name for slow-release energy foods is moderate to low glycemic index foods. You will also work to eat to meet your body's protein requirements. During Action Step 2, you will be cutting down on quick-release energy foods like grain products made with refined wheat and corn flours, white rice flour, and white rice.

Nutrition Education for Step 2 will provide you with lists of starchy foods that have moderate to low glycemic index. Fiber is a special kind of carbohydrate that is found in slow-release energy foods and has several important health benefits. You will become a skilled food label reading during step 2. You will learn how to calculate your body's protein needs and what kind of protein is healthiest to eat.

Body Biology Explained for Step 2 will help you understand how slow-release energy foods help to keep the body in an energy burning mode. You will see how quick-release energy foods cause the body to shift into an energy storing mode. You will find out how stress hormones from physical or emotional stress push the body into an energy storing mode. You will see how sleep deprivation negatively impacts the body's energy balance. Lastly, you will learn about different types of physical activity and how each support good health and weight loss.

You will learn how to develop and practice effective visualizations for successful habit changes in *Power Tools for Step 2*. This amazing power tool actually has several different ways that it can be used.

TRACKING: EAT CLEANER & EAT SLOW-RELEASE ENERGY FOODS

Use the chart on the next several pages to track cleaner eating and success with eating slow-release energy foods. You will notice that the habits written in **gray font**, are habits you have already been practicing from Action Step 1.

TRACKING: EAT CLEANER & EAT SLOW-RELEASE ENERGY FOODS **Month:**

							WK 1 Totals								WK 2 Totals
1 I eat foods without added sugars															
2 I eat foods without HFCS															
3 I eat foods without partially hydrogenated fats and without trans fats															
4 I eat foods with 3 or fewer chemicals in the ingredients list															
5 I practice the 3/12 meal pattern [Stop eating 3 hours before bed, 12 hours between super & breakfast]															
6 I drink beverages without added sugar or HFCS															
7 I drink beverages with 3 or fewer chemicals in the ingredients list															
8 I drink beverages without partially hydrogenated fats															
9 Break up sedentary time - walk around every hour															
10 I only eat grain products made with 100% whole grains															
11 I limit potatoes to ½ cup per day															
12 I eat to meet my body's protein needs [Pounds _____ divided by 2.2 = _____ grams of protein]															
13 I eat healthy protein [Un-breaded meats & fish, low-fat meat, eggs, seeds, nuts, cheese]															
14 I practice meal sequencing [Eat non-starchy veggies & healthy fat 1st, protein 2nd, and starch & fruit 3rd]															
15 I do not drink fruit juice															
16 Increase physical activity (describe):															
Personalized Goal:															
Personalized Goal:															
Personalized Goal:															

Part 2 – Action Steps for Weight Loss

TRACKING: EAT CLEANER & EAT SLOW-RELEASE ENERGY FOODS **Month:**

							WK 3 Totals								WK 4 Totals
1 I eat foods without added sugars															
2 I eat foods without HFCS															
3 I eat foods without partially hydrogenated fats and without trans fats															
4 I eat foods with 3 or fewer chemicals in the ingredients list															
5 I practice the 3/12 meal pattern [Stop eating 3 hours before bed, 12 hours between super & breakfast]															
6 I drink beverages without added sugar or HFCS															
7 I drink beverages with 3 or fewer chemicals in the ingredients list															
8 I drink beverages without partially hydrogenated fats															
9 Break up sedentary time - walk around every hour															
10 I only eat grain products made with 100% whole grains															
11 I limit potatoes to ½ cup per day															
12 I eat to meet my body's protein needs [Pounds _____ divided by 2.2 = _____ grams of protein]															
13 I eat healthy protein [Un-breaded meats & fish, low-fat meat, eggs, seeds, nuts, cheese]															
14 I practice meal sequencing [Eat non-starchy veggies & healthy fat 1st, protein 2nd, and starch & fruit 3rd]															
15 I do not drink fruit juice															
16 Increase physical activity (describe):															
Personalized Goal:															
Personalized Goal:															
Personalized Goal:															

Evaluate Success with Eating Cleaner & Eating Slow-Release Energy Foods

At this time, you have been working on eating cleaner and eating slow-release energy foods for four weeks. If most of your totals for week 4 are 5 or higher, you are ready to move to step 3. If you are still struggling with eating grain products made with 100% whole grains and eating to meet your body's protein requirements, continue to work on these things for another few weeks before moving on. Use the chart on this next page to track your success. If the only new habit you are struggling with is increasing physical activity, don't let this hold you back. You will be working on increasing physical activity for the duration of the program.

Part 2 – Action Steps for Weight Loss

TRACKING: EAT CLEANER & EAT SLOW-RELEASE ENERGY FOODS **Month:**

							WK 5 Totals								WK 6 Totals
1 I eat foods without added sugars															
2 I eat foods without HFCS															
3 I eat foods without partially hydrogenated fats and without trans fats															
4 I eat foods with 3 or fewer chemicals in the ingredients list															
5 I practice the 3/12 meal pattern [Stop eating 3 hours before bed, 12 hours between super & breakfast]															
6 I drink beverages without added sugar or HFCS															
7 I drink beverages with 3 or fewer chemicals in the ingredients list															
8 I drink beverages without partially hydrogenated fats															
9 Break up sedentary time - walk around every hour															
10 I only eat grain products made with 100% whole grains															
11 I limit potatoes to ½ cup per day															
12 I eat to meet my body's protein needs [Pounds _____ divided by 2.2 = _____ grams of protein]															
13 I eat healthy protein [Un-breaded meats & fish, low-fat meat, eggs, seeds, nuts, cheese]															
14 I practice meal sequencing [Eat non-starchy veggies & healthy fat 1st, protein 2nd, and starch & fruit 3rd]															
15 I do not drink fruit juice															
16 Increase physical activity (describe):															
Personalized Goal:															
Personalized Goal:															
Personalized Goal:															

TRACKING: EAT CLEANER & EAT SLOW-RELEASE ENERGY FOODS **Month:**

							WK 7 Totals								WK 8 Totals
1 I eat foods without added sugars															
2 I eat foods without HFCS															
3 I eat foods without partially hydrogenated fats and without trans fats															
4 I eat foods with 3 or fewer chemicals in the ingredients list															
5 I practice the 3/12 meal pattern [Stop eating 3 hours before bed, 12 hours between super & breakfast]															
6 I drink beverages without added sugar or HFCS															
7 I drink beverages with 3 or fewer chemicals in the ingredients list															
8 I drink beverages without partially hydrogenated fats															
9 Break up sedentary time - walk around every hour															
10 I only eat grain products made with 100% whole grains															
11 I limit potatoes to ½ cup per day															
12 I eat to meet my body's protein needs [Pounds _____ divided by 2.2 = _____ grams of protein]															
13 I eat healthy protein [Un-breaded meats & fish, low-fat meat, eggs, seeds, nuts, cheese]															
14 I practice meal sequencing [Eat non-starchy veggies & healthy fat 1st, protein 2nd, and starch & fruit 3rd]															
15 I do not drink fruit juice															
16 Increase physical activity (describe):															
Personalized Goal:															
Personalized Goal:															
Personalized Goal:															

2.3 Action Step Three Low Carb Nutrition Plan

During **Action Step 3** you will continue to eat cleaner, eat slow-release energy foods from the starch group, eat to meet your body's protein needs, and include some healthy fats in your diet. You have learned how physical activity promotes weight loss and supports peak health. You will continue to work on being physically active throughout the rest of the program and hopefully, for the rest of your life.

The main dietary change during step 3 is that servings of carbohydrate foods will be restricted. You will be encouraged to eat a balanced diet with servings of starchy foods and fruits being restricted. Low carbohydrate nutrition plans are an effective method to help increase your body's ability to efficiently burn stored fat for energy.

Nutrition Education for Step 3 will teach you about three wonderful, nutrient dense groups of foods – legumes, fruit, and dairy products. You will learn about serving sizes and how to choose the healthiest kinds of legumes, fruits, and dairy products. Lastly you will learn about healthy fats that help support peak health.

Body Biology Explained for Step 3 will help you understand key nutrients that your body needs in good supply to support a robust metabolism and efficient fat burning. You will also learn about specific nutritional deficiencies that can road block your weight loss efforts. Eating a balanced, nutrient dense diet is super important for successful, healthy weight loss.

You will learn how to develop and practice positive affirmations for successful habit changes in *Power Tools for Step 3*. This section will also teach you how to derail negative thinking. Negative thinking can lead to negative self-talk which can single handedly derail your self-improvement efforts to achieve a healthier weight.

LOW CARB NUTRITION PLAN

You will find your Low Carb Nutrition Plan on the next page. Look it over and then read the following page (pg 32) about how to follow this plan. At this point in the program, it is expected that you are continuing to eat clean and choose slow-release energy foods and avoid quick-release energy foods. You won't see these specific details included in the low carb nutrition plan.

Low Carb Nutrition Plan

STARCH: Grains, Legumes, Starchy Veggies	SERVING SIZES	SERVINGS PER DAY
slice of 100% whole grain bread	1 slice	Total number of starch/fruit servings combined per day: **Women - 5 servings** **Men - 6 servings** If you are not consuming milk/yogurt, you can add 1 carb serving that day If you are not consuming milk or yogurt most days, take a calcium supplement.
hamburger or hot dog bun or tortilla shell	½ bun or shell	
whole grain bagel	¼ bagel	
whole grain muffin	1 regular or ½ large	
oatmeal or other cooked whole grain cereal	½ cup	
whole grain pasta	½ cup	
brown rice or cooked whole grain kernels	1/3 cup	
popcorn without added fat	3 cups	
packaged foods like crackers or cold cereal or granola bars or rice cakes or multigrain chips	15 grams carbohydrates	
cooked beans (dried beans) or lentils	1/3 cup (6 gr protein)	
starchy veggie (**potatoes,** squash, yams, peas)	½ cup (2 gr protein)	
FRUIT	SERVING SIZES	SERVINGS PER DAY
piece of fresh fruit	1 small to medium	See note under STARCH serving.
canned fruit	**½ cup**	
cut up fruit (fresh or frozen)	1 cup	
dried fruit	¼ cup	**NO ~~fruit juice~~**
DAIRY	SERVING SIZES	SERVINGS PER DAY
milk (skim or 1%)	8 ounces (8 gr protein)	2
plain non-fat yogurt	8 ounces (8 gr protein)	
flavored yogurt	**6 ounces (6 gr protein)**	
NON-STARCHY VEGETABLE	SERVING SIZES	SERVINGS PER DAY
cooked vegetable	½ cup (2 gr protein)	Unlimited
vegetable juice	½ cup (2 gr protein)	
raw vegetable	1 cup (2 gr protein)	
raw leafy vegetable	2 cups (2 gr protein)	
PROTEIN/MEAT	SERVING SIZES	OUNCES PER DAY
un-breaded, low-fat meat - fish - poultry	1 ounce (7 - 9 gr protein)	Weight in pounds divided by 2.2 equals number of nutritional grams of protein per day
egg	1 egg (7 - 8 gr protein)	
low-fat cottage cheese	½ cup (7 - 8 gr protein)	
**cheese	1 ounce (7 - 8 gr protein)	
**seed/nut butter	2 tablespoons (5 - 7 gr)	
**seeds/nuts	¼ cup (3 - 10 gr protein)	
FAT	SERVING SIZES	SERVINGS PER DAY
oil, butter	1 teaspoon	**Women - 6 servings** **Men - 8 servings**
salad dressing, mayonnaise, sour cream	1 tablespoon	
**cheese	1 ounce	
**seed/nut butter	2 tablespoons	
**seeds/nuts	¼ cup	
OTHER		
WATER or Calorie Free/Caffeine Free Fluid (maximum 128 oz)	1 oz per every 2 pounds of body weight	
MULTIVITAMIN	1	
OMEGA 3 FATTY ACID	1 to 3 grams	
Extra Vitamin C (if have high cholesterol) Extra Vitamin D (if vitamin D deficient)		

How to Follow Your Low Carb Nutrition Plan

The first column is the food categories. The first category is the starch group which is made up of whole grains, legumes and starchy veggies. The starch group contains 2 separate food groups - grains and veggies. You will notice that only starchy veggies are in the starch group. The non-starchy veggies are in a category of their own. The fruit, protein, and dairy categories are also individual food groups. The fat category is not a food group but a macronutrient and a dense energy source. The last category is for important nutrients that support health and are important for energy balance – water, vitamins and mineral supplements.

There are 3 food categories that have black headers with white lettering. The foods in these categories supply your body with energy. Starch, fruit, and some kinds of fat are healthy sources of energy. The other categories on the nutrition plan provide limited calories for energy.

You will find several examples of foods listed under each category title in the first column. In *Nutrition Education for Step 3*, you will find expanded lists of healthy food choices for legumes, fruits, dairy products, and fats. You have already seen these expanded lists for grains, vegetables, protein and meat in *Nutrition Education for Step 2*.

The second column provides serving sizes for different food types in each category. It is very important to learn and respect serving sizes for the energy-food categories.

The third column gives you recommended number of servings per day for each food category.

I do want to point out that there is a food category that most people occasionally eat from. This category is **empty calorie foods**. This category is NOT healthy and not included on the Low Carb Nutrition Plan. It is recommended to avoid this category most days. It is hard to avoid empty calorie foods when we participate in celebrations which include deserts. Limit yourself to one small serving. Eat this treat slow and savor the flavor. Subtract one serving from the restricted carb group (starch or fruit) on days you treat yourself to a small serving of something sweet.

How to Use the Low Carb Nutrition Log

The Low Carb Nutrition Log will help you follow the eating plan for Action Step 3. Each line on the log represents a serving for starch/fruit, milk/yogurt, and fat. Rember, if you are not consuming 2 servings of milk/yogurt per day, you can add a starch or fruit serving. The recommended serving sizes for each of these food categories is found on the Low Carb Nutrition Plan. You will want to refer to the nutrition plan frequently while you are initially becoming familiar with appropriate serving sizes. Non-starchy veggies, water, multivitamin (MTV), and omega 3 fatty acids provide a single line to record totals consumed for the day. Use this log for 3 weeks. Then you can switch to a small notebook or a food log app to record food intake.

LOW CARB NUTRITION LOG

DATE		GP		GP		GP
Carb Servings Fruit & Starch Include Amt						
Extra for Men						
Milk & Yogurt Include Amt						
Non-starchy Veggies	Total Servings		Total Servings		Total Servings	
Protein Intake Ideal Protein Intake for My Body Weight: _____ Note: GP = grams of protein						
	Total Grams of Protein		Total Grams of Protein		Total Grams of Protein	
Fat Servings Include Amt						
Extra for Men						
Extra for Men						
Amt of Water						
MTV						
Omega 3						
Record Physical Activity HERE						
Record Extra Servings HERE [Starch & Fruit Dairy & Fat]						

LOW CARB NUTRITION LOG

DATE		GP		GP		GP
Carb Servings Fruit & Starch Include Amt						
Extra for Men						
Milk & Yogurt Include Amt						
Non-starchy Veggies	Total Servings		Total Servings		Total Servings	
Protein Intake Ideal Protein Intake for My Body Weight: _____ Note: GP = grams of protein						
	Total Grams of Protein		Total Grams of Protein		Total Grams of Protein	
Fat Servings Include Amt						
Extra for Men						
Extra for Men						
Amt of Water						
MTV						
Omega 3						
Record Physical Activity HERE						
Record Extra Servings HERE [Starch & Fruit Dairy & Fat]						

LOW CARB NUTRITION LOG

DATE		GP		GP		GP
Carb Servings Fruit & Starch Include Amt						
Extra for Men						
Milk & Yogurt Include Amt						
Non-starchy Veggies	Total Servings		Total Servings		Total Servings	
Protein Intake Ideal Protein Intake for My Body Weight: _____ Note: GP = grams of protein						
	Total Grams of Protein		Total Grams of Protein		Total Grams of Protein	
Fat Servings Include Amt						
Extra for Men						
Extra for Men						
Amt of Water						
MTV						
Omega 3						
Record Physical Activity HERE						
Record Extra Servings HERE [Starch & Fruit Dairy & Fat]						

LOW CARB NUTRITION LOG

DATE		GP		GP		GP
Carb Servings Fruit & Starch Include Amt						
Extra for Men						
Milk & Yogurt Include Amt						
Non-starchy Veggies	Total Servings		Total Servings		Total Servings	
Protein Intake Ideal Protein Intake for My Body Weight: _____ Note: GP = grams of protein						
	Total Grams of Protein		Total Grams of Protein		Total Grams of Protein	
Fat Servings Include Amt						
Extra for Men						
Extra for Men						
Amt of Water						
MTV						
Omega 3						
Record Physical Activity HERE						
Record Extra Servings HERE [Starch & Fruit Dairy & Fat]						

LOW CARB NUTRITION LOG

DATE		GP		GP		GP
Carb Servings Fruit & Starch Include Amt						
Extra for Men						
Milk & Yogurt Include Amt						
Non-starchy Veggies	Total Servings		Total Servings		Total Servings	
Protein Intake Ideal Protein Intake for My Body Weight: _____ Note: GP = grams of protein						
	Total Grams of Protein		Total Grams of Protein		Total Grams of Protein	
Fat Servings Include Amt						
Extra for Men						
Extra for Men						
Amt of Water						
MTV						
Omega 3						
Record Physical Activity HERE						
Record Extra Servings HERE [Starch & Fruit Dairy & Fat]						

LOW CARB NUTRITION LOG

DATE		GP		GP		GP
Carb Servings Fruit & Starch Include Amt						
Extra for Men						
Milk & Yogurt Include Amt						
Non-starchy Veggies	Total Servings		Total Servings		Total Servings	
Protein Intake Ideal Protein Intake for My Body Weight: _____ Note: GP = grams of protein						
	Total Grams of Protein		Total Grams of Protein		Total Grams of Protein	
Fat Servings Include Amt						
Extra for Men						
Extra for Men						
Amt of Water						
MTV						
Omega 3						
Record Physical Activity HERE						
Record Extra Servings HERE [Starch & Fruit Dairy & Fat]						

LOW CARB NUTRITION LOG

DATE		GP		GP		GP
Carb Servings						
Fruit & Starch						
Include Amt						
Extra for Men						
Milk & Yogurt Include Amt						
Non-starchy Veggies	Total Servings		Total Servings		Total Servings	
Protein Intake						
Ideal Protein Intake for My Body Weight: _____ Note: GP = grams of protein						
	Total Grams of Protein		Total Grams of Protein		Total Grams of Protein	
Fat Servings						
Include Amt						
Extra for Men						
Extra for Men						
Amt of Water						
MTV						
Omega 3						
Record Physical Activity HERE						
Record Extra Servings HERE [Starch & Fruit Dairy & Fat]						

2.4 Action Step Four Nutrition Plan for a Healthy Weight

During **Action Step 4** you will continue to eat cleaner, eat slow-release energy foods, eat to meet your body's protein needs, and include some healthy fats in your diet. The main dietary change during step 4 is that you will add some carbs back into your diet to meet the caloric needs of a healthy weight male/female body for your specific height. The nutrition plan for step 4 looks very similar to step 3. The main difference is that it contains more carbs.

At this point in the program, you may still be above your ideal weight. The nutrition plan for step 4 will be enough calories to maintain your ideal weight, but it will not be enough to maintain excess weight. If you are still overweight by step 4, you will continue to lose weight if you do the following:

1. Continue to focus on eating slow-release energy foods and avoid quick-release energy foods;
2. Continue to eat to meet your body's protein needs;
3. Remember to recalculate protein needs as your weight drops – the less you weigh, the less protein your body needs.

All of the new eating and lifestyle habits you have worked to adopt during the first 3 steps of the program has put your body into a fat burning mode and shifted it out of energy storing mode. The quickest way to shift your body back into the energy storing mode, is to start eating quick-release energy foods again. You have worked hard to get your energy balance back in whack.

Remember the important role that physical activity plays to promote weight loss and support peak health. Staying physically active will help you maintain your ideal weight once you get there. You will want to continue to work on being physically active throughout the rest of the program and hopefully, for the rest of your life.

Nutrition Education for Step 4 is packed with information that will help you transform your kitchen into a healthier kitchen, plan healthy menus, make healthy meals, convert unhealthy recipes into healthier recipes, how to shop for healthy foods on a budget, and much more.

Body Biology for Step 4 is a BONUS section. People who struggle with excess weight, have several health conditions in common. That is what this bonus section is primarily going to be

about. These health conditions include high blood pressure, high cholesterol, fatty liver, edema, vitamin D deficiency, prediabetes and type 2 diabetes.

The *Power Tools for Step 4* will help set you up for long term success. You will learn the valuable skills of problem solving and how to get around path blockers. This section is packed with tips to help you stay motivated to take excellent care of your amazing body.

Self-Assessment: Check Up

Read each question below. Think about it for a minute and then write your answer.

1. How would you describe your average daily energy level prior to beginning this program?

2. During the past week, would you say that your average daily energy level has improved, stayed the same, or gotten worse since beginning this program?

3. Have you reached your ideal weight?
   YES – Recommended to start the Nutrition Plan for a Healthy Weight
   NO – Consider continuing to follow the low carb nutrition plan, as long as you are not feeling fatigued or losing more than 2 pounds per week.

NOTE: You can follow the Low Carb Nutrition Plan till you reach your idea weight as long as you are not fatigued or losing weight too fast. If you are fatigued or losing weight too fast on the low carb plan, then progress to *Action Step 4 – Nutrition Plan for a Healthy Weight*.

Regardless whether you continue to follow the *Low Carb Nutrition Plan* longer, or progress to the *Nutrition Plan for a Healthy Weight*, you will want to log food intake. A small notebook is ideal for this task or you can download a food tracking app on your phone. A study found that people who log food intake lost 3.75 times more weight than individuals who did not keep a food log. Other studies have shown that people who log food intake eat an average of 25% less food than individuals who don't. Individuals who log food intake also experience greater success with long term weight loss.

See the Nutrition Plan for a Healthy Weight Man (next page) and woman (page after next).

Nutrition Plan for a Healthy Weight Man

STARCH: Grains, Legumes, Starchy Veggies	SERVING SIZES	SERVINGS PER DAY
slice of 100% whole grain bread	1 slice	Total starch/fruit servings per day based on the ideal weight for height as follows:
hamburger or hot dog bun or tortilla shell	½ bun or shell	
whole grain bagel	¼ bagel	
whole grain muffin	1 regular or ½ large	**60 – 61 inches = 7 servings**
oatmeal or other cooked whole grain cereal	½ cup	**62 – 65 inches = 8 servings**
whole grain pasta	½ cup	**66 – 69 inches = 9 servings**
brown rice or cooked whole grain kernels	1/3 cup	**70 – 73 inches = 10 servings**
popcorn without added fat	3 cups	**74 in & taller = 11 servings**
packaged foods like crackers or cold cereal or granola bars or rice cakes or multigrain chips	15 grams carbohydrates	
cooked beans (dried beans) or lentils	1/3 cup (6 gr protein)	
starchy veggie (**potatoes**, squash, yams, peas)	½ cup (2 gr protein)	If you are not consuming milk/yogurt, you can add 1 starch/fruit serving that day
FRUIT	SERVING SIZES	
piece of fresh fruit	1 small to medium	
canned fruit	**½ cup**	
cut up fruit (fresh or frozen)	1 cup	
dried fruit	¼ cup	**NO ~~fruit juice~~**
DAIRY	SERVING SIZES	SERVINGS PER DAY
milk (skim or 1%)	8 ounces (8 gr protein)	2 – 3
plain non-fat yogurt	8 ounces (8 gr protein)	If you are not consuming milk or yogurt most days, take a calcium supplement.
flavored yogurt	**6 ounces (6 gr protein)**	
NON-STARCHY VEGETABLE	SERVING SIZES	SERVINGS PER DAY
cooked vegetable	½ cup (2 gr protein)	Unlimited
vegetable juice	½ cup (2 gr protein)	
raw vegetable	1 cup (2 gr protein)	
raw leafy vegetable	2 cups (2 gr protein)	
PROTEIN/MEAT	SERVING SIZES	OUNCES PER DAY
un-breaded, low-fat meat - fish - poultry	1 ounce (7 - 9 gr protein)	Weight in pounds divided by 2.2 equals number of nutritional grams of protein per day
egg	1 egg (7 - 8 gr protein)	
low-fat cottage cheese	½ cup (7 - 8 gr protein)	
**cheese	1 ounce (7 - 8 gr protein)	
**seed/nut butter	2 tablespoons (5 - 7 gr)	
**seeds/nuts	¼ cup (3 - 10 gr protein)	
FAT	SERVING SIZES	SERVINGS PER DAY
oil, butter	1 teaspoon	
salad dressing, mayonnaise, sour cream	1 tablespoon	
**cheese	1 ounce	**Men - 8 servings**
**seed/nut butter	2 tablespoons	
**seeds/nuts	¼ cup	
OTHER		
WATER or Calorie Free/Caffeine Free (maximum 96 oz)	1 oz per every 2 lb of body weight	
MULTIVITAMIN	1	
OMEGA 3 FATTY ACID	1 to 3 grams	
Extra Vitamin C (if have high cholesterol)		
Extra Vitamin D (if vitamin D deficient)		

Nutrition Plan for a Healthy Weight Woman

STARCH: Grains, Legumes, Starchy Veggies	SERVING SIZES	SERVINGS PER DAY
slice of 100% whole grain bread	1 slice	Total starch/fruit servings per day based on the ideal weight for height as follows:
hamburger or hot dog bun or tortilla shell	½ bun or shell	
whole grain bagel	¼ bagel	
whole grain muffin	1 regular or ½ large	**60 – 64 inches = 6 servings**
oatmeal or other cooked whole grain cereal	½ cup	**65 – 69 inches = 7 servings**
whole grain pasta	½ cup	**70 – 73 inches = 8 servings**
brown rice or cooked whole grain kernels	1/3 cup	**74 in & taller = 9 servings**
popcorn without added fat	3 cups	
packaged foods like crackers or cold cereal or granola bars or rice cakes or multigrain chips	15 grams carbohydrates	
cooked beans (dried beans) or lentils	1/3 cup (6 gr protein)	If you are not consuming milk/yogurt, you can add 1 starch/fruit serving that day
starchy veggie (**potatoes**, squash, yams, peas)	½ cup (2 gr protein)	
FRUIT	SERVING SIZES	
piece of fresh fruit	1 small to medium	
canned fruit	**½ cup**	
cut up fruit (fresh or frozen)	1 cup	**NO ~~fruit juice~~**
dried fruit	¼ cup	
DAIRY	SERVING SIZES	SERVINGS PER DAY
milk (skim or 1%)	8 ounces (8 gr protein)	2 – 3
plain non-fat yogurt	8 ounces (8 gr protein)	If you are not consuming milk or yogurt most days, take a calcium supplement.
flavored yogurt	**s**	
NON-STARCHY VEGETABLE	SERVING SIZES	SERVINGS PER DAY
cooked vegetable	½ cup (2 gr protein)	Unlimited
vegetable juice	½ cup (2 gr protein)	
raw vegetable	1 cup (2 gr protein)	
raw leafy vegetable	2 cups (2 gr protein)	
PROTEIN/MEAT	SERVING SIZES	OUNCES PER DAY
un-breaded, low-fat meat - fish - poultry	1 ounce (7 - 9 gr protein)	Weight in pounds divided by 2.2 equals number of nutritional grams of protein per day
egg	1 egg (7 - 8 gr protein)	
low-fat cottage cheese	½ cup (7 - 8 gr protein)	
**cheese	1 ounce (7 - 8 gr protein)	
**seed/nut butter	2 tablespoons (5 - 7 gr)	
**seeds/nuts	¼ cup (3 - 10 gr protein)	
FAT	SERVING SIZES	SERVINGS PER DAY
oil, butter	1 teaspoon	**Women - 6 servings**
salad dressing, mayonnaise, sour cream	1 tablespoon	
**cheese	1 ounce	
**seed/nut butter	2 tablespoons	
**seeds/nuts	¼ cup	
OTHER		
WATER or Calorie Free/Caffeine Free (maximum 96 oz)	1 oz per every 2 lb of body weight	
MULTIVITAMIN	1	
OMEGA 3 FATTY ACID	1 to 3 grams	
Extra Vitamin C (if have high cholesterol)		
Extra Vitamin D (if vitamin D deficient)		

PART THREE

NUTRITION EDUCATION

Introduction to Nutrition Education

Have you ever heard the saying “calories in, calories out?” This saying is implying that what you weigh is all about calories in, calories out. Take in more calories than you burn, you gain weight. Take in fewer calories than you burn, you lose weight. This is only part of the story of how our bodies utilize food that we eat for energy.

Excess calorie consumption is not the only cause of an energy imbalance. An energy imbalance can also happen when the body does not properly convert food that is eaten into usable energy but instead tends to store energy in excess. The body’s energy balance is directed and controlled by a variety of hormones – which you will learn about in Body Biology Explained. The production and function of these key hormones that control energy balance, are strongly influenced by nutrients and chemicals found in our food. Nutrients and chemicals found in our food provide information to the cells of our bodies, including cells that produce the hormones that control our body’s energy balance.

Natural nutrient-dense foods activate the healthy function of cells that produce key hormones that control energy balance. Unnatural nutrient-depleted, genetically-altered foods that are loaded with chemicals, pesticides, and synthetic ingredients, activate unhealthy function of these same cells. Nutrition Education will help you understand how to choose the healthiest foods for your body during each Action Step of the program. Each Action Step is carefully designed to support the optimum production and function of key hormones which control your energy balance. Nutrition Education will teach you about adopting healthier eating habits which will help you achieve your ideal weight and reach peak health.

Important Words 3.0

There are several important words that you will want to understand prior to diving into nutrition education. Read through the list and make sure you understand what the different important words mean before moving on to *Nutrition Education for Step 1*.

[1] Refined foods - Foods that are mechanically and/or chemically altered resulting in the removal of some or all of their health supporting nutrients. Often refined foods do not resemble their natural state by the time the refining process is completed. Sugar is a great example. It typically is made from a sugar beet or sugar cane, yet it looks nothing like either one of these plants. Here is a short list of common highly refined foods: soda pop, candy bars, donuts, sports drinks, nondairy coffee creamer, and Raman noodles. Refined foods can still resemble the plant they came from, yet be stripped of many or most of their health-giving nutrients. Examples of this would be potato chips, white bread, minute rice, puffed rice cereal and dehydrated potato flakes.

[2] Vitamins – There are 13 major vitamins found in foods. They perform many important jobs in the body. Vitamins are involved with almost every process in the body and help it work more efficiently. Some vitamins help your body heal cuts and scrapes. Vitamin D helps make your bones strong. Vitamin C helps keep your immune system strong and helps your body fight off germs. Vitamin A helps your eyes stay healthy. B vitamins help your body use food for energy. Whole grains are a good source of B vitamins.

[3] Fiber – The part of plants that can't be digested. Fiber aids in normal functioning of digestion. It helps a person feel satisfied after eating. Fiber containing foods are more likely to be used for energy and not be put into storage. It plays an important role in balancing energy levels in the body. Fiber also helps lower cholesterol levels in the body.

[4] Quick-release energy foods – Quickly dumps a load of fuel (energy) into the blood stream, for the body to use. The body can't use a load of fuel all at once, so it uses some of the fuel for energy and puts the excess fuel into storage. Dumping loads of fuel on the body is stressful to the body. Over time, eating quick-release energy foods will damage health. Quick-release energy foods usually contain sugar and/or white flour like cakes, cookies, pasties, white bread products, pasta, pies, and desserts. White rice, fruit juice and high fructose corn syrup are also quick-release energy foods.

[5] Empty calories – A calorie is a measure of energy. Refined plant foods that only contain calories and lack health supporting nutrients (vitamins, minerals, and fiber), are called empty calories. Certain vitamins and minerals are needed in the process of digesting food. Empty calories actually require more vitamins and minerals to digest them, than they contain. In other words, they rob your body of precious vitamins and minerals in order to digest them. It is best to eat foods that add to your vitamin and mineral stores in your body.

[6] Whole grains – Contain the entire grain kernel: [1] Bran – "outer shell" which protects the seed (contains fiber, B vitamins, trace minerals); [2] Endosperm – provides energy and a little protein; [3] Germ – supplies antioxidants, vitamin E, and B vitamins.

[7] Slow-release energy foods – Gives the body a steady supply of fuel for several hours after a person eats. This is the type of fuel the body needs to keep energy levels balanced. The body rarely stores slow-release energy. Slow-release energy foods are the healthiest food to eat for energy balance. Slow-release energy is found in fruits, non-starchy vegetables, starchy vegetables, legumes, whole grains, and some types of dairy products. Protein is a special slow-release energy food.

[**8] Carbohydrate** – The major source of calories (energy) in the diet. Carbohydrates come primarily from sugar (simple carbohydrate) or starch (complex carbohydrate). Carbohydrates are broken down during digestion into glucose, which is the body's useable source of fuel for energy. The starch food group (grains, legumes, starchy veggies) are the most common source of complex carbohydrates in the diet.

[**9] Whole foods** – Are foods that resemble their natural state. Whole plant foods provide slow-release energy. They are rich in vitamins, minerals and fiber. All these nutrients are needed to help keep your body healthy and help maintain a healthy energy balance.

Whole plant foods may be eaten raw or may be minimally processed. Processed whole foods are minimally altered by mechanical means (cutting, chopping, grinding) or by temperature (heating or freezing). For example, spinach leaves may be eaten raw or cut up or steamed. In all these forms it still resembles leaves picked from a spinach plant. Whole grains need to be ground up and/or cooked before we can eat them (i.e. 100% whole wheat flour, oatmeal, cooked barley, whole rye flour).

[10] Minerals – Are elements found in the earth and water that the body needs to perform hundreds of different body functions. Salt is important for water balance in the body. Magnesium is needed for over 300 different functions in the body including energy balance. Some minerals are important building materials for some tissues in our bodies, like calcium is a building block for our bones.

[11] Protein – Provides the body with material for building muscles, tissues, blood cells, hormones and many other important substances. Protein is found primarily in meats, eggs, dairy, fish, nuts and dried beans.

[12] Glucose – Is the simplest form of carbohydrate. It is a building block for larger sugar molecules and complex types of digestible carbohydrates. Glucose is the primary energy source of cells in living organisms.

3.1 Nutrition Education for Step One

Nutrition Education for Step 1 will help you identify added sugars, HFCS, toxic chemical ingredients, and unhealthy fats in your foods and beverages. You will understand how added sugars, HFCS, toxic chemical ingredients, and unhealthy fats can harm your health and cause the body to store excess energy as fat. Lastly, you will learn about healthy beverage choices, snack ideas, and how to eat healthier when eating out.

Action Step 1 lays an important foundation for this healthy weight loss program. As you work through nutrition education for step one, you will better understand this statement.

A Word About Sugar 3.1.1

There are several different kinds of sugar. Some sugars are natural and some are unnatural, that is altered by man-made processes. It is the unnatural sugars that you will be excluding from your diet during *Action Step 1*.

Foods that contain natural sugars include milk, fruit, and veggies. Milk contains a complex sugar called lactose. Fruits and veggies contain a mix of sugars – fructose, sucrose, and glucose. Fruit naturally contains a lot more of these sugars than veggies. Starchy veggies contain more sugars than non-starchy veggies, which actually contain very little sugar. Natural sugars contained in these foods are part of a package deal that delivers health supporting nutrients to the body.

The following list of sweeteners contain trace amounts of some B vitamins, macro-minerals (i.e. potassium, magnesium, phosphorus, etc.) and **antioxidants**. They should only be eaten in small amounts (i.e. 1 teaspoon) with foods containing protein, healthy fat or fiber.

1. Date sugar is derived from dates and is often touted as being a 'healthy non-sugar' to use as a sweetener, but it is a sugar and can have some of the same effects on the body as table sugar.
2. Raw honey
3. Malt Sugars – Some grains have been malted to produce a sweet syrup. These syrups have a distinct flavor, depending on which grains have been used in the malting process.
4. Maple syrup is the boiled down sap from maple trees.
5. Rapadura is pressed cane sugar, but it has not been refined. It is darker in color and still has most of the minerals that are naturally found in cane sugar, otherwise lost in the processing of white, brown and raw sugars.

The following list of sweeteners contain trace amounts of some B vitamins, and some macro-minerals (i.e. potassium, magnesium, phosphorus, etc.). They should only be eaten in small amounts (1 teaspoon) with

foods containing protein, healthy fat or fiber.

6. Refined honey
7. Molasses – Sugar that is refined by squeezing juice from sugar beets or sugar cane. This juice is then boiled into syrup from which the sugar crystals are extracted. The remaining syrup is called molasses.
8. Rice syrup is a sweetener made from processing rice. Though touted as being a more healthy option to other sweeteners such as table sugar, rice syrup is not very sweet, so more of it is needed in a recipe to achieve the same level of sweetness as sugar.
9. Sucanat is dehydrated juice from sugar cane.

Sweeteners 10 through 14 should be avoided. They are void of nutrients and only contain empty calories. These are sweeteners that you want to try to completely or mostly eliminate from your diet.

10. Confectioners' sugar is white sugar that has been powdered.
11. Granulated White Sugar (a.k.a. 'table sugar')
12. Corn syrup
13. Raw Sugar** – molasses plus residue left over after sugar crystals have been extracted.
14. Brown sugar** – cane sugar with a little molasses added to provide the brown color.

****These sweeteners contain insignificant amounts of nutrients.**

B vitamins are required for the digestion process. Since sweeteners 10 through 14 contain no nutrients, including B vitamins, they actually rob B vitamins from your body's B vitamin stores. B vitamins play an important role in maintaining a robust metabolism. A robust metabolism is essential to successful weight loss. Therefore, you want to maintain adequate B vitamin stores in your body.

This is not the only negative impact that sweeteners 10 through 14 have on your body. Here is a list of 16 additional harmful impacts these sweeteners have on your mental, emotional, and physical health:

- Causes irritability, volatile moods, and hyperactivity
- Decreased ability to concentrate
- After consumption of sweetener(s) – up to a 40 point drop in IQ (short term – 1 day)
- Causes Brain Fog
- Promotes seizure activity
- Increases insulin levels – high insulin levels damage blood vessels and puts the body into fat-storing mode
- Increases insulin resistance – roadblocks weight loss, increases risk for type 2 diabetes
- Increases appetite and stimulates overeating
- Causes cravings for high fat, high sugar, low nutrient foods
- Addictive substance – sugar lights up the brain's dopamine pathways the same way drugs do
- Causes inflammation – promotes weight gain, increases risk for multiple chronic health conditions
- Suppresses immune function
- Can cause an overgrowth of yeast in the intestines – causing gut inflammation
- Promotes the growth of harmful bacteria in the intestines – causing gut inflammation
- Causes oxidative stress which damages power plants in cells (mitochondria) that are responsible for the amount of calories our bodies burn each day
- Causes fatty liver [fat accumulation in the liver leads to liver damage]

Surprisingly there are worse, more damaging sweeteners than these five sugars (10 – 14). I am talking about these three refined high fructose products:

15. Fructose (fruit sugar) can be refined into a white powder form. It is sweeter than table sugar.
16. High fructose corn syrup contains about 42-55% fructose, with the remainder being glucose. Commonly used in refined foods and most soda pops. It spikes blood glucose levels quicker than white table sugar.
17. Agave processed from the agave plant, it is similar to high fructose corn syrup, and can range anywhere from 55-92% concentrated fructose, and the rest as glucose, depending on processing and the source of the plant.

These are sweeteners that you want to try to completely eliminate from your diet. Consumption of high fructose sweeteners like these have been linked to multiple adverse health effects as follows:

- These sweeteners are highly palatable and can lead to overconsumption of calories, contributing to weight gain and obesity.
- They make the body less sensitive to insulin over time, causing insulin resistance.
- Insulin resistance can lead to type 2 diabetes.
- Fructose is metabolized primarily in the liver, where it can accumulate as fat. This can lead to non-alcoholic fatty liver disease (NAFLD).
- High fructose sweeteners increase the production of triglycerides, which are fats that can accumulate in the bloodstream and contribute to heart disease.
- These sweeteners exacerbate inflammatory diseases like gout due to increased uric acid production.
- High fructose sweeteners increase risk for high blood pressure.
- They stimulate inflammation in the body, which is associated with a multitude of chronic diseases.
- These sweeteners are associated with colorectal cancer in those already at risk. Animal studies have shown that high levels of HFCS consumption increase the size and aggressiveness of colorectal tumors.
- Some studies have linked high fructose sweeteners to kidney disease.
- Excess fructose may increase harmful substances called advanced glycation end products (AGEs), which are harmful to your cells.
- High fructose sweeteners are linked with slow memory function, cognitive decline, and memory loss.

You might be wondering if it is ok to turn to **Calorie Free Sweeteners** to satisfy your sweet tooth. The answer is yes! However, they are not all safe. Some have unwanted side effects. Here's what you need to know about calorie free sweeteners:

1. Aspartame (NutraSweet or Equal) – when broken down in the body, it turns into a neurotoxin that can alter brain chemistry, affect mood and behavior, cause headaches and nerve dysfunction, and it is an appetite stimulant (makes you want to eat). Aspartame is the most common artificial sweetener found in soda pop.
2. Maltitol, Sorbitol, Mannitol, Erythritol are sugar alcohols that are poorly absorbed. Safe to use but have side effects (gas and diarrhea) if you eat more than one or two servings.

3. Saccharin (Sweet N Low) – shown to cause cancer when consumed in large amounts.
4. Sucralose (Splenda) – sugar with an attached chlorine molecule – tastes sweet but body can't digest it. So far, it appears to be safe to use, however it does slightly increase insulin resistance.
5. Stevia Powder – is an extremely sweet powder derived from a South American herb. The body is unable to digest it. It is natural and very safe to use.
6. Tagatose (Naturlose) – a special milk sugar that is poorly absorbed. Safe to use.
7. Xylitol – made from the bark of a birch tree – safe to use.

A Word About Unhealthy Fats 3.1.2

Fats are a dense concentrated energy source. It is also a very-slow-release energy. We need a little fat in our diet most every day. But we only need a little because it is a concentrated, dense energy. It is very VERY important to be respectful of the serving size on this very dense energy source.

We all need fat in our diet to survive. Fats have many important functions. Here is a list of some of those important functions:

1. We need fat for a healthy brain and nervous system. The solid weight of our brain is 60% fat. The insulation that surrounds all of our nerves is made of fat.
2. Fat is an important, secondary energy source.
3. Fat is needed for the absorption and transport our fat soluble vitamins – A, D, E, and K.
4. Fat provides protection and structure for internal organs.
5. Fat is needed for production of certain important hormones.
6. Fat helps regulate body temperature.
7. Fat helps satisfy you after a meal.

Different Kinds of Fats

There are several different kinds of fats in our diets. Some fats are healthy and some are not. Some fats have a purpose in small amounts, yet harm the body when consumed in larger amounts. During *Nutrition Education for Step 1*, you will learn about fats that you should limit in your diet and those fats that are harmful to the body in any amount. You will learn about healthy fats in *Nutrition Education for Step 3.*

Saturated fats – found in animal products (meat and dairy) and tropical oils (coconut and palm oils). Saturated fats are solid at room temperature, stable when heated and safe to use for cooking. Saturated fats from plants are medium chain fatty acids. These fats found in tropical oils have many health benefits. Saturated fats from animal sources are a long chain fatty acid that is hard to break down once they have been eaten and are sticky as they travel through the blood stream.

Functions of Saturated Fats

1. They make up about 50 percent of our cell membranes and give them stability;
2. They help our bones incorporate calcium into our skeletal structure;
3. They protect the liver from toxins like alcohol and certain medications;
4. They are necessary for the body to be able to utilize essential fatty acids;
5. They support healthy immune function.

II. Cholesterol – found in animal products. It is also made in the body by the liver. Cholesterol is sticky and does not break down in the body. It is either used, eliminated or circulates in the bloodstream, sometimes in excess.

Functions of Cholesterol

1. Healing salve within the body;
2. Precursor to certain hormones (sex and steroids);
3. Vitamin D is made as a result of cholesterol;
4. It protects our skin and makes it water resistant;
5. It is a component of our lining on our nerves;
6. It is a component of bile acids (special acids that help the body break down fats we eat);
7. It is needed for the production of happy hormone (serotonin);
8. It plays an important role in maintaining the health of the intestinal wall.

Animal fats eaten in excess are unhealthy. This is because of the saturated fats and cholesterol they contain. Choose lean cuts of meat. Cut fat off meat before cooking it. Choose low fat dairy products like skim milk, 1% milk, low fat cheese (mozzarella, Swiss), low fat yogurt and low-fat cottage cheese.

III. Some types of fat damage our bodies and should be completely avoided.

1. Trans Fats (Hydrogenated Oils) – an unnatural fat produced by subjecting polyunsaturated fats to high temperatures and forcing hydrogen atoms onto the fatty acids to create a solid fat, like margarine. Trans fat are considered to be a bad fat and should be avoided.

> **Damaging Effects of Trans Fats (Hydrogenated Oils)**
> The body does not have an enzyme to break down trans fats. Omega 3 or omega 6 fatty acids are needed to clear trans fats from the body (learn about these fats in *Nutrition Education for Step 3*). Trans fats are harmful to our cell membranes when they are used for the building blocks of the cell membranes. They cause oxidative stress and inflammation in the body (learn about this in *Body Biology Explained for Steps 1 and 3*). Trans fats increase cholesterol levels and increase risk for heart disease. They increase insulin resistance and increase risk of developing diabetes. Trans fat blocks the utilization of essential fatty acids (omega 3 fatty acid), causing many negative effects on the body including increased blood cholesterol, suppressed immune system, cancer, hardening of the arteries, diabetes, obesity and many more.

2. Deep fat fried foods are unhealthy foods. Oils are damaged when they are heated to high temperatures and become unhealthy fats. They have a similar effect on the body as do hydrogenated oils. In addition to these foods containing unhealthy fats, deep fat fried foods are high fat foods. The body only needs a small amount of fat each day. High fat intake is unhealthy for the body and is one thing that can cause an energy overload and get the body's energy balance out of whack. Some examples of foods that are deep fat fried include potato chips, French fries, breaded meats, breaded seafood, breaded fish, and donuts.

3. Pan fried foods can be high in fat. Avoid eating pan fried foods. If you do pan fry foods, use only a small amount of oil. Sautéed fresh vegetables typically do not absorb much fat because they don't need much time to cook and it only takes a small amount of oil to sauté foods.

Label Reading for Step One 3.1.3

MULTI-SEED CRACKERS

Nutrition Facts

Serving Size about 15 Crackers (30g)
Servings Per Container about 4

Amount Per Serving	
Calories 140	Calories from Fat 45
	% Daily Value*
Total Fat 5g	8%
Saturated Fat 0.5g	3%
Trans Fat O g	
Cholesterol O mg	O%
Sodium 11O mg	5%
Total Carbohydrate 2Og	7%
Dietary Fiber 2g	8%
Sugars Og	
Incl. Added Sugars Og	
Protein 3g	

Vitamin A	O%	Vitamin C	O%
Calcium	6%	Iron	6%

*Percent Daily Values are based on a 2000 calorie diet. Your daily values may be higher or lower depending on your calorie needs.

INGREDIENTS: Brown rice flour, Sesame seeds, Potato starch, Quinoa seeds, Safflower oil, Flax seeds, Amaranth seeds, Tamari soy sauce powder, Maltodextrin, Salt, Sodium Nitrate, BHA, and BHT.

Look here to find total amount fat per serving in the crackers. Try not to eat foods that have more than 30% of the calories from fat. These crackers have 32% of the calories from fat (45 X 100 = 4500) divided by 140 = 32%).

This is the percent of fat in a 2000 calorie diet.

Unnatural unhealthy highly processed form of fat that damages the body. Try to always avoid foods that have trans fat of any amount.

This shows grams of natural sugars contained in the foods that this grain product is made from.

This is where you will see if there is any added sugars in this food. Foods with added sugars are foods that you want to try to avoid.

The first ingredient makes up the largest amount. The second ingredient makes up the second largest amount. And so on until you reach the last ingredient, which makes up the smallest amount. NOTE that the last 3 ingredients are chemicals. Chemicals are toxins to the body and not nutrients.

Spotting Unhealthy Ingredients

- Avoid buying foods that have any kind of sugar listed as one of the top 3 ingredients.
- Steer clear of foods that contain Trans Fats or Hydrogenated oils.
- Steer clear of foods that contain HFCS, fructose powder or agave.
- Limit consumption of foods with 1 to 2 chemicals listed in the ingredients and avoid foods with more than 2 chemicals in the ingredients list.

Label Reading Treasure Hunt

Read labels on foods in your kitchen to find the foods that fit the descriptions. Then check if you think it is a healthy food, ok to eat in small amounts, or unhealthy.		Healthy	OK in sm amt	Unhealthy	Not Found
1	Find a food with Trans fat:				
2	Find a food with hydrogenated oil or partially hydrogenated oil in the ingredients:				
5	Find a food with high fructose corn syrup in the ingredients:				
6	Find a food with sugar in the top 3 ingredients:				
7	Find a food with 1 ingredient:				
8	Find a food that has all calories from fat and 0 grams of carbohydrates and 0 grams of protein:				
9	Find a food that has no chemicals listed in the ingredients:				
10	Find a food that has 0 grams of fat:				
11	Find a food with no added sugars:				
12	Find a food that has 2 or more chemicals listed in the ingredients:				

Look on page 61 to see if you were right about which foods are healthy, ok in small amounts or unhealthy.

Decrease Fat in Your Diet 3.1.4

This is a list of ideas to help you decrease fat in your diet:

1. Respect serving sizes of fats:
   a. 1 teaspoon is the serving size for butter, margarine or olive oil;
   b. 1 tablespoon is the serving size for creamy salad dressing, tartar sauce, mayonnaise, cream and sour cream.

2. Choose low-fat or non-fat dairy products:
   a. Skim or 1% milk and non-fat yogurt;
   b. Low-fat cheeses (no more than 3 grams of fat per ounce), and 1% fat cottage cheese;
   c. Low-fat sour cream and cream cheese.

3. White cheese is usually lower in fat than yellow cheese. Choose low-fat versions of your favorite salad dressing, tartar sauce and mayonnaise.

4. Avoid fried foods like French fries, breaded meats and seafood, breaded deep fat fried vegetables, donuts, and other fried foods.

5. Avoid high-fat desserts like ice cream, pastries, cookies, cakes and pies.

6. Choose meat that has been baked, poached, grilled or broiled.

7. Trim off all fat from meat and remove skin from poultry before eating it. Decrease fat even more by taking these actions before cooking meat and poultry.

8. Choose fish packed in water when buying canned fish like tuna or salmon.

9. Choose low-fat luncheon meats, such as sliced turkey or chicken breast, lean ham, and lean sliced beef. Avoid high fat luncheon meats like baloney and salami.

10. Choose lean meats, fish and poultry. Try sprinkling lemon juice and herbs or spices on cooked vegetables instead of using cheese, butter, or cream-based sauces.

11. Try plain, nonfat, or low-fat yogurt and chives on baked potatoes rather than sour cream.

12. Avoid foods that contain trans fats or hydrogenated oils. Trans fats will be listed on the food label and hydrogenated oils will be listed in the ingredients list.

13. Avoid oily snack foods like potato chips, corn chips, pork rinds, and buttered popcorn.

14. Cut down on sauces and toppings like gravy, salad dressing, sour cream, butter, margarine, mayonnaise and whipped cream. Even small amounts of these foods can boost the fat content of your diet.

15. Watch out for hidden fat in crackers, muffins and other snack foods. If in doubt, read the food labels.

Make Better Beverage Choices 3.1.5

Non-diet soda, energy or sports drinks, and other sugar sweetened drinks contain a lot of calories from added sweeteners and few nutrients. Your body needs a wide variety of nutrients to stay healthy and to sustain a healthy energy balance. There are two main ways that sweetened beverages have a negative effect on energy balance. First, you consume large numbers of calories in a short amount of time when you gulp down sugary beverages, which causes an energy overload. Second, sugary drinks are a form very-quick-release energy. Here are some ideas to help you make better beverage choices.

Sugar-free tea is a great thirst quencher. Save money by making tea at home. Add variety to your homemade tea by mixing flavors. Mint tea brewed with regular tea makes a refreshing drink. Experient with other flavor mixtures.

Green tea is another healthy sugar-free drink. Green tea contains phytonutrients that help your body burn fat. This effect is synergistically improved when combined with aerobic exercise. The phytonutrients in green tea also have a cholesterol lowering effect. Save money and make your green tea at home.

There are a variety of **calorie-free flavored waters** on the market. Some of them have vitamins and minerals added to them to make them healthier for you. These are sometimes labeled **zero-calorie vitamin water**.

You can find **calorie-free flavored seltzer waters**. These are a nice alterative to soda pop.

Some people make their own **homemade flavored waters** by adding a piece lemon or lime or orange or watermelon or cucumber in their water.

Don't forget dairy. Select low-fat or fat-free **milk** or fortified **soy** or **nut beverages**. They offer key nutrients such as calcium, vitamin D, and potassium. Milk is nutritious but if you drink too much, it can cause an energy overload. If you are a milk lover, be mindful of how much you are drinking each day. Unlike fruit juice, **100% vegetable juice**, is another nutritious sugar-free drink.

DRINK WATER! Water is the **STAR** of all sugar-free drinks!

Water is not just for plants and trees, reptiles and mammals, fish and birds. Water is the most prevalent molecule in YOUR body. In fact, our bodies are made up of 60% water. Water is the main substance in all of our body fluids like blood, digestive juices, urine, tears, and sweat. It is needed for almost every bodily function like our circulation, digestion, absorption, waste elimination, brain function and our energy balance.

How much water does the body need each day? You need 1 ounce of water (sugar-free, caffeine-free fluid) for every 2 pounds of body weight.

Are there situations that increase the body's need for water? Yes, there are several situations that increase the body's need for water. Individuals living in warm climates will need additional fluids. Physical activity increases the body's need for water. Individuals who are ill with fever, vomiting or diarrhea will need extra fluid. High protein diets have a diuretic effect on the body and cause the body to excrete greater amounts of fluid. Individuals on high protein diets need increased amounts of fluids.

Why is it important to maintain adequate hydration? Hydrated bodies have higher energy levels, increased endurance and better muscle coordination than inadequately hydrated bodies. Hydrated brains remember more, think clearer and are more alert than inadequately hydrated brains.

If the benefits of hydration do not motivate you to drink adequate amounts of fluids, maybe hearing about the consequences of dehydration will motivate you to drink more fluids. Dehydration feels bad. Symptoms of mild to moderate dehydration include thirst, hunger, headache, mental confusion, decreased motor control, decreased memory and attention span, fatigue, nausea and inability to maintain a healthy body temperature. Severe dehydration can cause death.

Medical research has linked chronic dehydration to a multitude of chronic health problems including asthma, arthritis, type two diabetes, cataracts, back pain, chronic fatigue syndrome, depression, heart burn, colitis, high blood pressure, high cholesterol, kidney stones, migraines, multiple sclerosis and muscular dystrophy.

What are the best fluids to drink to maintain adequate hydration? Hydration requirements are best met by plain water. The primary ingredient in all fluids is water. Most fluids can contribute toward meeting your body's daily need for water. However, all fluids are not created equal. There are a few fluids that are poor hydration sources.

Caffeine and alcohol are diuretics. There is a great amount of variability in how much diuresis a caffeinated or alcoholic beverage will produce when consumed. The two primary factors that are going to affect diuresis are the concentration of caffeine or alcohol in the beverage and the body's sensitivity to each of these substances. For example, a strong cup of coffee can cause the body to release a greater amount of fluid through the urine than what was contained in the cup of coffee.

Drinks with high concentrations of sugar or corn syrup, like soda pop, can cause the body to "steal" water from other parts of the body to dilute the sweetened beverage and make it less concentrated. Highly sweetened beverages are another poor hydration source.

What is the best kind of water to drink? There are three primary sources of drinking water in our country: 1) Surface water which comes from rivers, lakes, reservoirs or streams; 2) Well water which comes from underground; and 3) Spring water which is underground water that is forced up toward the earth's surface. These water sources can be provided via city tap, from a private well or spring or purchased in a bottle.

The most important thing about the water that you choose to drink is that is comes from a documented uncontaminated source or it has been adequately filtered to remove contaminates. Solid carbon block

filters are one kind of water filtering system that effectively and economically filters water. These filters remove chemicals, organic pollutants, radon and asbestos while leaving the ionic minerals intact.

Why do we need to drink filtered water? Many sources of drinking water in the United States have been contaminated with varying levels of harmful chemicals as a result of leakage from underground fuel tanks, run off from agriculture fertilizer, treated sewage sludge and solid wastes buried in landfill dumps. Any one of the sources of water mentioned on the previous page, can become contaminated. However, the closer the water source is to the surface, the greater the opportunity for it to be contaminated.

Should we all just drink bottled water? Bottled water comes from the surface water, well water or spring water. The purity of bottled water is going to depend on geographical location that it was taken from and the filtering and purification process that it went through at the bottling plant. Therefore, the purity of bottled water is going to vary. There may or may not be information on the label indicating the purity of the water in the bottle.

Would it be best to drink distilled water? Distilled water is free of all contaminates. It is also free of health supporting ionic minerals. Hard water is rich in ionic minerals which are beneficial to a person's health. Research studies have shown that individuals who live in areas where the drinking water is highly mineralized experience improved health such as decreased rates of heart disease, increased bone density, good teeth health and even increased longevity. Hard water can come from ground water (i.e. wells or springs) or from surface water (i.e. rivers, lakes, reservoirs or streams). Hard water can be contaminated so it is important to choose filtered mineral water.

Do water softeners filter contaminates out of the water? Water softeners do not filter out contaminates from tap water or well water. Water softeners exchange sodium ions for ions of other minerals and leave you with water that is high in sodium and low in other minerals. Consumption of softened water is linked to the development of cancer, heart attacks and stokes.

Ideas for Healthy Snacks 3.1.6

It you are someone who craves sweets or junk food, this first action step can be hard. During this step, it will be helpful to use calorie free sweeteners to ease the cravings. Here are some ideas to help you find healthy tasty snacks that fit with your eat cleaner action step.

- Put dried fruit and roasted nuts into snack-size zip lock bags. They work great for healthy satisfying quick grab snacks on the go.

- Blend low-free Greek yogurt with fruit pieces and crushed ice to make a tasty smoothie. Greek yogurt has a higher protein content than regular yogurt and it usually has a lower sugar content. Use fresh or frozen fruits. Try bananas, berries, peaches, or pineapple. If you freeze the fruit first, you can even skip the ice!

- Make a delicious salad by mixing plain yogurt into a cup of shredded carrots and a handful of raisons.

- A single-serving container of low-fat yogurt or individually wrapped string cheese can be just enough for an after-work snack.

- Turn yogurt into an extra special treat by mixing berries into it.

- Make ready to eat snacks. Clean and cut up several types of fruits and veggies, then put them in containers to keep them fresh. When you are hungry between meals, this makes for a quick grab, healthy snack. Serve veggies with high protein hummus.

- Drink a healthy snack. Grab a cup of low-fat milk or fortified soy beverage.

- Eat something made with whole grain. Whole-wheat breads, whole grain crackers, and whole-oat cereals are high in fiber and low in added sugars, saturated fat, and sodium.

- Popcorn is a whole grain. Keep it healthy by making it from scratch with an air popper or cooking it on the stove in a pan with 1 tablespoon of coconut oil. Top with a sprinkle of sea salt.

- Baked whole grain corn chips with salsa are a satisfying and nutritious snack.

- Granola bars and protein bars can make great snacks on the go. Just be sure you read the label and only buy those with low or no added sweeteners.

- Choose protein foods such as roasted nuts and seeds, hummus or other bean dips, mozzarella cheese stick or a hard-cooked (boiled) egg for a healthy, easy snack. Hard-cooked eggs can be kept in the refrigerator for up to 1 week.

- Fresh, frozen, dried, or canned fruits, such as sugar-free applesauce, frozen grapes, or raisins, can be easy “grab-and-go” options that need little preparation. Choose canned fruits that have no added sugars.

- Design delicious dips! Whip up a quick dip for veggies with plain yogurt and seasonings such as herbs or garlic. Serve with raw vegetables like broccoli, carrots, or cauliflower. Fruit chunks go great with a yogurt and cinnamon or vanilla.

- Enjoy frozen treats. Frozen fruit is a delicious refreshing treat during the warm months. Just put fresh fruits such as melon chunks in the freezer. Make fruit-sickles by inserting sticks into peeled bananas and freezing.

- Fix homemade trail mix. Skip the pre-made trail mix and make your own. Use your favorite nuts and dried fruits, such as peanuts, cashews, walnuts, or sunflower seeds mixed with dried apples, pineapple, cherries, apricots, or raisins. Add whole-grain cereals or popcorn into the mix.

Tips for Eating Healthier Away from Home 3.1.7

Eating healthy when away from home can be challenging. Most snack options you find at convenience stores are not healthy. Here are some tips to help you be prepared for a snack attack ... anywhere … any time.

- Keep a healthy non-perishable snack like dried fruit, nuts, or a granola bar in your purse, briefcase or backpack.
- Keep sugar-free gum or sugar-free hard candy handy to satisfy sugar cravings.
- Make it a habit to carry a water bottle with you throughout the day. Did you know that your brain can not always differentiate between thirst and hunger? If you are hungry between meals, drink some water and then wait 15 minutes. If you are still hungry, have a healthy snack.
- Make healthy snacks at home to take on your road trip like whole grain muffins or popcorn.
- Buy an insulated lunch bag and reusable ice pack. Dedicate this ice pack and lunch bag to be your healthy snack bag. Use it to take low-fat string cheese, cut-up vegetables, and fresh fruit with you whenever you go out of town or when you have hours of errands to run.
- Pack a healthy snack bag with multigrain chips or crackers, granola bars, nuts, and dried fruit.
- Bring a jug of ice water and a water bottle for each person. This helps every one stay hydrated with the healthiest fluid on earth and it saves money.

Here are so tips to help you eat healthier at restaurants. Some of these ideas can even help you make better choices at fast food restaurants.

- Drink water with your meal or order low-fat milk, unsweetened tea, or other drinks without added sugars.
- Ask for whole grain bread when ordering a sandwich. If the restaurant doesn’t have whole grain bread, take the top piece of bread off your sandwich and set it to the side and enjoy an open face sandwich.
- Add an extra serving of vegetables to your day by starting your meal with a salad.
- Request that salad dressing be served on the side. Then you can use as much or as little as you want.
- Choose main dishes that include vegetables, such as stir fries, kebobs, or pasta with a tomato sauce.

- Order steamed, grilled, or broiled meat dishes instead of meat that is breaded or fried.
- Avoid foods that have creamy sauces and gravies.
- Substitute a bowl of fresh fruit for a pancake or toast with when ordering breakfast.

Label Reading Treasure Hunt Answers

How did you do with identifying which of the foods you found on the Label Reading Treasure Hunt were 1-healthy food, 2-ok to eat in small amounts, or 3-unhealthy?		Healthy	OK in sm amt	Unhealthy	Not Found
1	A food with Trans fat			XX	
2	A food with hydrogenated oil or partially hydrogenated oil in the ingredients			XX	
5	A food with high fructose corn syrup in the ingredients			XX	
6	A food with sugar in the top 3 ingredients			XX	
7	A food with 1 ingredient	XX			
8	A food that has all calories from fat and 0 grams of carbohydrates and 0 grams of protein		XX		
9	A food that has no chemicals listed in the ingredients	XX			
10	A food that has 0 grams of fat	XX			
11	A food with no added sugars	XX			
12	A food that has 2 or more chemicals listed in the ingredients			XX	

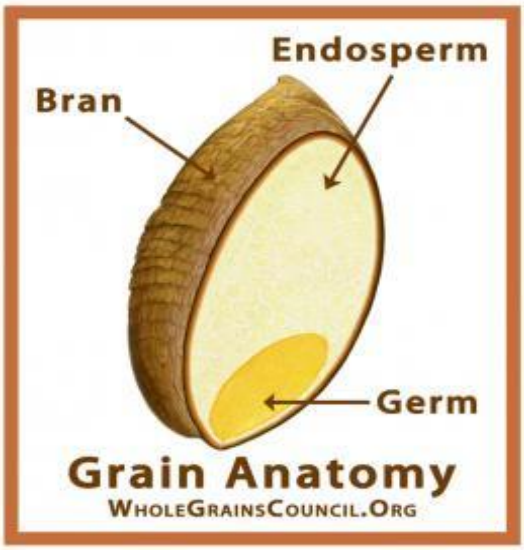
3.2 Nutrition Education for Step Two

Nutrition Education for Step 2 will teach how to identify plant-based foods, that provide slow-release energy, like veggies. You will learn about whole grains and why they are much healthier than refined grains. You will understand the many ways that fiber in plant foods helps you stay healthy and helps support successful weight loss. You will learn how to calculate protein needs for your body and how protein helps you loss weight. You get more practice reading labels but this time you will be looking for carbohydrates, fiber, and protein content.

A Word About Grains 3.2.1

The starch group provides most of the energy in a person's diet. Starchy foods and sugars are usually responsible for an "energy overload". It is important that individuals RESPECT SERVING SIZES of starchy foods. In other words, be knowledgeable of the serving sizes on starchy foods and follow serving size guidelines when eating starchy foods.

There are three types of foods that make up the starch group: 1) Grains; 2) Legumes; and 3) Starchy veggies. Americans get most of the starch in their diets from grains. Grains are also the food group that is the most abused of all the food groups. That is … many grain products are **refined [1]** and stripped of valuable **vitamins [2]**, **minerals [10]** and **fiber [3]**. When grains are stripped of these important nutrients, they become an unhealthy **quick-release energy [4]** food. Refined grains are mostly **empty calories [5]**. There is more bad news about refined grains. Unhealthy substances like sugar, high fructose corn syrup, trans fat, hydrogenated oils, and chemical preservatives are commonly added to refined grain products.



Healthy grains are **whole grains [6]**. Whole grains provide **slow-release energy [7]** and are packed with nutrients that support a healthy energy balance and support good health. The **bran** contains fiber, selenium, and B vitamins. B vitamins are also found in the **germ** along with iron, antioxidants, and magnesium. You will learn more about fiber, B vitamins, magnesium and vitamin E in session 4.3. The **endosperm** contains calories mostly from carbs and a few from protein. All the other nutrients are in bran and germ. In the process of making refined grains, the bran and germ are stripped away, only leaving the calorie-dense endosperm.

Here are some examples of foods made from whole grains and foods made from refined grains.

Grains	Whole (at least 2 grams of fiber)	Refined (1 or O grams of fiber)	Serving Sizes
Wheat	Cracked Wheat Hot Cereal, Whole Wheat Pasta, Whole Wheat Flour Products (100% Whole Wheat Bread, Pancakes, Waffles, Crackers, Whole Grain Breakfast Cereal, Etc.)	Cream of Wheat, Flour or Wheat Flour Products (Bread, Crackers, Muffins, Pancakes, Breakfast Cereals, Waffles, Pastries, Cookies, Cakes, etc.)	1 Slice of bread ½ Hamburger or hotdog bun ½ Tortilla shell 1 Regular muffin ½ Large muffin ¼ Bagel 1/3 Cup Rice or other cooked whole grain kernels ½ Cup Pasta 1 Cup broth soup 3 Cups Popcorn ½ Cup Oatmeal & other cooked whole grain cereals Serving sizes on all packaged grain products not listed above will be 15 grams of Carbohydrates [8] per food label
Corn	Tortilla Chips, Corn Pasta, Popcorn, Corn on the Cob, Frozen or Canned Corn, Corn Tortillas	Cornmeal, Degermed Corn Flour Products (I.E. Bugles, Corn Bread, Muffins, etc.)	
Rice	Brown Rice, Brown Rice Cakes, Brown Rice Pasta, Brown Rice Flour Products (Bread, Crackers, Pancakes, Muffins, Etc.)	White Rice, White Rice Flour Products (I.E. Bread, Breakfast Cereal, Crackers, etc.)	
Oats	Oatmeal, Granola, Oat Flour Products (Bread, Muffins, Crackers, Breakfast Cereal, Etc.)		
Barley	Barley Kernels in Soup, Barley Flour Products (Bread, Crackers, Etc.)		
Millet	Cooked Millet Kernels, Millet Flour Products (Bread, Crackers, Etc.)		
Quinoa	Cooked Quinoa Kernels, Quinoa Pasta, Quinoa Flour Products (Bread, Crackers, Etc.)		
Rye	Rye Flour Products (Bread, Pancakes, Muffins, Waffles, Crackers, Etc.)		
Buck Wheat	Buck Wheat Flour Products (Bread, Pancakes, Muffins, Waffles, Etc.)		

How can you tell what's a whole grain and what's a refined grain? If you can see the kernels of grain it is a whole grain – with the exception of white rice. But this only works with a small percent of grain products because most grains are ground into flour and baked into a variety of foods like breads, cereals, crackers, pasta, grain-based chips, pastries, snack foods and so on.

You could read ingredient lists and make sure that only whole grain flours are used. To do this you would look for the word "whole" at the beginning of each grain ingredient. Some examples include whole oats, whole-wheat flour, whole-grain corn, whole-grain brown rice, and whole rye. Foods that say they are "multi-grain," "whole wheat," "high fiber," or are brown in color may not be a whole-grain product.

It is time consuming reading through ingredients lists. There is a simpler way to spot whole grain products and it works 90% of the time. Whole grain foods will contain at least 2 grams of fiber per serving – a serving being 15 grams of carbohydrates. If a grain-based food has at least 2 grams of fiber for every 15 grams of carbohydrates, then it most likely is a whole grain.

A Word About Veggies 3.2.2

Veggies are a high fiber, nutrient dense whole food. All but one veggie, provides slow-release energy! Veggies contain 2 macronutrients – carbohydrates in the form of starch and a little protein (usually 2 grams per serving). They are packed with a variety of vitamins, minerals, phytonutrients and antioxidants. Key nutrients include Vitamins A and C, a variety of B vitamins, magnesium and potassium.

There are 2 kinds of veggies – starchy veggies which are in the starch category and non-starchy veggies which are in a category of their own. The difference being that starchy veggies contain about 15 grams of carbohydrates per serving and non-starchy only have about 5 grams of carbohydrates per serving. Non-starchy veggies contain more fiber than the starchies. Let's look at examples of starchy veggies first.

Starchy Veggies (Starch Group)	Serving Sizes
Potatoes, Sweet Potatoes, Yams, Winter Squash, Taro Root, Turnip, Cassava Root	½ Cup cooked

The potato is the most frequently eaten starchy veggie in the United States. The potato is nutrient dense veggie and it has its fair share of fiber. Potato starch breaks down quicker than any other veggie. It is actually a nutritious quick-release energy food. Because of this, it is important to limit yourself to eating just one serving of potatoes at a meal. The serving size for the potato and for all starchy veggies is a ½ cup.

The other thing about potatoes is that they are the most abused veggie of all veggies. They get submerged in hot boiling oil which causes most of their vitamins, minerals, and antioxidants to be destroyed. Then this damaged hot oil infuses into the potato making it even more unhealthy. It is about the only veggie that gets processed and stripped of nutrients. Instant potatoes and potato chips are examples of this.

The healthiest way to cook potatoes and other starchy veggies is to steam them or bake them. Boiling them is ok too, it's just that you lose some the nutrients in the boiling water. Obviously deep fat frying is not healthy.

Now let's look at non-starchy veggies. There are over 30 different kinds of non-starchy veggies. Here are some common non-starchy veggies that we eat.

Non-Starchy Veggies	Serving Sizes
Asparagus, Artichoke, Beets, Broccoli, Cabbage, Carrots, Cauliflower, Celery, Collard Greens, Eggplant, Garlic, Green Beans, Bell Peppers, Parsnips, Lettuce, Mushrooms, Okra, Onions, Snow Peas, Spinach, Summer Squash, Tomatoes, Zucchini	½ Cup cooked 1 Cup raw
100% Vegetable juice	1 Cup

Non-starchy veggies can be eaten raw or cooked. The best ways to cook non-starchy veggies is to steam, grill, bake, or sauté them. Sautéing is when you use a tablespoon of oil in a frying pan, on a high heat. Cook the veggies just long enough to get them hot, while still retaining their crispness. You can also microwave non-starchies with a tight cover so it steams them. Boiling is not recommended for non-starchy veggies as a lot of the vitamins, minerals and antioxidants will be destroyed and pulled out into the boiling water. Canning non-starchies has the same effect on the nutrients in these veggies as does boiling them. Not that canned veggies are bad for you, they just don't contain as many nutrients.

A Word About Protein & Meat 3.2.3

Protein provides the body with material for building muscles, tissues, blood cells, hormones and many other important substances in the body. Red meat is an important source of iron and nuts are an important source of magnesium. Iron and magnesium are both important minerals for energy balance. Here are examples of healthy high protein foods with serving sizes.

Protein and Meat	Serving Sizes
Meat: Chicken, Turkey, Beef, Pork, Lamb, Buffalo, Elk, Deer, Cornish Game Hens, Pheasant, Grouse	1 Ounce
Fish: Salmon, Sardines, Trout, Cod, Tuna, Tilapia, Haddock	1 Ounce
Sea Food: Scallops, Shrimp, Crab, Lobster, Clams, Crawfish	1 Ounce
Nuts & Seeds: Almonds, Cashews, Hazelnuts, Sunflower Seeds, Pumpkin Seeds, Sesame Seeds, Peanuts, Walnuts, Pecans, Pistachio, Brazilian **Nuts & seeds also count as a fat serving**	¼ Cup of Nuts or Seeds 2 Tablespoon of Nut/Seed Butter
Eggs (high quality protein)	1 Egg

Fresh frozen and fresh raw meat, fish, seafood, eggs, seeds and nuts are whole foods. Most high protein foods need cooked before eating. Even seeds and nuts should be slow roasted prior to eating. They contain an enzyme that interferes with complete breakdown of nutrients contained within the seeds and

nuts. The heat from roasting breaks down this enzyme, allowing the nutrients in seeds and nuts to be completely digested and utilized by the human body.

Protein reach foods can be measured in ounces or grams of weight. There are 28 grams in 1 ounce. Weight in grams is not the same as nutritional grams. Weight in grams is listed as serving size. Nutritional grams are listed at the bottom of the food label as grams of protein. People with high BMIs and people who are primarily sedentary, require a minimum of 1 gram of nutritional protein per kilogram of weight. Lean, physically active people typically need 1.3 nutritional grams of protein per kilogram of body weight.

Use this formula to calculate your body's minimum grams of nutritional protein required per day:

Pounds ÷ 2.2 = _____ kilograms = grams of nutritional protein _____

Keep Protein Healthy

- Choose lean cuts of meat and lean hamburger. Some meat contains high amounts of saturated fat. You heard in section 3.1 that a little bit is fine but a lot can be harmful to your body. Cut fat off steaks and chops – preferably before cooking.

- Saturated fat is found under poultry skin. Resist the temptation to eat brown crispy chicken skin. Pull it off and throw it away.

- Healthy methods to cook meat, fish, and seafood include baking without breading, grilling, broiling and sautéing. Fish and seafood can be steamed or boiled. Please note - the black char on grilled food is a cancer-causing substance. Make sure you scrap it off of grilled meat, fish, and seafood before eating it. Drain the fat drippings off hamburger. You can rinse the hamburger, with hot water, after draining fat drippings to remove even more of the saturated fat.

- Limit the amount and frequency that you eat high fat meat like bacon, sausage, salami, baloney, and hotdogs.

- Avoid eating breaded meats, fish, and seafood. If that's what is served for a meal, you can pull the breading off before eating it.

Unhealthy Things You Should Know About Protein

- Many processed meats such as ham, sausage, bologna, salami, and hot dogs—are high in sodium and often have added fat. Unnatural chemicals are frequently found as part of the ingredients.

- Canned meat and fish usually have lots of added salt.

- Prepackaged breaded fish and chicken (i.e. fish sticks and chicken nuggets) are covered in white flour breading (quick-release energy) and are high in fat and salt.

- Breading and frying meat, fish or seafood adds extra unhealthy calories.

- Some fish and seafood contain mercury. Mercury is the second more toxic substance in the world. A little mercury can do a lot of damage to the organs in the body, especially the brain. Fish and seafood that contain the highest levels of mercury include tile fish, shark, sward fish, mackerel, orange ruffe, marlin, tuna, lobster and cod.

Label Reading for Step Two 3.2.4

CHILI with beans

Nutrition Facts

Serving Size 1 Cup (245g)
Servings Per Container about 2

Amount Per Serving	
Calories 290	Calories from Fat 130
	% Daily Value*
Total Fat 14g	22%
Saturated Fat 6g	30%
Trans Fat O g	
Cholesterol 30 mg	10%
Sodium 720 mg	30%
Total Carbohydrate 29g	10%
Dietary Fiber 9g	36%
Sugars 2g	
Incl. Added Sugar Og	
Protein 13g	

INGREDIENTS: Water, Beef, Beans, Modified food starch, Textured soy protein concentrate, Caramel color, Chili powder, Tomato paste, Salt, Onion powder, Cumin, Garlic powder, Oregano, Caramel powder.

Look here to see how big the serving size is.

Look here to see how many servings in this can. If you eat the whole can, you will get 580 calories.

Here is where you can find sodium content. Most healthy adults need no more than 2300 mg of sodium per day. This one serving of chili contains 30% of the total sodium that you need per day. People with heart disease, high blood pressure, and edema are usually restricted to 1500 mg of sodium per day.

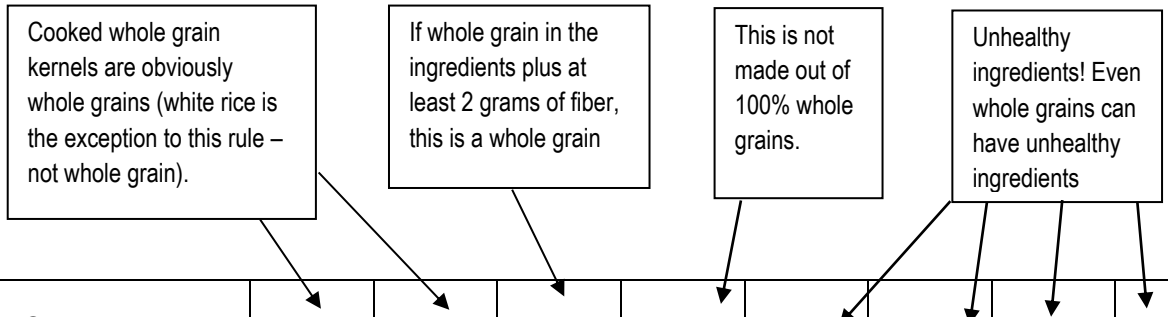
15 grams of Carbohydrate = serving size of starch. A ½ cup of this chili would contain 15 grams of carbohydrates which would be the appropriate carbohydrate serving size.

Fiber is an undigestible carb. You can subtract grams of fiber from total carbs to get total digestible carbs. Fiber content can help you identify whole grain products from refined grains. Whole grain products will have at least 2 grams of fiber per serving.

Here is where you can find grams of nutritional protein. Don't confuse grams of weight (28 grams per ounce) and nutritional grams. Your body needs 1 nutritional gram of protein for every kilogram of body weight [Pounds divided by 2.2 = nutritional grams of protein].

Practice Label Reading 3.2.5

Practice label reading on the next few pages. Complete the Kitchen Activities for Healthy Whole Grains, Protein & Meat, and Fats.



KITCHEN ACTIVITY – FIND HEALTHY WHOLE GRAINS **List Grain Products Here** Put an "X" mark in each column that describes this product.	Whole grain kernel (i.e. rice)	Whole grains in ingredients	At Least 2 grams of fiber	0 – 1 gram of fiber	Trans fat	Hydrogenated oil in ingredients	Sugar in top 2 ingredients	High Fructose Corn Syrup
For Example: Brown rice	X	X	X					

Go back through the list of grain products you have found in your kitchen and highlight unhealthy grain products.

KITCHEN ACTIVITY – FIND VEGGIES

List Veggies Here

Then put an "X" mark in each column that describes this product.

	Non-Starchy	Starchy	Raw	Frozen	Veggie Juice	Canned	Fried	33% of calories or more from fat

When you finish finding veggies in your kitchen, go back through the list and highlight the unhealthy ones. Veggies that are fried or are high in fat (30% of calories or more from fat) are unhealthy.

KITCHEN ACTIVITY – FIND PROTEIN AND MEAT

List Protein & Meat Here

Then put an "X" mark in each column that describes this product.

	Nuts or Seeds Nut or Seed Butters	Fresh Raw Meat/Fish	Raw Frozen Meat/Fish	Canned	Precooked	Chemicals in ingredients	Breaded	Added sugar or corn syrup	Added Fat

When you finish finding protein and meat in your kitchen, go back through the list and highlight the unhealthy protein. The first 3 columns are the healthiest sources of protein. Canned and precooked meat and fish can be healthy if you haven't checked any of the last 4 columns.

Quick Healthy Breakfasts 3.2.6

The first meal of the day can set the stage for food intake the rest of the day. It is important to include protein with a nutrient dense slow-release energy food. Sometimes things get rushed in the morning and it is hard to throw together a healthy breakfast. Here are several ideas for quick healthy breakfasts.

- Put nut butter on whole grain bread or toast and fold it over to eat it on the run.
- Melt a piece of your favorite low-fat cheese on a piece of whole grain toast.
- Make a breakfast sandwich – Tuna, turkey or egg salad sandwich on whole wheat bread. Add fresh veggies.
- Whole grain crackers with mozzarella cheese sticks.
- Healthy muffin with a glass of 1% milk. Pita breakfast pocket – stuff whole grain pita with low fat cheese, slice of ham and sliced bell pepper. Microwave for 15 seconds.
- Breakfast burrito with beans, sautéed vegetables, low fat cheese and salsa.
- Melt 1 teaspoon of coconut butter on top of brown rice that was left over from the day before.
- Breakfast wrap – scrambled eggs with veggies and cheese wrapped in a whole grain tortilla shell.
- Jazzed up oatmeal - add chopped nuts or peanut butter, and dried or fresh fruit.
- Fruit and nuts or seeds.
- Hard-boiled eggs and cut up fruit.
- Apple slices with almond butter.
- Peaches, pineapple or sugar-free applesauce mixed with cottage cheese.
- Fruit salad for breakfast – cut up your favorite fruit, add some nuts and low-fat vanilla yogurt.
- Yogurt, fruit, and whole grain toast. Blender drinks or smoothies can make a delicious breakfast that can be eaten on the go. They can include nut or rice milk, protein powder, green food, chia or hemp seeds, fruits (fresh or frozen), yogurt … use your imagination.
- Eggs with sautéed vegetables.
- Cut up vegetables and low-fat cheese stick.
- Cut up fruit eaten with vanilla yogurt dip.
- Yogurt Sundae – top plain low-fat yogurt with fresh or frozen fruit like bananas, strawberries or raspberries. Sprinkle granola on top for crunch.
- Fruit whips - frozen fruit blended with two tablespoons yogurt to a smooth consistency in a blender.

3.3 Nutrition Education for Step Three

During Action Step 3 you will continue eat cleaner, while focusing on a diet filled with nutritious slow-release energy foods, and practicing a moderate restriction of two carbohydrate rich food categories – starches and fruit. *Nutrition Education for Step 3* will cover legumes, fruit, dairy products, and healthy fats.

A Word About Legumes 3.3.1

There are three types of foods that make up the starch group: 1) Grains; 2) Legumes; and 3) Starchy Veggies. You just learned about grains during *Action Step Two*.

Legumes are a high fiber **whole food 9** in the starch group that supplies slow-release energy. Legumes are a special type of veggie which has a high protein content compared to other veggies. In fact, one serving size of legumes supplies 8 grams of protein – that is as much as an ounce of meat. Legumes are also a rich source of antioxidants and a good source of several important minerals like iron, zinc, manganese, selenium, calcium, potassium and magnesium. Now these are only a few key nutrients that legumes contain. There are many more excellent nutrients in legumes that help support a healthy energy balance and good health. There are 400 different kinds of legumes. Here are some common types of legumes with serving sizes.

Legumes	Serving Sizes
Pinto Beans, Lima Beans, Red Beans, Navy Beans, Kidney Beans, Black Beans, Great Northern Beans, Mung Beans, Garbanzo Beans, Chickpeas, Adzuki Beans, Fava Beans, Black-Eyed Peas, Lentils, Green Peas, Split Peas and Soy Beans	1/2 Cup canned 1/2 Cup cooked dried beans 1 Cup Soup

Beans retain their nutrients whether they are homemade or canned. There is something special you need to know about making homemade beans. You need to soak them in water over night. Drain that water off in the morning and place fresh water in the pan before beginning to cook them. Most beans need 1.5 up to 4 hours to cook.

Here's why you need to soak beans before cooking them. Beans contain high levels of phytic acid. In the digestive tract, phytic acid impairs the absorption of iron, zinc and calcium and may promote mineral deficiencies. Phytic acid is also a huge gas producer in the gut. Presoaking beans before cooking gets rid of most of the phytic acid.

Legumes are not only nutritious. They are also delicious. Here are some of my favorite bean dishes – chili, ham and bean soup, bean salad, and split pea soup with ham. I love refried beans with whole grain corn

chips and salsa or in a bean and cheese burrito. Beans make a delicious addition to most lettuce salads or soups. What are your favorite ways to eat beans?

Below you will find the Kitchen Activity – Find Legumes. How many legumes will you find in your kitchen and where?

KITCHEN ACTIVITY – FIND LEGUMES List Legumes Here Then put an "X" mark in each column that describes this product.	Dried/Cooked	Canned	Trans Fat

Legumes are a healthy food. The only way to make legumes unhealthy is to add something unhealthy to them – like hydrogenated oils or trans fat.

When you finish finding legumes in your kitchen, go back through your list of legumes and highlight the healthy ones.

You will probably highlight every legume you found, unless you have refried beans made with hydrogenated oils.

A Word About Fruit 3.3.2

Fruit is a delicious nutritious high fiber whole food. Fruits are packed with a variety of vitamins, minerals, and antioxidants. Most fruits are slow-release energy foods. Fruit only contains one macronutrient – carbohydrate. A few of these carbohydrates are from fiber, a few from starch but mostly from fructose. Fructose is the form of sugar that is found in fruit. You have been told that sugar is quick release energy. So how can most fruits be slow-release energy foods? There are 2 reasons. You see the unprocessed fructose molecule is more complex than the molecule of refined sugars so it takes longer to break down. Second the fiber in fruit slows down the digestion of fruit. Between these two things, most fruits are slow-release energy foods. You will find examples of fruits and serving sizes on the next page.

Fruit	Serving Sizes
Apples, Oranges, Lemons, Limes, Kiwi, Nectarines, Peaches, Pears, Plums	1 Piece
Bananas, Grapefruit	½ Piece
Cherries, Grapes, Blueberries, Raspberries, Strawberries	1 Cup of berries
Cantaloupe, Watermelon, Honeydew melon, Pineapple	1 Cup of cut-up
Dried Fruit – Raisins, Currents, Dates, Cranberries, Cherries, Bananas	¼ Cup
Canned fruit – Pears, Pineapple, Peaches, Applesauce, Mandarin Oranges, etc.	**½ Cup**
[Note - Practice meal sequencing when eating fruits in gray font]	

Raw fruit is the healthiest form of fruit. It is important to properly clean raw fruit before eating it. Wash it under clean, running water. Rub fruits briskly to remove dirt and surface microorganisms. After rinsing, dry it with a clean towel.

Frozen fruit is a nutritious alternative to raw fruit. Most of the nutrients are retained during the freezing process. My favorite way to eat frozen fruit is blended up in a smoothy.

Bananas are delicious and nutritious. They contain more starch than other fruits. The fructose in bananas breaks down fast with ripening. The more the fructose is broken down, the faster it spikes your energy level when eaten. In other words, the riper the banana, the quicker it spikes your blood sugar. This is true for all fruits as they ripen, however the fructose in bananas breaks down easier than the fructose in other fruits. Because of this and the fact that bananas have more starch than other fruits, they are a nutritious quick release energy food. A ½ a banana is the serving size.

Heat is something else that breaks down fructose in fruit. All fruit that has been heated will cause your blood sugar to spike quicker and higher than if it had not been heated and was eaten raw. Fruit is heated during the canning process. Therefore, all canned fruit will cause a quicker higher blood sugar spike when it is eaten. Something else about canned fruit is that some of the vitamins and minerals are damaged during the canning process. Some manufacturers add sugar or corn syrup to canned fruit. This adds empty calories.

It is recommended that you mostly avoid eating canned fruit during this program. If you eat canned fruit – try to only eat the kind in its own juice. If canned fruit does have added sweeteners, you can rinse fruit before eating it. Also eat it with a meal that you are practicing meal sequencing.

The last kind of fruit I want to talk to you about is **dried fruit**. Many nutrients are retained during the drying and/or dehydration process. This process causes the fructose be concentrated. This is why serving sizes for dried fruit is small - ¼ cup. You should limit eating dried fruit. Use it for an occasional treat and not as your primary source of fruit.

Below you will find the Kitchen Activity – Find Fruit. How many fruits will you find in your kitchen and where?

KITCHEN ACTIVITY – FIND FRUIT **List Fruit Here** Then put an "X" mark in each column that describes this product.	Raw	Frozen	Canned	Dried	Juice	No added sugar or corn syrup	Added sugar and corn syrup	Canned in heavy syrup

When you finish finding fruit in your kitchen, go back through the list and highlight the unhealthy ones. It is recommended that you mostly avoid canned fruit during the BiW4Adults program.

A Word About Dairy 3.3.3

Dairy products come from milk producing animals. Mostly cows but also goats. Milk contains all 3 macronutrients – protein, fat, and carbohydrates. Carbs in milk are from lactose which is milk sugar. Milk, yogurt, and some cheeses are good sources of calcium. However, cheeses contain 20% to 40% less calcium that milk and yogurt. Milk is often fortified with vitamin D. Calcium and vitamin D play an important role in maintaining a healthy energy balance. You will learn all about this in *Body Biology Explained for Step 3.*

Part 3 – Nutrition Education

Milk, cheese and yogurt are whole foods. Low fat dairy products, without added sugar, are healthy foods. Dairy products can contain large amounts of saturated fat. For example, 1 cup of whole milk has 150 calories – 60 of those calories are from fat. While 1% milk has 100 calories per cup – only 10 calories from fat. Fat is a dense energy source and a little bit can add a lot of calories. When large amounts of saturated fat are eaten, it is harmful to the body. You learned about this in *Nutrition Education for Step 1*. Here is a list of common dairy products and serving sizes which are a healthy part of the BiW4Adults program.

Dairy Products	**Serving Sizes**
Skim Milk, 1% Milk, No-fat or 1% fat Plain Yogurt	1 Cup (8 ounces)
Flavored Yogurt (less that 6 grams of added sugars)	¾ Cup (6 ounces)
Cheeses (American, Cheddar, Mozzarella, Ricotta, Swiss, Colby)	1 Ounce
Cottage Cheese 1% fat	½ Cup (4 ounces)

Yogurt is made when probiotics (friendly bacteria) are added to milk. These probiotics break down the milk sugar (lactose) and cause the yogurt to have a sour taste. Sweeteners are added to yogurt to make it taste better, which increases calories, decreases serving size and decreases nutrients. Plain low-fat yogurt is the healthiest yogurt to eat. Try adding a drop of vanilla with a calorie-free sweetener like stevia or Splenda to sweeten plain yogurt without adding calories. A serving of sweet berries added to plain yogurt is another way to make it taste yummy. Greek yogurt is made in such a way that it has twice the protein content as regular yogurt without increasing calories. However, it is usually more expensive than regular brands of yogurt.

When it comes to choosing cheese, hard white cheeses (i.e. Swiss, provolone, and mozzarella) have lower fat content than hard yellow cheeses (i.e. Colby and cheddar). Soft yellow cheeses are usually processed. They tend to be lower in calories and protein content and have more salt and chemicals added to them when compared to hard yellow cheeses. Cottage cheese is a soft curded cheese that is very nutritious and has a higher protein content per serving than most other cheeses. Fat content varies with cottage cheese. The BiW4Adults program recommends 1% fat cottage cheese.

What about cream cheese? Cream cheese, cream, and butter are not part of the BiW4Adults dairy food group even though they are made from milk. They are high in saturated fat and have little or no calcium. When recipes, such as dips, call for sour cream, substitute plain yogurt. Low-fat ricotta cheese can be used as a substitute for cream cheese and fat-free evaporated milk can be used instead of cream.

Ice cream is made with milk, cream and sugar or corn syrup. It is an unhealthy yummy treat. Because most of the calories come from fat and sugar, it is another dairy-based food that is not included in the BiW4Adults dairy group.

If you are **lactose intolerant**, you can only eat and drink dairy products that are lactose-free. Which means that the lactose has been broken down in those products. Lactase is the enzyme that breaks down lactose. You could take a lactase supplement before eating dairy or drink lactose-free milk. Friendly bacteria that are used in the making of yogurt, hard cheeses, cottage cheese and soft white goat cheeses, break down lactose. So, yogurt and these cheeses are also lactose-free dairy products you can eat.

If you are **allergic to milk**, you are not able to consume dairy products to get your calcium. You could try milk substitutes that are fortified with calcium like almond milk, soy milk, rice milk or coconut milk. If you don't like any of these ideas, you can take a calcium supplement with vitamin D3. These are also options for people who are lactose intolerant.

Below, you will find the Family Activity – Find Dairy Products. How many dairy products will you find in your kitchen and where?

KITCHEN ACTIVITY – FIND DAIRY PRODUCTS **List Dairy Products Here** Then put an "X" mark in each column that describes this product.	Fat Free	1% Fat	2% Fat or more	30% or more of calories from fat	Sugar Added	Corn Syrup Added

When you finish finding dairy products in your kitchen, go back through the list and highlight unhealthy dairy products (i.e. 30% or more of calories from fat, sugar added, corn syrup or high fructose corn syrup added).

A Word About Healthy Fats 3.3.4

Fats are a very-slow-release energy food. We need a little fat in our diet most every day. But we only need a **little** because it is a dense concentrated energy source. It is very VERY important to know and to respect the serving size of this very dense energy source.

In *Nutrition Education for Step 1*, you learned that we all need fat in our diet to survive. Fats have many important functions. You learned about those during Action Step 1.

There are several different kinds of fats in our diets. Some fats are healthy and some are not. You learned about unhealthy fats in *Nutrition Education for Step 1.* During this section you will learn about healthy fats.

Most healthy fats are some type of unsaturated fats. Unsaturated fats retain health supporting qualities when they are extracted from plants via natural methods – that being **cold pressed** or **expeller expressed.** These two methods of extraction allow unsaturated fats to remain in an unrefined nutritious state. If an unsaturated fat is extracted via one of these two natural methods, it will be stated on the label. If you see 'extra virgin oil' on the label, it means that the oil was extracted via one of the two natural methods.

It is important to consume unsaturated fats in their unrefined state. Here's why! Unsaturated fats are easily damaged by high heat and chemicals. Unsaturated fats that are expressed from plants via high heat or chemical extraction are damaged. Damaged unsaturated fats are unhealthy for the body. If the label doesn't state 'cold pressed,' expeller expressed,' or 'extra virgin,' then heat and/or chemicals have been used during extraction of the oil.

There are two main kinds of unsaturated fats – monounsaturated and polyunsaturated.

1. **Monounsaturated fatty acids** – are found primarily in nuts, avocados and olives. Good sources of monounsaturated fats are olive oil, macadamia nut oil, oils from almonds, pecans, cashews, Brazil nuts, and avocados. These fats are liquid at room temperature and stable when exposed to moderate heat. Avocado oil is the most heat resilient oil of all these.

   Canola oil is a monosaturated fat. However, it always requires high heat and chemicals to extract from the canola seed. It is recommended to avoid this oil.

   Functions of Monounsaturated fatty acids
   1. They provide antioxidants like vitamin E and selenium;
   2. They provide small amounts of healthy fats that help the body absorb fat soluble vitamins – A, E, D, and K;
   3. They can help prevent and treat obesity, diabetes, heart disease, cancer, muscular skeletal pain and other inflammatory conditions;
   4. Research shows these fats help lower cholesterol, blood clotting, inflammation and blood pressure.

2. **Polyunsaturated fats** - are called essential fatty acids because our body does not make these fats. These fatty acids are essential for maintaining health, so we need to eat these fats in our diet. These fats are liquid at room temperature. They are not stable when heated and they become rancid easily. It is best to store them in the refrigerator. There are two polyunsaturated fats that play key roles in our diets - omega 3 fats and omega 6 fats. It has been determined that the **healthiest ratio of omega 6 to omega 3 is a 4:1 ratio.** The tendency of the American diet is to eat too much omega 6 fat and too little omega 3 fat. This creates inflammation in the body, increasing risk for inflammatory diseases and worsening existing inflammatory conditions.

   Omega 3 Fatty Acids
   Omega 3 fatty acid is the healthy fat in fish oil and some seeds like flax seed, chia seed, and hemp seed. **It is a proven fact that individuals who are deficient in Omega 3 fatty acid don't use their food for energy efficiently and store energy easy.**

   The best sources of omega 3 fatty acids are flaxseed, hemp seed, chia seed and fish oil. Pumpkin seeds, walnut oil, and soy oil all contain omega 3 fatty acids but only in small amounts, ranging from about 3 to 15 percent. Free range chicken eggs and wild game meat also contain small amounts of omega 3 fatty acids.

   Functions of Omega 3 Fatty Acids
   a. They increase metabolic rate;
   b. They increase transfer of oxygen throughout the body;
   c. They help burn fat more efficiently;
   d. They help keep cell membranes from becoming rigid – flexible cell membranes allow for more effective nutrient transfer;
   e. They lower cholesterol and triglyceride levels;
   f. They are necessary for brain development, brain function and emotional health;
   g. They help reduce inflammation, swelling and pain;
   h. They help reduce severity of allergic reactions;
   i. They enhance kidney function and fluid balance;
   j. They support healthy blood pressure and heart function;
   k. They improve gastrointestinal function,
   l. They produce smooth velvety skin;
   m. They keep blood healthier by decreasing clot formation, keeping blood thinner and running smoother through veins. This increases the clearing of waste products from blood and increases nutrient delivery.

Omega 6 Fatty Acids
The best sources of omega 6 fatty acids are sunflower seeds, safflower oil, cottonseed oil, soy oil, corn oil, grape seed oil, and poppy seeds. Sesame seeds, peanuts, and rice bran oil contain both omega 6 fats and monounsaturated fats. Our American diets have an overabundance of omega 6 fats and are deficient in omega 3 fats. It is recommended not to purchase or use omega 6 oils in your kitchen. Choose monounsaturated fats to cook with in your kitchen.

Omega 6 fats have several of the same functions as Omega 3 fats. However, Omega 3 fats produce more health benefits than the Omega 6 fats. Omega-6 fatty acids support healthy heart function, cell membrane structure, and immune function. They reduce risk of coronary heart disease by lowering LDL cholesterol and raising HDL.

Gamma-linolenic acid (GLA) is a special omega 6 fatty acid with additional health benefits. These fatty acids improve insulin sensitivity and support healthy blood sugar levels. These fats play an important role in maintaining cell membrane structure and providing energy. Evidence suggests they may help manage or delay type 2 diabetes and chronic renal disease. GLAs produce metabolites that help regulate inflammation and immune responses. Sources of GLAs include plant seed oils like borage oil, evening primrose oil, and black currant oil.

Here is a chart with examples of different sources of fat plus serving sizes.

Fat	Serving Sizes
Butter, Margarine without hydrogenated oil, Olive Oil, Sunflower Oil, Grape Seed Oil, Safflower Oil, Peanut Oil, Nut Oils, Coconut Oil	1 Teaspoon
Salad Dressing, Cream, Mayonnaise, Cream Cheese, Sour Cream	1 Tablespoon
Seeds, Nuts (Also count as an ounce of protein)	¼ Cup
Peanut Butter, Sunflower Seed Butter, Almond Butter, Cashew Butter, etc. (Also count as an ounce of protein)	2 Tablespoon
Avocados, Hard Yellow Cheeses, Bacon	1 Ounce
Black and Green Olives	8 Olives

Enjoy Your Food While Eating Fewer Calories 3.3.5

Here are some ideas to help you eat smaller portions and/or consume fewer calories. Making one change at a time can add up to big changes later on.

1. Leave space between each food that you are putting on your plate. This will help decrease serving sizes.
2. Use a smaller plate at meals to help with portion control. That way you can finish your entire plate and feel satisfied without overeating.
3. Eat slowly. It takes 20 minutes for the message to get from the stomach to the brain and back to the stomach, delivering the message that the stomach is full. Fast eaters can gulp down lots of calories before the "I'm full" message has a chance to get to the brain and back to the stomach. Fast eaters consume more calories than slow eaters.
4. Be mindful while eating. Enjoy the taste and textures of the food you are eating. Chew your food thoroughly. Pay attention to how you feel. Use hunger and fullness cues to recognize when to eat and when you've had enough. Mindful eating helps you eat less and feel more satisfied. It also

helps your digestive tract absorb more nutrients from the food you have eaten.

5. The brain can't always differentiate between hunger and thirst. If you think you are hungry between meals, drink a glass of water and wait 15 minutes. If you are still feeling hungry 15 minutes after you drank water, then eat a small healthy snack.
6. Eat snacks and meals at the table with another family member(s). Individuals who eat snacks and meals with others, tend to eat slower and eat less.
7. Turn the television off during snacks and meals. Watching TV while you eat can cause you to overeat because you are paying attention to what is on the TV and not paying attention to how much you are eating.
8. If you are still hungry after eating everything on your plate, choose non-starchy veggies, fruit, or lean protein for seconds. This will help decrease the total calorie intake at meals.

Below, you will find the Family Activity – Fat Finding Mission. See the directions below.

KITCHEN ACTIVITY – FAT FINDING MISSION

List Fats Here

Then put an "X" mark in each column that describes this product. You will need to read ingredients lists on the food labels of margarine, salad dressing, tartar sauce and mayonnaise to see what kind of fat (oils) are used to make these products.

	Fat from Dairy [Saturated Fat – Damaging in large amt]	Fat from Nuts, Avocado & Olives [Monounsaturated]	Fat from Fish Oil & Flaxseed Oil [Omega 3]	Fat from Seeds & Vegetables [Omega 6]	Fat from Coconut & Palm Oil [Healthy form of Saturated fat]	Trans Fat & Hydrogenated oil

When you finish finding fat in your kitchen, go back through the list and highlight the unhealthy fats. Basically the only unhealthy fat will be hydrogenated oils, partially hydrogenated oils, trans fats and saturated fat from dairy.

3.4 Nutrition Education for Step Four

By the time you reach Action Step Four, you have learned how to identify healthy nutrient dense foods that promote healthy weight loss and support peak health. During this step you will develop a plan to replace unhealthy foods with healthy foods in your kitchen. You will learn where to find the healthiest foods in the grocery store and receive helpful tips for shopping for on a budget. You will practice menu planning and find out how to make unhealthy recipes healthier.

In summary, *Nutrition Education for step 4* will help you develop important skills in the kitchen and grocery store which will support your new healthy eating habits. This step will help set you up for successful for maintaining a healthy weight for life.

Blueprint for a Healthier Kitchen 3.4.1

You will use the Kitchen Activities that you completed in *Nutrition Education for Steps 2 and 3*, to fill in the *Unhealthy Foods* column on the *Blueprint for a Healthier Kitchen.* Specifically, you will use the Kitchen Activities for grains, veggies, dairy, protein, and fats. You will be looking for the unhealthy foods that you highlighted on each of these lists, and will write these unhealthy foods in the *Unhealthy Foods* column on the *Blueprint for a Healthier Kitchen.*

At this time, you may also be aware of other unhealthy foods in these food categories, that did not get recorded when you completed the Kitchen Activities. Also write these foods in the *Unhealthy Foods* column on the *Blueprint for a Healthier Kitchen.*

Next, write one or two healthy foods that could replace each of the unhealthy foods on the list. Each time you run out of an unhealthy food in your kitchen, replace it with a healthy food from your *Blueprint for a Healthier Kitchen*. After about a month, most of the unhealthy foods in your kitchen will be replaced with healthy foods.

The Blueprint for a Healthier Kitchen is found on the next page.

Blueprint for a Healthier Kitchen

UNHEALTHY FOODS Delete from next grocery list	HEALTHY FOODS Add these to your grocery shopping list	
Grains and Grain Products (page 68)		
Starchy Veggies (page 69)		
Meat (page 70)		
Dairy (page 77)		
Fats (page 81)		
Do you have a few kinds of **fruits** in your kitchen? YES, Great! NO, Add to next shopping list.		
Do you have a few kinds of **non-starchy veggies** in your kitchen? YES, Great! NO, Add to next shopping list.		
Do you have any **legumes** in your kitchen? YES, Great! NO, Add to next shopping list.		

Smart Tips for Shopping 3.4.2

Get the most for your budget by following smart shopping tips. There are several ways that you can save money on the foods that you eat. First – Shopping from a grocery list. Second – Planning before you go shopping. Third – Buying food at the best prices. Fourth – Practicing food storage and cooking methods that stretch your food dollars.

BUILD A SMART LIST

1. Before you head to the grocery store, plan your meals for the week.
2. Try to include low-cost food in your meals. For example, foods like carrots, greens, winter squash, potatoes, apples, bananas, and oranges are usually reasonably priced.
3. Make a grocery list - do not rely on memory alone.
4. Check to see what foods you already have and make your grocery list for what you need to buy.
5. List the foods in the quantity needed.
6. List items together that are located near each other in the store. Double check space in your fridge and freezer. Make sure you will have room to put all the perishable foods away when you get home from the grocery store.

SHOP SMART

1. Read food ads in the newspaper or at the grocery store to see what is on sale.
2. Look for specials on meat and seafood, which are often the most expensive items on your list.
3. Shop on the days when the store offers double value for coupons. However, avoid buying products that you don't need, just to use a coupon!
4. If your grocery store has a membership card, sign up to get even more savings.
5. Find out when your town is holding a farmer's market. Fresh produce is usually less expensive and fresher at a farmer's market.
6. Don't shop when you're hungry. Shopping after eating will make it easier to pass on the tempting snack foods.

BUY SMART

1. Buy fresh fruit and vegetables in season for great buys. It can lower the cost and add to the freshness.
2. Avoid buying fresh fruit and vegetables with soft spots, withered appearance or decayed pieces. Buy fresh firm produce for a longer shelf life at home.
3. Canned and frozen items may be less expensive than fresh. Choose fruit canned in 100% fruit juice and vegetables with "low sodium" or "no salt added" on the label.
4. Buy fresh vegetables and fruits in their whole form. Pre-cut, pre-washed, and ready-to-eat fresh produce often costs much more than when purchased in its whole form.
5. Buy cheese by the block and do your own slicing, grating, grinding and chopping. Sliced and grated cheese usually costs more than block cheese.
6. Buy a large cut of meat and divide into several meals rather than buying cuts separately.
7. Generic brands and store brands are safe and just as nutritious as the more expensive name brands.
8. White eggs cost less and have the same nutritional value and taste as brown eggs.

9. Shop for perishables and frozen foods last.
10. You will save money by buying only what you need.

COOK SMART

1. Take the time to prepare your own meals and save!

2. Include meals like stews, casseroles, or stir-fries, which "stretch" expensive items into more portions.

3. Beans are an inexpensive protein food. Try out some bean casserole or soup recipes.

4. Turkey and chicken are usually less expensive, lower in saturated fat and cholesterol, and contain more protein and nutrients than other meats.

5. **Throwing away food is throwing away your money!**
   - Spice up your leftovers or use them in new ways.
   - Try leftover chicken in a stir-fry or over a garden salad, or use it to make chicken chili.
   - Add leftover vegetables to casseroles or soups.
   - Some fresh vegetables and fruits don't last long (i.e. strawberries and raspberries). Buy these in small amounts so they can be eaten before they spoil.
   - Store fresh fruits and vegetables properly to avoid spoilage.
   - Overripe fruit is great for smoothies or baking.

6. Processed and ready-to-eat convenience foods usually cost more than home-prepared foods but may reduce preparation time. Here are a couple ideas to reduce food prep time in your kitchen:
   - Prepare a large batch of favorite recipes on your day off. Freeze in individual containers and use them throughout the week and you won't have to spend money on take-out meals.
   - Prepare and freeze vegetable soups, stews, or other dishes in advance.

Build a Healthy Meal 3.4.3

1. Each meal is a building block in your healthy eating style. Try to include healthy foods from each of the food categories during lunch and supper meals.
   - Make half your meal non-starchy veggies.
   - Choose healthy starches to make up one quarter of your meal. That would be whole grains or starchy veggies or legumes. You can also use fruit.
   - Protein rich foods should make up one-quarter of your meal. Choose protein foods such as lean beef, pork, chicken, turkey, eggs, nuts, beans, or tofu.
   - Don't forget to include 2 servings of dairy products each day.

2. Try something new! Stir-fry fresh or frozen veggies— like broccoli, carrots, cauliflower, or green beans—for a quick-and-easy addition to any meal.

3. Go easy on the added fats like butter, sour cream, creamy salad dressing, heavy gravies or sauces. Here are some healthy alternatives:
   - Drizzle olive oil or lemon juice mixed with herbs on cooked vegetables or whole grain pasta instead of using cheese, butter, or cream-based sauces.
   - Try plain low-fat yogurt and chives on baked potatoes rather than sour cream.

4. Take your casserole to the next level. Mix vegetables such as sauteed onions, peas, pinto beans, or tomatoes into your favorite dish for that extra flavor.

5. Whether you are making a sandwich, a stir-fry, or a casserole, find ways to make them healthier.

6. Keep it interesting by picking out new foods you've never tried before, like mango, lentils, quinoa, kale, or sardines. You may find a new favorite! Trade fun and tasty recipes with friends or find them online.

7. Make your own soups with a low-sodium broth like chicken or beef flavor. Add some leftover meat, your favorite vegetables, and a healthy starch like brown rice or black beans.

8. The most important thing to remember about breakfast is to eat something and choose healthy slow-release energy foods. If you can, include something from the protein group.
   - Be creative with your breakfast. Add apples, bananas, blueberries, or pears to your oatmeal, yogurt, or pancakes for a special start to your day.
   - Boost the color and texture of your morning omelet with vegetables. Simply chop, sauté, and add them to the egg as it cooks. Try combining different vegetables, such as mushrooms, spinach, green onions, or bell peppers.

A Snapshoot of a Healthy Balanced Meal

Take a mental snapshot of this diagram. This mental snapshot will help you as you plan healthy balanced meals and menus. This diagram shows you a great example of how lunch and supper meals should look like on your plate.

Liven Up Your Meals With Veggies And Fruit

Discover the many benefits of adding vegetables and fruits to your meals. Vegetables and fruits don't just add fiber and key nutrients to meals. They also add color, flavor, and texture.

- Discover fast ways to cook fresh or frozen vegetables in the microwave for a quick-and-easy dish to add to any meal. Steam green beans, carrots, or Bok choy in the microwave by putting them in a bowl with a small amount of water and a tight cover. This works great for quick nutritious side dish.
- Brighten your plate with vegetables that are red, orange, or dark green. They are full of vitamins and minerals. Try acorn squash, cherry tomatoes, sweet potatoes, or collard greens. They not only taste great but are good for you, too.
- Cut up a batch of bell peppers, cauliflower, or broccoli. Pre-package them to use when time is limited. Enjoy them in a casserole, stir-fry, or as a snack with hummus.
- Frozen vegetables are quick and easy to use and are just as nutritious as fresh veggies. Try adding frozen vegetables, such as corn, peas, edamame, or spinach, to your favorite dish. Look for frozen vegetables without added sauces, gravies, butter, or cream.
- Use the grill to cook vegetables and fruits. Try grilling mushrooms, onions, peppers, or zucchini on a kabob skewer. Brush with extra virgin olive oil to keep them from drying out. Grilled fruits like peaches, pineapple, or mangos add variety to a cookout.
- Brighten your salad by using colorful vegetables such as black beans or avocados, sliced red bell peppers or onions, shredded radishes or carrots, and chopped red cabbage or watercress.
- Toss in shredded carrots, peas, strawberries, orange segments, or other seasonal items for a flavorful, fun salad.
- Sip on some vegetable soup. Try tomato, butternut squash, or garden vegetable soup. Look for low sodium soups. Homemade soups are the healthiest.
- When ordering at a restaurant, ask for an extra side of vegetables or a side salad instead of the typical fried side dish (i.e. French fries).
- Buy vegetables that are in season for maximum flavor at a lower cost. Check your local supermarket specials for the best in-season buys. Or visit your local farmer's market.
- Add extra vegetables to your pasta dish. Slip some herbs, peppers, spinach, red beans, onions, or cherry tomatoes into your tomato sauce. Vegetables provide texture that satisfies.
- Whether it is a sandwich or wrap, vegetables make great additions to both. Try hummus, cucumber, or avocado on your usual sandwich or wrap for extra flavor.

Make Healthier Holiday Choices

The holidays are often filled with time-honored traditions that include some of our favorite meals and foods. As you celebrate, think of little changes you can make to create healthier meals.

- Prepare whole-grain crackers with hummus as an appetizer. Add unsalted nuts and black beans to a green-leaf salad. Include fresh fruit at the dessert table. Use low-fat milk instead of heavy cream in your casseroles. Share healthier options during your holiday meal.
- Choose lean meats for holiday meals. Turkey, roast beef, or fresh ham are lean protein choices. Trim visible fat before cooking. Try baking or broiling instead of frying. Go easy on sauces and gravies.
- Quench your thirst with low-calorie options. Drink water with lemon or lime slices. Offer seltzer water with a splash of 100% fruit juice.
- For dessert, try baked apples with cinnamon and a sprinkle of sugar instead of apple pie. Invite your guests to make their own parfait with colorful sliced fruit and low-fat yogurt.
- Use recipes with unsweetened applesauce or mashed ripe bananas instead of butter. Try reducing the amount of sugar listed in recipes.
- Make homemade sweets healthier by adding dried fruits like apricots or raisins and reduce the amount of sugar in the recipe. Adjust recipes that include fats like butter or shortening by using unsweetened applesauce or prune puree for half the amount of fat.
- Use spices such as cinnamon, allspice, or nutmeg to add flavor instead of butter and sugar.
- Create delicious new meals with your leftovers. Add turkey to soups or salads. Use extra veggies in omelets, sandwiches, or stews. The possibilities are endless!
- Laugh, mingle, dance, and play games. Focus on fun and enjoy the company of others. Make being active part of your holiday tradition. Have fun walking and talking with family and friends after a holiday meal. Give gifts that encourage others to practice healthy habits such as workout DVDs, running shoes, and reusable water bottles.

TIPS FOR HEALTHIER RECIPES

1. **Cut the sugar:**
   - When baking oatmeal cookies, quick breads or brownies you can cut down on the amount of sugar called for in the recipe by 1/3.
   - Try replacing sugar in muffins or sweet bread with natural sweeteners like a half of a mashed ripe banana, coconut flakes, coconut butter or chopped up raisins.

2. **Make healthy substitutions:**
   - Drizzle olive oil or lemon juice mixed with herbs on cooked vegetables or whole grain pasta instead of using cheese, butter, or cream-based sauces.
   - Try plain low-fat yogurt and chives on baked potatoes rather than sour cream.
   - Reduce fat by ½ the amount in baked products (i.e. cakes, cookies, quick breads, muffins) and replace with an equal amount of applesauce or yogurt.
   - Substitute plain yogurt or low-fat cream cheese or low-fat cottage cheese for sour cream in recipes and dips.

3. **Increase whole grains in recipes:**
   - Mix whole wheat flour together with white flour. Start with half of each type of flour. Gradually phase out the white flour until you are cooking with 100% whole wheat flour.
   - Make your own whole oat flour out of oatmeal. Grind up the oatmeal in your coffee grinder. When cooking with whole oat flour, use 25% less flour than what the recipe calls for.

4. **Reduce Fat:**
   - Use skim milk or 1% milk when cooking instead of 2% milk and whole milk.
   - Bake, broil, or grill meats on a rack that allows fat to drip from the meat.
   - Avoid deep-frying or pan-frying foods in oil.
   - Trim all visible fat from meat and remove the skin from poultry before cooking.
   - After cooking ground meat (i.e. beef, pork, turkey), drain the grease from the pan.
   - Cool soups, gravies and stews in the refrigerator. Then remove the hardened fat from the top of these dishes before heating and eating.
   - Cook with the less-expensive cuts of beef and pork. Choice or prime grade cuts of meat are the highest in fat.

5. **Incorporate veggies into recipes whenever possible:**
   - Try zucchini bread, sugar-free carrot cake or pumpkin muffins!
   - You can add extra veggies to starchy dishes. Mix cooked mashed carrots into a macaroni and cheese dish. Mix cooked mashed cauliflower in with mashed potatoes.

Menu Planning 3.4.4

Use the meal planning worksheets on the next two pages to develop one week's worth of supper menus. Use the MyPlate diagram as a guideline for a balanced meal. If you have a spouse or others living with you, ask if they would like to join you for a meal planning meeting.

Next, decide what ingredients are needed for each meal. Give thought to what the healthiest ingredients will be to use in preparing each meal. As you write down ingredients needed to prepare each meal, you will be able to start building your grocery list for the week.

Expand your weekly menu planning to include menu ideas for lunches, breakfasts and snacks. Save your menu lists from each week. After several weeks you will have enough menu ideas to build a **master menu list** for main dishes, side dishes, breakfasts and lunches.

Save a few weeks' worth of grocery lists. After a few weeks you will see foods that commonly show up on weekly grocery lists. You can build a **master grocery list** from this. When you make a master grocery list, it is helpful to group foods that you commonly find in the same area in the grocery store. For example, milk, cheeses, butter and eggs are usually located in the same isle in the grocery store – so group these foods together on your master grocery list. Also, make sure to leave a few blank spots by each grouping of food so that you can write in additional foods. After you have developed a master grocery list that you are happy with, make several copies.

The more you practice weekly menu planning, the easier it gets. If you start running out of ideas for menus or are wanting to try something different, open up a cookbook and look for new recipes. There are many online recipe websites.

Individuals who follow a weekly menu tend to eat healthier food. It also saves money when you make a weeks' worth of menus and go to the grocery store once a week.

Meal Planning – Worksheet

		MENU	INGREDIENTS	LUNCH IDEAS
1	PROTEIN MAIN DISH			
	STARCH SIDE DISH			
	NonSTARCH VEGGIE			
	FRUIT			
	DAIRY			
	OTHER			
2	PROTEIN MAIN DISH			
	STARCH SIDE DISH			
				BREAKFAST IDEAS
	NonSTARCH VEGGIE			
	FRUIT			
	DAIRY			
	OTHER			
3	PROTEIN MAIN DISH			
	STARCH SIDE DISH			
	NonSTARCH VEGGIE			
	FRUIT			
	DAIRY			
	OTHER			

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Meal Planning – Worksheet

		MENU	INGREDIENTS	LUNCH IDEAS
1	PROTEIN MAIN DISH			
	STARCH SIDE DISH			
	NonSTARCH VEGGIE			
	FRUIT			
	DAIRY			
	OTHER			
2	PROTEIN MAIN DISH			
	STARCH SIDE DISH			
				BREAKFAST IDEAS
	NonSTARCH VEGGIE			
	FRUIT			
	DAIRY			
	OTHER			
3	PROTEIN MAIN DISH			
	STARCH SIDE DISH			
	NonSTARCH VEGGIE			
	FRUIT			
	DAIRY			
	OTHER			

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Meal Planning – Worksheet

		MENU	INGREDIENTS	LUNCH IDEAS
1	PROTEIN MAIN DISH			
	STARCH SIDE DISH			
	NonSTARCH VEGGIE			
	FRUIT			
	DAIRY			
	OTHER			
2	PROTEIN MAIN DISH			
	STARCH SIDE DISH			
				BREAKFAST IDEAS
	NonSTARCH VEGGIE			
	FRUIT			
	DAIRY			
	OTHER			
3	PROTEIN MAIN DISH			
	STARCH SIDE DISH			
	NonSTARCH VEGGIE			
	FRUIT			
	DAIRY			
	OTHER			

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Healthy Foods Shopping List [pg 1]

FRUIT
Frs/Fzn/Cnd
- ❍ ❍ ❍ Apples
- ❍ ❍ ❍ Bananas
- ❍ ❍ ❍ Blueberries
- ❍ ❍ ❍ Cantaloupe
- ❍ ❍ ❍ Cherries
- ❍ ❍ ❍ Grapes
- ❍ ❍ ❍ Grapefruit
- ❍ ❍ ❍ Honeydew melon
- ❍ ❍ ❍ Juice - Fruit
- ❍ ❍ ❍ Lemons
- ❍ ❍ ❍ Limes
- ❍ ❍ ❍ Kiwi
- ❍ ❍ ❍ Mandarin Oranges
- ❍ ❍ ❍ Nectarines
- ❍ ❍ ❍ Peaches
- ❍ ❍ ❍ Pears
- ❍ ❍ ❍ Pineapple
- ❍ ❍ ❍ Plums Oranges
- ❍ ❍ ❍ Raspberries
- ❍ ❍ ❍ Strawberries
- ❍ ❍ ❍ Watermelon
- ❍ ❍ ❍ _____
- ❍ ❍ ❍ _____
- ❍ ❍ ❍ _____
- ❍ ❍ ❍ _____

DRIED FRUIT
- ❍ Raisins
- ❍ Currents
- ❍ Cranberries
- ❍ Cherries
- ❍ Bananas
- ❍ _____
- ❍ _____

CONDIMENTS
- ❍ Catsup
- ❍ Mustard
- ❍ Salsa
- ❍ _____
- ❍ _____
- ❍ _____

STARCHY VEGGIES
Frs/Fzn/Cnd
- ❍ ❍ ❍ Corn*
- ❍ ❍ ❍ Peas**
- ❍ Potatoes
- ❍ Sweet Potatoes
- ❍ Yams
- ❍ Taro Root
- ❍ Turnip
- ❍ Parsnip
- ❍ _____
- ❍ _____
- ❍ _____

Winter Squash:
- ❍ Acorn
- ❍ Buttercup
- ❍ Butternut
- ❍ Carnival
- ❍ Hubbard
- ❍ Pumpkin
- ❍ Spaghetti
- ❍ _____
- ❍ _____
- ❍ _____

*Grain eaten like starchy veggies.
** Legume eaten like starchy veggies.

LEGUMES
Dry/Cnd
- ❍ ❍ Black-Eyed Peas
- ❍ ❍ Black Beans
- ❍ ❍ Garbanzo Beans
- ❍ ❍ Great Northern Beans
- ❍ ❍ Kidney Beans
- ❍ ❍ Lentils
- ❍ ❍ Lima Beans
- ❍ ❍ Mung Beans
- ❍ ❍ Navy Beans
- ❍ ❍ Pinto Beans
- ❍ ❍ Red Beans
- ❍ ❍ Split Peas
- ❍ ❍ _____
- ❍ ❍ _____

NON-STARCHY VEGGIES
Frs/Fzn/Cnd
- ❍ ❍ ❍ Asparagus
- ❍ ❍ ❍ Artichoke
- ❍ ❍ ❍ Avocado*
- ❍ ❍ ❍ Beets
- ❍ ❍ ❍ Bell Peppers
- ❍ ❍ ❍ Broccoli
- ❍ ❍ ❍ Cabbage
- ❍ ❍ ❍ Carrots
- ❍ ❍ ❍ Cauliflower
- ❍ ❍ ❍ Celery
- ❍ ❍ ❍ Collard Greens
- ❍ ❍ ❍ Eggplant
- ❍ ❍ ❍ Green Beans
- ❍ ❍ ❍ Juice - Vegetable
- ❍ ❍ ❍ Leaf Lettuce
- ❍ ❍ ❍ Mushrooms
- ❍ ❍ ❍ Okra
- ❍ ❍ ❍ Onions
- ❍ ❍ ❍ Snow Peas
- ❍ ❍ ❍ Spinach
- ❍ ❍ ❍ Summer Squash
- ❍ ❍ ❍ Tomatoes
- ❍ ❍ ❍ Zucchini
- ❍ ❍ ❍ _____
- ❍ ❍ ❍ _____

* 1 oz avocado = 1 serving of fat

HEALTHY SNACKS
Whole Grain Crackers
- ❍ _____
- ❍ _____

Whole grain snack bars
- ❍ _____
- ❍ Multigrain chips
- ❍ Corn chip
- ❍ Granola bars
- ❍ Brown rice cakes
- ❍ 100% dehydrated fruit

Other Healthy Snacks
- ❍ _____
- ❍ _____
- ❍ _____

Healthy Foods Shopping List [pg 2]

WHOLE GRAIN FLOUR PRODUCTS

Bread
- ❍ 100% whole wheat
- ❍ Oat
- ❍ Rye
- ❍ Multigrain
- ❍ _____
- ❍ _____
- ❍ Hamburger buns
- ❍ Hotdog buns

Bagels
- ❍ _____
- ❍ _____

Pasta
- ❍ Whole wheat
- ❍ Brown rice
- ❍ Quinoa
- ❍ Corn
- ❍ _____
- ❍ _____

Pancake / Waffles
- ❍ _____

Tortilla shells
- ❍ _____
- ❍ _____

Muffins
- ❍ _____
- ❍ _____

Breakfast cereal
- ❍ _____
- ❍ _____
- ❍ _____

WHOLE GRAIN KERNELS
- ❍ Brown rice
- ❍ Barley
- ❍ Cracked wheat cereal
- ❍ Millet
- ❍ Oatmeal
- ❍ Quinoa
- ❍ Popcorn
- ❍ _____

MEAT

Frs/Fzn
- ❍ ❍ Chicken
- ❍ ❍ Turkey
- ❍ ❍ Cornish game hens

Beef
- ❍ ❍ _____
- ❍ ❍ _____

Pork
- ❍ ❍ _____
- ❍ ❍ _____

Buffalo
- ❍ ❍ _____
- ❍ ❍ _____

FISH

Frs/Fzn/Cnd
- ❍ ❍ ❍ Cod
- ❍ ❍ ❍ Salmon
- ❍ ❍ ❍ Sardines
- ❍ ❍ ❍ Tilapia
- ❍ ❍ ❍ Trout
- ❍ ❍ ❍ Tuna
- ❍ ❍ ❍ Walleye
- ❍ ❍ ❍ _____

SEAFOOD

Frs/Fzn/Cnd
- ❍ ❍ ❍ Lobster
- ❍ ❍ ❍ Scallops
- ❍ ❍ ❍ Shrimp
- ❍ ❍ ❍ _____

DAIRY
- ❍ Skim or 1% Milk,
- ❍ Plain low-fat yogurt
- ❍ Low-fat flavored yogurt
- ❍ _____

Cheese
- ❍ Mozzarella
- ❍ Provolone
- ❍ Swiss
- ❍ String
- ❍ _____

OTHER PROTEIN
- ❍ Eggs

Nuts or seeds*
- ❍ _____
- ❍ _____

Nut or Seed butter*
- ❍ _____
- ❍ _____

* 1 oz protein & 1 fat serving

FAT
- ❍ Butter
- ❍ Margarine without trans fat or hydrogenated oil
- ❍ Olive oil
- ❍ Olives
- ❍ Coconut oil
- ❍ Creamy / oil salad dressing
- ❍ Mayonnaise
- ❍ Cream
- ❍ Cream cheese
- ❍ Sour cream
- ❍ _____
- ❍ _____

COOKING INGREDIENTS
- ❍ Whole grain flour
- ❍ Baking soda
- ❍ Baking powder
- ❍ Food starch
- ❍ Yeast
- ❍ _____
- ❍ _____
- ❍ _____

Spices / Seasonings
- ❍ _____
- ❍ _____
- ❍ _____

SUGAR-FREE DRINKS
- ❍ Mineral water
- ❍ Herb tea
- ❍ _____
- ❍ _____

PART FOUR

BODY BIOLOGY EXPLAINED

Introduction to Body Biology Explained

During the introduction to Nutrition Education, you read that the body's energy balance is directed and controlled by a variety of hormones. If these key hormones are not produced at key times, in proper amounts, the body will not be able to properly convert food that is eaten into usable energy. Effective functioning of these key hormones is vital to having a healthy energy balance in the body.

Part Four – Body Biology Explained will help you understand what is going on inside your amazing body. You will learn about hormones that control energy balance in the body. You will find out how the different macronutrients (carbohydrates, protein, fat) affect your energy balance. You will learn about key nutrients that help promote weight loss and support overall health. You will understand how meal patterns and serving sizes affect metabolic rate. Each step of Body Biology Explained will help you understand how the new eating habits you are adopting during each Action Step, will support a healthy energy balance and promote weight loss.

We will also explore factors that mess up your body's energy balance and cause weight loss resistance. There are many factors that can cause weight loss resistance that have nothing to do with the amount of calories you consume. These factors include things like chronic gut inflammation, toxic overload, sleep deprivation, unmanaged stress, constipation, nutrient deficiencies, and overgrowth of bad bacteria in your intestines. You will learn about unhealthy

habits that contribute to the development of many of these issues that cause weight loss resistance. This will provide you with knowledge about unhealthy habits that you will want to try to avoid.

You will be provided opportunities to complete self-assessments and identify if you are dealing with any of these issues that interfere with weight loss. In addition to the self-assessments, you will find "Take Action" plans for each of the weight loss resistance issues. If a self-assessment indicates you have a specific weight loss resistance issue, you will have a list of actions you can take to combat the issue and/or reduce the severity of the it.

Our fabulous bodies were designed to be physically active every day. It is built into our body's blueprint for health. Physical activity is also an important part of speeding up your metabolic rate, that is, the calories your internal furnace burns throughout the day. During *Body Biology Explained for Step 2*, you will learn about different types of physical activity and how each plays an important role in maintaining a healthy energy balance, promoting weight loss, and supporting overall health of the body.

Important Words 4.0.1

There are several important words that you will want to understand prior to diving into Body Biology Explained. Read through the list and make sure you understand what the different important words mean before moving on to *Body Biology Explained for Step 1.*

Anatomy Words

[12] Liver - is a important organ in metabolism, responsible for processing nutrients, producing energy, regulating hormones, and performing various other metabolic functions essential for maintaining bodily homeostasis (healthy balance).

[13] Pancreas – an organ located behind the stomach that has two main functions: digestion and blood sugar (glucose) control. It produces digestive enzymes that break down food. The pancreas produces the hormones insulin and glucagon, which regulate blood sugar.

[14] Mitochondria - tiny powerplants inside our cells that are responsible for converting energy from glucose into ATP (adenosine triphosphate), a form of energy that cells can use. Mitochondrial dysfunction is linked to variety of chronic diseases, including aging, diabetes, obesity, Parkinson's disease, cancer, and lots more.

Hormones

[15] Insulin - promotes glucose uptake into cells for energy or storage. It does this by binding to receptors on cells, particularly liver, muscle, and fat cells, to allow glucose to move from the bloodstream into the cells for energy, which lowers blood glucose levels. Insulin stimulates the liver and muscles to store excess glucose as glycogen and fatty acids, for temporary storage. It stimulates fat cells to take up fatty acids from the blood, to be placed in long-term storage.

[16] Happy-hormone (serotonin) - increases feelings of well-being and happiness, and diminishes feelings of anxiety, anger, and fear. It has a positive effect on the sleep-wake cycle. The happy hormone suppresses appetite and promotes feelings of fullness.

[17] Hunger-hormone (ghrelin) - primary function of the hunger-hormone is to stimulate appetite and promote feeding behavior. It also promotes fat storage.

[18] Satiety-hormone-1 (leptin) - prevents hunger by signaling the brain to decrease food intake and increase energy expenditure.

[19] Satiety-hormone-2 (cholecystokinin or CCK) - signals the brain to produce a feeling of fullness and slows gastric emptying, which helps you feel full longer. It is released in the small intestine in response to fat and protein intake.

[20] Super-satiety-hormone (adiponectin) – It enhances glucose uptake in tissues of the body by increasing insulin sensitivity and decreasing insulin resistance. It stimulated fat burning and inhibits glucose and fat production in the liver. It has protective effects on insulin producing (beta) cells in the pancreas, potentially increasing their survival. It has anti-inflammatory properties, reducing inflammation in various tissues. It has a natural antioxidant effect which helps reduce oxidative stress in cells.

[21] Stress-hormone (cortisol) - This hormone is released in response to stress. It plays a crucial role in the body's "fight or flight" response, but prolonged or excessive stress hormone production can have negative effects on the body. For example:

- Increased Blood Sugar: Cortisol stimulates the liver to release glucose into the bloodstream, providing energy for the body during stressful situations.
- Increased Blood Pressure: Cortisol constricts blood vessels, raising blood pressure to prepare the body for action.
- Suppressed Immune System: Cortisol temporarily suppresses the immune system to reduce inflammation and protect the body from damage.
- Disrupted Sleep: High cortisol levels can interfere with sleep patterns, leading to insomnia.
- Increased Appetite: Cortisol stimulates the appetite, leading to weight gain.

- Altered Mood: Cortisol can contribute to anxiety, depression, and irritability.
- Constipation: Cortisol slows down digestion, leading to constipation.
- Increased Risk of Diabetes: Prolonged high cortisol levels can increase insulin resistance, raising the risk of developing type 2 diabetes.

Molecules

[22] Free radicals - are unstable, highly reactive molecules with an unpaired electron that seek to steal an electron from a healthy molecule, creating a new free radical and causing a chain reaction that can damage the entire cell. This process, known as oxidative stress, can damage cells, DNA, proteins, and lipids, contributing to aging and diseases like cancer and cardiovascular disease. Free radicals are formed naturally from metabolic processes but can also be increased by external factors like pollution, smoking, toxins, negative thinking, consuming sugars and processed foods.

[23] Antioxidant - a substance that protects cells from damage caused by free radicals. Antioxidants can help neutralize free radicals. Antioxidants work by stabilizing or eliminating free radicals. Antioxidants donate an electron to a free radical. Antioxidants stop the damaging chain reaction without becoming a free radical itself.

[24] Toxins - are substances that are harmful or poisonous, which can be naturally occurring or man-made, and interfere with normal bodily functions. The body has natural systems to eliminate toxins. However, if the body gets overloaded from environmental exposure to things like pesticides, plastics, and heavy metals, as well as certain bacterial infections, this can impair its function and lead to various health problems. Toxins can damage cell membranes and disrupt cellular communication and processes, like energy production in mitochondria. Some toxins trigger inflammation in the body. Organs that play key roles in detoxing the body can be damaged by toxins, like the liver, kidneys and intestines.

Processes

[26] Metabolism - is the sum of all chemical processes in a living organism that convert food and oxygen into energy for vital functions. This is a 24/7 process that involves energy for everything from breathing and circulating blood, movement and heat production, to thinking, growth and repairing cells.

[27] Metabolic rate - is the speed at which the body produces energy and burns calories to sustain life. Metabolic rate is a measure of how fast calories are being burned at any given moment compared to metabolism which is the entire set of chemical processes that convert food and oxygen into energy.

[28] Basal Metabolic Rate (BMR) – the minimum amount of energy (calories) required to keep your body functioning at rest.

[29] Diet-induced thermogenesis (DIT) - is the increase in energy expenditure (calories burned) to digest food and absorb nutrients after a meal, contributing 5–15% to total daily energy expenditure.

[30] Exercise Activity Thermogenesis - extra calories burned during exercise.

[31] Non-Exercise Activity Thermogenesis - extra calories burned during daily activities (i.e. performing selfcare, cooking, cleaning, shopping, etc.).

[32] Inflammation - is the body's natural immune response to tissue damage, infection, or injury. It involves the immune system sending white blood cells to the affected area, causing classic signs like redness, swelling, heat, pain, and loss of function. This acute, short-term response helps the body heal and fight off pathogens.

However, chronic inflammation, a long-term inflammatory state, can damage healthy tissue and increase the risk of chronic diseases like heart disease, diabetes, and cancer. Chronic inflammation plays a big role in weight loss resistance because of its many negative effects on energy balance. Chronic inflammation increases appetite, promotes weight gain, slows fat burning and metabolism, damages mitochondria, and stimulates the release of stress hormones.

[33] Oxidative stress - an imbalance that occurs when there are too many free radicals and not enough antioxidants to neutralize them. Oxidative stress can damage cellular components like DNA, RNA, mitochondria, proteins, and lipids, leading to cell dysfunction, mutation, and even cell death. A high level of oxidative stress is linked to multiple serious chronic diseases (i.e. heart disease, cancer, diabetes, Alzheimer's, Parkinson's, arthritis, etc.).

[34] Insulin resistance - means that cells (i.e. muscles and liver) don't respond well to insulin. In response, the pancreas has to produce extra insulin to compensate for the resistance. This drives insulin levels up, causing hyperinsulinemia (high insulin levels). Excess circulating insulin puts the body into an energy storing mode and has damaging effects on blood vessels.

Internal Energy Balance 4.0.2

It is important to understand the processes and hormones involved in keeping energy levels balanced. This knowledge will help you understand your own body better and know what actions you can take to successfully use up excess stored energy (lose weight). Here is a step-by-step list of processes and hormones that are involved in energy intake and energy utilization:

1. An empty stomach and low blood sugar, stimulate the production of the **hunger-hormone [17]** - causing a person experience hunger;
2. A person eats in response to hunger and the stomach starts to fill with food and stretch out;
3. Digesting food causes **diet-induced-thermogenesis [29] -** increases energy expenditure (calories burned) to digest food and absorb nutrients after a meal;
4. Nutrients, from the digested food, are absorbed into blood stream - blood sugar rises, **insulin [15]** levels rise, **happy-hormone [16]** levels rise, **super-satiety-hormone [20]** level rise;
5. The stretching stomach in combination with the increasing blood sugar, stimulates the **satiety-hormone-1 [18]** – a person experiences satiety and hunger fades away;
6. Energy in the form of **glucose [12]** is transported from the blood to the tissues with the assistance of **insulin [15]**;
7. Energy in the tissues is used for body functions, body heat, and movement;
8. Energy that exceeds the needs of the tissues is put into temporary storage, in the liver, to be used later when blood sugar drops between meals;
9. An empty stomach and low blood sugar, stimulates the production of the **hunger-hormone [17],** decreases **happy-hormone [16],** decreases **metabolic rate [27]** (conserves energy), decreases energy available for body heat (feel cold), decreases energy available for movement (fatigue), and stimulates the liver to release some stored glucose for energy.

Factors That Contribute to Energy Imbalance 4.0.3

An energy imbalance results when energy taken in does not equal energy expended. There are many factors that can play a role in disturbing the processes and the production and release of key hormones, responsible for managing the body's energy balance. Here is a list of factors that contribute to energy imbalance and create roadblocks to weight loss.

1. Elevated Stress Hormone -
   - stimulates the **liver [12]** to release glucose into the bloodstream, making extra energy available whether you need it or not
   - interferes with sleep patterns, leading to insomnia and the release of more **stress hormones [21]**
   - stimulates the appetite, leading to excess caloric intake
   - contributes to anxiety, depression, and irritability which can all lead to diminished self-control, over eating and excess caloric intake
   - slows down digestion, leading to constipation and retention of **toxins [24]** causing toxic build up in the body and **inflammation [32]** in the large intestine
   - decreases insulin sensitivity of tissues and increases **insulin resistance [34]**

2. Inflammation –
   - stimulates the release of stress hormones (read #1 - *elevated stress level*)
   - increases appetite
   - promotes weight gain
   - slows fat burning
   - slows metabolism
   - damages mitochondria (read #13 *damaged mitochondria*)

3. Sleep Deprivation –
   - increases cravings for calorie-dense, nutrient-depleted, unhealthy foods
   - stimulates the release of stress hormones (read #1 - *elevated stress level*)

4. Fatty Liver –
   - slows **metabolism [26]** and decreases **metabolic rate [27]**
   - causes impaired processing of nutrients
   - impairs effective energy production
   - interferes with regulation of **insulin [15]** and glucagon
   - slows metabolic functions essential for maintaining bodily homeostasis
   - impairs detoxification process and increases **toxic [24]** load on the body

5. Elevated Insulin Levels -
   - increases production of **free radicals [22]** which increases **oxidative stress [33]** and causes damage to **mitochondria [14]** and triggers **inflammation [32]**
   - promotes fat storage and causes weight gain
   - alters the balance of gut bacteria, leading to an increase in pro-inflammatory bacteria

6. Insulin Resistance -
   - causes fatty liver (read #4 *fatty liver*)
   - slows **metabolic rate [27]**
   - causes high insulin levels (read #5 *elevated insulin levels*)

7. Elevated Hunger-Hormone –
   - increase appetite
   - slows **metabolism [26]**
   - inhibits the breakdown of fat and decreases the body's ability to burn fat
   - increases **insulin resistance [34]** and drives up insulin levels (read #5 *elevated insulin levels*)
   - promotes the use of carbohydrates for energy while sparing fat to be stored in fat cells
   - promotes binge eating
   - contributes to food cravings and misuse of substances like alcohol
   - promotes feelings of anxiety and depression which can all lead to over eating

- accelerates gastric emptying which speeds up emptying of the stomach, stimulating hunger, and making room for more food (calories)

8. Resistance to Satiety-Hormones -
   - inability to feel full causes a constant feeling of hunger, signaling for more energy which can lead to uncontrollable food cravings, particularly for sugar
   - slows rate at which body burns calories
   - causes persistent feeling of tiredness that isn't alleviated by rest, which causes food cravings
   - causes chronic inflammation throughout the body (read #2 *inflammation*)
   - increases risk of developing fatty liver disease (read #4 *fatty liver*)
   - increases susceptibility to depression which decreases motivation and increases disordered eating
   - causes sleep disturbances (read #3 *sleep deprivation*)

9. Low Levels of Super-Satiety-Hormone -
   - decreases insulin sensitivity and increases insulin resistance (see #6 *insulin resistance*)
   - decreases fat burning, making it harder to use up stored fat
   - increased glucose and fat production in the liver which contributes to excess circulating glucose and fatty acids, which then get put into storage
   - increase inflammation in various tissues (read #2 *inflammation*)
   - elevates **oxidative stress [33]** levels in cells

10. Low Levels of Happy-Hormone –
    - decreased feelings of well-being, increase depression, which decreases motivation
    - increases cravings for calorie-dense, nutrient-depleted, unhealthy foods
    - disturbed sleep-wake cycle (read #3 *sleep deprivation*)
    - stimulates appetite and promotes feelings of hunger

11. Slow metabolic rate – burn fewer calories throughout the day

12. Damaged mitochondria –
    - slows metabolic rate
    - decreases total calories burned throughout the day
    - contributes to development of obesity
    - promotes insulin resistance (read #6 *insulin resistance*)
    - can cause hormone imbalances

13. Nutritional deficiencies – cause multiple problems with production and release of key hormones that control energy balance. Some vitamins and minerals play key roles in metabolic processes and when deficient, these metabolic processes are impaired.

14. Excess Caloric Intake –
    - causes inflammation (read #2 *inflammation*)
    - causes weight gain
    - contributes to development of fatty liver (read #4 *fatty liver*)
    - damages mitochondria (read #13 *damaged mitochondria*)

As you work through the 4 steps of Body Biology Explained, you will learn about various causes of each of these factors and actions you can take to diminish the negative effects of each.

4.1 Body Biology Explained for Step One

Biology Behind Action Step One 4.1.1

In *Nutrition Education for Step 1*, your learned about some of the harmful effects that added sugars, HFCS, and unhealthy fats can have on your body. In the *Body Biology Explained for Step 1,* we will look specifically at how these substances contribute to the development of weight gain and cause weight loss resistance. Please note that factors that cause weight loss resistance (pages 106 - 108) will be in bold.

As you read through this section, think about how much easier it would be to lose weight if you could avoid most of these factors that cause weight loss resistance. And that is what Action Step One helps you do.

Added Sugars

Added sugars have a multitude of harmful effects on the body. You read about this in *Nutrition Education for Step 1*. Below you will see specific effects of added sugar that contribute to excess weight gain and cause weight loss resistance. Consuming added sugars causes:

1. Oxidative stress which **damages mitochondria** and **slows metabolic rate**
2. Directly **damages mitochondria**
3. Gut **inflammation** and increases **inflammation** throughout the body
4. **Fatty liver disease**
5. Cravings for high fat, high sugar, low nutrient foods which contributed to **excess caloric intake** and **nutrition deficiencies**
6. **Increased insulin** levels which puts the body into fat-storing mode
7. Increases appetite which causes **excess caloric intake**
8. **Insulin resistance** which increases insulin levels and puts the body into a fat storing mode
9. **Nutritional deficiencies** which interfere with production and function of key hormones that control the body's energy balance
10. Addictive substance – sugar lights up the brain's dopamine pathways the same way drugs and alcohol do
11. Overgrowth of yeast in the intestines – causes gut **inflammation** which **decreases the happy-hormone** and **increases the stress hormone**
12. Promotes the growth of harmful bacteria in the intestines – causes **gut inflammation** which **decreases the happy-hormone** and **increases stress hormone**

Refined High Fructose Sweeteners

High fructose sweeteners have a multitude of harmful effects on the body. You read about this in *Nutrition Education for Step 1*. Below you will see specific effects of high fructose sweeteners that contribute to excess weight gain and cause weight loss resistance. Consuming HFCS and other concentrated fructose sweeteners cause all of the following:

1. Does not stimulate insulin, leaving insulin levels low even though a person may have just consumed a lot of calories – low insulin levels stimulate the production of the **hunger-hormone**, **decreases happy-hormone** levels, **decreases metabolic rate** (conserves energy), decreases energy available for body heat (feel cold), decreases energy available for movement (fatigue), and stimulates the liver to release stored glucose for energy, which causes an excess of glucose that is put into fat storage.

2. Does not stimulate the **satiety-hormone-1** which keeps levels **low**, leaving a person feeling hungry, contributing to **excess caloric intake**.

3. Fructose is metabolized primarily in the liver, where it can accumulate as fat and causes **fatty liver** disease.

4. **Damages mitochondria** and **slows metabolic rate.**

5. Causes **insulin resistance** which **increases insulin levels** and puts the body into a storage mode.

6. Contributes to **nutritional deficiencies** which interfere with production and function of key hormones that control the body's energy balance.

7. These sweeteners are highly palatable and can lead to **overconsumption of calories**, contributing to weight gain and obesity.

8. Increases the production of triglycerides, which are the storage form of fat that are ready to go straight into fat storage.

9. Stimulates **inflammation** in the body which causes the release of **stress hormones**.

10. Excess fructose can increase harmful substances called advanced glycation end products (AGEs), which can **harm mitochondria**.

Excess Animal Fats

Animal fats eaten in excess are unhealthy and roadblock weight loss efforts. Below you will see specific effects of consuming excess animal fats and how they contribute weight loss resistance:

1. Feed harmful bacteria in the intestines which then causes gut **inflammation.**
2. Stress the body and cause **inflammation,** both of which increase the release of **stress hormone.**
3. **Damage mitochondria.**

Trans Fats (Hydrogenated Oils) & Deep Fat Fried Foods

Trans fats (hydrogenated oils) are harmful to overall health and cause weight loss resistance. Oils used to deep fat fried foods, break down when they exposed to high temperatures and cause inflammation in the digestive tract. Here are the specifics about how these unhealthy fats contribute to excess weight gain and cause weight loss resistance:

1. Causes **inflammation** in the guts and throughout the body.
2. **Damages mitochondria.**
3. Increases **insulin resistance, increasing inulin levels** and putting the body into fat storing mode.
4. Trans fat blocks the utilization of omega 3 fatty acids. Omega 3 fats have several important roles in maintaining a healthy energy balance.
5. Increases triglycerides which are the storage form of fatty acids.
6. Proven to be an independent cause of obesity.

Toxins

Toxins harm the body in a multitude of ways, including causing weight loss resistance. Here are the specifics about how toxins cause weight loss resistance:

1. **Damages mitochondria.**
2. Cause **inflammation** in the lining of the digestive track.
3. Some toxins trigger **inflammation** throughout the body.
4. The **liver can be damaged** when trying to process larger amounts of toxins.

WOWZA!! Does that knock your socks off to learn about how many harmful affects you could be protecting your body from, just by eating cleaner? Action Step One is a very important first step toward achieving your weight loss goals and reaching the top of Peak Health.

Action Step One may be hard at first, but I promise it gets easier. The discomfort you experience from food cravings will lessen. Remind yourself, **THIS DISCOMFORT IS ONLY TEMPORARY!** Your tastebuds will change over time and sweets and junk food won't taste as good as they once did. You will find the Craving Management Plan in *Power Tools for Step 1* to very helpful.

Gut Inflammation 4.1.2

You have just heard a lot about inflammation and the role it plays in causing excess weight gain and how it creates a major roadblock to weight loss. All inflammation in the body stimulates the release of stress hormones and causes weight loss resistance. However, gut inflammation is notorious for creating the biggest problems because of a cascade of issues that stem from gut inflammation. Because of this, it is very important to assess for symptoms of gut inflammation and try to remove as many causes of gut inflammation as you can.

The causes of gut inflammation are many. You have just read how added sugars, unhealthy fats and toxins cause gut inflammation. Additionally, unhealthy fats and added sugar feed bad bacteria and yeast, and suppress growth of good bacteria. Good bacteria decrease gut inflammation. Low levels of good bacteria allow bad bacteria and yeast to flourish. High levels of bad bacteria and yeast cause inflammation in the gut, plus they produce and release toxins. Additionally, they promote **constipation which retains and recirculates toxins**. Retained toxins cause more gut inflammation, increase oxidative stress in the body, and damage mitochondria.

Gut inflammation causes problems that complicate the issue. Gut inflammation independently reduces the production and release of the happy-hormone and super-satiety-hormone. Low levels of super-satiety-hormone increases insulin resistance, decreases fat burning, makes it harder to use up stored fat, increases inflammation in various tissues, elevates oxidative stress levels in cells, plus more. Low levels of happy-hormone increases cravings for calorie-dense, nutrient-depleted, unhealthy foods, disturbs sleep-wake cycle, stimulates appetite, plus more.

Inflamed gut lining is not able to efficiently absorb nutrients, which can cause nutritional deficiencies. Nutritional deficiencies cause multiple problems with production and release of key hormones that control energy balance. Some vitamins and minerals play key roles in metabolic processes and when deficient, these metabolic processes are impaired.

Chronic gut inflammation leads to leaky gut. Food sensitivities/allergies develop as consequence of a leaky gut. Food sensitivities/allergies cause more gut inflammation, making leaky gut worse, and promoting full blown malnutrition.

As you can see, gut inflammation can turn into a vicious cycle. Most certainly a cycle you want to stop. Before we look at actions you can take to diminish and stop gut inflammation, let's do a self-assessment for gut inflammation.

SELF-ASSESSMENT: GUT INFLAMMATION

Below you will find a list of symptoms and/or causes of gut inflammation. As you read each symptom and/or cause - consider if this describes you. Score each symptom and/or cause as follows:

0 = No/Rarely 1 = Sometimes 2 = Yes/Most the time

	I don't feel well after eating (sluggishness, headaches, brain fog, etc.).
	I have food allergies, sensitivities, intolerances, and/or reactions.
	I have a bloated or full feeling, and/or belching, burning, or flatulence right after meals.
	I feel nauseated after taking supplements.
	I feel fatigued after eating.
	I have heartburn.
	I regularly use antacids (tums, Maalox, acid-blocking drugs, etc.).
	Eating bread or other sugars causes bloating.
	I have chronic abdominal pains.
	I have diarrhea.
	I have constipation.
	I have greasy, large, poorly formed, or foul-smelling stools.
	I find food that is not fully digested in my stool.
	I have chronic yeast or fungal infections (jock itch, vaginal yeast infection, athlete's foot, toenail fungus).
	I have thrush (whitish tongue).
	I have anal itching.
	I have sores on the tongue.
	I have canker sores in my mouth.
	I have geographic tongue (map-like rash on tongue indicating food allergy or yeast overgrowth).
	I have bleeding gums or gingivitis.

Self-Assessment: Gut Inflammation - Continued

	I drink more than 3 alcoholic beverages a week.
	I have excessive stress.
	I have taken birth control pills or hormone replacements.
	I frequently use or have frequently used antibiotics in the past (more than 2 times in 3 years).
	I have a history of taking NSAIDs (ibuprofen, naproxen, etc.)
	I have taken prednisone or cortisone in the past year.
	TOTAL SCORE

If your total score is 14 or higher, look at the actions you can take to help you diminish gut inflammation, found on the *Take Action: Diminish Gut Inflammation Checklist*. As you go through this checklist, you will notice several habits from *Action Step One – Eat Cleaner*.

You will see that the **3:12MealPattern** is on this checklist. Following the 3:12MealPattern decreases inflammation in the gut and gives the guts a rest and opportunity to heal. This simple habit has a ton of wonderful health benefits. Many of which aid in weight loss and help prevent excess weight gain. First, let's review all the different ways that the 3:12MealPattern supports healthy energy balance.

1. It works by reducing overall calorie intake and causes a metabolic shift from using glucose to burning fat for fuel. When your body runs out of readily available glucose, it switches to burning stored fat for energy.

2. The 3:12MealPattern improves mitochondrial health by stimulating the production of new, healthier mitochondria through a process called mitophagy (the removal of damaged mitochondria), improving overall energy production, and protecting cells from damage.

3. It improves metabolic flexibility and supports metabolic health.

4. It helps lower levels of chronic inflammation in the body. Studies have shown that the 3:12MealPattern reduces the release of inflammatory-proteins.

5. It reduces oxidative stress.

6. It makes your body more sensitive to insulin and reduces insulin resistance, both of which help to lower insulin levels and blood sugar levels.

7. The 3:12MealPattern gives the liver a chance to complete a full detox cycle which reduces toxic load on the body and helps protect mitochondria.

8. It increases stress resilience which helps diminish release of stress hormones during periods of stress.

9. It has been shown to enhance mental health which will help a person focus and stay motivated during habit change.

10. Studies suggest that over time, practicing the 3:12MealPattern can improve heart health, better brain function, enhance cellular repair processes, and protect against chronic diseases.

Take Action: Diminish Gut Inflammation Checklist

As you read through the list below, notice actions (habits) you are currently practicing. Check the box in front of each action that is your current habit. Habits included in *Action Step One – Eat Cleaner* are in **bold type.** Gray type are actions you will be taking in Action Steps Two – Three – Four, which will help diminish gut inflammation.

☐ **Cut added sugar from your diet**

☐ **Avoid trans fats and hydrogenated oils**

☐ **Limit animal fats in your diet by eating low-fat meat and dairy products**

☐ **Avoid foods that have chemicals (toxins) in the ingredients list**

☐ **Practice the 3:12MealPattern**

☐ **Exercise has a powerful anti-inflammatory effect and therefore helps diminish the effects of inflammation – get 30 minutes of aerobic exercise most every day [*Action Step 2*]**

☐ **Identify and manage stress in your life [*Action Step 2*]** [1]

☐ **Minimize consumption of refined, processed foods [*Action Step 2*]**

☐ **Primarily eat slow-release energy foods [*Action Step 2*]**

☐ **Eat fatty fish 2 to 3 times a week or take an omega 3 fatty acid supplement [*Action Step 3*]**

☐ **Take a daily multivitamin [*Action Step 3*]**

☐ **Find ways to add extra virgin olive oil into your daily food intake [*Action Step 3*]**

☐ **Eat fruits and vegetables with intense color (provides abundant antioxidants) and/or take antioxidants supplements [*Action Steps 3 -4*]**

☐ **Eat to meet your body's caloric needs and avoid over eating [*Action Step 4*]**

Diminish Gut Inflammation Checklist - Continued

☐ **Eat a high fiber diet (i.e. whole grains, fruits, vegetables, legumes, nuts and seeds) [*Action Steps 2 - 3 - 4*]**

Eating habits that promote efficient digestion of food and reduce gut inflammation: [2]

- ☐ Eat slowly and chew your food thoroughly [a]
- ☐ Eat in a relaxed manner [b]
- ☐ Eat less food at meals [c]
- ☐ Eat some raw plant-based foods every day [d]
- ☐ Drink water between meals [e]

☐ Avoid using non-steroidal anti-inflammatory drugs (NSAID). [3]

Promote growth of friendly bacteria (Lactobacilli and Bifidobacterium) in the gut:

- ☐ Eat yogurt – eat cottage cheese – drink butter milk
- ☐ Take a probiotic supplement containing Lactobacilli and Bifidobacterium

☐ Take a fiber supplement – especially FOS and inulin – if you are having trouble getting adequate amounts of fiber from your diet [4]

☐ Eat foods that support friendly bacteria in your gut – asparagus, fruit, legumes, green tea, garlic and onion

☐ Identify and treat food allergies and/or sensitivities [5]

☐ Support vagus nerve activity and improve your vagal tone [6]

☐ Eat ginger root or drink ginger tea

☐ Mix 1000 mg of L-glutamine powder into water and drink daily

Next, go back through the list and notice actions (habits) that don't have checkmarks. Are there any of these actions (habits) you would be willing to adopt? Highlight each of these actions that you would be willing to adopt now or sometime in the near future. You will add these actions (habits) to your Master Goals Sheet in Appendix.

NOTE 1 – Manage stress!

When the body responds to stress, it causes the digestive system to slow down and not work as effectively and reduces blood flow to the digestive organs. Food can be left undigested in the digestive tract for many hours. This undigested food can begin to decay and produce damaging toxins in the digestive tract. Chronic stress can have a negative effect on the immune system and affect its ability to respond to injury and damage. This can impair the immune system's ability to heal tissues in the body, including tissues of the digestive tract.

NOTE 2 – Eating habits that promote efficient digestion of food include:

a. Eating slowly and chewing your food thoroughly helps your food digest more efficiently and completely. You want this because partially chewed food can leave pieces of undigested food in

your digestive tract. Undigested food can begin to decay in the intestines which causes irritation and inflammation. Additionally, thoroughly chewed food minimizes digestive stress.

b. Eating in a relaxed manner activates the vagus nerve and improves vagal tone. Good vagal tone supports effective digestion by increasing production of saliva and digestive enzymes, increasing mobility of the intestines, and increasing blood flow to the digestive tract. This prevents opportunity of undigested food to sit in the intestines and begin to decay.

c. Eat less food at meals and add small healthy snacks between meals. This keeps your digestive tract from being overloaded with large amounts of food at one time. Small amounts of food tend to digest more completely without stressing the digestive tract.

d. Eat some raw plant-based foods every day. They contain enzymes that aid digestion. Cooking destroys these enzymes.

e. Drink water between meals! Water provides fluid needed for digestion and absorption. Limit fluid intake during meals because this dilutes stomach acid and digestive juices, which renders them less effective. Try to drink most of your water between meals.

NOTE 3 - Avoid using non-steroidal anti-inflammatory drugs (NSAIDs).
NSAIDs are damaging to the lining of the stomach and small intestine. Frequent repetitive use of these drugs can break down the lining of the digestive tract and cause ulcers.

NOTE 4 – Recommended Daily Fiber Intake

1. Fiber recommendation for women:
   - 19 to 50 years of age - 25 grams per day
   - over 50 years of age - 21 grams per day
2. Fiber recommendation for men:
   - 19 to 50 years of age - 38 grams per day
   - over 50 years of age - 30 grams per day

NOTE 5 – Food Allergies & Sensitivities
An allergic reaction to foods in the digestive tract often causes inflammation to the lining of the stomach and/or intestines. Chronic inflammation of the digestive tract can cause leaky gut syndrome and irritable bowel syndrome. Both these conditions cause more gut inflammation.

Read about symptoms of food allergies and sensitivities in section 4.4.1 (Body Biology Bonus – Gluten Sensitivity). You will also find guidance on actions to take if you find you have a lot of symptoms of food allergies and/or sensitivities.

NOTE 6 – Improve Your Vagal Tone
The vagus nerve is the longest nerve in your autonomic nervous system and controls all the automatic functions in our bodies like our circulation, respiration, sweating, digestion, plus more. It extends from your brain stem, through your neck, into your chest and abdomen. It is one of the most important nerves in the body. It connects our brain to our gut, and helps the entire gastrointestinal tract work together efficiently.

Studies have found that people with reduced vagus nerve function and poor vagal tone, tend to have increased gut issues and gut inflammation. Vagal tone is the level of activity of the Vagas nerve. Higher vagal tone is connected to healthy gut function and reduced gut inflammation. It is associated with the body's ability to relax, resist stress, elevate mood, reduce anxiety, and improve resilience.

Eye Exercises Improve Vagal Tone

You can support your vagal nerve activity and improve your vagal tone to reduce gut inflammation, improve digestion and bowel motility. There are many strategies that help to improve your vagal tone. Most of these strategies are easy to practice. Next, you will find some strategies to improve vagal tone. Check them out. You may want to try some of these strategies.

#1 Figure 8 Eye Tracking

- Follow your thumb with your eyes (head remaining still) as you trace a sideways figure-8 in the air, with your thumb 12 to 18 inches in front of your face
- Begin in the center of the sideways figure-8, and inhale as your eyes trace the movement of your thumb down and to the left
- Perform a long exhale as you trace the movement of your thumb through the remainder of the sideways figure-8, down to the right and around till you reach the center again
- Repeat 3-10 times

#2 Near/Far Gaze

- Hold your thumb at arm's length away from your face
- Fix your gaze on your thumbnail for 3 seconds and inhale
- Then look “through” your thumbnail to the farthest point directly behind your thumb in the distance (Ideally do this where you have to look out your window at something far away)
- Now focus on this distant point for 6 seconds and exhale
- Then return your gaze to your thumbnail, still at arm’s length from your face, for a 3 second inhale
- Then focus back on the distant point for 6 second far gaze with exhale
- Repeat this pattern 3-10 times

#3 Near/Far Gaze Advanced

- Hold your thumb up in front of your face
- Focus on your thumb and bring it towards the bridge of your nose
- Then focus your gaze beyond your thumb to the far edge of the room
- Try to quickly focus on the far edge of the room and then return your gaze back to your thumb, which remains next to the bridge of your nose
- Jump back and forth with this near focus/far focus eye exercise for 10-20 times

Breath Work Improves Vagal Tone

#1: Voo Breath
This breath is used to get the vagus nerve to nourish the organs with its connectivity. Place hands on belly, inhale into lower abdomen. Exhale slowly, and say in a low vibratory tone "vooooo". The key is nice long exhales. Repeat for 1-2 min. Then just rest and notice your body and environment for several moments. Please note, this is a great breathing exercise to do when feeling irritation, anger, fear, or stress.

#2 4-7-8 Breath Pattern
This is a simple ancient breath pattern.

- 4 sec inhale
- 7 sec hold
- 8 sec exhale
- Repeat 4x

#3 Alternate Nostril Breathing Pattern
This is a simple ancient yoga breath pattern.

- Close left nostril, inhale through right nostril
- Then close right nostril, exhale through left nostril
- Keep right nostril closed and inhale through left nostril
- Close left nostril and exhale through right nostril
- Practice this pattern for 1 to 3 minutes

#4 Box Breathing Pattern
This breath pattern will help develop concentration skills at the same time it is activating your parasympathetic nervous system (rest, digest, heal).

- Inhale 4 sec, hold 4 sec, exhale 4 sec, hold 4 sec
- Repeat! Try to work up to 10 breaths box breaths in a row without thinking of ANYTHING else. That will be a challenge!

Other Actions That Improve Vagal Tone

Laughter is another great way to stimulate your vagus nerve, bring your energy up, and create safety. Find a funny video, watch a comedy, engage in activities and social situations that make you laugh, and don't be afraid to laugh at yourself. If you feel anxiety, stress, or a lack of safety, think about something funny to bring yourself back to a safe state.

Set aside time for daily **prayer** and **meditation** to tone your vagus nerve. Prayer of any kind helps to connect to a higher purpose, allows you to find safety and connection, and helps to create a sense of calmness. Practice **gratitude** (see gratitude journaling in *Power Tools*).

Anything that **vibrates the throat** like humming, singing, chanting, talking, and gargling are great practices to improve your vagal tone.

Cold water is one of the simplest ways to stimulate your vagus nerve and improve your vagal tone. Research has found that exposure to cold water produces observable results. Start with washing your face with cold water or running cold water over your head, then slowly move up to taking a 30-second cold water shower. Most people find that it is easiest to do a warm shower and finish with 30–60 seconds of cold water at the end.

There are some common activities of daily living that naturally help improve vagal tone:

- Getting 7 to 9 hours of quality **sleep** per night
- **Socializing** and connecting with others
- All kinds of **exercise** and movement
- Following the **nutrition plan** actions steps in this program

Schedule Time For Vagal Toning

First
Look through the list of exercises and strategies that help improve vagal tone on pages 115 through 117. Pick several different vagal toning exercises or strategies to practice. Find exercises and strategies that feel comfortable to you and put you at ease when you practice them.

Second
Start practicing 2 different sets of vagal toning exercises/actions in the morning and in the afternoon or evening. Recording the times you practice your daily vagal toning will help you establish this new habit. You can also use vagal toning exercises/actions any time during the day if you are feeling anxious, angry, agitated or scared. These exercises/actions help to calm your nervous system and put you at ease.

Third
Once vagal toning exercises/actions become an established habit for you twice a day, you can now start adding other vagal exercises/actions to your daily routine. Activating and/or toning your vagus nerve calms your autonomic nervous system and puts your body into a rest-digest-heal state of being.

Toxic Buildup 4.1.3

Toxins are substances that are harmful or poisonous to the body. They can be naturally occurring like toxins produced from bacterial infections, yeast overgrown, or heavy metals (i.e. mercury or aluminum) that get into our environment, our food supply, or medications. Many toxins are man-made like herbicides, pesticides, preservatives, plastics, chemicals in household products, and air pollution. Toxins end up in our food supply when pesticides and herbicides are added to food crops, from plastic and aluminum packaging, and from preservatives and food colorings that are added ingredients.

Our food supply is not the only way toxins enter our bodies. Toxins can enter our bodies by inhaling them and via absorption through the skin. No matter how toxins enter our bodies, they all interfere with normal bodily functions and cause damage to the body. Toxins disrupt cellular communication and processes, like energy production in mitochondria. Some toxins trigger inflammation in the body. Other toxins cause cells to malfunction and mutate into cancer. These are just a few examples out of a hundred different ways toxins can damage and cause malfunction in the body.

Thank goodness the body has natural systems to eliminate toxins. Organs and organ systems that play key roles in detoxing the body include the liver, kidneys, lymph system, immune system, digestive system, lungs, and skin. The liver does most of the heavy lifting when it comes to processing and eliminating toxins from the body. Because of this, the liver can be damaged when trying to process larger amounts of toxins. You have already learned that the liver plays an important role in energy balance. It is important to take actions to minimize exposure to toxins and support the body's natural detoxification process.

In this section you are going to complete an assessment for toxic exposure, symptoms of toxic build up, and constipation. Anyone who suffers from constipation, suffers from excess retention of toxins. Because of this, it is important to assess for constipation and take action to treat constipation if it is a problem.

Self-Discovery Activity: Toxic Exposure

Below you will find a list of opportunities for toxins to enter your body. You have already learned about food preservatives and food coloring that are chemicals, which are toxic, non-food items. This list will help you discover other toxins you may be getting exposed to throughout your day. This self-discovery activity is meant to increase your awareness about toxins in your environment.

___ I drink unfiltered tap or well water or water from plastic bottles.

___ I dry-clean my clothes.

___ I work or live in a building with poor ventilation or windows that don't open.

___ I live in a large urban or industrial area.

___ I use household or lawn and garden chemicals or get my house or apartment treated for bugs by an exterminator.

___ I have more than 1–2 mercury (amalgams) fillings in my teeth.

___ I eat tuna or other large fish (swordfish, shark, tilefish) more than once a week.

I regularly consume any of the following substances or medications:

___ Acetaminophen (Tylenol)

___ Acid-blocking drugs (Tagamet, Zantac, Pepcid, Prilosec, Prevacid)

___ Hormone-modulating medications in pills, patches, or creams (the birth control pill, estrogen, progesterone, prostate medication)

___ Ibuprofen or naproxen

___ Medications for recurrent headaches, allergy symptoms, nausea, diarrhea, or indigestion

SELF-ASSESSMENT: TOXIC BUILDUP

Below you will find a list of symptoms that can occur as a result of excess toxins building up in your body. As read each symptom - consider if this describes you. Score each symptom as follows:

0 = No/Rarely 1 = Sometimes 2 = Yes/Most the time

	I urinate small amounts of dark, strong-smelling. I only urinate a few times a day.
	I rarely break into a real sweat.
	I lead a sedentary life (sit most the day and don't exercise).
	When I drink caffeine, I feel wired or experience an increase in joint and muscle Aches or have hypoglycemic symptoms (anxiety, palpitations, sweating, dizziness).
One or more times per week, I experience:	
	Fatigue
	Muscle aches
	Headaches
	Concentration and memory problems
	Nausea
	Loss of appetite
	I have had jaundice (skin and whites of eyes turning yellow) for any reason
	I have been told I have Gilbert's syndrome (an elevation of bilirubin)
I am bothered by one or more of the following:	
	Gasoline or diesel fumes
	Perfumes
	New car smell
	Fabric stores
	Dry-cleaned clothes
	Hair spray
	Soaps
	Detergents
	Tobacco smoke
	Chlorinated water

Self-Assessment: Toxic Buildup - Continued

I have a negative reaction when I consume foods containing:	
	MSG
	Sulfites - found in wine, salad bars, dried fruit
	Sodium benzoate - preservative
	Red wine
	Cheeses
	Bananas
	Chocolate
	Garlic or onions
	Alcohol in any amount
	CONSTIPATION SCREENING … Most every day - I have at least one large, soft, bowel movement without straining ☐ **YES (score 0)** ☐ **NO (score 10)**
	TOTAL SCORE

If your total score is 10 or higher, look at the actions you can take to support your body's detoxification process, found on the *Take Action: Support Natural Detox.*

Take Action: Support Natural Detox

As you read through the list below, notice actions (habits) you are currently practicing. Check the box in front of each action that is your current habit. Habits included in *Action Step One – Eat Cleaner* are in **bold type.** Actions written in GRAY font are actions you will find in Action Steps Two – Three – Four. Actions that help alleviate constipation will have a "O" instead of a "☐" in front of them.

☐ Reduce toxins in food by eating more organic foods (i.e. fruits, veggies, eggs, meat, nuts).

☐ Properly clean fresh produce to reduce and remove toxins.[1]

☐ **Avoid foods that have chemicals and food coloring listed in the ingredient list.**

☐ **Avoid foods that cause inflammation in the body (sugar, trans fats, hydrogenated oils, and high fructose corn syrup). Inflammation in the body interferes with the detoxification process.**

☐ **Practice the 3:12MealPattern.**

Take Action: Support Natural Detox - Continued

- ☐ Drink 2 to 3 cups of green tea per day. Green tea is rich in antioxidants and contains anti-inflammatory substances which help support the detoxification process.
- ○ **Get 20 to 30 minutes of aerobic exercise most days. Aerobic exercise improves function of the lymphatic system [2] and sweating from exercise helps release toxins through the pores of the skin. (Action Step 2)**
- ☐ Soaking in a hot tub of water with 1 cup of Epsom salts helps draw toxins out through your skin and sweating from the hot bath, helps release toxins through the pores of the skin.
- ☐ Practice dry brush massaging[3] which helps circulate lymphatic fluid and speeds up detox.
- ☐ Take hot cold shower[4] which help stimulate your lymph system.
- ☐ **Drink 1 ounce of water for every 2 pounds of body weight. (Action Step 3)**
- ○ Practice *Belly Button Pumping* exercise. [5]
- ○ Take a fiber supplement. Fiber supplements not only help keep a person regular, they also absorb some of the toxins in your colon and help transport these toxins out of the body.
- ○ Take magnesium citrate 400 to 500 mg before bed. Magnesium helps to relax the colon and allows stool to pass through more easily and quicker.

Next, go back through the list and notice actions (habits) that don't have checkmarks. Are there any of these actions (habits) you would be willing to adopt? Highlight each of these actions that you would be willing to adopt now or sometime in the near future. You will add these actions (habits) to your Master Goals Sheet in the **Appendix.**

NOTE 1 - Clean produce

It is important to remove toxins from raw produce before eating it. Water alone will not remove toxins from your raw produce. You can purchase produce cleaners which you spray on your raw veggies and fruit, let it set for a minute and then wash it off. Raw produce that is covered by a skin (i.e. apple, pear, potato, etc.) can be soaked in a sink with a teaspoon of Ivory soap. Soak for 5 minutes, then rub and rinse. There are also recipes for homemade produce cleaners.

NOTE 2 – Lymphatic System

Lymph nodes and lymph vessels make up the lymphatic system. Lymph glands, or lymph nodes, are small, bean-shaped organs that are part of the body's immune system. They contain lymphocytes (B-cells and T-cells) that help the body fight infection by destroying germs and abnormal cells. Lymph nodes are found throughout the body, connected by a network of lymph vessels. The lymphatic system does not have a pump to move the lymphatic fluid. It has to depend on movement of the body and contraction of the muscles to move the fluid through the lymphatic system.

The lymphatic system plays an important role in detoxification of the body. Lymph nodes remove waste products, toxins and dead cells from the body's tissues. Lymph nodes filter harmful substances like bacteria, toxins, waste products, and dead cells from the lymphatic fluid and dumps these harmful elements into the large intestine (colon) to be carried out of the body.

NOTE 3 – Dry Brush Massage
Dry brush massage improves function the of lymphatic system. Here's how to do it. You will need a soft natural bristle skin brush. You will be brushing your skin using long sweeping firm brush storks against your skin. Start at your feet and move up the legs, All brush strokes should be upward towards your heart. Repeat the process on your arms, working from hands to shoulders. For areas like the stomach and back, use gentle, circular motions. Afterward, take a bath or shower to wash away dead skin, and follow up with a moisturizer to hydrate your skin.

NOTE 4 – Hot Cold Shower
A hot cold shower helps stimulate your lymphatic system. While taking a hot shower, crank the facet over to cool for about 10 seconds then go back to hot for a few minutes. Do this a second time. After your shower, dry your arms and legs using firm stokes in the direction of your heart.

NOTE 5 - Belly Button "Pumping"
This is an excellent practice to help with digestion, lymphatic drainage, blood flow through the abdomen, and general energy flow. Belly Button Pumping stimulates vagus nerve connections between the gut and brain. Here's how to do it. Standing up – inhale. On the exhale, place your index finger and middle finger into your belly button and manually pump the belly button in and out throughout the full exhale. Inhale again and repeat. Repeat up to 5-10 times per session before meals. Practice this twice a day.

Other Things to Consider…

There are several **natural therapies** available at health spas or holistic-based clinics. Some popular effective natural detox therapies include saunas, ionic foot baths, and massages.

Purposely move throughout the day. Physical movement helps support a healthy functioning digestive tract. It tones the muscles in the gastrointestinal tract, increases circulation of nutrients to cells, stimulates removal of waste products from cells, and helps your bowels to move more regularly. The lymphatic system depends on physical movement and contraction of the muscles to move lymphatic fluid through the lymphatic system. The lymphatic system plays an important role in removal of waste products, toxins and dead cells from the body's tissues.

Break up sedentary time by **walking around every hour**. This is a specific lifestyle approach that helps combat long periods of sitting. By taking movement breaks at least once per hour, you can mitigate the harm of a sedentary lifestyle and significantly improve your overall health and well-being. Use alarms or fitness trackers to remind you to get up and move every hour.

Taking a break once an hour, from prolonged sitting, provides substantial physical and mental health benefits that help counteract a sedentary lifestyle. Key advantages include all of the following:

1. Regular short walks can significantly lower blood sugar (glucose) spikes after meals, decrease blood pressure, reducing the risk of heart disease, stroke, and type 2 diabetes. One study found that walking for five minutes every 30 minutes was the only regimen that significantly lowered both blood sugar and blood pressure compared to sitting all day.

2. Incorporating movement breaks throughout the day can significantly increase energy levels and reduce feelings of fatigue.

3. Even light activity burns calories and boosts your metabolism. Moving regularly helps burn calories and boosts your metabolism. Replacing sitting with walking can help manage weight and reduce the risk of obesity.

4. Physical activity helps stimulate melatonin production, which helps to regulate sleep patterns and can lead to falling asleep faster and experiencing deeper, higher-quality sleep.

5. Walking stimulates the release of endorphins, the body's natural mood lifters, which can help manage stress, anxiety, and depression. Participants in studies reported being in a better mood on days when they took movement breaks.

6. As a weight-bearing exercise, walking helps to maintain bone density, reducing the risk of osteoporosis and fractures. Movement also lubricates the joints, easing stiffness and pain associated with prolonged sitting.

7. Increases blood flow to the brain which improves focus, memory, and cognitive performance, while also potentially lowering the risk of dementia and Alzheimer's disease.

8. Studies consistently link regular walking to a lower risk of chronic diseases (like type 2 diabetes and certain cancers) and lower mortality rates, helping you live a healthier, longer life.

Incorporating short walks into your daily routine, even for just a few minutes every hour, adds up to substantial health gains and helps counteract the negative effects of prolonged sitting.

4.2 Body Biology Explained for Step Two

Action Step 2 is about burning more than you store. We already know that consuming more calories than the body needs will cause your body to store the extra calories as fat. That is not what this section is about. This section will focus on slow-release energy foods, increasing metabolic rate with physical activity, and taking action to manage stress.

Slow-release energy foods help the body burn more calories than they store. Quick-release energy foods activate fat storage. Highly refined grain produces, are poor quality carbohydrates, which belong in the quick-release energy group. These carbs lack nutrients and fiber. Some bodies are very reactive to poor quality carbohydrates. These folks must be super careful to avoid poor quality carbs.

You will learn how protein helps prevent fat storage and promotes fat burning. Protein plays an important role in meal sequencing, along with fiber rich foods.

Previously, you learned about many harmful effects that stress hormone has on a body's energy balance. In this session, you will learn that any physical or emotion stress causes the release of stress hormones. This includes the stress that sleep deprivation has on your body. You will assess your own stress and learn about actions you can take to reduce stress and/or diminish the effects of it.

Exercise helps the body burn more than you store. It has a positive effect on energy balance plus it uses up extra calories. We will be looking at the different kinds of exercise and how each benefits the body and supports weight loss. You will find guidance in this section to develop your own personal exercise program.

Biology Behind Slow-Release Energy Foods 4.2.1

Slow-release energy foods (like whole grains, legumes, vegetables, fruits, nuts) are digested slowly, causing a gradual rise in blood sugar and insulin levels, unlike quick-release energy foods (sugary drinks, white bread) that cause quick rises in blood sugar and high spikes in insulin levels. Slow-release energy foods reduce the demand for large insulin releases, which helps your body respond better to insulin over time, improving insulin sensitivity and reducing insulin resistance. Preventing spikes in blood sugar and insulin levels, minimizes fat storage, supports weight loss and weight maintenance, promotes fat burning, supports a higher metabolic rate and better metabolic health.

Foods that digest slowly, like slow-release energy foods, prevent rapid blood sugar spikes and crashes. This helps stabilize blood sugar, reduces insulin spikes, provides steady level of energy throughout the day, preventing energy slumps, and minimizing food cravings. Slow-release energy foods cause you to feel fuller longer and help control appetite.

Consuming slow-release energy foods and avoiding quick-release energy foods is the only way to combat the negative effects of **carb sensitivity**. You will learn about his in a few pages.

Consuming a diet loaded with slow-release energy foods is linked to lower LDL ("bad") cholesterol, reduced blood pressure, and a lower risk of type 2 diabetes, heart attack, stroke, and heart failure.

Practice Meal Sequencing 4.2.2

Research shows that eating fiber, protein, and fat before carbohydrates, helps reduce post-meal blood sugar spikes. Whenever you have high blood sugar spikes, this causes insulin levels to elevate high. We learned in Action Step 1 why it is important to take action to avoid high insulin levels. Elevated insulin levels promote fat storage and cause weight gain. That's not all. High levels of insulin increase production of free radicals which increase oxidative stress and cause damage to mitochondria. This whole process triggers inflammation and the release of stress hormone. Lastly, elevated insulin levels alter the balance of gut bacteria, leading to an increase in pro-inflammatory bacteria and gut inflammation.

A simple shift in the order you eat foods can reduce post-meal blood sugar spikes and insulin levels. This is the biggest benefits of meal sequencing. Secondly, it helps you feel more energized throughout the day. To reduce post-meal insulin levels, start with fiber, then add protein, include healthy fats, and save carbohydrates for last.

How Does Meal Sequencing Work?

When carbohydrates are eaten first, they are digested quickly and cause a rapid rise in blood glucose (sugar). Eating fiber, protein, and fat before carbs slows down digestion, creating a gentler rise in glucose and insulin levels. Slower, lower spikes in blood sugar and insulin levels improve satiety and energy levels.

Clinical studies have confirmed that eating non-starchy foods before carbs can significantly improve blood sugar and insulin response. A 2015 study found that people with type 2 diabetes had 29% lower glucose levels when they ate protein and vegetables before carbs. Healthy adults showed similar benefits in a 2019 trial, showing lower glucose and insulin levels when carbohydrates were eaten last.

How to Practice Meal Sequencing

Step 1: Start with Fiber & Healthy Fats

Eating fiber first creates a physical barrier in the stomach and slows the absorption of glucose, which lowers post-meal blood sugar and insulin levels. Non-starchy vegetables are an ideal choice and have been shown to significantly improve post-meal blood sugar/insulin levels. For example, begin meals with a salad, steamed vegetables, or vegetable soup. Aim for at least half a plate of non-starchy vegetables. Think broccoli, spinach, zucchini, cucumbers, tomatoes, lettuce, peppers, asparagus, or cauliflower.

Dietary fats further slow digestion and promote fullness. They also help with the absorption of fat-soluble vitamins. Sprinkle seeds or drizzle olive oil on salads or vegetables. Add avocado, olives, nuts, or seeds. [Learn more about healthy fats in *Action Step 3*.]

Step 2: Add Protein

Protein helps stabilize blood sugar and reduces the hunger hormone. It also increases satiety, which can prevent overeating later in the meal. Include lean protein like chicken, turkey, fish, or tofu. Eggs, Greek yogurt, and cottage cheese are good breakfast options. Plant proteins such as beans, lentils, and edamame are excellent choices. Research suggests that protein-rich meals may offer greater glycemic and hormonal benefits than meals focused solely on fiber.

Step 3: Finish with Carbohydrates

By eating carbohydrates last, your body processes them more gradually. Choose whole grains (i.e. quinoa, brown rice, millet), starchy veggies or raw fruit. If eating bread or pasta, opt for whole-grain versions and pair with vegetables and protein. This sequence significantly reduces both blood glucose and insulin by about 6% over 60 and 120 minutes.

Meal Sequencing Examples

This meal sequence works in everyday meals. You don't need a special diet plan to follow it. Here are a few ideas to give an idea of how it can work for all meals:

- Breakfast: Veggie-packed omelet (fiber and protein), avocado (fat), then whole grain toast (carb).
- Lunch: Green salad (fiber) grilled chicken (protein), olive oil-based dressing (fat), roasted sweet potatoes (carb).
- Dinner: Steamed broccoli (fiber), baked salmon (protein), olive oil drizzle (fat), brown rice (carb).
- Snack: Raw vegetables (fiber) with hummus (protein and fat), followed by a mandarin orange (carb).
- Healthy Dessert: Berries (fiber), Greek yogurt (protein), chopped walnuts (fat), drizzle of honey (carb).

Carbohydrate Sensitivity 4.2.3

What exactly is carbohydrate sensitivity? Basically, it is a mild malfunction within the pancreas, where pancreas secretes an overabundance of insulin, in reaction to the consumption of carbohydrates (any sugars or starches). This overreaction is activated when carbohydrates are eaten as the only macronutrient (no protein or fat) during a meal or snack. Consuming quick release energy carbs causes the most severe reaction. When the pancreas secretes an overabundance of insulin, it puts the body into a fat storing mode. This causes the majority of circulating glucose in the blood stream to be placed in fat storage. Lastly, the high insulin levels quickly drive down the blood sugar and puts a person at risk for experiencing a low blood sugar.

There is condition which commonly pairs up with carb sensitivity. Many people suffering from carb sensitivity also suffer from insulin resistance. If you remember from step one, insulin resistance is a condition where cells (i.e. muscles and liver) don't respond well to insulin. In response, the pancreas has to produce extra insulin to compensate for the resistance. This combination of carb sensitivity coupled with insulin resistance causes double trouble. High levels of circulating insulin puts the body into a super energy storing mode and has damaging effects on blood vessels.

Individuals who suffer from carbohydrate sensitivity, experience similar symptoms. This makes it pretty easy to assess for carb sensitivity in individuals. Thank goodness there are actions you can take to reduce the negative effects of having carb sensitivity. The first step is to know whether you have it or not. Please complete the Self-Assessment on the next page.

SELF-ASSESSMENT: CARBOHYDRATE SENSITIVITY

Below you will find a list of symptoms of carbohydrate sensitivity. As you read each symptom consider if this describes you. Carbohydrate sensitivity is something that can run in families and cause specific health issues. You will notice several statements about your family history because of this. Score each symptom as follows:

0 = No/Rarely 1 = Sometimes 2 = Yes/Most the time

	I crave sweets and eat them, and though I get a temporary boost of energy and mood, I crash later.
	I get irritable, anxious, tired, and jittery, or get headaches intermittently throughout the day, but feel better temporarily after meals.
	I feel shaky 2–3 hours after eating a meal made up of primarily starchy or sweet foods.
	It is difficult for me to lose weight.
	If I miss a meal, I feel cranky and irritable, weak, or tired.
	If I eat a carbohydrate breakfast (muffin, bagel, cereal, pancakes, etc.), I can't seem to control my eating for the rest of the day.
	Once I start eating sweets or carbohydrates, I can't seem to stop.
	If I eat fish or meat and vegetables, I feel good, but seem to get sleepy or feel "drugged" after eating a meal full of pasta, bread, potatoes, and dessert.
	I go for the bread-basket at restaurants.
	I get heart palpitations after eating sweets.
	I seem salt sensitive (I tend to retain water).
	I get panic attacks in the afternoon if I skip breakfast.
	My memory and concentration are poor.
	I get tired a few hours after eating a starchy meal.
	Eating starchy foods makes me calm.
	I get night sweats.
	I have extra weight around the middle.
	My hair thins in the places I don't want it to (my head) and it grows in the places it shouldn't (my face, if I am a woman).

Self-Assessment: Carbohydrate Sensitivity - Continued

	I have a family history of polycystic ovarian syndrome or I am infertile.
	I have a family history of high blood pressure.
	I have a family history of heart disease.
	I have a family history of type 2 diabetes, hypoglycemia, or alcoholism.
	I have chronic fungal infections (jock itch, vaginal yeast infections, dry scaly patches on my skin).
	TOTAL SCORE

If your total score is 10 or higher, look at the actions you can take to help you lower high insulin levels caused from carb sensitivity and its companion, insulin resistance. These actions are found on the *Take Action: Lower High Insulin Levels* Checklist. As you go through this checklist, you will notice that most of the actions are habits from Action Steps 1 and 2.

Take Action: Lower High Insulin Levels

This is a list of actions (habits) that helps minimize blood sugar/insulin spikes, lowers insulin levels, reduces insulin resistance and increases insulin sensitivity. As you read through the list below, check mark the box in front of actions (habits) you are currently practicing.

- ☐ Eat foods and drink beverages without HFCS [1]
- ☐ Eat foods and drink beverages without added sugars [2]
- ☐ Avoid foods and beverages with hydrogenated fats and trans fats [1]
- ☐ Practice the 3/12 meal pattern [Stop eating 3 hours before bed, 12 hours between super and breakfast] [3]
- ☐ Limit potatoes to ½ cup per day [2]
- ☐ Practice meal sequencing [Eat non-starchy veggies and protein before starch and fruit] [4]
- ☐ Avoid drinking fruit juice [2]
- ☐ Eat grain products made with 100% whole grains containing a minimum of 2 grams of fiber per serving [4]
- ☐ Avoid refined grains (white flour, denatured corn, white rice) with less than 2 grams of fiber per serving [2]
- ☐ Get involved with a fitness program that builds muscle (toning and strengthening) [3]
- ☐ Get a minimum of 30 minutes of aerobic exercise per day [3]
- ☐ Aim for around 7 – 9 hours of quality sleep per night to prevent sleep deprivation [1, 2]
- ☐ Manage stress to reduce or prevent release of stress hormones [1, 2]
- ☐ Stay hydrated - dehydration indirectly causes insulin levels to increase [2]

As you read through the list, did you notice that most of the actions (habits) are part of Action Steps 1 and 2? Hopefully by the time you are ready to move on to Action Step 3, you will be practicing all the habits on the list above.

NOTE 1 - Increases insulin resistance
NOTE 2 - Causes abnormally high insulin levels
NOTE 3 - Habit decreases insulin resistance and/or increases insulin sensitivity
NOTE 4 - Habit decreases insulin levels

What About Stress 4.2.4

Stress is a normal part of life. Life is full of events that are beyond our control. The body's stress response begins in the brain. The brain automatically begins interpreting an event, seconds into the experience. Stress happens whenever your mind and body react to some real or imagined situation. Most every event in your daily life causes some degree of stress, it is unrealistic for you to eliminate stress from your life. Situations which cause stress reactions are called stressors. Some types of stress are beneficial and other types of stress are harmful. Let's take a closer look at beneficial and harmful types of stress.

Beneficial Stress

Acute stress is a quick reaction, that enables our bodies to respond and move quickly away from something harmful. This is a beneficial stress reaction that protects you from potential harm. You actually need moderate levels of stress to help you stay alert and perform well. Beneficial stress can give a sense of achievement, satisfaction, fulfillment, meaning, and balance. This type of stress is termed eustress.

Harmful Stress

Harmful stress can cause you to feel helpless, frustrated, or overwhelmed. Prolonged stress can fatigue or damage your body to the point of malfunction or disease. This type of stress can leave you physically drained or wired beyond your ability to relax. It can take a toll on you mentally and emotionally and leave you edgy, irritable, and short tempered. It can make small tasks seem overwhelming, which heaps on more stress. Prolonged stress is also called chronic stress.

Stress Effect

The stress response is vital to survival. There are similarities and big differences in how acute and chronic stress effect the body. Both types of stress activate the release of stress hormones. Acute stress activates a quick, brief release of stress hormone while chronic stress activates a prolonged, ongoing release of stress hormones in varying amounts. See the chart on the next page to learn more about the effect of acute and chronic stress on the body.

HOW STRESS EFFECTS THE BODY

BODY SYSTEMS	ACUTE REACTION (occurs within 8 seconds)	CHRONIC RESULT (prolonged, ongoing release of stress hormones)
Immune System	Temporary decrease in immune function.	Decrease immune system function. Increase chance for cancer and immune system malfunction.
Circulation System	Heart beats harder and faster and blood vessels constrict. Blood pressure increases which increases blood flow to muscles and brain. Thought processes quicken. Muscle tension increases to result in increased strength. Blood clotting factors in blood increase in case there is a bleeding injury.	Blood pressure and pulse consistently runs high which puts stress on the heart and damages the blood vessels. Damaged blood vessels increase risk for heart attack, peripheral vascular disease and stroke. More prone to developing blood clots that can block important blood vessels in the heart, brain, lungs or legs.
Endocrine System	Liver releases extra glucose into blood stream, which increases the blood sugar and more energy is available for body and brain for increase thinking. Stress hormones change the way we produce and use cholesterol.	Liver constantly releasing extra sugar into the blood stream that is not needed. This puts extra stress on the pancreas which has to work harder to keep blood sugars within normal limits. Increases insulin resistance. Elevates blood sugars and insulin resistance, both which drive insulin levels up. Increases cholesterol in the blood stream. Fat is more prone to be stored on the abdomen. Plaque formation increases in blood vessels. Decreases testosterone levels which make it harder to build and maintain muscle. Decreases thyroid function which decreases metabolic rate.
Digestive System	Blood is diverted from stomach and intestines so it can be available for the muscles. Digestion slows considerably.	Digestive upset related to poor blood supply. Increase acid production which contributes to ulcer formation. Constipation related to slowed digestive function. Decreases satiety-hormone 1 (leptin) sensitivity which increases appetite.
Senses	Hearing becomes more acute. Pupils dilate and increase visual sensitivity.	

Chronic stress increases risk of developing health conditions. This is a list of common conditions which can be initiated and/or intensified by chronic stress:		
Allergies	Gastritis	Menstrual irregularities
Anxiety	Heart attack	Obesity[2]
Cancer	Headaches	Oxidative Stress[1]
Chronic inflammation[1]	Hypertension	Rashes
Colitis	Autoimmune disease	Rheumatoid arthritis
Constipation	Immune suppression	Spastic colon
Depression	Infections	Stroke
Diabetes	Irritability	Ulcers
	Insomnia	

NOTE 1 – Chronic inflammation and oxidative stress are primary contributing factors to a multitude of chronic diseases (i.e. diabetes, cancer, heart disease, Alzheimer's, etc.).
NOTE 2 – Chronic stress is an independent cause of obesity.

As you can see, chronic stress has a multitude of negative effects on physical and emotional health. It is because of the prolonged, ongoing release of stress hormones that chronic stress negatively impacts multiple body systems. Chronic stress worsens health issues by targeting systems which are weakened by chronic health issues. Chronic stress is an independent cause of weight gain leading to obesity due to its negative effects on the endocrine and digestive systems. Because of this, stress management is an important part of this holistic weight management program.

Stress management involves several steps:

1. Identify stressors that contribute to chronic stress.
2. Decide which stressors can be eliminated or modified.
3. Learn about and practice nutrition and lifestyle habits that help make the body more resilient under stress.
4. Learn about and practice relaxation techniques that lower stress hormones in the body.

The first step is to identify stressors that contribute to chronic stress. The self-assessment on the next page will help you do this.

SELF-ASSESSMENT: STRESS

Find out what part stress is playing in your life. React as honestly as possible to the following statements as it relates to your situation. Use this scoring system:

0 – Doesn't bother me
1 – Rarely bothers me
2 – Occasionally bothers me
3 – Sometimes bothers me
4 - Usually bothers me
5 - Always bothers me

	After leaving the job, I generally complete work at home that I have not had time for during the work day (W)
	I find it difficult to find meaning or satisfaction in my job (W)
	I continue to take on new job responsibilities without letting go of others (W)
	I often feel overwhelmed with the demands of my job (W)
	When I am under pressure, I tend to respond negatively (W)
	My job is emotionally demanding (W)
	I feel burnt out and want to change jobs/careers but seem unable to take the first step (W)
	I find it difficult to relax during work breaks/lunch (W)
	On my way to and from work, I tend to rehash the problems of the day (W)
	I feel torn between being a responsible family man/woman and being a perfect employee (W)
	I find it difficult to find any fulfillment, joy, or peace in my life (M)
	I tend to blame others for any situation I don't like (M)
	I wish I knew how to be more in control of my feelings (M)
	I find it difficult to discipline myself so I can accomplish goals I really want (M)
	I wish I felt more worthwhile and important as a person (M)
	I find it difficult to remember things (M)
	I feel restless (M)
	I would like my life to have more meaning and purpose (M)
	I want more spirituality in my life (M)
	I find it difficult to laugh at myself or see the humor in some situations like others do (M)
	I have difficulty maintaining a healthy weight (B)

Self-Assessment: Stress - Continued

	I experience muscle tightness or aching in my shoulders (B)
	I clinch and/or grind my teeth (B)
	I get frequent headaches (B)
	I get frequent colds, cold sores, viruses, and infections (B)
	I have days when I feel totally exhausted (B)
	I have trouble falling asleep and/or staying asleep (B)
	Most weeks I engage in less than 90 minutes of some form of enjoyable physical activity (B)
	I have more than 1 alcoholic drink per day (B)
	I smoke or chew tobacco (B)
Total up your Assess Stress score and add up each subgroup of the self-discovery exercise. Total_____ Work(W)_____ Mind(M)_____ Body(B)_____	

HOW TO INTERPRET YOUR TOTAL SCORE

Total Score of 0 to 30 – Great stress management! Your stress management and relaxation practices enhance your health and length of life, plus help to prevent heart disease, diabetes, and cancer.

Total Score of 31 to 60 – Good stress management! Your stress management and relaxation practices mildly enhance health and moderately help to protect you from chronic diseases.

Total Score of 61 to 90 – OK stress management! Your stress management and relaxation practices do not produce health benefits or insults to health. Your mental and physical health would benefit from taking time most every day to purposely relax.

Total Score of 91 to 120 – Poor stress management! Your lack of stress management and relaxation practices put you at risk for immune suppression, low energy, increase wear and tear on your body, and may be increasing your risk for chronic diseases. Take some time to make a list of all the things in your life that produce stress.

Is there a subgroup (work, mind, body) that contributes to your stress more than the other 2 subgroups? Make note of this. Go back through the list and put a check mark by the things that you can change.

Make a plan to start making changes, one at a time. Refer to the *Power Tools* section to find help with changing habits. Lastly, make it a priority to take time most every day to purposely relax.

Total Score of 121 to 150 – Your gross lack of stress management and relaxation is harming your health. It is putting you at risk for chronic diseases, immune suppression, low energy, mental illness, high blood pressure, high cholesterol. It is vitally important to your physical and mental health, that you develop a plan to manage stress in your life and purposely relax every day. Take some time to make a list of all the things in your life that produce stress.

Is there a subgroup (work, mind, body) that contributes to your stress more than the other 2 stress subgroups? Make note of this. Go back through the list and put a check mark by the things that you can change.

Make a plan to start making changes, one at a time. Refer to the *Power Tools* section to find help with changing habits. Make it a priority to take time every day to purposely relax. Lastly, consider that you may need to seek help from a mental health professional. Take this seriously! Your quality of life and longevity depend on it.

Manage Stress

On the next several pages you will find actions to help you de-stress, manage stress, and build resilience in your body to more effectively handle stress. If your total score from the self-assessment above is about 90, you definitely will want to spend time reading, learning, and adopting stress management practices found on the next serval pages.

Take Action: Manage Stress
This is a list of actions that help reduce levels of stress hormone in the body. Please note that actions written in Free Ink Font, are great actions to take to calm mind/body during periods of heightened stress. As you read through the list below, check mark the box in front of actions you have used to combat and manage stress.
☐ Practice deep breathing, relaxation exercises (see exercises #1, #2, and #3 below)
☐ Take a walk
☐ Use a hand exerciser [1]
☐ Eat complex carbohydrates – stimulates serotonin which sooths stressed nerves

Take Action: Manage Stress - Continued

- ☐ Find a reason to laugh (i.e. watch a funny movie, share jokes with someone) - laughter lowers stress hormones
- ☐ Get a massage
- ☐ Take a break
- ☐ Enjoy a mini-escapes (i.e. take a bubble bath, enjoy some quiet time, soak in a hot tub)
- ☐ Listen to soothing music - stimulates the relaxation response (i.e. listen to music, play music, dance to music, sing, hum, yodel)
- ☐ Write in your journal - gratitude journaling has been shown counteract the effects of stress (See Section 5.1.3)
- ☐ Talk to someone you trust
- ☐ Take a catnap
- ☐ Read something uplifting (i.e. scripture, poetry, inspirational, happy story)
- ☐ Get some sunshine – stimulates serotonin which sooths stressed nerves
- ☐ Practice kindness to others
- ☐ Be creative (i.e. paint, cook, decorate, rearrange furniture, etc.)
- ☐ Aroma therapy – enjoy great smells
- ☐ Set aside quiet time for self
- ☐ Visualize yourself relaxing in a visually pleasing, peaceful scene (See Section 5.2.3)
- ☐ Practice progressive relaxation (see exercise #4)
- ☐ Yoga stimulates the relaxation response. People who practiced yoga in conjunction with a weight loss program, lost more weight than people who did not practice yoga.
- ☐ Meditation with a positive focus stimulates the relaxation response
- ☐ Saunas stimulate the relaxation response. Saunas also increase circulation, help balance blood sugar, and promote detoxification.
- ☐ Prayer and reading the Bible have been shown counteract the effects of stress.

Read back through the list and highlight de-stress actions you might like to try.

NOTE 1 - *hand exerciser* - engaging in a rhythmic, repetitive motion that diverts the mind from stressors and has a calming, meditative effect. This physical action stimulates nerves that can help lower overall stress levels.

The relaxation response turns off genes that cause weight gain and turns on genes that cause you to lose weight. The relaxation response increases insulin sensitivity, lowers cholesterol, and improves sleep. Anything a person can do to stimulate the relaxation response will help counteract the effects of stress. Deep breathing exercises stretch the diaphragm, which activates the parasympathetic nervous system. This stimulates the relaxation response and subsequently promotes weight loss.

Exercise #1: Deflating Balloon

Pay attention to your breathing for several breaths.

1. Then, take a deep slow breath through your nose. Inhale as much air as you can and hold it for 4 seconds.
2. While you are holding your breath, become aware of the tension in your lungs. Then sense the tension in your muscles.
3. Exhale slowly through your mouth, against pursed lips. Your pursed lips should cause some resistance to your exhaling air. Feel the tension in your lungs release as you exhale. Also allow tension in your muscles to flow to your lungs and out with your exhaling breath.
4. During the exhale, your body should feel like a deflating balloon. Allow your shoulders to relax and your spine to slump as you exhale.
5. Think the word “relax” or “release” every time you exhale.
6. Repeat this breathing pattern for 1 to 3 minutes.

This breathing technique can lower stress hormone (cortisol) levels, independent of any other interventions, when it is practiced 3 to 4 times a day.

Exercise #2: Mantra Breath

The purpose of this simple practice is to bring yourself into the present moment and show yourself that you are safe, despite the emotions, beliefs, or sensations you might be experiencing. You can use any mantra you like, or use the one I love, “I Am Safe Here Right Now.” You repeat the mantra, silently to yourself, along with a steady heart centered breath pattern of 5 seconds in and 5 seconds out. Here is how to begin:

1. Breathe in a deep, regular pattern of equal breaths 5 seconds in, 5 seconds out, SLOWLY. Place your hand over your heart while breathing, and focus on your attention on your breath and your heart center.
2. You can either close your eyes or focus on a point outside of you, with a slight smile.
3. Do this for 5 breaths total.
4. Next, as you breathe…
    - inhale for 5 seconds and repeat silently, “I,”
    - exhale for 5 seconds and repeat silently “Am,”

- inhale for 5 seconds and repeat silently, “Safe,”
- exhale for 5 seconds and repeat silently “Here,”
- inhale for 5 seconds and repeat silently, “Right,”
- exhale for 5 seconds and repeat silently “Now.”

Repeat 3 times or more times. This is a great exercise to use to alleviate middle-of-the-night anxiety attacks.

Exercise #3: Supportive Touch

One easy way to care for and comfort yourself when you’re feeling stressed is to give yourself supportive touch. Touch activates the vagus nerve to help us calm down and feel safe. It may feel awkward or embarrassing at first, but your body doesn’t know that. It just responds to the physical gesture of warmth and care, just as a baby responds to being cuddled in its mother’s arms. Our skin is an incredibly sensitive organ. Research indicates that physical touch releases oxytocin, provides a sense of security, soothes distressing emotions, and calms cardiovascular stress.

When you notice you’re under stress, take 2-3 deep, slow, cleansing breaths. Gently place your hand over your heart, feeling the gentle pressure and warmth of your hand. If you wish, place *both* hands on your chest, noticing the difference between one and two hands. Feel the touch of you hand on your chest. If you wish, you could make small circles with your hand on your chest. Feel the natural rising and falling of your chest as you breathe in slowly and as you breathe out slowly.

Linger with the feeling for as long as you like. Hopefully you’ll start to develop the habit of physically comforting yourself when needed, taking full advantage of this surprisingly simple and straightforward way to calm to yourself.

Exercise #4: Progressive Relaxation

Find a quiet, comfortable place to lie down. Loosen tight clothing. Quiet your mind. Take two deep, cleansing breaths. Now you will begin a progression of tense muscle groups and release tension in the following order:

1. Tense the muscles in your left foot/ankle/calf and hold this for 5 seconds. Let go of the muscle tension and as you do feel your lower leg become heavy, sinking into the floor, relaxed. Continue to experience this relaxed heaviness for a minute before moving onto the left thigh.
2. Tense the muscles in your left thigh and hold this for 5 seconds. Let go of the muscle tension and as you do feel, your upper leg become heavy, sinking into the floor, relaxed. Continue to experience this relaxed heaviness for a minute before moving onto the right foot/ankle/calf.

3. Tense the muscles in your right foot/ankle/calf and hold this for 5 seconds. Let go of the muscle tension and as you do, feel you lower leg become heavy, sinking into the floor, relaxed. Continue to experience this relaxed heaviness for a minute before moving onto the right thigh.
4. Tense the muscles in your right thigh and hold this for 5 seconds. Let go of the muscle tension and as you do, feel your upper leg become heavy, sinking into the floor, relaxed. Continue to experience this relaxed heaviness for a minute before moving onto the abdomen/back.
5. Tense the muscles in your abdomen/back and hold this for 5 seconds. Let go of the muscle tension and as you do, feel your abdomen/back become heavy, sinking into the floor, relaxed. Continue to experience this relaxed heaviness for a minute before moving onto the left hand/wrist/forearm.
6. Tense the muscles in your left hand/wrist/forearm and hold this for 5 seconds. Let go of the muscle tension and as you do, feel your lower arm become heavy, sinking into the floor, relaxed. Continue to experience this relaxed heaviness for a minute before moving onto the left upper arm.
7. Tense the muscles in your left upper arm and hold this for 5 seconds. Let go of the muscle tension and as you do, feel your upper arm become heavy, sinking into the floor, relaxed. Continue to experience this relaxed heaviness for a minute before moving onto the right hand/wrist/forearm.
8. Tense the muscles in your right hand/wrist/forearm and hold this for 5 seconds. Let go of the muscle tension and as you do feel your lower arm become heavy, sinking into the floor, relaxed. Continue to experience this relaxed heaviness for a minute before moving onto the right upper arm.
9. Tense the muscles in your right upper arm and hold this for 5 seconds. Let go of the muscle tension and as you do, feel your upper arm become heavy, sinking into the floor, relaxed. Continue to experience this relaxed heaviness for a minute before moving onto the neck/face.
10. Tense the muscles in your neck/face and hold this for 5 seconds. Let go of the muscle tension and as you do, feel your neck/face become heavy, sinking into the floor, relaxed. Continue to experience this relaxed heaviness for a minute.

Continue to remain in this heavy, relaxed state for 5 to 10 minutes. You may even slip into a light stage of sleep. When you are ready to awake, say to yourself, “I am completely relaxed and refreshed.” Stretch and flex muscles in your arms, legs, back, abdomen, face and neck.

Take Action: Build Resilience

This is a list of nutrition and lifestyle habits (actions) that help build resilience and protect bodies from the negative effects of chronic stress. As you read through the list below, check mark the box in front of habits (actions) you are currently practicing to build resistance to chronic stress.

- ☐ Eat a balanced, nutrient dense, whole-foods diet [1]
- ☐ Take a Vitamin B complex with zinc [2]
- ☐ Take vitamin C 1000 to 3000 mg daily [3]
- ☐ Try to get 30 minutes of aerobic exercise 5 days per week [4]
- ☐ Get 7 to 9 hours of quality sleep per night. Get at least 7 hours of restful sleep per night (see section 4.2.5)
- ☐ Practice optimism [5]
- ☐ Lavender has calming, stress relieving properties
- ☐ Schedule regular quiet time for yourself weekly
- ☐ Enjoy a hobby
- ☐ Play a musical instrument
- ☐ Express yourself writing (i.e. poetry, journaling, stories) or with movement (i.e. dance, martial arts, yoga, etc.)
- ☐ Learn something new
- ☐ Join a group (i.e. crafts, bible study, golf league, coffee group, etc.)
- ☐ Take time for recreation and leisure activities
- ☐ Start a collection of something you appreciate
- ☐ Pamper yourself (i.e. get your hair fixed, get a facial or manicure, etc.)
- ☐ Get involved with things that have meaning to you
- ☐ Socialize at gatherings
- ☐ Record memorable experiences
- ☐ Set aside regular periods of time for self-reflection
- ☐ Enjoy cultural enrichment (i.e. go to concerts and plays)
- ☐ Have a pet

Read back through the Build Resilience list (on the previous page) and highlight actions you might like to try to help build up your resilience to stress.

NOTE 1 -A balanced, nutrient dense, whole-foods diet will help keep your body built up and increase resilience against chronic stress. A whole-foods diet supplies your body with an ample supply of vitamins, minerals, phytonutrients, and fiber. Fiber sooths our intestinal tract and helps combat the negative effects of chronic stress inflicted on the intestines.

NOTE 2 - B vitamins are one of the most important stress busters. They help to blunt some of the damaging effects of chronic stress. They help the body to be more resilient during stress. These B vitamins include B1 (thiamin), B3 (niacin), B5 (pantothenate), B6 (pyridoxine), B9 (foliate), and B12 (cobalamin). This is a group of vitamins that you do not want to be lacking during periods of stress. Zinc plays a key role in adrenal gland health. The adrenal gland is better able to regulate stress hormone production when it is supported with an adequate supply of zinc.

NOTE 3 - Our body uses extra vitamin C when we are stressed, which lowers our levels of vitamin C. Vitamin C is in needed for the production of an anti-stress hormone called norepinephrine. When we have adequate levels of vitamin C in our bodies, we are able to excrete excess stress hormones in our urine and produce adequate amounts of norepinephrine.

NOTE 4 – Regular aerobic exercise produces a multitude of health benefits, which includes helping protect the body from stress in several different ways. During aerobic exercise, the body processes stress hormones more efficiently so they don't hang around causing problems in the body as long. Aerobic exercise builds the body up so it is more resistant to the negative effects of chronic stress. Mood enhancing hormones are produced and released during aerobic exercise, which helps **stress to be less stressful** on an emotional and mental level. To learn more about aerobic exercise, go to (See Section 4.2.6)

NOTE 5 - Practice optimism. Optimism has a calming effect on the stress reaction plus diminishes the severity of the stress reaction. This translates to less severe negative effect from chronic stress. It is been shown that people who practice optimism actually change the part of the brain which initiates the stress reaction. Purposely focus on positive things happening in your life. Look for the bright side of situations. Seek out opportunities to laugh and be inspired. Think positive!

What About Sleep Deprivation 4.2.5

We just finished taking a close look at how chronic stress affects our overall health and weight loss efforts. We saw that getting adequate, quality sleep is one of the habits listed on the *Take Action: Build Resilience*. Sleep is an important time of rejuvenation for your body to repair itself from the damaging effects of stress and help your body to be more resilient against the effects of stress.

Quality sleep can reduce stress and improve your overall mood and emotional resilience. Studies have found that lack of sleep can actually interfere with our ability to regulate stress. Poor sleep has been shown to throw off normal production of stress hormone (cortisol). Getting consistent, high-quality sleep promotes a healthy stress response.

Quality sleep is one of the six pillars of optimal health. No matter how well you eat, exercise, or supplement, quality sleep cannot be replaced in the pursuit of wellness. During sleep, the body repairs and regenerates tissues. Human growth hormones (HGH) are released during sleep. Normal HGH levels are essential for well-being. It helps maintain and repair healthy tissue in the brain and other organs, supporting overall body structure. HGH helps increase calcium retention and promotes bone density, reducing the risk of conditions like osteoporosis in adulthood. It contributes to increased muscle mass and decreased body fat in both children and adults. HGH helps regulate how the body uses energy by influencing the metabolism of carbohydrates, proteins, and fats. It increases protein synthesis and fat breakdown.

Sleep helps your body fight off illness by boosting the immune system. Consistent good sleep has been found to lower the risk of heart disease and stroke.

Your brain forms new pathways for learning and memory during sleep. Quality sleep improves problem-solving and decision-making skills. It increases attention, focus, and creativity. Good sleep increases productivity at school and work. It is critical for consolidating and storing memories. Quality sleep ensures adequate production of a special hormone that activates the "self-control" and "motivation" areas of the brain.

Adequate sleep plays a role in weight management. Getting consistent, restorative sleep boosts metabolism, and can actually help you maintain high energy levels throughout the day! Good sleep can help maintain healthy blood sugar levels. It can enhance exercise performance and aid in athletic recovery. Improving physical performance and function makes physical activity more enjoyable and decreases risk of injury.

Research has shown that people need at least seven and up to nine hours of sleep for optimal health. Every hour of sleep between 9 p.m. and midnight is equivalent to two hours of sleep quality after midnight. Quality sleep is restful, restorative and leaves you feeling refreshed upon waking. It involves falling asleep quickly, staying asleep with minimal interruptions, and cycling through all sleep stages, including deep, restorative sleep. Complete the *Self-Assessment: Sleep* to see how well you are doing with getting quality sleep.

Self-Assessment: Sleep	
Below you will find a list of statements describing signs of quality night's sleep. As you read each sign consider if this describes you. Score each statement/sign as follows: 0 = No/Rarely 1 = Sometimes 2 = Yes/Most the time	
	I fall asleep in 30 minutes or less after climbing in bed.
	I wake up 1 time or less during the night (18-64 years of age).
	I wake up 2 times or less during the night (65 years of age +).
	If I awake during the night, I fall back to sleep in 20 minutes or less (18-64 years of age).
	If I awake during the night, I fall back to sleep in 30 minutes or less (65 years of age +).
	I sleep at least 7 hours during the night (i.e., 7 out of 8 hours spent in bed).
	I wake up feeling energized and restored, not groggy or fatigued.

If your total score is 8 or lower, look at the actions you can take to help improve your quality of sleep. These actions are found on the *Take Action: Improve Sleep Quality* Checklist. First, take a few minutes to learn about how sleep deprivation harms your healthy and interferes with successful weight loss.

Sleep Deprivation Roadblocks Weight Loss

It is encouraging to learn about the many benefits of getting at least 7 hours of consistent good quality sleep. If you are not getting consistent quality sleep, it is equally important that you understand the negative consequences of sleep deprivation. Sleep deprivation is a condition characterized by inadequate or insufficient sleep sustained over a period of time. It occurs when an individual consistently fails to obtain the amount of sleep that they need. Poor sleeping habits, fragmented sleep, insomnia, and sleep apnea are all things that can cause sleep deprivation.

Sleep deprivation roadblocks successful weight loss and can independently cause unwanted weight gain which can lead to obesity. It increases food cravings, increases stress hormone (cortisol), decreases satiety hormones, and increases hunger hormone levels. Insufficient sleep affects your ability to make mindful decisions about food that leads to increased cravings for high-calorie and sugary snacks. It is linked to overeating, increased consumption of simple carbohydrates, and a lower consumption of vegetables, fruits, and whole grains.

Sleep deprivation elevates stress hormone (cortisol) levels. This activates a negative domino effect:

- Elevated cortisol levels increase insulin levels

- Elevated cortisol decreases insulin sensitivity of tissues, so more insulin production is required
- Elevated cortisol increases insulin resistance, so more insulin production is required
- Elevated cortisol promotes fat storage
- Elevated cortisol interferes with sleep patterns, leading to insomnia and the release of more stress hormones
- Elevated cortisol stimulates the appetite, leading to excess caloric intake
- Elevated cortisol contributes to anxiety, depression, and irritability which can all lead to lack of motivation, over eating and excess caloric intake
- Elevated cortisol slows down digestion, leading to constipation and retention of toxins causing toxic build up in the body and inflammation in the large intestine

Sleep deprivation reduces human growth hormone (HGH). Low levels of HGH contributes to decreased muscle mass and increased body fat. It causes a dysregulation in how the body uses energy by causing a disruption in the metabolism of carbohydrates, proteins, and fats. Low HGH levels decreases protein synthesis and fat breakdown. These things all negatively impact weight loss efforts.

Elevated cortisol levels create body-wide inflammation. When combined with lowered HGH levels, this action is enhanced and inflammation throughout the body multiplies. Inflammation causes more stress hormone to be released.

Staying physically active is an important part of a successful weight loss program. Sleep deprivation decreases physical performance, delays recovery, and makes exercise feel like hard work. It takes even longer for your body to heal from physical strain. A 2024 study shows that sleep deprivation impairs motor skills, coordination, and balance. This increases your risk of injury during exercise, sports, or just living your life.

You should be able to fall asleep within 30 minutes after going to bed and be able to sleep with minimal waking for 7-9 hours continuously. It is vital that you take this seriously.

Take Action: Improve Sleep Quality

This is a list of habits (actions) that help promote quality sleep. As you read through the list below, check mark the box in front of habits (actions) you are currently practicing to help promote quality sleep.

- ☐ Unplug or turn off your WiFi each night before bed. [1]
- ☐ Go to bed at the same time each night and wake up at the same time (7 to 9 hours later) each morning. Minimize deviation from these times by no more than be thirty minutes. [2]
- ☐ Sleep on a comfortable mattress, use a pillow that is comfortable for your head and neck, and use enough blankets to keep your body temperate warm, but not too warm.
- ☐ Sleep in a dark room with all lights turned off or turned away from the bed (i.e. digital clock faces). [3]
- ☐ Turn off noise that would distract you. Consider wearing earplugs to bed to block out noise.
- ☐ Keep the room between 65-70 degrees F. as this improves sleep quality. [4]
- ☐ Start unwinding an hour before bed (i.e. take a bath, read a book, write in your journal, etc.).
- ☐ Practice gratitude. [5]
- ☐ Adopt a nighttime meditation. [6]
- ☐ Drink 8 ounces of water 90 minutes before bed and leave a glass of water near your bed in case you wake up thirsty. [7]
- ☐ Naturally help relax the body with a cup relaxation tea prior to bed - herbs like chamomile, passionflower and valerian root induce sleepiness.
- ☐ Eat an evening meal made up of protein, healthy fats, and slow-release energy foods. [8]
- ☐ Walk barefoot outside on grass, dirt or sand to ground your body to the earth. [9]
- ☐ Go outside early in the morning and expose yourself to sunlight. [10]

Read back through the list and highlight sleep improvement actions you might like to try.

NOTE 1 - Artificial electromagnetic frequency (EMF) stress, from WiFi, has a negative effect on the body's stress response. It can throw off our cortisol/melatonin rhythms and alter key neurotransmitters. Some people are barely affected by artificial EMF, while others are much more sensitive. If you are having trouble getting restful sleep, try unplugging or turning off your WiFi before bed. It can improve quality of sleep and restfulness.

NOTE 2 - Bodies have a natural 24-hour cycle that regulates physical, mental, and behavioral changes, primarily the sleep-wake cycle, called the circadian rhythm. The circadian rhythm is the fluctuation between cortisol (a stimulating hormone) and melatonin (a sleep-inducing hormone). This rhythm relies on a number of cues like sunlight, food, physical activity, and previous rhythm patterns. Because of this rhythm, it is important to stay consistent with your sleep and wake schedule. This way, your hormones will follow a similar pattern each day. This will make your sleep patterns more consistent and restorative.

NOTE 3 - In the absence of light, a special gland in the brain produces melatonin. Melatonin is known as the regulator of the sleep wake cycle in the body. It monitors sleep cycles while playing an important role in healing and anti-oxidant protection. Any sort of light can interfere with normal melatonin production and negatively affect sleeping patterns. Turn off all lights, turn your alarm clock away from you and close the blinds. Consider using an eye mask to cover your eyes and maximize your melatonin secretions.

NOTE 4 - When you fall asleep your body temperature homeostasis (temperature your brain is trying to achieve) goes down. If the room temperature is too cold or too hot it can cause stress on the system and disrupt sleep. The typical range that works best is between 65-70 degrees F. Additionally, using a fan can be extremely helpful to improve air flow and make the room more comfortable.

NOTE 5 - Many individuals allow fear, worry and anxiety to disrupt sleep cycles. Practicing gratefulness allows the body to relax more effectively and sleep better. Keep a gratitude journal and write down three things you are genuinely grateful for that day. Creating a gratitude ritual will improve your sleep quality and give you peace of mind.

NOTE 6 - Nighttime meditation has also been proven to lower stress levels, fight insomnia and improve sleep quality. By focusing on your breath and clearing your head, you're better able to focus on the present instead of stressful future or past events. A nighttime meditation routine can take as little as 1 to 5 minutes to practice. The Head-Heart-Belly Self-Presenting & Hold is one of many relaxation-breathing-meditations you can practice:

- Place one hand on your forehead and one hand on your upper chest
- Keep both hands in this placement as you breath evenly and easy
- Wait until you experience a shift in your state of relaxation
- Then move your hand from forehead onto the belly
- Stay in this position till you experience another shift

This is great medication to do at night when you cannot sleep. There are many other breathing and relaxation exercises you can use, found in sections 4.1.2 (gut inflammation) and 4.2.4 (stress).

NOTE 7 - You want to ensure that your body is properly hydrated when you go to bed. Dehydration will increase stress hormones and disrupts sleep while too much hydration will fill the bladder and lead to bathroom breaks during the night.

NOTE 8 - If you consume a meal high in quick-release energy foods and sugars before bed, this can result in a spike in blood sugar, followed by a subsequent blood sugar crash (low). It is this crash that often wakes people up in the middle of the night. Evening meals that support quality sleep are made up of protein, healthy fats, and slow-release energy foods.

NOTE 9 - In our society we are surrounded by toxic artificial EMF's. These artificial EMF's negatively affect our brain chemistry, neurotransmitter secretions and stress response. By going outside daily and walking barefoot on grass, dirt or sand you absorb natural EMF's from the ground that balance your electrical rhythms.

NOTE 10 - You have heard about the hormone in the brain that is released at night to help you sleep called melatonin. Darkness is what stimulates its release in the brain at nighttime. What many of people don't understand though is that melatonin works in a very predictable rhythm within us. It spikes at night before bedtime and naturally tapers off until it bottoms out by the time we wake up in the morning. Something that many of us overlook is that exposure to sunlight early in the morning can actually help properly align the natural rhythm of melatonin and help us sleep at night.

Studies have shown that consistent exposure to sunlight during the day, and especially upon waking up, can increase the production of the happy hormone (serotonin) which is an important factor in melatonin production at night. Early-morning sunlight exposure also helps your body understand when to naturally produce a spike in cortisol which works in rhythm with melatonin to regulate your sleep-wake cycle. In other words, cortisol wakes you up in the morning and melatonin helps you fall asleep at night.

Get outside early in the morning and expose yourself to sunlight. For maximum benefit, leave the sunglasses inside the house, because sunglasses disrupt sunlight from reaching important photoreceptors in your eyes. This lines up our 24-hour biological clocks and will set you up for a natural release of melatonin at night.

Sleep Apnea

Severe snoring, headaches, fatigue, and holding your breath while asleep can all be symptoms of sleep apnea. Sleep apnea affects more than 22 million Americans and can be fairly serious if left untreated.

The most common type, obstructive sleep apnea, occurs when the throat muscles relax during sleep, causing breathing to start and stop throughout the night. Not only does this contribute to bad sleep, but these sudden drops in oxygen levels can lead to high blood pressure and even serious heart issues or stroke.

One way to discover if sleep apnea is an issue for you, is to participate in a sleep study. This is where your breathing, heart rate, and neurological activity are monitored during sleep to identify potential disruptions. Many forms of sleep apnea can be improved with lifestyle strategies. More severe forms may require the use of a special machine that keeps the airways open, such as a CPAP.

Are you curious what the symptoms of sleep apnea are? Are you wondering if you may have sleep apnea? Complete the *Self-Assessment: Sleep Apnea* to find answers to these two questions.

Self-Assessment: Sleep Apnea

Below you will find a list of statements describing symptoms of sleep apnea. As you read each symptom consider if this describes you. Circle 'YES' for each statement/symptom that describes you and 'NO' for each statement/symptom that does not describe you.

YES NO	I snore loudly.
YES NO	I often feel tired, fatigued, and sleepy during the daytime.
YES NO	I am being treated for high blood pressure.
YES NO	My body mass index (BMI) of 35 or higher.
YES NO	I am older than 50 years of age.
YES NO	My neck circumference 16 inches or more.
YES NO	I am a male.
	TOTAL – How many times did you answer YES?

If your YES total is 0-2, you have a low risk for sleep apnea. If your YES total is 3-4, you have an intermediate risk for sleep apnea – recommend discussing this with your doctor. If your YES total is 5-7, you are at high risk for sleep apnea – recommend talking to your doctor about getting tested for sleep apnea.

Physical Activity 4.2.6

Physical activity is built into the body's blueprint for health. There are 4 main types of physical activity included in our blueprint for health:

- Stretching and flexibility
- Resistance training
- Aerobic activity
- Lifestyle activity

Each type of physical activity has health supporting benefits. Let's explore each type of physical activity and benefits associated with each one.

Flexibility

Flexibility refers to the ability of a joint to move through its full range of motion without pain. Exercises designed to develop flexibility are typically called stretches. Stretching increases muscle length and reduces muscle stiffness, increases joint range of motion, improving flexibility and joint mobility.

The most common types of stretching are static stretching and dynamic stretching. **Static stretching** is the most common type, involving slowly moving a muscle to its stretched position (a mild tension is felt) and holding it for a sustained period (usually 30 to 60 seconds). This is often done during the cool-down period after exercise. **Dynamic stretching** involves active movements that take a joint through its full range of motion without holding a position. Typically it is used during the warm-up period before exercise to prepare muscles for activity.

Proprioceptive neuromuscular facilitation stretching (PNF stretching) is a technique that involves contracting a muscle before stretching it, often using a partner to provide resistance, resulting in deeper stretching.

Yoga also significantly improves flexibility by engaging multiple muscle groups through controlled movements.

Health Benefits of Stretching and Flexibility Exercises

Here is a list of health benefits reaped from performing stretching and flexibility exercises several times a week. As you read through this list, highlight benefits that you would like to experience:

1. Stretching helps **prevent injuries** by lengthening muscles and improving joint mobility. This action reduces muscle strains and pulls, which are common causes of injuries during physical activity.

2. Greater flexibility allows for a wider range of motion, which can **improve performance** in sports and other physical activities.
3. Regular stretching can help alleviate muscle tightness and stiffness, which can lead to **reduced aches and pains** in the body.
4. Flexible muscles help maintain proper alignment, leading to **improved posture**.
5. Stretching can improve neuromuscular coordination, which contributes to **better balance and stability**, and reduces falls.
6. Stretching can promote relaxation and **reduce stress levels** by calming the nervous system.
7. When muscles are stretched, **blood circulation improves**, delivering more oxygen and nutrients to the muscles.
8. Good flexibility is important for performing everyday tasks like reaching, bending, and lifting. This **improves functional ability.**

Here are several keys to stretching safely and getting maximum results:

1. Always warm up your muscles before stretching to prevent injury.
2. Stretching should be pain-free. Only stretch to a point of mild discomfort. Stop if you feel sharp pain.
3. Focus on major muscle groups. Target areas like hamstrings, quads, calves, shoulders, and lower back.
4. Consistency is the key to reaping positive results. Practice flexibility exercises most every day for optimal benefits.

Resistance Training

Toning and strength training are known as resistance training. This type of exercise causes muscles to contract against an external resistance (i.e. weights, bands, or body weight). Resistance training builds muscle mass, increases strength, and improves endurance of muscles.

Resistance training that builds muscle bulk in addition to strength, is accomplished with weightlifting. Weight lifters use weights like dumbbells or barbells or weight machines to increase strength and muscle size. This is accomplished with heavier weights that fatigue muscles within 6 to 10 reptations per set.

Resistance training that focuses on toning muscles, increases muscle endurance, strength, and develops lean physique. There are four types of exercises you can do to accomplish toning.

- Bodyweight exercises using your own body weight to exercise, such as push-ups, pull-ups, sit-ups, lunges, squats, and abdominal crunches. These types of exercises are also called calisthenics.
- Pilates primarily increase core muscle tone, which include abdominal, back and buttocks.

- Isometric exercises are strength training techniques involving static muscle contractions without movement of the involved joints or changes in muscle length. They are performed by holding positions against resistance (like gravity or a wall).
- Lifting light weights and performing 30 or more repetitions per set will tone muscles.

Resistance Training Produces Multiple Health Benefits

Here is a list of health benefits reaped from performing resistance training for a minimum of 20 minutes, 2 to 3 times a week. As you read through this list, highlight benefits that you would like to experience:

1. Resistance training that increases muscle mass, increases amount of **mitochondria**, which **increases metabolic rate**.
2. Strength training can increase **bone density** and reduce the risk of osteoporosis.
3. Strength training can help you **lose weight** and/or maintain a healthy weight by **increasing your metabolism.**
4. Strength training can help **reduce the symptoms of chronic conditions** like arthritis, heart disease, and diabetes.
5. Strength training can improve your balance and flexibility, which can help you avoid falls and **prevent injuries**.
6. Strength training can **improve your range of motion**, which can help you move more easily.
7. Strength training can help you develop **good posture** and **relieve back pain**.
8. Strength training can help you **fall asleep faster** and **stay asleep longer**.
9. Strength training can **boost your mood** and **self-confidence**.
10. Strength training can **increase your energy levels**.
11. Some research suggests that strength training **can improve thinking** and **learning skills**. Other studies have proven that the mass (size) of large muscle groups (i.e. thighs or butt muscles) correlates with the **amount (volume) of brain tissue** in mature people.
12. Strength training can improve the **health of your organs**.

Starting an exercise routine safely is crucial, especially if you've been inactive for a while or have existing health conditions. We will cover this after reviewing aerobic activity.

Aerobic Activity

Aerobic activity is when you get your body moving continuously for a set period of time. You must be moving fast enough that your heart is beating harder and faster, and you breath deeper and faster. However, you should be able to carry on a conversation.

Aerobic activity has tons of benefits. It enhances the health of your whole body. Once you learn about all of its benefits, you will understand why it is said that physical activity is an important part of the blueprint for health. I want to first tell you how it helps you get your energy balance back in whack.

Aerobic Activity Helps Get Your Energy Balance Back in Whack

There are a multitude of ways that aerobic exercise helps you lose weight. As you read through these lists, highlight benefits you would like to experience:

1. Increases energy levels, endurance and stamina (you can keep going longer without getting tired);
2. After 20 minutes of aerobic activity, your body starts burning stored fat for energy;
3. Makes your body's internal furnace burn hotter and use up more energy;
4. Helps your body use the food you eat for energy instead of storing it;
5. Regulates your appetite so you are less likely to want to overeat;
6. Makes you want healthier food to eat to support your active body;
7. Improves quality of sleep so you feel more rested and energized;
8. Taking a walk 60 to 90 minutes after eating a meal is particularly effective for managing blood sugar levels.

These 8 benefits obviously support weight loss. There are several more benefits that indirectly support weight loss:

1. Increases dopamine which increases self-control;
2. Increases serotonin levels, which helps suppress appetite;
3. Aerobic activity can turn off genes that predispose you to insulin resistance and obesity;
4. Aerobic activity stimulates thyroid function and increases tissue sensitivity to thyroid hormones which increases metabolic rate;
5. Aerobic activity has a powerful anti-inflammatory effect and therefore helps diminish the effects of inflammation and inversely lowers stress hormone;
6. Regular, aerobic activity is associated with a reduced overall stress response, improved regulation of stress hormones, and lower spikes of stress hormones in response to psychological stressors.
7. Aerobic activity helps support a healthy functioning digestive tract. It tones the muscles in the gastrointestinal tract, increases circulation of nutrients to cells, stimulates removal of waste products from cells, and helps your bowels to move more regularly. These positive effects help increase release of toxins from the body and decrease gut inflammation. You learned how toxins and gut inflammation roadblock weight loss in subsections 4.1.2 and 4.1.3.

Aerobic Activity Helps the Brain Work Better

1. Increases blood flow and oxygen to the brain;
2. Increases creativity;
3. Increases problem solving abilities;
4. Improves memory;
5. Increases alertness and ability to think clearly;
6. Increases ability to concentrate.

Aerobic Activity Helps Keep Bones & Muscles Strong

1. Increases muscle strength and endurance (can keep moving longer without getting tired);
2. Increases flexibility and coordination;
3. Strengthens bones.

Aerobic Activity Improves Heart & Lung Function

1. Strengthens heart muscle and improves heart function;
2. Decreases blood pressure;
3. Increases lung volume and improves lung function;
4. Increases blood supply & oxygen throughout the body;
5. Decreases cholesterol and triglyceride levels and increases HDL (good cholesterol).

Aerobic Activity Helps You Stay Healthy

1. Helps body heal quicker from injury or illness;
2. Helps you stay healthy during cold and flu season by stimulating your immune system;
3. Helps food digest better and prevents constipation;
4. Makes you want healthier food to eat to support your active body;
5. Improves quality of sleep so you feel more rested and energized;
6. Helps skin to be healthier and clearer;
7. Decreases risk of heart disease, diabetes, and cancer.

Aerobic Activity Helps You Feel Happier And Relaxed

1. Helps you have a brighter outlook and think more positive thoughts about yourself, your life and others;
2. Uplifts emotions and stabilizes mood swings;
3. Natural release from bad feelings, anxiety and anger;
4. Increases self-acceptance and self-image;
5. Increases self-esteem and self-confidence;
6. Helps relieve mild to moderate depression;
7. Improves your ability to handle stress;
8. Increased sense of well-being;
9. Increased life enjoyment.

In order to reap all these benefits, a person needs a minimum of 30 minutes of aerobic activity, 5 days per week. Starting an exercise routine safely is crucial, especially if you've been inactive for a while or have existing health conditions.

LIFESTYLE ACTIVITIES

Lifestyle activity is movement that is part of everyday activities. It is movement that is needed to take care of our responsibilities and enjoy ourselves. It refers to movement that is part of our daily routine, like taking the stairs, walking the dog, gardening, or doing chores. Lifestyle activity is about finding opportunities to move more during work, errands, and leisure. It can be intentional (taking 1 minute walk every hour) or spontaneous (dancing during a commercial). It focuses on accumulating short bursts of moderate activity throughout the day, making movement a consistent part of life.

Health Benefits of Lifestyle Activity

Purposely moving more throughout the day, via a variety of lifestyle activities, helps counteract the negative effects of prolonged sitting and adds up to substantial health benefits. As you read through this list, highlight benefits you would like to experience:

1. Incorporating movement breaks throughout the day can significantly increase energy levels and reduce feelings of fatigue.
2. Moving regularly helps burn calories and boosts your metabolism. Replacing sitting with moving around can help manage weight and reduce the risk of obesity.
3. Frequent movement increases blood flow to the brain which improves focus, memory, and cognitive performance, while also potentially lowering the risk of Alzheimer's disease and dementia.
4. Physical movement stimulates the release of endorphins, the body's natural mood lifters. This can help manage stress, anxiety, and depression. Participants in studies reported being in a better mood on days when they took frequent movement breaks.
5. Physical activity helps stimulate melatonin production, which helps to regulate sleep patterns and can lead to falling asleep faster and experiencing deeper, higher-quality sleep.
6. Weight-bearing exercise helps to maintain bone density, reducing the risk of osteoporosis and fractures. Movement also lubricates the joints, easing stiffness and pain associated with prolonged sitting.
7. Regular physical movement helps support a healthy functioning digestive tract. It tones the muscles in the gastrointestinal tract, increases circulation of nutrients to cells. It stimulates removal of waste products from cells and helps your bowels to move more regularly.

The chart on the next page will help give you ideas on how you can get moving more and reap all the wonder benefits that we have just discussed during this subsection.

Lifestyle Activity

Movement in our lives needed to take care of our responsibilities and enjoy ourselves.

House cleaning	*Rollerblading	*Jump on trampoline
Vacuum	Skateboarding	*Jump rope or Skip
Mopping	Yoga	Downhill skiing
Fold and put away laundry	*Exercise class	Sledding
Wash windows	*Dance class	Rock climbing
Take the stairs	Volleyball	*Adventure hiking
Walk part way to work or store	*Tennis	Geocaching
Talk a walk with a friend	Baseball	*Rowing canoe
Explore the outdoors	Badminton	Waterskiing or Tubing
Dance around the house	Croquet	Hunting
Raking leaves	*Racket ball	Stream fishing
Yard work	Table tennis	_____
Gardening	Kickball	***NOTE** – This lifestyle activity can be aerobic activity if:
*Push mower	Hula hoop	1-Your body stays in continuous motion for a set period of time;
*Shovel snow	Hopscotch	2-It makes you breathe faster & harder;
Home projects - painting, wash/wax the car, build fence	Bowling	3-It makes your heart beat faster;
Hobbies - woodworking, pottery, rock hunting	Gymnastics	4-It makes you sweat.
	*Golf	
	Horseback riding	

Aerobic Activity

Puts your body in continuous motion for a set period of time. It causes you to breathe harder and faster, and makes you sweat.

Get Moving Outside ….	**Get Moving Inside ….**
Brisk walking	Use exercise equipment
Hiking	Walk on an indoor track
Jogging	Exercise or dance DVD
Bike riding	Wii or Xbox exercise program
Swimming	Mini tramp
Cross country skiing	Stationary bike
Basketball	Treadmill
Football	Stepper
Soccer	March in place
Cross country running	Dance to your favorite tunes

Cut Down on Inactivity

-- Watching TV
-- Playing sedentary video and computer games
-- Sitting for more than 60 minutes at a time

Muscle Strengthening Activity

Causes muscles to contract against an external resistance to build strength and muscle size.

Wrestling
Resistance ball
Rope climbing
Martial arts
Isometric exercises
Pilates
Weight lifting
Resistance bands
Weight machines
Wall or tree climbing
Calisthenics:
-- Sit ups
-- Pushups
-- Squats

Self-Discovery Exercise: Current Level Of Physical Activity

The first step to exercising more is to take an assessment of how much of each type of exercise you are currently getting. This will help you decide which types of physical activity you want to increase and/or add to your weekly routine. After reading each question below, carefully think about what kind and how much of each type of physical activity you are getting on a weekly basis. Answer each question as accurately as you can.

1. What kind of **aerobic activity** do you get during the week? How long per session?

   How many times per week?

2. Are doing any **resistance training**? NO YES – What parts of your body do you work on?

   How much time per week?

3. Do you to any **stretching and flexibility exercises** during the week? NO YES – What kind?

   How long per session?

   How many times per week?

4. What kind of **lifestyle activities** are part of your daily routine?

   What kind of lifestyle activity do you get during the week, that is not on a daily basis?

   Do any of your lifestyle activities qualify as aerobic activity? NO YES – Highlight the ones that are also aerobic activity.

5. How much time each day do you spend **sitting**?

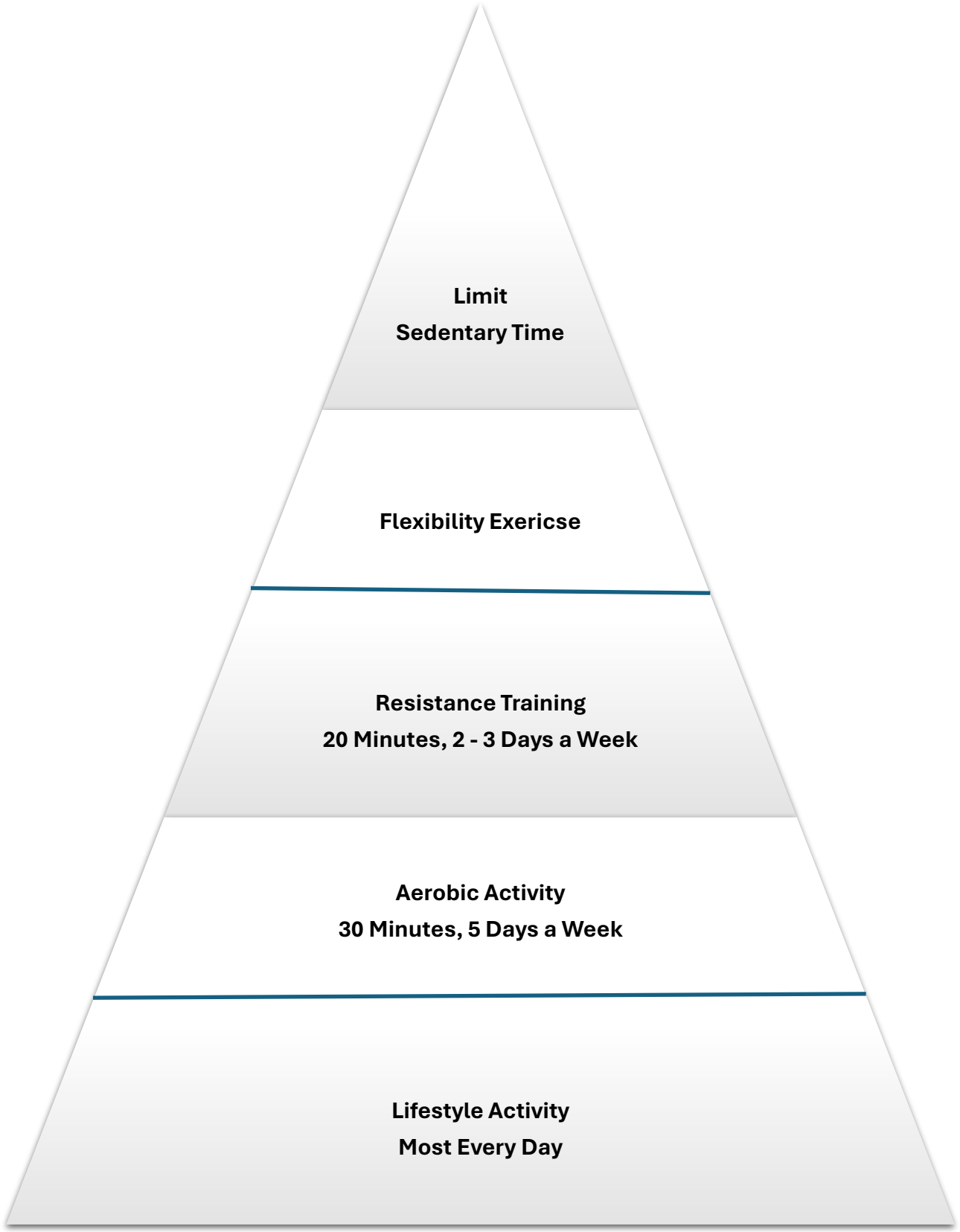
   Do you take walking breaks to break up sedentary time? NO YES – Describe how often and how long the walk breaks are:

6. Have you ever gotten **dizzy**, **short of breath**, or had a **heaviness on your chest** while doing any kind of physical activity? NO YES – Did you report this to your doctor?

Design Your Own Personalized Activity Pyramid

On the next page you will find a blank activity pyramid. As you look at the pyramid, think about physical activities that you are currently doing. Write these activities in the appropriate sections. Highlight each of these physical activities before moving on.

Next, think about physical activities that you would like to do or would like to try. Write these activities into the appropriate sections. This pyramid creates a wonderful snapshot to help get you thinking about how much you are currently moving and how you can to start moving more.


Limit
Sedentary Time
Flexibility Exericse
Resistance Training
20 Minutes, 2 - 3 Days a Week
Aerobic Activity
30 Minutes, 5 Days a Week
Lifestyle Activity
Most Every Day

Safely Starting an Exercise Routine

The first important step to exercising safely is to assess if you need a physical exam by your doctor prior to exercising. Complete the self-assessment below.

Self-Assessment: Pre-Exercise Safety Evaluation Assess if it is safe to exercise before starting a new exercise routine. Read each question and answer appropriately YES or NO.	
YES NO	Has been six months or more since you got, 60 or more minutes, of aerobic activity on a weekly basis?
YES NO	Are you a smoker?
YES NO	Do you feel pain in your chest when you do physical activity?
YES NO	Do you get short of breath while physically active, which is not gone after 10 minutes of rest?
YES NO	Has a doctor ever told you that you have a heart condition or high blood pressure?
YES NO	Is a doctor currently prescribing medication for your blood pressure or heart condition?
YES NO	Do you have diabetes, arthritis, or asthma?
YES NO	Has your doctor ever told you, that you should only do medically supervised physical activity?
YES NO	Have you lost your balance due to dizziness or lost consciousness in the past 12 months?
YES NO	Do you have any pre-existing injuries to your feet, ankles, knees, legs, hips, or back?
YES NO	Are you pregnant or less than six weeks postpartum?
If you answer yes to any of these questions, schedule a doctor's appointment prior to beginning a new exercise program.	

Your doctor can help determine your readiness and necessary adaptations you may or may not need to make in order to exercise safely. They can also advise you on potential risks or limitations and ensure that the program is safe and effective in the long run. Your doctor can help you determine the appropriate type and intensity of exercise based on your medical history and current health status. **If your doctor is not able to properly advise you about all of these things, ask for a referral to a physical therapist.**

Safe Exercise Practices

Once you have determined it is safe to proceed with a new exercise routine, follow these guidelines to minimize risk. Following safety guidelines is crucial when starting an exercise routine, especially if you've been inactive for a while or have existing health conditions. Here's a comprehensive guide to help you begin your fitness journey safely and effectively.

1 - Assess your current fitness level (see pages 158 – 159)

- Understanding your current fitness level will help you set realistic goals and avoid overexertion.
- You can assess your aerobic fitness (e.g., how long it takes to walk or run a certain distance), muscular fitness (e.g., how many pushups you can do), flexibility, and body composition (e.g., waist circumference or BMI).

2 - Choose the right exercises

- Find activities you enjoy, as this will increase your motivation and make it easier to stick with your routine.
- Incorporate a variety of activities to target different muscle groups and reduce the risk of overuse injuries.
- Consider exercises that combine aerobic, resistance, and flexibility training:
    - Aerobic activities like walking, swimming, cycling, or dancing can help improve endurance and heart health.
    - Resistance training with bodyweight exercises like squats, lunges, and push-ups can build lean muscle mass and boost metabolism.
    - Flexibility exercises like stretching or yoga can improve mobility and reduce muscle soreness and stiffness.

3 - Start slow and gradually progress

- Begin with low-impact activities at a moderate intensity, such as moderate walking, and gradually increase the frequency, intensity, and duration as your fitness improves.
- Aim to increase your activity level by no more than 10% per week to avoid injury and burnout.
- Remember that consistency is key. Small, gradual changes will lead to significant improvements over time.

4 - Master proper form and technique

- Focus on maintaining good posture and joint alignment throughout each exercise.
- Use a full range of motion without extending beyond your natural limits.
- Prioritize quality over quantity. It's better to perform fewer repetitions with correct form than to perform twice the reps with poor technique.

5 - Warm up and cool down

- Begin each workout with a warm-up of 5-10 minutes of light aerobic activity and dynamic stretching to prepare your body for the activity and reduce the risk of injury.
- End each workout with a cool-down period of light aerobic activity and static stretching to gradually lower your heart rate, promote recovery, and improve flexibility.

6 - Listen to your body and avoid overdoing it

- Allow for adequate rest and recovery between workouts, as this is when your muscles repair and strengthen.
- Consider incorporating rest and recovery into your routine. Aim for at least one full rest day per week to allow your muscles to recover.
- On rest days or during recovery periods, consider low-intensity activities like walking or stretching to keep your body moving without overexertion.
- Ensure you get enough sleep (7-9 hours per night) to support muscle repair and cognitive function.
- It is safe if you experience general muscle fatigue. Don't push through pain or discomfort; it's your body's signal to slow down or stop.

7 - Stop exercising immediately and seek medical advice if you experience any of the following red flags:

- **Pain:** Shooting pain, joint pain, or persistent aches that last for more than a few days after rest.
- **Cardiovascular Symptoms:** Light-headedness, dizziness, an irregular heartbeat, or unusual shortness of breath.
- **Illness Symptoms:** Fever, fatigue, widespread muscle aches, or symptoms "below the neck" like a hacking cough or upset stomach.
- **Physical Changes:** Sudden swelling or redness in an area of discomfort, or muscle cramping.

By following these guidelines and listening to your body, you can create a safe, effective, and sustainable exercise program that will help you achieve your fitness goals and enjoy a healthier, more active life.

Setting Goals For Physical Activity

Now it is time to set goals for physical activity. There are two important keys to ensure success with a physical activity program. It needs to fit your lifestyle and it needs to be enjoyable for you. Please note, that the enjoyable part of exercising may be something you do at the same while you are exercising like listening to music, watching a show, visiting with a friend or participating in an exercise class.

As you consider how you want to get moving more, remember that aerobic activity, when performed for 30-minute time blocks (or longer), 5-days a week, will provide the greatest support for your weight loss program. Resistance training is second in line for helping support weight loss. When muscle mass increases from resistance training, it increases number of mitochondria which speeds up your metabolic rate.

Now it is time to write a few goals for your physical activity program. You have already completed the first step in this goal writing process by completing the *Self-Discovery Exercise: Current Level of Physical Activity* and by filling in your personalized activity pyramid. Use the pyramid to help you write your physical activity goals below. You may only want to write one physical activity goal at this time or you can write several. Use this form to help you clearly define your goal(s).

PART ONE - Write a small achievable, believable physical activity goal:

[1] What physical activity do you want to do, to get moving more?

[2] Are you currently spending any time doing this specific activity?
NO, skip to [4] **YES**, describe current intensity, amount of time, times per week:

[3] Write a new goal for this physical activity by adding a little extra distance or 5 minutes of time or small amount weight or few extra reps - describe how much:

[4] Write a goal for this new physical activity by describing how much – start small (short distance or 5 minutes of time or small amount weight or few reps):

[5] When will you do this physical activity (time of the day, which days a week)?

[6] How often (number of days per week)?

[7] Start Date:

PART TWO – Divide and conquer the greater goal:

[8] Are you planning to do more of this specific physical activity as time moves forward?

NO, go to part three **YES**, answer a and b

[a] How much of this specific physical activity would you like to be getting by the time you are working on Action Step Four (6 to 12 weeks from now)? Describe amount of time, intensity, distance (if applicable), times per week:

[b] Describe how you plan to make small increases, over the next 6 to 12 weeks, to reach this goal:

PART THREE – Use power tools to achieve success:

[9] What power tools could you use to help you reach your physical activity goal?

- ☐ Record daily physical activity on a habit tracker or log or diary
- ☐ Focus on Peak Health – what are you striving to achieve when you reach the top of Peak Health?
- ☐ Practice body appreciation and positive self-talk
- ☐ Wear your 'Make Healthy Choices' bracelet
- ☐ Journal about your weight loss journey or body awareness or gratitude
- ☐ Visualize success or visualize loving to be physically active (see pages 202 – 205)

If you would like to write another goal for a different type of physical activity, here is a second blank physical activity goals form.

PART ONE - Write a small achievable, believable physical activity goal:

[1] What physical activity do you want to do, to get moving more?

[2] Are you currently spending any time doing this specific activity?

NO, skip to [4] **YES**, describe current intensity, amount of time, times per week:

[3] Write new goal for this physical activity by adding a little extra distance or 5 minutes of time or small amount weight or few extra reps - describe how much:

[4] Write a goal for this new physical activity by describing how much – start small (short distance or 5 minutes of time or small amount weight or few reps):

[5] When will you do this physical activity (time of the day, which days a week)?

[6] How often (number of days per week)?

[7] Start Date:

PART TWO – Divide and conquer the greater goal:

[8] Are you planning to do more of this specific physical activity as time moves forward?

NO, go to part three **YES**, answer a and b

[a] How much of this specific physical activity would you like to be getting by the time you are working on Action Step Four (6 to 12 weeks from now)? Describe amount of time, intensity, distance (if applicable), times per week:

[b] Describe how you plan to make small increases, over the next 6 to 12 weeks, to reach this goal:

PART THREE – Use power tools to achieve success:

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- ☐ Record daily physical activity on a habit tracker or log or diary
- ☐ Focus on Peak Health – what are you striving to achieve when you reach the top of Peak Health?
- ☐ Practice body appreciation and positive self-talk
- ☐ Wear your 'Make Healthy Choices' bracelet
- ☐ Journal about your weight loss journey or body awareness or gratitude
- ☐ Visualize success or visualize loving to be physically active (see pages 202 – 205)

You can find more of these blank forms in the Appendix (pages 243 – 244).

4.3 Body Biology Explained for Step Three

Action Steps 1 and 2 focused on cleaning up your diet and choosing slow-release energy foods that don't spike your blood sugar or your insulin levels. Action Step 3 builds on the first two steps and adds in all the food groups with some limitations. Carbohydrates are limited for the purpose of helping your body learn to burn fat for energy. This helps increase the body's ability to burn stored fat. You see, when bodies are used to having plenty of glucose available to use for energy, it becomes dependent on glucose for the primary energy source and becomes poor at utilizing fat for an energy source. This means that it is going to be hard for the body to burn stored fat for energy.

Let me explain why this happens. In order for the body to use fat for energy, the fat globules must be broken down into fatty acids. This takes special fat busting enzymes. If the body doesn't use fat for energy (because it is relying on glucose for energy), it doesn't have much need for the fat busting enzymes. Over time the levels of the fat busting enzymes fall, getting lower and lower, making it more difficult for your body to breakdown and burn stored fat for energy. You need higher levels of the fat busting enzyme to efficiently break down stored fat into fatty acids so they can be burned for energy. Another thing that happens when glucose supply is high, the body suppresses breakdown of fat, which prevents your body from burning stored fat for energy.

Remember, glucose comes from broken down carbohydrates (starches, sugars) that we eat. When carbohydrate intake is restricted, the body is forced to burn fat for energy. If the body has been used to burning glucose for energy, it will not effectively burn fat for energy until it has a chance to increase production of fat busting enzymes. This process takes weeks for the body to increase production of the fat busting enzymes. Once it does, it can efficiently burn fat for energy. That includes fat you eat and fat that is stored on your body.

A body that is able to efficiently switch between using two fuel sources (glucose and fat), is said to have metabolic flexibility. This adaptability allows the body to use glucose for energy after a carbohydrate containing meal and switch to burning fat when glucose is less available, or during fasting or exercise.

Metabolic flexibility is considered crucial for maintaining health, while a lack of it (metabolic inflexibility) is linked to conditions like insulin resistance, obesity, and type 2 diabetes. Metabolic inflexibility is the inability to make this switch efficiently. This can lead to the body struggling to use fat for fuel when needed, which is often seen in individuals with high BMIs and type 2 diabetes.

Carbohydrate restriction is a very important part of Action Step 3. The other very important part of step 3 is to eat nutrient dense foods from each food group. This will help you to get important nutrients that help to support a healthy energy balance. There are several nutrient deficiencies that roadblock weight loss and promote easy weight gain. The remainer of this section will focus on these key nutrients.

Important Words 4.3.1

Vitamins are a group of organic compounds essential for human health, required in small amounts for the body to function properly. They are crucial for growth, metabolism, a wide range of bodily functions, vision, bone health, and a strong immune system. Vitamins can be found in food, dietary supplements, fortified foods or are produced in the body. They are classified as either fat-soluble (stored in body fat) or water-soluble (removed by urine).

Macro minerals are essential minerals that the body requires in large amounts, such as calcium, phosphorus, magnesium, sodium, potassium, chloride, and sulfur. They play vital roles in building the structural parts of the body (i.e. bones), maintaining fluid balance, supporting numerous metabolic processes, and are involved in almost all bodily processes, including muscle function, nerve signaling, and metabolism.

Trace minerals are essential nutrients the body needs in small amounts for vital functions like growth, metabolism, and hormone production. While needed in smaller quantities than macro minerals, they are crucial for health, and deficiencies can lead to health problems. Examples of trace mineral include iron, zinc, copper, selenium, chromium, and iodine.

Nutritional deficiencies cause multiple problems with production and release of key hormones that control energy balance. Some vitamins and mineral play key roles in metabolic processes and when deficient, these metabolic processes are impaired.

Free radicals are unstable, highly reactive molecules with an unpaired electron that seek to steal an electron from a healthy molecule, creating a new free radical and causing a chain reaction that can damage the entire cell. Free radicals are formed naturally from metabolic processes but can also be increased by external factors like pollution, toxins, and smoking.

Antioxidants are substances that protect cells from damage caused by free radicals. They can help neutralize free radicals. Antioxidants work by stabilizing or eliminating free radicals. They donate an electron to a free radical. Antioxidants stop the damaging chain reaction without becoming a free radical itself.

Oxidative stress an imbalance that occurs when there are too many free radicals and not enough antioxidants to neutralize them. Oxidative stress can damage cellular components like DNA, RNA, mitochondria, proteins, and lipids, leading to cell dysfunction, mutation, and even cell death. A high level of oxidative stress is linked to accelerated aging of the body and multiple serious chronic diseases (i.e. heart disease, cancer, diabetes, Alzheimer's, Parkinson's, arthritis, etc.).

Nutrition Deficiencies Worsen Energy Imbalance 4.3.2

The following nutritional deficiencies have been identified in large percentages of individuals who have high body mass indexes (BMI). All of these nutrients play important roles in the way the body uses food for energy or stores it. Let's go through each of these nutrients one by one.

B Vitamins

Most of the B vitamins play important roles in cellular production of energy and they enhance the body's metabolism. They play an important role in glucose metabolism and help regulate blood glucose levels. Deficiencies of B vitamins 1, 2, 3, 5, 6 and 12 all cause fatigue and lower metabolic rate. When you are trying to lose weight, that is the last thing you want. Eating a nutrient dense balanced diet helps you get a variety of B vitamins most every day.

Omega 3 Fatty Acids

Omega 3 fatty acids provide a multitude of health benefits. Several of the health benefits support a healthy energy balance and promote weight loss. For instance, they increase metabolic rate and help burn fat more efficiently. Omega 3 fats increase transfer of oxygen throughout the body which helps increase metabolic rate. They help reduce inflammation, therefore reducing production of stress hormones. Stress hormones are a huge roadblock to successful weight loss. Omega 3 fatty acids improve gastrointestinal function which improves nutrient absorption.

A negative correlation has been established between omega 3 fatty acid levels and weight. The lower the levels of omega 3 fatty acids are in the blood, the higher the BMI and larger the waist line is of an individual. Omega 3 fatty acids daily dose for adults is 1 to 3 grams. The best sources of omega 3 is fish oil or flax seed oil supplements or an oily fish like salmon. Salmon contains 0.5 grams of omega 3 fats per ounce.

Most doctors don't routinely test for omega 3 levels. There are some signs of omega 3 fatty acid deficiency. Complete the *Self-Assessment: Omega 3 Fats* below.

Self-Assessment: Omega 3 Fats

Below you will find a list of symptoms of omega 3 fatty acid deficiency. As you read each symptom consider if this describes you. The symptom in **bold** is almost always caused from omega 3 deficiency. Score each symptom as follows:

0 = No/Rarely 1 = Sometimes 2 = Yes/Most the time

	I have soft, cracked, or brittle nails.
	I have dry, itchy, scaling, or flaking skin.
	I have dry eyes.
	I have brittle hair.
	I have hard earwax.
	I have chicken skin (tiny bumps on the backs of arms or on the trunk).
	I have dandruff, scalp sensitivity or flakiness.
	I feel aching or stiffness in my joints.
	I am thirsty most of the time.
	I have light-colored, hard, or foul-smelling stools.
	I have poor mood, difficulty paying attention, and/or memory loss.
	I suffer from insomnia.
	I suffer from depression and/or anxiety.
	I have premenstrual syndrome.
	I catch colds and other contagious illnesses easily.
	I have high blood pressure.
	I have fibrocystic breasts.
	I have high LDL (bad) cholesterol, low HDL (good) levels, and high triglycerides.

If your total score is 9 or higher, it is recommended that you take an omega 3 fatty acid supplement or start eating at least 14 ounces of oily fish (i.e. salmon, sardines) per week.

Calcium and Vitamin D

Calcium is an important mineral for energy balance in combination with vitamin D. Adequate amounts of calcium in combination with vitamin D in the body, has been shown to inhibit the enzyme that converts calories into fat. When there are low levels of calcium and vitamin D, this increases this enzyme by five-fold. In other words, when calcium and vitamin D levels are low in your body, this enzyme is 5 times as busy converting the calories you eat into fat. YIKES!

You might be wondering, "How much Vitamin D and calcium do I need?" Let's start with **calcium** first. Women less than 51 years old and men less than 71 years of age typically need 1000 mg of calcium per day. Older women and men need 1200 mg of calcium per day. If you are consuming 2 servings of dairy (milk or yogurt), as per the Low Carb Nutrition Plan, you will be getting 500 mg of calcium.

Cheese is another good source of calcium. A serving of cheese does not contain as much calcium as a serving of milk or yogurt. Calcium content in cheeses varies greatly according to how the particular kind of cheese was made. You have to read the label if you want to know calcium content of any particular cheese.

You can get additional calcium by taking a calcium supplement or from consuming other calcium-rich foods. Here is a short list of other calcium containing foods, listing mg of calcium per 3.5 ounce servings: Collard greens and other greens (250 mg); Brewers yeast (210 mg); Brazil nuts (186 mg); Sunflower seeds (120 mg).

There is one more option for calcium. Many milk substitutes are fortified with calcium. You will need to read the label to see how much each contains. Be aware that milk substitutes usually do not include vitamin D. You should take a vitamin D supplement if you are relying on a milk substitute for your calcium.

Bodies that contain excess amounts of stored energy tend to have lower levels of **Vitamin D**. Excess fat tissue absorbs and stores this fat-soluble vitamin. Because of this, individuals with high BMIs usually need supplemented with higher doses of Vitamin D – ranging from 2000 to 5000 IU per day. You should have your vitamin D level checked before you start taking a vitamin D supplement. The normal range for Vitamin D is 30 to 60 ng/ml. If you fall in this range, you are not deficient and the 2000 IU dosage of vitamin D would be the recommendation. If your Vitamin D level is lower than 30 ng/ml, it is recommended to take 5000 IU of Vitamin D. If your doctor recommends a different dose, always follow your doctor's advise.

Some people who are suffering from a vitamin D deficiency exhibit certain symptoms. Not always, but sometimes. You can find these symptoms on the next page on the *Self-Assessment: Vitamin D.*

Self-Assessment: Vitamin D

Below you will find a list of risk factors and/or symptoms of Vitamin D deficiency. As you read each risk factor / symptom consider if this describes you. You will notice there are several family history risk factors. This is because poor Vitamin D production and/or utilization can run in families. Score each risk factor / symptom as follows:

0 = No/Rarely 1 = Sometimes 2 = Yes/Most the time

	I have a family history of seasonal affective disorder (SAD) or the winter blues.
	I have experienced a loss of mental sharpness or memory.
	I have sore or weak muscles.
	I have tender bones (press on your shin bone to see if it hurts).
	I work indoors.
	I avoid the sun.
	I wear sunblock most of the time.
	I live north of Florida.
	I don't eat small, fatty fish such as mackerel, herring, or sardines (the main source of dietary vitamin D).
	I have a family history of osteoporosis.
	I have broken more than 1 bone or had a hip fracture.
	I have a family history of autoimmune disease (such as multiple sclerosis).
	I have osteoarthritis (vitamin D deficiency weakens bones and leads to deterioration).
	I have frequent infections.
	I have a family history of prostate cancer.
	I have dark skin (any race other than Caucasian).
	I am 60 years old or older.

If your total score is 15 or higher, it is recommended that you talk to your doctor about getting your vitamin D level checked. After you get your results, take the recommended vitamin D dose as stated about the *Self-Assessment* activity or take the dose your doctor recommends.

Vitamin D Supports Health In Many Ways

There is research linking **vitamin D deficiency to over 200 diseases.** This crucial nutrient, is technically a hormone rather than a vitamin. Vitamin D is really quite an extraordinary fat-soluble vitamin. Although most people think of vitamin D as just the "sunshine vitamin", they often do not fully understand the significant ways that vitamin D affects your brain, body and overall health. Here are just a few:

Immunity
Vitamin D receptors are found all over the body, including the immune cells. Research has clearly shown that vitamin D deficiency is part of the seasonal nature of cold and flu outbreaks – less sunlight means less vitamin D, which leads to lower immunity and more illness.

Bones
It's well-documented that vitamin D is essential for the proper absorption of calcium, and it's been shown to greatly reduce fracture risk in two ways. First, it helps with the formation of stronger bones. Second, vitamin D helps improve balance and prevent falls by enhancing muscle contraction.

Muscles
One of the byproducts of vitamin D's breakdown, called $1,25(OH)_2D$, enters muscle cells and affects the nucleus. Once there, the vitamin D metabolite enhances the cell's contraction ability. Since muscles work by contraction and relaxation, a muscle's ability to contract is essential to its strength and response to outside forces. Vitamin D, then, makes muscles stronger in a very direct way.

Lungs
As many studies indicate, vitamin D plays a role in keeping our lungs healthy due to vitamin D possessing a range of anti-inflammatory properties – with greater concentrations of vitamin D resulting in greater lung health benefits.

Heart
Research has demonstrated an inverse relationship between vitamin D levels in the blood and high blood pressure (hypertension). In other words, the lower the vitamin D, the higher the blood pressure. High blood pressure causes excess strain on the heart, resulting damage to the coronary arteries serving the heart. Over time the coronary arteries slowly narrow and harden, greatly increasing the risk of a heart attack.

Kidneys
Because vitamin D is a fat-soluble vitamin, it helps to regulate kidney function and plays a very beneficial role in treating kidney disease.

Mood
When it comes to being happy, the scientific evidence is clear. The lower your vitamin D levels, the more likely you are to feel blue rather than happy. Low levels of vitamin D have long been associated with a higher incidence of depression. Interestingly, when vitamin D3 supplements were compared to anti-depressants in a 2014 study, the positive effect of vitamin D3 on mood was comparable to the effects of the anti-depressants.

Weight Loss
When you don't have enough vitamin D, you feel hungry all the time, no matter how much you eat. That is because low levels of vitamin D interfere with the effectiveness of satiety hormone (leptin) which tells you when you are full. When vitamin D is replenished and back to normal levels, leptin's actions are restored, thus creating feelings of satiety and aiding in weight loss.

Brain Health
In the past few years, many studies have linked shortage of vitamin D with cognitive impairment in older men and women. Research has demonstrated that vitamin D has a variety of neuroprotective roles, including helping to rid the brain of beta-amyloid, an abnormal protein that is believed to be a major cause of Alzheimer's disease. Additionally, an international study (the largest to date) shows that seniors with very low levels of vitamin D are at twice the risk of Alzheimer's disease.

Unfortunately, many Americans – even those who eat a good diet – are vitamin D deficient. **Hopefully you will not be one of them!**

Magnesium

Magnesium is a cofactor in more than 300 enzyme systems that regulate diverse biochemical reactions in the body. Magnesium is crucial for muscle relaxation and nerve signal transmission. It helps muscles contract and relax and allows nerves to send signals throughout the body. It plays a role in **regulating blood sugar levels** and helps maintain healthy blood pressure, which is vital for heart health. It supports a healthy immune system, keeps the heart beat in a steady rhythm, and helps bones remain strong. It is involved in the body's process of **creating energy** and synthesizing proteins. Magnesium is a key component in building and maintaining strong bones and teeth. Magnesium is important for immune function, helping to keep the immune system healthy.

As you can imagine, if you are deficient of a mineral that has over 300 different jobs, you will have symptoms. Many symptoms are noticeable. Some are not. For example, magnesium deficiency worsens insulin resistance. Insulin resistance makes it easier for your body to store energy from the food you eat, instead of using it for energy and body heat. But it is not a symptom that would be obvious to you. On the next page, you can see many symptoms of deficiency, found on the *Self-Assessment: Magnesium*. The funny thing about magnesium deficiency is that a person can

fall in the low normal range on a blood test but still be suffering from magnesium deficiency. This is because some bodies need more magnesium than others. Complete the *Self-Assessment* below and see how you score.

Self-Assessment: Magnesium Below you will find a list of symptoms of magnesium deficiency. As your read each symptom consider if this applies to you. Score each risk factor / symptom as follows: 0 = No/Rarely 1 = Sometimes 2 = Yes/Most the time	
	I have a poor mood.
	I feel irritable.
	I have difficulty focusing.
	I am anxious.
	I have trouble falling and/or staying asleep.
	I have muscle twitching.
	I have premenstrual syndrome.
	I have leg or hand cramps.
	I have restless leg syndrome.
	I have heart flutters, skipped beats, or palpitations.
	I have a fast heartbeat.
	I get frequent headaches or migraines.
	I have trouble swallowing.
	I have acid reflux.
	I am sensitive to loud noises.
	I feel fatigued.
	I have a family history of asthma.
	I have constipation (fewer than two bowel movements a day).
	I have excess stress.
	I have had kidney stones.
	I have heart disease or heart failure.
	I have type 2 diabetes.

If your total **magnesium** score is 16 or higher, consider trying a magnesium supplement. Men need at least 420 mg and women need at least 320 mg per day. Magnesium citrate is inexpensive and highly absorbable. The only form of magnesium that does not absorb well is magnesium oxide – do not waste your money on this one.

The other thing I want to share with you, is that if you take too much magnesium, it can give you diarrhea. That's it! Nothing life threatening – just a little diarrhea. If you struggle with constipation, magnesium citrate is a great natural treatment to try.

Nutritional Support for Energy Balance 4.3.3

1. A **multivitamin** supplement is recommended for individuals on a weight loss program to help ensure you are getting a full range of vitamins and minerals. First of all, bodies that carry excess stored energy need greater amounts of most nutrients, when compared to bodies with a normal BMI. Secondly, most weight loss plans restrict food intake which also restricts nutrient intake. Make sure your multivitamin contains all 8 B vitamins. B vitamins play a key role in increasing metabolic rate.

2. Consider taking a **probiotic** containing Lactobacillus and Bifidobacterium. These two types of probiotics have several benefits as follows:
   - Increases mineral absorption
   - Helps maintain the integrity of the digestive tract
   - Manufactures B vitamins and folate - important for metabolism
   - Enhances metabolism and promotes a healthy weight
   - Reduces inflammation in the gut
   - Helps normalize cholesterol and triglyceride levels
   - Helps prevent allergies
   - Breaks down bacterial toxins
   - Protects against certain toxins
   - Helps increase peristalsis and prevent constipation

3. **Fiber** has multiple benefits. The BiW4Adults nutrition plan is packed with high fiber foods. Some people choose to add fiber to this diet plan by taking a fiber supplement. When fiber supplements are taken prior to a meal it decreases appetite along with many other benefits as follows:
   - Has an anti-inflammatory effect on the gut
   - Helps stabilize blood sugar
   - Lowers blood sugar - cholesterol – triglyceride levels
   - Decreases post meal blood sugars

- Decrease insulin levels
- Fills up the stomach and keeps it full longer after meals because it slows down the digestive process
- Feeds healthy bacteria in the gut and promotes a healthy microbial balance
- Supports weight loss efforts
- Can absorb some sugar and fat and prevent these calories from getting absorbed, which reduces the amount of calories that get absorbed
- Reduces appetite

4. **Green tea** has multiple benefits as follows:
   - Rich source of *antioxidants (see #5 below)*
   - Helps protect tissues from oxidative stress
   - Diminishes inflammation
   - Enhances fat burning effect
   - Increases weight loss
   - Lowers cholesterol
   - Stimulates thermogenesis (more calories burn to heat the body)
   - Helps increase metabolism
   - Helps keep weight off
   - Helps muscle recover quicker after exercise
   - Boosts ability to perform better during exercise
   - Boosts liver detoxification

   You can get all these benefits by consuming 2 to 3 cups of green tea per day.

5. **Antioxidants** have several benefits as follows:
   - Facilitates the burning of stored energy
   - Reduces inflammation
   - Enhances metabolism
   - Protects cells and tissues from oxidative stress
   - Increases insulin sensitivity
   - Repairs damaged mitochondria
   - Protects your mitochondria from further damage

   Foods rich in antioxidants include fruits, veggies, legumes, nuts, seeds, spices and herbs.

6. **Chromium** has several benefits as follows:
   - Has been shown to lower body weight and increase lean body mass
   - Decreases fasting blood sugars
   - Improves glucose tolerance
   - Lowers insulin levels

- Decreases total cholesterol and triglyceride levels
- Increases HDL cholesterol levels [good cholesterol]

7. **5-HTP** is an amino acid complex that increases happy hormone (serotonin) levels. Serotonin helps suppress appetite and promotes feelings of fullness, which leads to reduced food and calorie intake, and helps people lose weight. 5-HTP improves symptoms of depression, potentially working as effectively as some prescription antidepressants. This amino acid complex helps regulate sleep-wake cycles. It may decrease the time it takes to fall asleep, improve overall sleep quality, and reduce sleep terrors. Additionally, 5-HTP may reduce the frequency, duration, and intensity of migraines and chronic headaches.

   A special enzyme converts the amino acid tryptophan to 5-HTP. 5-HTP is then converted to serotonin. People with a high BMI lack the enzyme that converts tryptophan to 5-HTP, therefore leaving them with chronically low serotonin levels. Supplementing with 5-HTP is a great way to overcome this problem. If you want to try this supplement, start with 50 mg of 5-HTP per day. Gradually increase the dose by 50 mg per week until you notice some of the benefits listed in the previous paragraph. The maximum dose is 300 mg per day.

8. **Coconut oil** increases diet-induced thermogenesis and increase energy expenditure. Take 1 to table spoon per day.

4.4 Body Biology Bonus

Over the years of working with people who struggle with excess weight, I have found that many of them have several health conditions in common. That is what this bonus section is going to primarily be about. These health condition include high blood pressure, high cholesterol, fatty liver disease, edema, vitamin D deficiency, prediabetes and type 2 diabetes.

We have already discussed vitamin D deficiency in section 4.3.2. Prediabetes and type 2 diabetes are huge topics. Each health condition could use their own book, so I will not be directly addressing these two conditions. However, I do want to point out that the BiW4Adults nutrition plan is designed to lower blood sugar and insulin levels, so it is very appropriate for a people with prediabetes or diabetes. Many of the additional health habits in the program help to lower blood sugars and minimize damage to the diabetic body.

There is one other health condition that I want to cover in this section – **gluten sensitivity**. Food sensitivities are tricky because they cause symptoms that are not like typical allergy reactions. Many of the symptoms are delayed and not connected to the digestive tract. Gluten sensitivity does cause gut inflammation – review negative effects of gut inflammation in section 4.1.2.

Here is what will be covered in the Body Biology Bonus section:

1. Gluten Sensitivity – I encourage everyone to complete the *Self-Assessment: Gluten Sensitivity*. Gluten sensitivity promotes easy weight gain and roadblocks weight loss, primarily because of the gut inflammation that it causes.
2. High Blood Pressure – Look at this section if you are being treated for high blood pressure, if you have been told you have high blood pressure, or if your blood pressure is 140/90 or higher.
3. High Cholesterol – Look at this section if you are being treated for high cholesterol or triglycerides, if you have been told you have high cholesterol or triglycerides, or if you have any lipid values out of range as follows:
    - Total cholesterol above 199;
    - LDL (bad) cholesterol above 99;
    - HDL (good) cholesterol below 40 in men or below 50 women;
    - Triglycerides above 149.
4. Fatty Liver Disease – Look at this section if you are being treated for fatty liver disease or if you have ever been told you have fatty liver disease.

5. Edema – Look at this section if you experience swelling of your feet, ankles, and calves – especially if a dent is left, for several seconds, over your shin bone when you press on your shin bone.

Gluten Sensitivity 4.4.1

Gluten sensitivity can cause a variety of health problems and rob people of quality health. It is certainly a huge roadblock to successful weight loss. Many doctors' offices test for gluten allergy, which can cause actual tissue damage to the intestines and lesions in the brain. Most doctors do not test for gluten sensitivity. While gluten sensitivity doesn't not typically cause tissue damage, it does cause a multitude of health disturbances which greatly reduce quality of health. This self-assessment will give you an opportunity to evaluate if you may be suffering from gluten sensitivity.

Self-Assessment: Gluten Sensitivity

Below you will find a list of symptoms of gluten sensitivity. As read each symptom consider if this describes you. Use the scoring system below to describe how often or how severe you experience each symptom:

0 = No/Rarely 1 = Mild/Sometimes 2 = Moderate/Often 3 = Severe/Almost Always

	Bloating and/or gas
	Constipation and/or diarrhea
	Nausea
	Easy weight gain and/or difficulty losing weight
	Iron-deficient anemia
	Fatigue
	Sleep problems (too much, sleep disturbances, insomnia, sleep deprivation)
	Depression, anxiety, and/or mood swings
	Menstrual problems
	Infertility
	Thyroid problems
	Osteoporosis or osteopenia

Self-Assessment: Gluten Sensitivity - Continued

	Headaches or migraines
	Memory problems
	Joint pains and aches
	Brain fog
	Fibromyalgia
	Get gut infections easily
	Have any kind of arthritis
	Have or have had any kind of cancer
	Have any kind of autoimmune disease
	Have family history of celiac disease, autoimmune disease or cancer
	TOTAL SCORE

If your total score is 0 – 6, most likely you do not suffer from gluten sensitivity. If your total score is 7 – 10, gluten sensitivity possibly could be a problem for you. If your total score is above 10, there is a good chance you have some degree of gluten sensitivity.

If you suspect you have a gluten sensitivity, the best action to take is to remove all gluten from your diet. Gluten containing grains include wheat, rye, and barley. Most oats are processed in factories with wheat and therefore, most oat products are contaminated with gluten. Only eat oat products that have "gluten free" on the label. There are many names for gluten containing ingredients. You will need to find a reliable resource to learn about these ingredients. These are two of my favorite online resources to learn about how to avoid all gluten containing food products: https://www.foodallergy.org/ or www.celiac.org

If you do suffer from gluten sensitivity, you will start noticing improvements of symptoms after two weeks of being gluten free. After a month of being gluten free, you will experience noticeable improvements of symptoms. Yes! It is a hassle to gluten free, but it is well worth the benefits!!

What About Other Food Sensitivities and/or Allergies

You might be wonder if gluten from wheat, rye, and barely are the only food sensitivities that can mess with your health, cause weight gain, and roadblock weight loss. This is a great question. The truth is that any food sensitivity can mess your body up.

How can you Identify hidden food allergies and sensitivities? You can go your doctor and get tested for food allergies. Most people know if they have a food allergy because the reaction is quick (less than 2 hours) and presents in ways that get a person's attention – rashes, hives, swollen face or mouth, pounding heart, tight throat, and difficulty breathing.

Food sensitivities are sneakier and show up over a 72 hours period after consuming the trigger food. Any food sensitivity can cause symptoms found on the *Self-Assessment: Gluten Sensitivity*. Like I said earlier, most doctors don't test for food sensitivities. So what is a person to do??

Do your own detective work!!

1. Keep a food diary and record how you feel before and after you eat. Look for patterns of symptoms related to foods you have eaten.
2. Try the food sensitivity pulse test:
    a. Wait at least two hours since you have eaten.
    b. You need to be relaxed and sitting for a 5 minutes before starting the test and throughout the test.
    c. Count your pulse for a full 60 seconds so there won't be any rounding errors. Rounding errors can occur when you count for 15 seconds and multiply by 4.
    d. Put a piece of food in your mouth. Chew it for 30 seconds to 1 minute, but do not swallow any of it.
    e. Take your pulse again, for a full minute, with the food in your mouth but without swallowing any of it.
    f. Spit out the food. Rinse out your mouth with water and spit out the rinse.
    g. If your pulse increased by 6 beats or more, you had a stress reaction to that food.
    h. Let your pulse return to your baseline before testing another food.
3. If you suspect you are sensitive to a food, remove it from you diet for a month, and see if you start feeling healthier. You may discover there is more than one food that gives you symptoms.

High Blood Pressure 4.4.2

Here is a list of healthy eating habits that can help lower your high blood pressure. As you read through the list, put a check mark in front of all the habits you are already doing. Then go back through the list and highlight habits that you would like to try to adopt.

- ☐ Eat a balanced diet whole foods diet
- ☐ Consume calcium rich foods, calcium fortified foods, or take a calcium supplement with vitamin D_3
- ☐ Avoid high salt foods (canned foods, packaged snack produces, chips, processed meats including ham)
- ☐ Don't add salt to your food – choose herbal salt-free seasoning for your food
- ☐ Eat oily fish 2 to 3 times a week or take an omega 3 fatty acid supplement
- ☐ Decrease saturated fats
- ☐ Increase monounsaturated fats (olives, avocados, nuts)
- ☐ Learn about the DASH Diet

Additional Nutrition Habits for a Lower Blood Pressure

- ☐ Eat celery
- ☐ Eat garlic and onions or take a garlic supplement
- ☐ Eat potassium rich foods or take a potassium supplement
- ☐ Eat magnesium rich foods or take a magnesium supplement
- ☐ Avoid caffeine and alcohol
- ☐ Take a multivitamin and mineral supplement to support overall health
- ☐ Get you potassium and magnesium levels checked at least once a year. If either one of these minerals are low, it can contribute to high blood pressure.

Lifestyle Habits for a Lower Blood Pressure

Here is a list of lifestyle habits that can help lower your high blood pressure. As you read through the list, put a check mark in front of all the habits you are already doing. Then go back through the list and highlight all the habits that you would like to try to adopt.

- ☐ Get 30 to 60 minutes of aerobic activity most days (see section 4.3.6).
- ☐ Practice relaxation exercises (see sections 4.1.2 and 4.2.4)
- ☐ Practice healing visualizations (see section 5.2.3)
- ☐ Stop smoking
- ☐ If you have a high BMI, take actions to lose weight and achieve a healthier weight (see the BiW4Adults Program)

High Cholesterol 4.4.3

High cholesterol can result from genetic factors or metabolic or hormonal imbalances. Typically, high cholesterol is the result of unhealthy nutrition and lifestyle habits. The following list of nutrition and lifestyle habits contribute to and/or cause elevations in cholesterol levels. As you read through the list below, put a check mark in front of any of the factors that you think may be **contributing to your elevated cholesterol levels**.

- ☐ Eating more calories than what the body needs for daily energy needs
- ☐ Eating refined sugar
- ☐ Elevated Body Mass Index (BMI) can cause elevations in triglyceride levels
- ☐ Eating too much saturated animal fat (meat and dairy)
- ☐ Omega 3 fatty acid deficiency
- ☐ Low fiber diet
- ☐ Antioxidant deficiency – comes from a lack of eating bright colored fruit and veggies
- ☐ Eating trans fats (hydrogenated oils)
- ☐ Deficiency of vitamins B5, B6 and B12, folic acid and choline
- ☐ In activity and a sedentary lifestyle

- ☐ Overgrowth of unfriendly bacteria in the guts causing symptoms like gas, bloating, foul smelling gas, diarrhea or constipation

Nutrition And Lifestyle Habits That Help Lower High Cholesterol

Natural interventions for the management of hypercholesterolemia are primarily aimed at diminishing or removing causative factors. Here is a list of nutrition and lifestyle habits that do just that. As you read through the list, put a check mark in front of all the habits you are already doing. Then go back through the list and highlight habits that you would like to try to adopt.

- ☐ Cut refined sugar from diet and replace with complex carbohydrates (see section 3.1.1 and 3.1.7)
- ☐ Cut out sugar drinks and replace with water and fat free milk (see sections 3.1.5)
- ☐ Limit saturated fat intake to 10 percent of total calories eaten - choosing lean meat and low-fat dairy products will help (see section 3.1.4)
- ☐ Avoid trans fats and hydrogenated oils (see section 3.1.4)
- ☐ Eat foods rich in antioxidants - brightly colored fruits and vegetables are good sources of antioxidants (see section 4.3.3)
- ☐ Get 30 minutes of aerobic exercise most every day (see section 4.2.6)
- ☐ Decrease sedentary time and find opportunities to move more during the day (see Pages 123 - 124)
- ☐ Eat to meet body's daily energy needs – don't over eat and limit consumption of high calorie foods (see section 2.4)
- ☐ Eat foods rich in omega 3 fatty acids or take a supplement (see sections 3.3.4, & 4.3.2)
- ☐ Eat high fiber foods or take a fiber supplement (see sections 3.2.1, 4.1.2, & 4.3.3)
- ☐ Take a full spectrum multivitamin and mineral supplement (see section 4.3.3)
- ☐ Take a vitamin C supplement (1000 mg per day)
- ☐ Eat foods containing probiotics like yogurt, sourcrout, kabocha or take a probiotic (see section 4.3.3)
- ☐ Eat garlic and onions on a regular basis

Fatty Liver Disease 4.4.4

Fatty liver disease is a condition where there is a buildup of excess fat in the liver, which can lead to liver damage. This is bad because the liver has more than 500 functions in the body, making it a vital organ for overall health. Some of its key roles include:

- It filters the blood of toxins, drugs, and other waste products. The liver detoxifies harmful substances.
- It also breaks down old red blood cells and clears bilirubin from the bloodstream.
- The liver processes nutrients from food, converting them into forms the body can use.
- It converts excess glucose into glycogen for storage and releases it when needed for energy. It also regulates blood sugar levels and amino acids.
- It produces proteins, such as albumin, and clotting factors needed for blood to clot properly.
- It also produces bile, which is essential for digesting fats and absorbing fat-soluble vitamins.
- The liver stores vitamins, minerals (like iron), and sugars to be used by the body later.
- It helps fight infections by producing immune factors and removing bacteria from the blood.

Fatty liver disease can result from genetic factors or metabolic or hormonal imbalances. Additionally, there are several nutrition habits that increase risk of developing fatty liver disease. Here is a list of factors that contribute to the development of fatty liver disease. As you read through the list below, put a check mark in front of any of the factors that you think might have **contributed to you developing fatty liver disease**.

- ☐ Consuming a high fat diet
- ☐ Excess consumption of HFCS (i.e. soda pop)
- ☐ Excess consumption of sugar
- ☐ Regularly consuming more calories than the body can use
- ☐ Being overweight or obese, especially having a large amount of belly fat
- ☐ Insulin resistance
- ☐ Elevated insulin levels
- ☐ Low thyroid function
- ☐ Type 2 diabetes
- ☐ High levels of fats in the blood, such as high triglycerides and high cholesterol

- ☐ Metabolic syndrome - a cluster of conditions that includes high blood pressure, high blood sugar, and abnormal fat levels
- ☐ Genetics - certain gene variations (i.e. PNPLA3 gene) can increase the risk of developing the disease and its severity
- ☐ Hepatitis C

Nutrition Habits That Help Heal Fatty Liver

Nutrition interventions to your liver heal are partially aimed at diminishing or removing causative factors and partially to add liver healing foods into your diet. Here is a list of nutrition habits that do just that. As you read through the list, put a check mark in front of all the habits you are already doing. Then go back through the list and highlight habits that you would like to try to adopt.

- ☐ Eat clean – cutting sugars and HFCS, avoiding foods with chemical ingredients, and properly cleaning all fresh produce before eating it
- ☐ Eat to meet your body's caloric needs (don't overeat)
- ☐ Eat a low-carb, balanced diet packed with nutrient dense, slow-release energy foods
- ☐ Take a high potency multivitamin
- ☐ Take an omega 3 fatty acid supplement
- ☐ Add liver healing foods into your diet:
  - O Foods with a high sulfur content - garlic, onions, legumes, eggs
  - O Soluble fiber – pears, apples, oat bran, legumes
  - O Veggies in the brassica family – broccoli, brussels sprouts, cabbage
  - O Artichokes, beets, carrots, dandelion greens
  - O Healing spices – turmeric, cinnamon, cilantro
  - O Leafy greens including wheatgrass, barley grass, chlorella, spirulina
- ☐ Lose weight and try to achieve a BMI of 25 or less
- ☐ Take actions to support the detoxification of the body (see section 4.1.3)
- ☐ Avoid alcohol
- ☐ Stay hydrated (see section 3.1.6)

- ☐ Take actions to manage stress (see section 4.2.4)
- ☐ Get adequate amount of quality sleep (see section 4.2.5)
- ☐ Avoid taking medication that your doctor has not prescribed

Edema 4.4.5

Individuals who are trying to get rid of water retention must consume vegetables that are naturally low in sodium. Veggies are healthier when prepared fresh without any added sauce or salty seasonings. You may also have fresh meat prepared without any additional sauce.

Eat natural diuretic vegetables, including asparagus, parsley, beets, green beans, cucumber, artichoke, leafy greens, onion, leeks, and garlic. Some of these foods may interact with diuretic medications. Parsley and green tea are also known to help reduce edematous swelling.

Some fruits with high water content such as watermelon, grapes, pineapple, pumpkin, and cranberry juice can also prevent water retention in the body. As well as being useful as natural diuretics, these fruits also provide the body with various essential minerals and vitamins.

Eat antioxidant foods, such as blueberries, cherries, tomatoes, squash, and bell peppers.
Eat more lean meats, cold water fish, tofu (soy, if no allergy), or beans for protein. Use healthy cooking oils, such as olive oil.

Drink Up!
Excess salt is a big contributor to swelling, and upping your fluid intake can help dilute the salt in your system. Drinking water to eliminate water works by correcting the feedback mechanism the body uses to determine whether it is dehydrated or overhydrated. The body can keep retaining water because the thirst reflex is engaged. Therefore, drinking a lot of water signals the body to excrete more water. Aim for 8-10 glasses of water per day to flush things out. Try making cucumber-lemon water! Just drop a couple of cucumber and lemon slices in your glass, and enjoy! Both cucumber and lemon have anti-inflammatory properties the help combat swelling.

Foods to Avoid for Edema
Higher consumption of sodium may cause water retention inside your body. Consult with your doctor to determine the right amount of sodium that you should intake daily. According to the American Heart Association, it is healthiest to limit sodium consumption to 1,500 mg per day. Here is a list of foods that typically have a high sodium content – avoid these:

1. Commercial pancakes and waffles, ready-to-eat bran and oat cereals, instant hot cereals, microwave popcorn, salty snack crackers, and pretzels.
2. Some canned vegetables contain high amounts of sodium. You should carefully read the nutrition facts labels on the cans to avoid salty foods. You should also avoid frozen vegetables that contain added sauces. Vegetable and tomato juice also have high amounts of sodium, and must be completely avoided if you have edema.
3. Processed meats also contain significant amounts of sodium. You should avoid consuming luncheon meats, sausage, bacon, hot dogs, ham, and canned tuna.
4. Canned legumes might also contain high levels of sodium, so prepare meals containing legume from scratch, using dried beans to limit your sodium consumption.
5. You should avoid salted nuts and choose unsalted nuts instead.
6. Processed dairy foods contain significant amounts of sodium, so it should be avoided if you have edema. You should also avoid buttermilk and eat only fresh dairy products.
7. Convenience foods contain high amounts of sodium and should be avoided by people who are trying to control edema. You should avoid foods such as frozen meals, soups and rice, and pasta mixes.
8. Completely avoid **fast foods** and request your food to be prepared without salt at restaurants.
9. Avoid seasonings that contains salt. Check the label to see if it has garlic salt or celery salt.
10. You should also keep away from other high sodium condiments such as catsup, prepared salad dressings, and soy sauce.

Complementary and Alternative Therapies for Edema

1 Dry skin brushing. See instructions on page 123.

2 Grab Some Grapefruit Essential Oil A warm bath can also help with swelling, and you can give that water a boost with a few drops of grapefruit essential oil! You can also just fill a bucket with nice, warm water to soak in. If baths aren't your thing, you can also mix a few drops of grapefruit oil with a carrier oil like olive or sweet almond oil and give yourself a little foot and leg massage. As you rub your feet, ankles, and calves, focus your pressure upward, rather than downward or in a circular motion.

3 Do a Salt Water Soak Adding 1 cup of Epsom salts to the tub is another way to boost that bath. Like the grapefruit oil, you can also just use a bucket, if you're only having swelling in your feet and ankles. If your calves are swollen, too, a bath is probably your best bet. Epsom salts are like magic for swelling.

4 Treat Yourself to a Massage A massage therapist can do wonders for swollen feet and ankles! Don't be shy about mentioning the problem when you get to your appointment, so she or he can focus on getting things moving in your lower extremities.

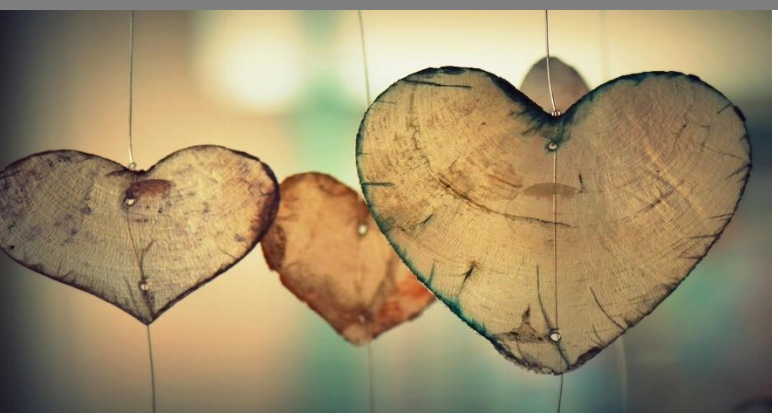
5 Get Some Support Hose Support hose or compression gear can prevent swelling, especially from being on your feet. You can find compression socks that come knee- or thigh-high or full-on compression stockings. These stocking are hard to get on, because they're meant to be pretty tight on your legs, but they can really make a difference.

6 Elevate Those Feet Gravity is not your friend when it comes to edema, so elevate your feet every chance you get! When you're relaxing in the evening, prop your legs up on some pillows. Ideally, you want your feet above your heart. Take THAT, gravity!

7 Make a Splash Swimming or even floating in water can help with swollen feet and ankles. The pressure from the water can help get things moving in your legs, and floating gives your circulatory system a break from gravity's constant pull. If you don't have a pool, check out local gyms to see what they offer.

8 Exercise lightly 5 days a week if your health care provider says you can.

PART FIVE



POWER TOOLS

Introduction To Power Tools

BiW4Adults utilizes multiple research based behavioral change techniques called power tools. Power tools are habit change tools and skills that make it easier for you to let go of old unhealthy habits and replace them with new healthy habits. It can be hard to let go of old habits that you are comfortable with, even though you know they are unhealthy for you. For example, if you are a pop drinker, it can be hard to give up pop and start drinking water.

Our established health habits (self-care behaviors) are imprinted along nerve pathways into the unconscious mind and act like an automatic tape recording which effortlessly reminds you each day what actions need to be performed in order to get your physical and emotional needs met. New self-care behaviors must be imprinted into the unconscious mind before they can become permanent self-care behaviors. This process takes time, repetition, and persistence.

Habit Change Starts in the Brain! If you want to successfully change your health habits, you have to reformat habit (nerve) pathways in your brain, replacing old unhealthy habit pathways with new healthy habit pathways. It is like retraining your brain to be attracted to your new healthy habits and loose interest in the old harmful habits. This is what power tools do for you.

Power tools also help you transform information about healthy lifestyle and nutrition habits into new healthy habits. **Power tools are a very important part of this program!!**

5.1 Power Tools for Step One

In this section, *Power Tools for Step 1*, you will learn rules for writing successful goals. You will learn how to deal with food cravings. You will find out how several different kinds of journaling can be used to support habit change and peak health. You will learn about a simple, yet effective power tool that you can start using right now.

Write Successful Goals 5.1.1

Be realistic. Rework your lifestyle gradually. Set small, easy goals. Do not spread yourself too thin. Unrealistic goals set an individual up for failure, and are frustrating and demoralizing. Easy goals encourage you and let you be successful. Small goals are believable and therefore achievable.

Write positive goals. Positive goals are more pleasurable. It is easier to add a new self-care behavior than it is to stop an existing habit. Negative goals can actually make the thing you are trying to give up, more tempting. People naturally feel obstinate toward goals that tell them not to do something.

Be specific. Be clear about what you want and why you want it. Write your goals so you can measure your success. It is easier to perform a self-care action when you have a clear picture in your mind of what you want to accomplish.

Connect pleasure to your goal. Experience pleasure while you perform your goal. Behavior is driven by an instinctive reaction to pain and pleasure, not intellectual processing. The brain finds ways to avoid pain. It is a survival mechanism. It is very important that you experience pleasure during or soon after the performance of your self-care goal.

Be flexible. No health improvement plan should be ridged. Leave room for mistakes, mishaps, off days and little diversions.

Write it down. Committing your goals on paper will make them more visible and tangible. There is truth to the saying, “Out of sight, out of mind”. And that is the last thing you want to happen with your goals.

Divide and conquer. Chopping a big health goal into several intermediate steps can make it seem less overwhelming and more achievable. Each intermediate step should be written as small, easy, realistic goals.

Prioritize goals. Decide which ones are the most important and then number them accordingly.

Take Action! If you are choosing to start with big habit changes, only choose 1 or 2 goals to start with. If you decide to start with small habit changes, you can write up to 4 goals on your chart (i.e. like taking a multivitamin every day or going to bed an hour earlier). It is important to start with small habit changes. Big changes can quickly become overwhelming and cause a person to abandon a new health improvement plan. Starting with a few small changes makes the plan believable and achievable.

Track Your New Health Habits! Document accomplishments in a habit tracker or log or diary each day, usually in the evening. Tracking new habits is vital to your success. Here's why! Tracking new habits has several important functions:

1. It acts like the hub of your health improvement plan, like the hub of a wheel.
2. It keeps your health goals visible.
3. It keeps your brain actively thinking about making healthy choices. This is really important because HABIT CHANGE STARTS IN THE BRAIN!
4. Documenting success in a habit tracker or log or diary makes you accountable for your actions or lack of action.
5. Over time, you will see healthy patterns emerge in the habit tracker or log or diary.
6. Individuals who monitor new health habits with a habit tracker are significantly more successful at changing unhealthy habits into healthy habits.

Track Each New Habits for at Least 3 Months. It takes about 3 months for a new habit to become an automatic, comfortable habit. Continue to follow health goals in the Habit Tracker until they become automatic, comfortable habits for you.

Simplest Power Tool 5.1.2

It's time for your first power tool. It is super easy. Find or make a bracelet that you like. Wear it on the wrist of the hand you eat with. This bracelet is going to be a reminder to you, to make healthy choices.

As simple as it sounds, it is incredibly effective. Out of your 5 senses, vision utilizes more brain space than all the other 4 senses put together (hearing, touch, smell, and taste). Because of this, vision is the sense that will leave the greatest impression on the brain. Every time you see the bracelet on your wrist, it will remind you to make healthy choices.

Managing Food Cravings 5.1.3

A food craving is an intense desire to eat a particular food. Cravings come from the brain and not the stomach. They are typically a need for an energy boost or to fill an emotional need to increase happiness or peace. Typically, the foods that people crave are unhealthy quick-release energy foods.

Food cravings are often associated with energy overload. Food cravings can trigger food binging. Food binging is when an individual eats 3 to 8 serving sizes of a food – most often an unhealthy food.

Do you have any unhealthy foods that you crave? List them below:

_____

_____

_____

_____

Lifestyle Habits That Affect Food Cravings

Tiredness and negative emotions are the two most common causes of food cravings. Tiredness can be caused from not getting enough sleep, skipping a meal, eating quick-release energy foods or from sitting around too long. Negative emotions can come from hurt feelings, disappointment, stress or a negative attitude.

Lifestyle Habits That Minimize Food Cravings There are several lifestyle habits that help prevent tiredness and minimize other causes of food cravings. Read through this list of lifestyle habits. Check the box in front of each habit that is currently your habit:	
	1 – Makes sure healthy foods (whole foods, slow-release energy) are available at home at all times and get eaten for snacks and at all meals.
	2 – Eats low-fat protein most every day [i.e. eggs, turkey, chicken, seafood, low-fat, cottage cheese, seeds and nuts].
	3 - Refined foods are avoided [i.e. corn syrup, white flour, sugar, trans fats and hydrogenated oils].
	4 - Eats breakfast which contains slow-release energy food and protein.
	5 - Eats three meals a day.
6 - Prevent nutritional deficiencies by:	
☐ ☐ ☐	Eating a balanced diet (eat food from each food group most days) Taking a multivitamin Getting Omega 3 fat in your diet by eating oily fish 2 – 3 times a week OR by taking a tablespoon of ground up flaxseed most every day OR by taking a fish oil supplement or a flaxseed oil supplement.

Lifestyle Habits That Minimize Food Cravings - Continued

	7 - Chews food well and eats slowly. This helps satisfy your appetite.
	8 - Drinks only caffeine-free beverages. Caffeine causes fluctuations in energy levels.
	9 - Drinks plenty of pure water [1 ounce for every 2 pounds of body weight]. Sugar-free, caffeine-free non-carbonated drinks can count as water.
	10 - Gets at least 30 minutes of aerobic activity most every day. Adults who are physically active most every day have greater self-control.
	11 - Has written self-care goals, and looks at these written goals every day. Adults who have clearly written self-care goals have more self-control.
	12 - Limit sedentary time or break it up by taking a mini activity break every hour. Sitting around makes you tired. Tiredness is a cause of sugar cravings.
	13 - Gets at least 7 to 9 hours of sleep per night and has regular bedtime. Cravings are stronger when individuals are feeling tired.
Now go back through this list and highlight the lifestyle habits that **do not** have the box checked in front of them. If you struggle with food cravings, these highlighted habits are habits you should consider adopting. Even adopting just a few highlighted habits may be a big help.	

Identify Food Craving Triggers

You may find that there are times when you are full of energy and positive emotions and yet you find yourself struggling with an active food craving. Sometimes certain places, events, situations or even other people can trigger a food craving. As you read through this list of possible triggers, ask yourself, "Is this a trigger for me?" If you answer YES to any of the statements below, explain why you answered yes.

I find myself craving unhealthy food when …
… I am hanging out with certain PEOPLE. NO YES, Explain …
… I am at a specific LOCATION (i.e. convenience store). NO YES, Explain

Continued - **I find myself craving unhealthy food when …**

… I attend certain EVENTS (i.e. sporting events). NO YES, Explain
… I participate in certain ACTIVITIES (i.e. car trip or party). NO YES, Explain
… I find myself in certain SITUATIONS (tired from lack of sleep or have hurt feelings). NO YES, Explain
… it is about _____ o'clock during the day. NO YES, Explain
… I see _____ food(s) (i.e. chocolate). NO YES, Explain
… I EAT A CERTAIN FOOD (i.e. white bread makes you want something sweet to eat a couple hours later). NO YES, Explain

Look at your list of food craving triggers. Some food craving triggers can be prevented. For example, if having chocolate in the house causes you to crave chocolate, then don't bring chocolate into the house. You may need to talk to other family members and have them help with this. If eating white bread causes you to want sweets a couple hours later, then skip eating white bread with meals. If hanging out with a certain friend causes you to want to eat unhealthy foods, then make sure you have a healthy snack with you when you go to hang out with this friend. These are just a few examples of ways you

can prevent cravings. **Are there any of your food craving triggers that could be prevented?** Use the space below to write down ideas you have to prevent food craving triggers.

_____

_____

_____

_____

_____

_____

Actions That Help Minimize Active Food Cravings

Sometimes in spite of your best efforts to prevent a food craving, it happens anyway. First, rule out if it is true hunger or is it just thirst. The brain can't always differentiate between hunger and thirst. If you have a food craving, drink a glass of water and wait 15 minutes. If you are still wanting something unhealthy to eat after drinking a glass of water, then eat something healthy. If you don't want anything healthy to eat, then most likely it is not true hunger but a food craving. Here are some actions you can take to help you deal with an active food craving:

1. Choose healthy substitutions for unhealthy food cravings. For example, sugar-free gum can help quench cravings for sweets. Homemade popcorn or carrot sticks can satisfy the need to munch on crunchy chips or Cheetos.

2. If you want to eat because you are tired, it is OK to lay down and rest, instead of eating.

3. If it is an energy slump during a certain time of the day – try fresh air, sunshine, drink a cold glass of water, stand up and stretch, move around, laugh about something, or visit with someone.

4. Stress can trigger cravings. Find ways to relax and reduce stress. Try yoga, walking, stretching, breathing exercises, journaling, visit with a friend, or take a warm bath.

5. Anger, sadness and depression can trigger a craving. Don't feed your emotions. Try this:
    a. Do something nice for yourself.
    b. Express yourself. Tell someone you trust how you are feeling or express yourself on paper – write in your journal.
    c. Think positive and focus on the positive in yourself and your situation.
    d. Repeat positive affirmations that support self-acceptance (see section 5.3.1).
    e. Create a visualization about yourself (see section 5.2.3) – see yourself as a good and loveable person.
    f. Think about a place or situation which makes you feel happy and make a visualization about this. Go to your happy place in this visualization (see section 5.2.3).

g. Stomp ANTS (Automatic Negative ThoughtS)! STOP negative thoughts and REPLACE them with positive thoughts (see section 5.3.3).

6. Get your mind on something else. The more you think about a food craving, the stronger the desire becomes to obtain that food and eat it. Telling yourself you **can not** have a certain food, is thinking about it. Telling yourself you **can not** have a food intensifies the desire to obtain that food. You need to get your mind on something else…

   Make a DISTRACTION ACTION PLAN. Make a list of 10 POSITIVE things you can do to distract yourself. Choose activities you enjoy – things that tend to make you feel happy after you do them (for example - call a friend, go for a walk, read a book, shoot hoops, listen to music).

   1. _____
   2. _____
   3. _____
   4. _____
   5. _____
   6. _____
   7. _____
   8. _____
   9. _____
   10. _____

   Next, make your Distraction Action Plan visible. Write it on a pocket card and put it in your wallet or purse. Make a mini poster of your Distraction Action Plan and hang it up where you will see it most every day.

7. Believe that your food craving will pass. A food craving is similar to a wave in the ocean. It grows with intensity, peaks and then subsides if you get your mind on something else. Create a visualization of yourself as a surfer who is "riding the wave" until it subsides.

One More Thing …

If you give into a food craving, don't beat yourself up. This is a journey that you are on. There are going to be good days and bad days. You are not a failure if you slip and fall on this journey. The important thing is that you get up when you slip and fall, and keep moving forward. Remind yourself that each day is a new day, a new beginning, if you need it to be. **Don't give up! Don't give in! Keep moving forward!!**

Journaling 5.1.4

Journaling is an effective way to express emotions, and has been found to enhance both mental and physical well-being. It is an awesome power tool and it is so easy to do! Journaling has many MANY benefits. Journaling increases self-awareness. Self-awareness increases success with long-term behavioral change. Journaling has a positive effect on the emotional and judgment centers of the brain. This positive effect increases self-control. But that's not all. Here is a list of some of the many benefits of journaling:

1. Provides opportunity for self-discovery;
2. Reveals your greater potential;
3. Enhances self-expression;
4. Builds self-confidence and self-knowledge;
5. Empowers YOU;
6. Brings out natural beauty and wisdom;
7. Helps you feel better about yourself;
8. Improves self-trust;
9. Strengthens your sense of yourself;
10. Stimulates personal growth;
11. Helps you organize thoughts and ideas;
12. Bridges inner thinking with outer events;
13. Focuses and clarifies your desires and needs;
14. Aids in connecting causes to effects;
15. Clarifies thoughts, feelings and behavior;
16. Acts as your own counselor;
17. Releases pent-up thoughts and emotions.

Journaling can be used to clarify any issue in your life. It gives you the opportunity to stop, pay attention and listen to yourself. It has no rules. Messiness, typos, poor writing are all OK. Next, let's review several different types of journaling that can provide support to you as you move forward on the Back in Whack Path toward Peak Health.

Body Appreciation Journaling

There are so many things you can do because you have a fully functional, amazing body. Things you enjoy (i.e. hang out with friends, play games with the family, go for a hike). You can take care of yourself and have some independence (i.e. choose your style of clothing and hair style, go on an adventure). You can be creative or take on exiting challenging projects (paint a picture, build a bookshelf, overhaul an engine). Learn new things. You can help other people you care about. Each day think about different things you have done and realize you could only have been able to do them because you have an amazing body.

Take body appreciation journaling a step further. Think about how your body identifies invaders (bacteria

and virus) and destroys them. How about when you get cut, your body grows new tissue and skin. That's pretty amazing. What about how your body turns a handful of nuts into muscle. Think about the many amazing functions of your body and brain and then write about it.

Self-Kindness Journaling

Write to yourself. Use kind, understanding, words of comfort. Let yourself know that you care about yourself, adopting a gentle, reassuring tone. If you are having a bad day, have compassion for yourself. Tell yourself you are loveable and worthy of respect.

Body Awareness Journaling

This is a special type of journaling that requires you take a time out in a quiet place and become aware of how your body and mind are feeling. Does your body feel energized or drained? Do you feel relaxed or uptight? Are you pain free or does something hurt? Do you feel peaceful or worried? Does your stomach feel good or is it upset and bloated? Do you feel optimistic or negative? This is an excellent type of journaling practice at least once a week.

An important part of taking good care of your body is to be aware of how your body feels – listen to your body. As you take good care of your body, your body will become more energized, have less pain, your stomach will feel better, your emotions will be happier, you will feel more peaceful and optimistic. Incredible, isn't it!! Listen to your body! It will let you know if you are taking good care of it.

Gratitude Journaling

Gratitude is one of the most important thoughts and feelings you can have for your well-being. Research has shown that practicing gratitude leads to increased happiness, reduced stress, and better immune system function (you will learn more about that in step 2).

Gratitude journaling is easy to do. Each day make a list of things you are grateful for. Try to think of as many things as you can, big things and little things. For example, I am grateful (thankful) for loving family members, a safe home, nutritious food, friends, a brain that can learn, favorite color of shirt, warm shining sun, etc. Thinking about the little things that make your life enjoyable will help shift your focus from negative thoughts to positive. Taking time out each day to be grateful can help improve your mood and outlook on life.

There's more!! You might be surprised to learn that such a simple form a journaling is actually a powerful brain changing tool. When you practice gratitude journaling, the emotional center of your brain becomes cooler. SAY WHAT!?

Here is how it works. When the emotional center of your brain is negative (i.e. depressed, sad, everything seems wrong, angry) it is hotter than the rest of your brain. It is like looking at your world through gray-color sunglasses. Everything seems worse than it is and it is hard to see the positive in situations and it is hard to be happy. NOW, when the emotional center of your brain is positive (optimistic, happy, easy to see the bright side, relaxed) it is cooler than the rest of the brain. It is like you are looking at your world through rose-colored sunglasses and you are naturally happier, uplifted, encouraged, less easily stressed out. **When you practice gratitude journaling, the emotional center of your brain becomes cooler. How COOL is that!?** ☺

Journey Journaling

Journey journaling is simply writing about this habit change journey you are on and the wonderful transformation of your health and body. Here are some ideas of things you may want to write about when practicing journey journaling:

1. What changes do you want to see 6 months from now?
2. How do you think the Back in Whack program is going to make your life better?
3. Are you excited about this Back in Whack journey to Peak Health?
4. Why do you want to take better care of your amazing body?
5. What motivates you to want to adopt healthier lifestyle and eating habits?
6. How committed are you to following your health plan?
7. What has been the hardest habit to change and why?
8. What do you like most about this health plan?
9. Do you anticipate any path blockers along this journey (section 5.4.2)?
10. Are you noticing benefits from getting more physically active (section 4.2.6)?
11. What is your favorite power tool so far and why?
12. Are you feeling better about yourself and your body?
13. How does it feel to take charge of your health?
14. What are your hopes and dreams and how can the Back in Whack program help you achieve your hopes and dreams?
15. What is keeping you motivated to keep moving forward?

5.2 Power Tools for Step Two

Positive Focus Supports Habit Change 5.2.1

Thoughts and emotions motivate people to do the things they do. Upbeat emotions and positive thoughts about healthy habits helps you stay excited about taking good care of your amazing body. It motivates you to keep moving forward on this journey to the top of Peak Health. The type of motivation that inspires people to change health habits does not happen accidently. Inspirational motivation happens "ON PURPOSE."

Your brain is the boss of your body so it is very important to think about what you are thinking about. Behavior is driven by an instinct to avoid pain and seek pleasure. Because of this, the brain is attracted to anything positive and is motivated to achieve things that have positive results. It is important to purposely look for positive things about yourself and your life. Here are some examples of what I am talking about:

1. When you think about yourself – look for the things you like about yourself.
2. Look for good things that happen to you and around you during the day.
3. Think about the benefits you are getting and will continue to get from sticking with your health plan.

A positive focus has a similar effect on the emotional center of your brain as does gratitude journaling – it cools the emotional center of the brain. Remember, when the emotional center is cooler than the rest of the brain, it is like you are looking at your world through rose-colored sunglasses. It is easier to see the bright side of life. You are naturally happier, uplifted, encouraged, and more relaxed.

Positive Mindset Promotes Success 5.2.2

A positive mindset is the cornerstone to success. A mindset is more than just having a thought about something. A mindset is much deeper than a thought. A mindset is a commitment to a pattern of thinking and perceiving yourself, your circumstances, and the world around you. A mindset can have a big influence on perception and therefore thought patterns.

There are 2 types of mind sets - the growth mindset (positive) and the fixed mindset (negative). People with a **growth mindset** are interested in setting learning goals which means they are more interested in gaining competence and growing, than they are about passing or failing. Rather than focusing on how they feel, they focus on what they can learn from the experience which will help them do better next time. They are willing to try new approaches in order to improve. They see problems as opportunities to try new strategies. The effort they put forth measures success more than the final outcome. If at first you don't succeed, try, try again. People with a growth mindset don't give up easy.

They view change as a journey and set out with the intention of thoroughly enjoying the journey. Here are some examples of beliefs common to people with a growth mindset:

1. Unmet goals are opportunities for growth, learning, and a chance to practice problem solving skills.
2. There is no such thing as failure … there are those who find solutions to problems and keep moving forward, and those who quit.
3. If you stumble and fall …. fall forward! When you get back up, you will be facing forward and will be moving forward. This is a positive perception to have for those days when you aren't able to follow your health plan.
4. Each day is a new day with new possibilities.
5. Making healthy changes in your life is not a race. It is a journey. Take one day at time and enjoy each day.
6. Believe you will achieve whatever you wrote at the top of your Peak Health.
7. The moment you commit to change, is the moment your destiny is shaped. Be persistent!
8. Never give up! Never give in!

People with a **fixed mindset** set performance goals and focus on the end result. It is about passing or failing. Change is about the destination. When people with a fixed mindset fail to achieve their performance goals, they feel helpless and hopeless. It is easy for them to get depressed, lose self-esteem and run out of steam (motivation). When faced with a problem, they typically keep repeating the same behavior. Rather than try something new, they will give up completely.

As you read these two descriptions, could you relate to any of the characteristics of either mindset? Grab a highlighter and read back through these two descriptions. Highlight every characteristic that describes you. Which mindset do you have? If you find that you mostly have a fixed mind set, can you think of anything you can do to shift to a growth mindset?

Visualize Success 5.2.3

DEFINITION: Visualization is a conscious, organized daydream in which you deliberately take charge of your mental images and decide what you want to see.

HOW DO VISUALIZATIONS WORK?
A large portion of the cerebral cortex is devoted to vision. The cerebral cortex's main function is to process information that comes from the retinas of the eyes. When we close our eyes, this function turns inward. It is at this point that one of the most important channels for the mind/body connection become available.

The subconscious mind seems to make little distinction between real visual information and the vivid sensory images conjured up during a visualization exercise. Your mind and body react much the same to imaginary experiences as they do to real experiences. Visualization works because your unconscious mind experiences reality indirectly by watching these vivid sensory images. It's like you write and produce your own life story, and broadcast it on this little TV screen in your head. Your unconscious mind watches the broadcast but interprets this information as real.

Research has shown that you can move information into your unconscious if you can hold a vivid image in your mind for 35 seconds. Using visual images is the most effective way to access our unconscious mind. The best times to practice visualizations are just before falling asleep at night and upon waking in the morning. During these periods of altered consciousness, you are particularly relaxed and your mind is open to suggestion.

The more senses you involve, the more effectively your visualization will absorb into your unconscious and therefore influence your behavior. Visual images with a strong emotional response are most effective. Intensity of senses, emotion, lighting, volume all influence the effectiveness of your visualization.

Create Your Own Visualization

How do I make an effective visualization? There are 5 parts needed to create an effective visualization. Each part has several important details.

1. SURROUNDINGS – That is environment and scenery.
    a. Think of a scene that is familiar and pleasant.
    b. Somewhere you can feel safe and relax.
    c. See as many details as you can think of in your surroundings. Use lots of color and brightness.
    d. What do you hear, feel (touch), smell and taste?

2. YOURSELF
    a. How do you look?
    b. How do you feel emotionally?
    c. How does your body feel?

3. Yourself in ACTION practicing your new healthy habit.

4. Yourself LIKING and ENJOYING your healthy habit.
    a. It makes you feel happy and uplifted.
    b. Your body feels strong and full of energy.
    c. Think about how much you really REALLY like this healthy habit.
    d. You are looking forward to the next time you can practice this healthy habit.

5. See and feel the POSITIVE RESULTS of your healthy habit.
    a. You feel good about yourself.
    b. You are proud of yourself for taking good care of your amazing body.
    c. You like yourself.
    d. You are full of positive uplifting emotions.
    e. See your body responding positively to your healthy habits.
    f. Your body feels strong, healthy and energized.
    g. You want to celebrate life!

Use the box below to write the details of your visualization.

Details of Surroundings … See? Hear? Smell? Feel (touch)? Taste?	Yourself …. Look? Feel emotionally? Feel physically?	Healthy Habit Action …
Liking & Enjoying your healthy habit…	Positive Results of healthy habit ….	

Practice Your Visualization

1. Find a quiet, comfortable place. Best after you have climbed in bed, before you go to sleep.
2. Close your eyes.
3. Clear your mind of all thoughts. Train your mind to be quiet.
4. Pay attention to your breathing.
5. Take a deep slow breath through your nose. Inhale as much air as you can and hold it for 2 second. Become aware of the tension in your lungs and sense the tension in your muscles.
6. Exhale slowly through your mouth. Feel your body deflating like a balloon as you release the air from your lungs. Think the word "relax" every time you exhale.
7. Continue slowly inhaling and exhaling in this fashion until your body feels limp and heavy.
8. Now that your body is relaxed, allow your breathing to become slow and rhythmic.
9. It is now time to create your mental movie. Think of a scene that is familiar and pleasant. Somewhere you can feel safe and relax.

10. Envision this place in detail, including trees, clouds, water, animals, breezes, light. See what you see brightly and intensely. Try to envision as many details as you can.
11. Visualize a scene involving emotion. It's important to experience emotion which is uplifting, cheery, self-affirming, and celebrates life.
12. Hear pleasant sounds clearly.
13. Feel the warmth of the sun or the freshness of a gentle breeze.
14. Smell the freshness of the air, the fragrance of flowers or pine trees.
15. Now put yourself in the picture.
16. See yourself practicing your new self-care patterns. Feel joy that comes from this self-care action.
17. Visualize yourself as a picture of wellness. You are full of energy, strong, confident, happy, and doing the things you like to do. Believe you own these qualities of wellness. You feel wonderful as a result of practicing your new self-care patterns.
18. Experience this visualization with lots of positive emotion and vividly use all your senses with as much intensity as possible: sight, sound, smell, touch, and taste. Try to hold this vivid image with this intensity for a minute.
19. Now let your pleasant images fade into sleep.

A Final Word About Visualizations

Visualization is a powerful habit change tool that uses your imagination to reprogram your unconscious thought and create a more positive reality in your brain of what you are capable of accomplishing. Your body will respond positively to this new reality in your brain and will start changing in order to match your brain's new positive reality. Your brain is the boss of your body!!

You need to believe your goals before you can achieve your goals. Mental imagery and positive thinking help you believe and achieve your health goals.

5.3 Power Tools for Step Three

During *Power Tools for Step 3,* you will learn about positive affirmations and how to combat negative thoughts.

Positive Affirmations 5.3.1

Positive affirmations are positive statements that support your healthy habits. These messages help you feel good about new habits. They help you like your new habits.

An affirmation is a positive self-statement that diminishes negative personal beliefs and expectations. Individuals who consciously modify self-talk report immediate improvement in daily achievements and energy levels. Affirmations can reprogram the mind by replacing critical, demoralizing self-talk with uplifting, energizing messages. Positive affirmations give us an inner strength and set us up for success.

A. How to Write an Effective Positive Affirmation

1. Write a **positive** statement! Use upbeat energizing words. Avoid using words like "don't, stop, and not". Write something you want to accomplish instead of something you want to give up.
2. Make it **short**!
3. Make it **clear,** unambiguous, and **specific**.
4. Keep it **personal**! Affirmations are for you and you alone. It needs to be meaningful to you.
5. Write it in the **present tense**. The present tense will help to create a reality in your brain the moment you say it.
6. Be **realistic**!
7. After you have written your positive affirmation, try saying it a few times. It should feel good to repeat your affirmation several times.

B. How to Effectively Practice Your Positive Affirmation There are four important keys to effectively practicing affirmations … SEE IT! HEAR IT! FEEL IT! REPEAT IT!

1. SEE IT!
    a. See your positive affirmations in writing. Sixty percent of your cerebral cortex is devoted to vision. Seeing positive affirmations is an important way to help these messages saturate into your unconscious mind.
    b. You can hide written affirmations in drawers, inside cabinet doors, on your computer, etc. Then you can find them later in the day.

c. You can make a mini poster of your positive affirmations and hang it inside your bathroom cabinet or on the inside of your closet door or some other location that you access a few times a day.
d. Try writing your affirmations down on a small card and keep it in your pocket. You can periodically look at it during the day.

2. HEAR IT!
    a. Hear your positive affirmations. Say them out loud. Positive affirmations become more believable when you hear them.
    b. You can try turning a positive affirmation into a song and sing it or rap it.
    c. You can turn it into a cheer or just say it.
    d. You can record positive affirmations on tape and listen to them during the day or as you fall asleep at night.

3. FEEL IT!
    a. Say your affirmations with feeling! Be positive, upbeat, and expansive as you recite your affirmations.
    b. Affirmations are most effective when you say them with enthusiasm. Say them like you mean them!
    c. When you are saying your affirmations, avoid negative, doubting self-talk. Don't undercut your positive messages.

4. REPEAT IT!
    a. The more **often** you repeat your positive affirmations, the better they work.
    b. Upbeat enthusiastic messages that are repeated 20 to 30 times a day can actually change your brain.

C. Affirmations Change Your Brain

The SEE-HEAR-FEEL-REPEAT method of practicing affirmations is an effective method to help positive messages seep into your unconscious mind. Information in the unconscious mind is the foundation for our beliefs. These beliefs become a powerful influence on conscious thoughts and drive our behavior. In other words, when your affirmations seep into your unconscious mind, your brain will start believing these positive messages and act accordingly. Positive affirmations help to create a more positive reality in your brain for what you are capable of accomplishing.

Your body will respond positively to this new reality in your brain. Remember, each thought you have produces a physical electrochemical message. The cells in your body have special receptor sites to receive these electrochemical messages. It is like the cells of your body have ears to hear messages from your brain. This physiology allows your brain to be the boss of your body. Your body will respond to what the brain believes. Your body will start changing in order to match your brain's new positive reality.

D. Different Reasons People Use Positive Affirmations

1. Affirmations are a positive thinking skill that you can use the rest of your life to support any change you are trying to make or anything thing that you are trying to accomplish.

2. Affirmations can be used to increase body appreciation and love of body.
3. They can be used to improve self-image and self-worth.
4. Positive affirmations help diminish negative personal beliefs and unrealistic expectations. They can replace critical self-talk with uplifting encouraging messages about yourself.
5. They can help build self-confidence and belief in your ability to reach a goal that you are trying to accomplish.
6. Affirmations can support efforts to adopt new health habits.
7. Positive affirmations give people an inner strength and set them up for success.
8. Best of all, they are fun and easy to use.

E. Need Help Writing Your Positive Affirmations? Here are some sample affirmations.

1. Positive Affirmations for Body Appreciation

- I treat my body with respect!
- I have a wonderful body!
- I have an amazing body!
- My body is an incredible machine!
- I am taking good care of my body!
- I love my body!

2. Positive Affirmations for Healthy Eating

- Vegetables energize me!
- Fruits strengthen me!
- Whole grains balance my energy!
- I crave food in its natural form!
- Vitamins help me use stored energy!
- I eat food to support health and supply energy!
- Whole foods support peak health!
- My body craves whole foods!

3. Positive Affirmations for Self-Acceptance

- I am a special unique individual!
- I am a good person!
- I like myself just as I am!
- I am acceptable just as I am!
- I am worthy of good self-care!
- I am a valuable extraordinary individual!

4. Positive Affirmations to Build Self-Confidence

- I am strong and capable.
- I am determined and committed.
- I can do it. I will do it.
- I will be successful.
- It's going to be a great day.

4. Positive Affirmations for Aerobic Activity

- My body is growing stronger with aerobic activity!
- Aerobic activity balances my energy!
- Aerobic activity energizes me!
- Aerobic activity regulates my appetite!
- Aerobic activity helps my brain work better!
- Aerobic activity makes me feel happier!
- Aerobic activity decreases stress hormone!
- Aerobic activity helps manage stress!
- Aerobic activity helps my body heal quicker!
- Aerobic activity helps me stay healthy!

F. Write Your Own Positive Affirmations

Do you have any ideas about affirmations you would like to write and practice? What areas of your life would you like to build up or reprogram? Here are some areas you might be considering:

1) Changing health habits;
2) Health concern that you are working on;
3) Building up self-esteem and self-worth;
4) Emotional health;
5) Confidence in social situations;
6) Body appreciation;
7) Satisfaction at work; or
8) Whatever else is a concern for you.

After you have identified an area or two of your life that you like to build up or reprogram, use positive empowering words from the chart below and develop positive affirmations for these areas.

Positive Empowering Words to Use for Writing Your Own Positive Affirmations					
adored	creative	energized	hurray	passionate	special
amazing	dynamite	extraordinary	invincible	phenomenal	smashing
awesome	excited	explosive	incredible	precious	spectacular
brilliant	ecstatic	empowered	intelligent	relish	tremendous
beautiful	excellent	fascinating	jazzed	remarkable	terrific
blessed	exuberant	fantastic	magnificent	resilient	unique
captivating	exhilarated	fabulous	marvelous	sensational	vivacious
confident	enthralled	gifted	outstanding	smart	vibrant
charmed	enraptured	gorgeous	outrageous	super	winner

Start by writing several statements for each area identified. Use the space below to do this.

_____

_____

_____

_____

Next, repeat each statement several times. If a statement feels good, and is uplifting and energizing, when you say it, it is a keeper. Next, make a plan to start practicing your new affirmations most every day.

Changing Thought Patterns 5.3.2

Everyone has control to choose their conscious thoughts, yet very few individuals take advantage of this control. The conscious mind, like the physical body, requires constant conditioning to stay fit. It is well worth the effort it takes to exchange negative unhealthy thought patterns for positive health supporting patterns. The benefits are tremendous and far reaching. Optimism is one of the most powerful tools you have to promote and support peak health.

Let's look at one example of what I am talking about. Gratitude is one way to practice optimism. You learned during the Journaling subsection, that practicing gratitude can transform the emotional center of the brain from a negative state (hot), to a positive state (cool). The emotional center of the brain, also known as the limbic system, has a direct line to your immune system. When the limbic system is in a positive state (cool), it stimulates the immune system to perform robustly and without malfunction (autoimmune diseases or cancer). When the limbic system is in a negative state (hot), it suppresses immune system performance and promotes malfunction.

The limbic system is not just the emotional center of the brain. It is the control center for 7 other functions:

1. Motivation and drive
2. Sleep Cycle
3. Appetite cycle
4. Stress response
5. Bonding and social interactions
6. Libido
7. Process smells

Think about this … whenever your limbic system is in a positive (cool) state, all functions that are controlled from the limbic system will be positively affected and function more efficiently and optimally. Think about it! Wouldn't it be nice to have a boost in motivation to stick with this program? Would you like to get just the right amount of quality sleep? Is your appetite in overdrive? Wouldn't it be nice to suppress that wild beast? Think about a stress response that didn't respond so robustly and dump out a load of stress hormone into the body. Don't forget that your emotional state is included in this list. A cool limbic system promotes positive emotions of happiness, wellbeing, ability to see the bright side of things, and feeling more peaceful.

STOP! Think about what affect a limbic system in a negative (hot) state will have on all eight of these functions. It will have the opposite effect of everything I just listed above. Don't forget how the immune system is negatively impacted when the limbic system is negative (hot).

Isn't it amazing that you have the **power** to change the state of your limbic system by consciously choosing what you think about and how you think about things. Changing our thought patterns takes a commitment to: 1) stay aware of conscious thoughts, 2) stay aware of how those thoughts affect your emotional wellbeing, and 3) purposeful take actions to exchange negative unhealthy thought patters for positive health supporting thought patterns. This requires us to talk to ourselves differently. It might involve positive and affirming self-talk. It might include practicing positive affirmations. It might require challenging negative thought patterns head-on.

Now that you have gained a greater awareness of your thought patterns, it is time to explore approaches to changing negative thought patterns into more positive thought patterns.

Derail Negative Thinking 5.3.3

Positive psychology has shown that negative emotions can be harmful to health and possibly can even shorten a person's life span. One landmark study showed that individuals who reported that they infrequently experienced positive emotions, died an average of 10 years earlier than individuals who reported that they frequently experienced positive emotions.

The **LANDMARK STUDY** referenced in the introduction above was conducted on 180 elderly and deceased catholic nuns. Researchers studied handwritten autobiographies each woman had written in her early twenties. The frequency of positive emotions in these early writings was scored and compared to mortality rates. The results were overwhelming. The group of nuns who reported experiencing the lowest percentage of positive emotions died an average of 10 years earlier when compared to the nuns who reported experiencing the highest percentage of positive emotions.

If you are a person who struggles with negative emotions, don't become discouraged by this study. Here's the thing, most emotions are preceded by or linked to the conscious thoughts we think. This is good news because we can modify the conscious thoughts that produce negative emotions. Persistent negative thoughts need to be met head on and derailed. This will take work and a committed effort to change persistent negative thoughts. The rest of this section will give you ideas about how you can confront and derail negative thoughts.

Learn Methods to Derail Negative Thoughts

It is helpful to become more aware of how often you think negative thoughts. This is just one idea which you can do to increase awareness. It is called "A Penny for Your Thought." Put about 20 pennies in your left pocket first thing in the morning. Every time you think a negative thought about yourself, someone else, situations throughout your day or current events, place one penny in your right pocket. At the end of the day, count how many negative thought pennies you accumulated. Do this awareness exercise for three days in a row. At the end of three days, have you noticed that there are certain negative thoughts that were repeated more often than others? Write these repeated and/or persistent negative thoughts on a piece of paper.

Next you are going to learn about three different methods that can be used to combat and/or derail negative thoughts. These methods can be used on persistent negative thoughts or the occasional negative thought.

Snap Thoughts of Pessimism

You can learn to STOP pessimistic thinking. The word "STOP" symbolizes "Snap Thoughts Of Pessimism". Here is how the STOP method works. Put a rubber band on your wrist. When you have a negative thought, forcefully say, "STOP!" and snap your wrist with the rubber band. It is very important to promptly interrupt negative thought patterns, before they have a chance to negatively impact the emotional center of your brain – causing your emotional center (limbic system) to heat up into a negative state.

Stomp ANTS

ANTs are Automatic Negative ThoughtS. You can stomp ANTs. Here is how:

1. Identify the automatic negative thought;
2. Immediately and firmly say "STOP!"
3. Replace the negative thought with an 'Opposite Positive' statement;
4. Repeat the positive statement several times;
5. If the negative thought is persistent – argue that the 'Opposite Positive' statement is true and the negative thought is NOT true. Next, you will learn more about how to do this.

Combat Stubborn Negative Thoughts

Some negative thoughts are stubborn. If you encounter a negative thought that you can't STOMP or STOP, you will need to confront these negative thoughts with hard-nosed, confrontational self-talk.

Let's say the persistent negative statement was, "I am so stupid." Start by confronting the negative thought by asking, "What evidence is there that I am stupid?" Question the validity of the negative statement, "Is this all based on one mistake I made?" Ask for further clarification, "You mean I have never acted intelligently?" Ask for the facts and answer with facts, "I made one mistake, one day. It is human to make mistakes. One mistake does not equal a total lack of intelligence. Here is a list of intelligent actions I have taken during the last several days." End this confrontational self-talk by repeating an opposing positive statement several times, "I have an exceptional brain!"

Change Critical Self-Talk 5.3.4

This exercise should be done over several weeks and will eventually form the blueprint for changing how you relate to yourself long-term. Some people find it useful to work on their inner critic by writing in a

journal. Others are more comfortable doing it via internal dialogues. If you are someone who likes to write things down and revisit them later, journaling can be an excellent tool for transformation. If you are someone (like me) who never manages to be consistent with a journal, then do whatever works for you. You can speak aloud to yourself, or think silently.

1. The first step towards changing how you treat yourself is to notice when you are being self-critical. It may be that – like many of us — your self-critical voice is so common for you that you don't even notice when it is present. Whenever you're feeling bad about something, think about what you've just said to yourself. Try to be as accurate as possible, noting your inner speech verbatim. What words do you actually use when you're self-critical? Are there key phrases that come up over and over again? What is the tone of your voice – harsh, cold, angry? Does the voice remind you of anyone in your past who was critical of you? You want to be able to get to know the inner self-critic very well, and to become aware of when your inner judge is active. For instance, if you've just overslept and missed an important meeting, does your inner voice say something like "You're such a screw-up," "What a loser," and so on? Really try to get a clear sense of how you talk to yourself.

2. Make an active effort to soften the self-critical voice, but do so with compassion rather than self-judgment (i.e., don't say "you're such a monster" to your inner critic!). Say something like, "I know you're worried about me and feel unsafe, but you are causing me unnecessary pain. Could you let my inner-compassionate-self say a few words now?"

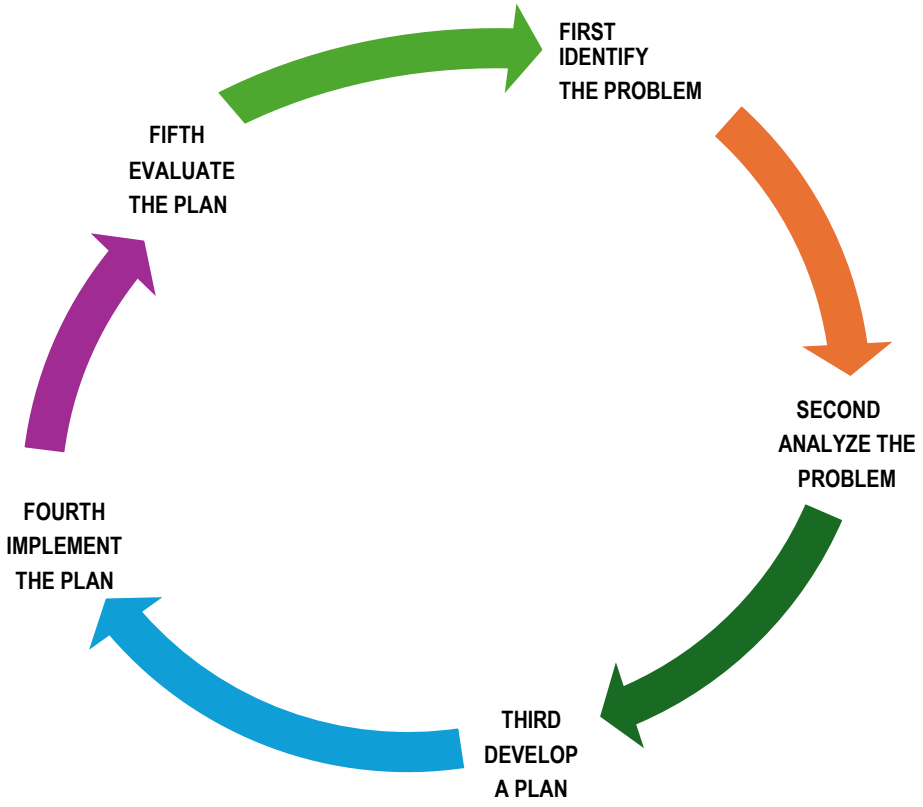
3. Reframe the observations made about your inner critic, in a friendly constructive way. If you're having trouble thinking of what words to use, you might want to imagine what a very compassionate friend would say to you in this situation. For instance, you can say something like "I know you felt horrible about missing the meeting. It was a mistake that could happen to anyone. You have been staying up late, scrolling on your phone, and probably aren't getting enough sleep. Maybe you could try putting your phone away by ten? I want you to be well rested so you can get your best work done each day." While engaging in this supportive self-talk, you might want to try gently stroking your arm, or holding your face tenderly in your hands (as long as no one's looking). Physical gestures of warmth can tap into the caregiving system even if you're having trouble calling up emotions of kindness at first. Touch releases oxytocin that will help change your bio-chemistry. The important thing is that you start acting kindly toward yourself, and feelings of true warmth and caring will eventually follow.

Did you know that it takes 3 positive thoughts about yourself to neutralize 1 negative thought about yourself. Studies show that positive and negative information of the same importance does not hold equal weight in our minds. Each negative thought will produce a negative emotion with 3 times the impact of an equally important positive thought with corresponding positive emotion. What does this mean for you? You need to purposely think 3 positive thoughts to neutralize each negative thought that you think. **Positive thinking helps combat negative thoughts.**

5.4 Power Tools for Step Four

Problem Solving 5.4.1

Problem-solving is a 5-step process. It involves [1] identifying the problem; [2] analyzing and defining the problem's root cause(s); [3] brainstorming potential solutions, and choosing the best solution to use to develop a plan; [4] develop the plan then implement the plan; and [5] after the plan is in place, evaluate the outcome. Below, is a diagram of the problem-solving process.



Problem solving is a super important skill needed to make successful changes in your life. It can be used to help you with any kind of change you are trying to make or with any problem you want to solve. Because problem-solving is such a valuable skill, it is important that you understand how to use this skill. The best way to understand how to use this skill, is to practice.

Next, you are going to be given an opportunity to practice problem solving. Listen to the scenario on the video and then think about how you would solve this problem, using the practice session below..

Practice Session 1

Complete the problem-solving practice session below, while you listen to problem scenario provided for you on the video for this section (Power Tools for Step 4).

1] Problem Identification – what is the problem?

2] Problem Analysis – what is not working or why is the problem occurring?

3] Plan Development:

a] What is the goal that has not been met OR what is the outcome that you want?

b] List 3 possible ideas to avoid or fix the problem:

1-

2-

3-

c] Choose the best idea: 1 - 2 - 3

d] Are there steps you need to take to transform this idea into a plan?
List these steps:

4] Plan Implementation – put the step by step plan into place!

5] Plan Evaluation – after you have tried the plan - how well did it work?

Practice Session 2

1] Problem Identification – what is the problem?

2] Problem Analysis – what is not working or why is the problem occurring?

3] Plan Development:

a] What is the goal that has not been met OR what is the outcome that you want?

b] List 3 possible ideas to avoid or fix the problem:

1-

2-

3-

c] Choose the best idea: 1 - 2 - 3

d] Are there steps you need to take to transform this idea into a plan?
List these steps:

4] Plan Implementation – put the step by step plan into place!

5] Plan Evaluation – after you have tried the plan - how well did it work?

Use Problem Solving for a Problem You Have

Think of a personal problem you have encountered on the journey to Peak Health. Now go through the problem-solving steps with your problem.

1] Problem Identification – what is the problem?

2] Problem Analysis – what is not working or why is the problem occurring?

3] Plan Development:

a] What is the goal that has not been met OR what is the outcome that you want?

b] List 3 possible ideas to avoid or fix the problem:

1-

2-

3-

c] Choose the best idea: 1 - 2 - 3

d] Are there steps you need to take to transform this idea into a plan?
List these steps:

4] Plan Implementation – put the step by step plan into place!

5] Plan Evaluation – after you have tried the plan - how well did it work?

Getting Around Path Blockers 5.4.2

Path blockers and problems are similar. They both get in the way of you achieving your goals. Problems can be removed with problem solving and path blockers are unmovable.

It is important to anticipate potential roadblocks and develop a roadblock prevention plan. A roadblock is something that interferes with the completion of a self-care action. Common roadblocks include lack of time or energy or money or family support, a ridged schedule, and bad weather. The most difficult roadblocks include: fear of failure; belief that one is undeserving of better health; and discomfort associated with change.

Fear failure is one of the most common reasons why people don't try to attempt self-improvement. Most individuals interpret the tiniest deviation from their plan to be failure. This is not failure. Real failure is when a person totally abandons their self-improvement efforts. Everything else during the self-improvement journey is a learning experience or an opportunity to practice problem solving skills or just a normal variation of daily patterns. Success comes with the fact that you are continuing on your self-improvement journey. An occasional stubble, rest period or slip backward is not failure, but just a normal part of any journey.

Another powerful roadblock is the belief that an individual is undeserving of better health. Use positive self-talk, affirmations, visualizations and journal writing to rid yourself of this destructive mindset.

Discomfort associated with change can also be a roadblock. Discomfort is a normal part of change. The good news is that, it is temporary. In time, the change you are making will become a comfortable habit. It is hard for an individual to stay motivated when they perceive the discomfort of change to be greater than the immediate benefits being received. During these tough times, explore ways to increase pleasure associated with your new self-care habits.

Explore Path Blockers on Your Journey

Think about examples of things or situations that could be path blockers to health goals. List them below:

Have you encountered any path blockers along your Back in Whack Path to a healthier weight?

Have you been able to get around the path blockers?

If yes, how?

If no, do you think there was anything that could have been done?

If no, should you write a new health goal for the current goal that is being blocked?

Staying Motivated 5.4.3

Thoughts and emotions motivate people to do the things they do. Upbeat emotions and positive thoughts about healthy habits will help you stay excited about taking good care of your amazing body. It motivates you to keep moving forward on this journey to Peak Health. The type of motivation that inspires people to change health habits does not happen accidently. Inspirational motivation happens "ON PURPOSE." You may not know it, but you have already learned several things you can do to stay motivated "on purpose."

Your brain is the boss of your body so it is very important to think about what you are thinking about. The brain is attracted to anything positive and is motivated to achieve things that have positive results. It is important to purposely look for positive things about yourself and your life. Here are some examples of what I am talking about:

1. When you think about yourself – look for the things you like about yourself;
2. Look for good things that happen to you and around you during the day;
3. Think about the benefits you will get from sticking with your healthy habits;
4. What did you write at the top of your Peak Health in Part 1? Believe you will achieve whatever you wrote at the top of your peak.

Each power tool helps keep you motivated by helping you think positive thoughts about yourself and about your weight loss and health improvement goals. There are several power tools that can be used to support you while your brain is being trained to eat to meet your body's nutritional and energy needs. Here are a few ideas to get you thinking about how you can use power tools to help you follow your nutrition plan:

1. Write in your journal about how things are going with your nutrition plan. What do you like? What is hard? How do you feel about eating appropriate amounts of healthy food? How hard is it to avoid empty calorie foods most days?
2. Choose positive affirmations to support your nutrition plan. For example:
   a. My nutrition plan balances my energy.
   b. Veggies energize my body.
   c. I eat to meet my body's energy needs.
3. Combat negative thoughts and practice positive thinking.
4. Create a visualization to support your nutrition plan. For Example:
   a. See your nutrition plan as a 4-wheeler which is taking you up the Back in Whack path to the top of Peak Health.
   b. See yourself enjoying a plate of healthy food with correct portion sizes. When you finish eating, you are satisfied, energized, and feel good about yourself.
5. Keep track of what you are eating in a food log. Remember, people who log their food intake eat up to 25% less food than those who do not. Plus, it helps keep you accountable for what and how much you are eating.
6. Use your easiest power tool. Wear the bracelet you chose to remind you to "Make Healthy Choices" every day.
7. If you don't have a buddy you have been partnering with during this Back in Whack journey, consider finding a partner … even if it just a partner to exercise with.

Keep moving forward on this journey and stay on the Back in Whack Path clear to the top of Peak Health. Some sections of the path will be easy and other sections will be tough. You may even slip and fall down from time to time. The important thing is that YOU GET BACK UP and KEEP MOVING FORWARD.

IMPORTANT! The closer you follow the BiW4Adults program, the quicker your energy balance will get back in whack, and the faster you will lose weight and reach your supreme health goal that you wrote at the top of Peak Health.

People with healthy bodies are happier than people with sick bodies. Keep taking wonderful care of your AMAZING BODY and you will live a healthier happier life.

Part 5 – Power Tools

PART SIX

APPENDIX

Recommended!

Carefully cut/tear the Funky Frases Form out of the Appendix and keep it with the section of the workbook where you are working.

Funky Frases Form

As you listen to BiW4Adults program videos, you will hear Funky Frases. You will need to listen for and record these Funky Frases, if you are working with medical provider or healthcare organization that requires accountability for completing the program materials. By the time you finish watching all of the program videos, you will have found 20 sets of Funky Frases. When you hear a Funky Frase, write the Frase and its section number on the form below.

Session Number	Funky Frase

Part 6 - Appendix

Master Goals Sheet

The Master Goals Sheet is a place where you can list ALL the new habits you are wanting to add to your daily or weekly routine. Individuals are most successful with adopting new habits when they limit the number of new habits they are trying to add at a given time. It is best to work on adopting 2 to 3 new habits at a given time. When you start getting used to these new habits, in 3 or 4 weeks, you can add a few more habits.

You are already using tracking sheets or the nutrition log to keep track of new eating habits. There is a place on these sheets to record physical activity. The Master Goals Sheet is designed to help you keep track of additional healthy habits, that are not part of the 4 *Action Steps for Weight Loss*. These habits might include actions to decrease gut inflammation, improve sleep, or manage stress. All these health issues greatly interfere with successful weight loss.

Part 4 – Body Biology Explained will help you assess each of the following health issues which could be causing you to gain weight easy and making it difficult to lose weight. **FIRST** - Identify your personal health issues by completing each self-assessment found in *Part 4*.

Put an X the box of each health issue that is a potential problem for you. Darken in the box if you believe the health issue is a BIG problem for you.

- ☐ Gut Inflammation [p. 228]
- ☐ Toxic buildup [p. 229]
- ☐ Constipation [p. 229]
- ☐ Carb sensitivity (Action Steps 1 – 2 – 3)
- ☐ Stress [p. 230 - 231]
- ☐ Sleep deprivation [p. 229]
- ☐ Sedentary Lifestyle (Section 4.2.6, p. 151)
- ☐ Nutritional deficiency(s) [p. 231]
- ☐ Nutrition Support [p. 231]
- ☐ Gluten sensitivity (p. 180]
- ☐ Fatty Liver [p. 232]
- ☐ Additional: _____ [p. 234]

For each health issue, there is a list health improvement habits (actions), that help to heal, minimize, or manage each specific health issue. These lists of habits (actions) are found on charts titled “Take Action” throughout *Part 4*. Several of these lists of habits (actions) are also included in this section of the Appendix. Find the Appendix page number next to each health issue in the list above.

SECOND – Go to the page numbers which have the list of health improvement habits (actions) for each of your health issues. As you review the lists, color in the boxes in front of each habit (action) you would like to adopt. Don’t worry or become overwhelmed if you end up with a lot of health habits you would like to adopt. Remember, you will be adopting 2 or 3 new habits every 3 to 4 weeks or at whatever pace you find is comfortable for you to progress.

The Master Goals Sheet keeps track of ALL the new habits you are thinking about adopting. These habits will be waiting safely for you right here in this section, until you are ready to work on adopting them. It's so easy! Every time you are ready to add a few more new health habits to your daily/weekly routine, you can go straight to your Master Goals Sheet and pick a couple new habits.

THIRD – Included with the Master Goals Sheet is a blank *Habit Tracker.* You can use this *Habit Tracker* to record new habits and track your success with adopting the habit(s). There are 4 copies of the *Habit Tracker* – 2 copies for you to use and see if you like it. The other 2 copies are for you to tear out of the Appendix and make additional copies.

Gut Inflammation is a problem for me! NO YES …

… Fill in the box in front of each health improvement habit (action) that you think you might like to adopt. When the time comes that you are ready to add the habit to the Habit Tracker and start working on adopting the habit, use the blank line in front of the box to fill in the start date.

Habits that promote growth of friendly bacteria (Lactobacilli and Bifidobacterium) in the gut:

_____ ☐ Eat yogurt – eat cottage cheese – drink butter milk
_____ ☐ Take a probiotic supplement containing Lactobacilli and Bifidobacterium
_____ ☐ Eat foods that support friendly bacteria in your gut – asparagus, fruit, legumes, green tea, garlic and onion
_____ ☐ Take a fiber supplement – especially FOS and inulin [p. 114]

Habits that support vagal nerve activity and improve your vagal tone:

_____ ☐ Practice Figure 8 Eye Tracking [p. 115)
_____ ☐ Practice Near/Far Gaze [p. 115]
_____ ☐ Practice Near/Far Gaze Advanced [p. 116]
_____ ☐ Practice Voo Breath [p. 116]
_____ ☐ Practice 4-8-7 Breath Pattern [p. 116]
_____ ☐ Practice Alternate Nasal Breathing Pattern [p. 116]
_____ ☐ Practice Box Breathing Pattern [p. 116]
_____ ☐ Take laugh breaks [p. 117]
_____ ☐ Practice gratitude [p. 200]
_____ ☐ Socialize with people you enjoy
_____ ☐ Exercise of any kind

Eating habits that promote efficient digestion of food and reduce gut inflammation:

_____ ☐ Eat slowly and chew your food thoroughly
_____ ☐ Eat in a relaxed manner
_____ ☐ Eat less food at meals
_____ ☐ Eat some raw plant-based foods every day
_____ ☐ Drink water between meals
_____ ☐ Avoid using non-steroidal anti-inflammatory drugs (NSAID).
_____ ☐ Identify and treat food allergies and/or sensitivities (see section 4.4.1)
_____ ☐ Eat ginger root or drink ginger tea
_____ ☐ Mix 1000 mg of L-glutamine powder into water and drink daily

Toxic Buildup and/or Constipation is a problem for me! NO YES …

… Fill in the box in front of each health improvement habit (action) that you think you might like to adopt. When the time comes that you are ready to add the habit to the Habit Tracker and start working on adopting the habit, use the blank line in front of the box to fill in the start date.

_____ ☐ Eat more organic foods (i.e. fruits, veggies, eggs, meat, nuts)
_____ ☐ Properly clean fresh produce to reduce and remove toxins [p. 122]
_____ ☐ Drink 2 to 3 cups of green tea per day.
_____ ☐ Get 20 to 30 minutes of aerobic exercise most days.
_____ ☐ Soaking in a hot tub of water with 1 cup of Epsom salts.
_____ ☐ Practice dry brush massaging before showering or bathing [p. 123]
_____ ☐ Take hot cold shower which help stimulate your lymph system [p. 123]
_____ ☐ Practice Belly Button Pumping exercise [p. 123]
_____ ☐ Take a fiber supplement [p. 114]
_____ ☐ Stay hydrated (1 oz of water for every 2 lb of body weight)
_____ ☐ Take magnesium citrate 400 to 500 mg before bed [p. 174]

**Please note that habits in Ink Free font, are excellent for both constipation and detoxification.

Sleep issues (lack, disrupted, deprivation) is a problem for me! NO YES …

… Fill in the box in front of each health improvement habit (action) that you think you might like to adopt. When the time comes that you are ready to add the habit to the Habit Tracker and start working on adopting the habit, use the blank line in front of the box to fill in the start date.

_____ ☐ Sleep on a comfortable mattress and pillow, use enough blankets to keep your body temperate warm, but not too warm.
_____ ☐ Sleep in a dark room with all lights turned off or turned away from the bed (i.e. digital clock faces).
_____ ☐ Turn off noise that would distract you. Consider using earplugs to bed to block out noise.
_____ ☐ Keep the Room between 65-70 degrees F. as this improves sleep quality.
_____ ☐ Start unwinding an hour before bed (i.e. take a bath, read a book, write in your journal, etc.).
_____ ☐ Practice gratitude [p. 200]
_____ ☐ Adopt a nighttime meditation [p. 139]
_____ ☐ Drink 8 ounces of water 90 mins before bed and leave a glass of water near your bed
_____ ☐ Drink a cup relaxation tea prior to bed - like chamomile, passionflower and valerian root
_____ ☐ Eat an evening meal made up of protein, healthy fats, and slow-release energy foods.
_____ ☐ Walk barefoot outside on grass, dirt or sand to Ground Your Body to the earth.
_____ ☐ Go outside early in the morning and expose yourself to sunlight
_____ ☐ Unplug or turn off your WiFi each night before bed
_____ ☐ Go to bed at the same time each night and wake up at the same time each morning
_____ ☐ Consistently get 7 to 9 hours of sleep per night

Stress (mind, body, work) is a problem for me! NO YES …

… Fill in the box in front of each health improvement habit (action) that you think you might like to adopt. When the time comes that you are ready to add the habit to the Habit Tracker and start working on adopting the habit, use the blank line in front of the box to fill in the start date.

_____ ☐ Practice the Deflating Balloon Relaxation Exercise [p. 139]
_____ ☐ Practice Mantra Breathing [p. 139]
_____ ☐ Practice Supportive Touch [p. 140]
_____ ☐ Practice Progressive Relaxation [p. 140]
_____ ☐ Take a walk
_____ ☐ Use a hand exerciser
_____ ☐ Find a reason to laugh (i.e. watch a funny movie, share jokes with someone) - laughter lowers stress hormones
_____ ☐ Talk to someone you trust
_____ ☐ Take a catnap
_____ ☐ Read something uplifting (i.e. scripture, poetry, inspirational, happy story)
_____ ☐ Get some sunshine – stimulates serotonin which sooths stressed nerves
_____ ☐ Practice kindness to others
_____ ☐ Be creative (i.e. paint, cook, decorate, rearrange furniture, etc.)
_____ ☐ Enjoy great smells (Aroma therapy)
_____ ☐ Set aside quiet time for self
_____ ☐ Visualize yourself relaxing in a visually pleasing, peaceful scene (p. 203).
_____ ☐ Yoga stimulates the relaxation response.
_____ ☐ Meditation with a positive focus stimulates the relaxation response.
_____ ☐ Listen to soothing music - stimulates the relaxation response (i.e. listen to music, play music, dance to music, sing, hum)
_____ ☐ Saunas stimulate the relaxation response.
_____ ☐ Read the Bible and pray
_____ ☐ Get a massage
_____ ☐ Take a break
_____ ☐ Enjoy a mini-escapes (i.e. take a bubble bath, enjoy some quiet time, soak in a hot tub)
_____ ☐ Write in your journal [p. 199]
_____ ☐ Eat a balanced, nutrient dense, whole-foods diet
_____ ☐ Take a Vitamin B complex with zinc
_____ ☐ Take vitamin C 1000 to 3000 mg daily
_____ ☐ Try to get 30 minutes of aerobic exercise 5 days per week
_____ ☐ Get at least 7 hours of restful sleep per night (see section 4.2.5)
_____ ☐ Practice optimism
_____ ☐ Lavender has calming, stress relieving properties.
_____ ☐ Schedule regular quiet time for yourself weekly

Stress management habits (actions) continued on the next page **- BUILD RESISTANCE TO STRESS**

Stress Management Habits (Actions) - Continued
BUILD RESISTANCE TO STRESS

_____ ☐ Enjoy a hobby
_____ ☐ Play a musical instrument
_____ ☐ Express yourself (poetry, journaling, stories) or with movement (i.e. dance, martial arts, yoga, etc.)
_____ ☐ Learn something new (crafts, bible study, golf league, coffee group, etc.)
_____ ☐ Take time for recreation and leisure activities
_____ ☐ Start a collection of something you appreciate
_____ ☐ Pamper yourself (i.e. get your hair fixed, get a facial or manicure, etc.)
_____ ☐ Get involved with things that have meaning to you
_____ ☐ Socialize at gatherings
_____ ☐ Record memorable experiences
_____ ☐ Set aside regular periods of time for self-reflection
_____ ☐ Enjoy cultural enrichment (i.e. go to concerts and plays)
_____ ☐ Have a pet

NUTRITIONAL SUPPORT for ENERGY BALANCE

Fill in the box in front of each health improvement habit (action) that you think you might like to adopt. When the time comes that you are ready to add the habit to the Habit Tracker, use the blank line in front of the box to fill in the start date.

_____ ☐ Take a multivitamin which includes 8 different B vitamins [p. 169, 176]
_____ ☐ Take a vitamin D supplement [p. 171]
_____ ☐ Take a calcium supplement [p. 171]
_____ ☐ Consider taking a probiotic containing Lactobacillus and Bifidobacterium [p. 176]
_____ ☐ Take an omega 3 fatty acid supplement (fish oil, flax seed oil) [p. 169]
_____ ☐ Take a fiber supplement [p. 114, 176]
_____ ☐ Drink 2 to 3 cups of green tea daily [p. 177]
_____ ☐ Eat foods rich in antioxidants include fruits, veggies, legumes, nuts, seeds, spices and herbs [p. 177]
_____ ☐ Take a magnesium supplement [p. 174]
_____ ☐ Take a chromium supplement or make sure it is included in your multivitamin [p. 177]
_____ ☐ Take a 5-HTP amino acid supplement at bedtime [p. 178]
_____ ☐ Take 1 table spoons of virgin coconut oil per day [p. 178]

Fatty Liver Disease is a problem for me! NO YES …

… Fill in the box in front of each health improvement habit (action) that you think you might like to adopt. When the time comes that you are ready to add the habit to the Habit Tracker and start working on adopting the habit, use the blank line in front of the box to fill in the start date.

_____ ☐ Eat clean (step 1)
_____ ☐ Eat to meet your body's caloric needs (don't overeat)
_____ ☐ Eat a low-carb, balanced diet packed with nutrient dense, slow-release energy foods (step 3)
_____ ☐ Take a high potency multivitamin
_____ ☐ Take an omega 3 fatty acid supplement [p. 79, 169]
_____ ☐ Lose weight and try to achieve a BMI of 25 or less
_____ ☐ Take actions to support the detoxification of the body (see section 4.1.3)
_____ ☐ Avoid alcohol
_____ ☐ Stay hydrated (p. 56)
_____ ☐ Take actions to manage stress (see section 4.2.4)
_____ ☐ Get adequate amount of quality sleep (see section 4.2.5)
_____ ☐ Avoid taking medication that your doctor has not prescribed

Add liver healing foods into your diet:
_____ ☐ Foods with a high sulfur content - garlic, onions, legumes, eggs
_____ ☐ Soluble fiber – pears, apples, oat bran, legumes
_____ ☐ Veggies in the brassica family – broccoli, brussels sprouts, cabbage
_____ ☐ Healing spices – turmeric, cinnamon, cilantro
_____ ☐ Leafy greens including wheatgrass, barley grass, chlorella, spirulina

ADDITIONAL HEALTH IMPROVEMENT HABITS (ACTIONS)

Write additional health improvement habits (actions) that you think you might like to adopt. When the time comes that you are ready to add the habit to the Habit Tracker, use the blank line in front of the box to fill in the start date.

_____ ☐ _____
_____ ☐ _____
_____ ☐ _____
_____ ☐ _____
_____ ☐ _____
_____ ☐ _____
_____ ☐ _____

BiW4Adults

Habit Tracker ↙ **Write days of the week in gray squares below** ↘ **Month:**

							WK Totals								WK Totals
WRITE GOALS IN THESE SPACES															

Date: WT: Date: WT: Waist Circ:

Habit Tracker

↙ **Write days of the week in gray squares below** ↘ **Month:**

							WK Totals								WK Totals
WRITE GOALS IN THESE SPACES															

Date: WT: Date: WT: Waist Circ:

BiW4Adults

Habit Tracker

↙ Write days of the week in gray squares below ↘ **Month:**

TEAR OR CUT OUT

MAKE COPIES

TEAR OR CUT OUT

MAKE COPIES

TEAR OR CUT OUT

								WK Totals								WK Totals
WRITE GOALS IN THESE SPACES																

Date: WT: Date: WT: Waist Circ:

Habit Tracker

↙ Write days of the week in gray squares below ↘ **Month:**

								WK Totals								WK Totals
WRITE GOALS IN THESE SPACES																
Date:		WT:							Date:		WT:			Waist Circ:		

MAKE COPIES

MAKE COPIES

MAKE COPIES

MAKE COPIES

MAKE COPIES

TRACKING: EAT CLEANER **↙ Write days of the week in gray squares below ↘** **Month:**

							WK 1 Totals								WK 2 Totals
1 I eat foods without added sugars															
2 I eat foods without HFCS															
3 I eat foods without hydrogenated fats and without trans fats															
4 I eat foods with 3 or fewer chemicals in the ingredients list															
5 I practice the 3/12 meal pattern [Stop eating 3 hours before bed, 12 hours between super & breakfast]															
6 I drink beverages without added sugars or HFCS															
7 I drink beverages with 3 or fewer chemicals in the ingredients list															
8 I drink beverages without partially hydrogenated fats															
9 Break up sedentary time - walk around every hour															
Personalized Goal:															
Personalized Goal:															
Personalized Goal:															

Part 6 - Appendix

TRACKING: EAT CLEANER **↙ Write days of the week in gray squares below ↘** **Month:**

							WK 1 Totals								WK 2 Totals
1 I eat foods without added sugars															
2 I eat foods without HFCS															
3 I eat foods without hydrogenated fats and without trans fats															
4 I eat foods with 3 or fewer chemicals in the ingredients list															
5 I practice the 3/12 meal pattern [Stop eating 3 hours before bed, 12 hours between super & breakfast]															
6 I drink beverages without added sugars or HFCS															
7 I drink beverages with 3 or fewer chemicals in the ingredients list															
8 I drink beverages without partially hydrogenated fats															
9 Break up sedentary time - walk around every hour															
Personalized Goal:															
Personalized Goal:															
Personalized Goal:															

TRACKING: EAT CLEANER & EAT SLOW-RELEASE ENERGY FOODS **Month:**

							WK 1 Totals								WK 2 Totals
1 I eat foods without added sugars															
2 I eat foods without HFCS															
3 I eat foods without partially hydrogenated fats and without trans fats															
4 I eat foods with 3 or fewer chemicals in the ingredients list															
5 I practice the 3/12 meal pattern [Stop eating 3 hours before bed, 12 hours between super & breakfast]															
6 I drink beverages without added sugar or HFCS															
7 I drink beverages with 3 or fewer chemicals in the ingredients list															
8 I drink beverages without partially hydrogenated fats															
9 Break up sedentary time - walk around every hour															
10 I only eat grain products made with 100% whole grains															
11 I limit potatoes to ½ cup per day															
12 I eat to meet my body's protein needs [Pounds _____ divided by 2.2 = _____ grams of protein]															
13 I eat healthy protein [Un-breaded meats & fish, low-fat meat, eggs, seeds, nuts, cheese]															
14 I practice meal sequencing [Eat non-starchy veggies & healthy fat 1st, protein 2nd, and starch & fruit 3rd]															
15 I do not drink fruit juice															
16 Increase physical activity (describe):															
Personalized Goal:															
Personalized Goal:															
Personalized Goal:															

Part 6 - Appendix

TRACKING: EAT CLEANER & EAT SLOW-RELEASE ENERGY FOODS **Month:**

							WK 1 Totals								WK 2 Totals
1 I eat foods without added sugars															
2 I eat foods without HFCS															
3 I eat foods without partially hydrogenated fats and without trans fats															
4 I eat foods with 3 or fewer chemicals in the ingredients list															
5 I practice the 3/12 meal pattern [Stop eating 3 hours before bed, 12 hours between super & breakfast]															
6 I drink beverages without added sugar or HFCS															
7 I drink beverages with 3 or fewer chemicals in the ingredients list															
8 I drink beverages without partially hydrogenated fats															
9 Break up sedentary time - walk around every hour															
10 I only eat grain products made with 100% whole grains															
11 I limit potatoes to ½ cup per day															
12 I eat to meet my body's protein needs [Pounds _____ divided by 2.2 = _____ grams of protein]															
13 I eat healthy protein [Un-breaded meats & fish, low-fat meat, eggs, seeds, nuts, cheese]															
14 I practice meal sequencing [Eat non-starchy veggies & healthy fat 1st, protein 2nd, and starch & fruit 3rd]															
15 I do not drink fruit juice															
16 Increase physical activity (describe):															
Personalized Goal:															
Personalized Goal:															
Personalized Goal:															

Low Carb Nutrition Log

DATE		GP		GP		GP
Carb Servings						
Fruit & Starch						
Include Amt						
Extra for Men						
Milk & Yogurt Include Amt						
Non-starchy Veggies	Total Servings		Total Servings		Total Servings	
Protein Intake						
Ideal Protein Intake for My Body Weight:						
_____						
Note: GP = grams of protein						
	Total Grams of Protein		Total Grams of Protein		Total Grams of Protein	
Fat Servings						
Include Amt						
Extra for Men						
Extra for Men						
Amt of Water						
MTV						
Omega 3						
Record Physical Activity HERE						
Record Extra Servings HERE						
[Starch & Fruit Dairy & Fat]						

Low Carb Nutrition Log

DATE		GP		GP		GP
Carb Servings						
Fruit & Starch						
Include Amt						
Extra for Men						
Milk & Yogurt Include Amt						
Non-starchy Veggies	Total Servings		Total Servings		Total Servings	
Protein Intake Ideal Protein Intake for My Body Weight: _____ Note: GP = grams of protein						
	Total Grams of Protein		Total Grams of Protein		Total Grams of Protein	
Fat Servings Include Amt						
Extra for Men						
Extra for Men						
Amt of Water						
MTV						
Omega 3						
Record Physical Activity HERE						
Record Extra Servings HERE [Starch & Fruit Dairy & Fat]						

PART ONE - Write a small achievable, believable physical activity goal:

[1] What physical activity do you want to do, to get moving more?

[2] Are you currently spending any time doing this specific activity?
NO, skip to [4] **YES**, describe current intensity, amount of time, times per week:

[3] Write new goal for this physical activity by adding a little extra distance or 5 minutes of time or small amount weight or few extra reps - describe how much:

[4] Write a goal for this new physical activity by describing how much – start small (short distance or 5 minutes of time or small amount weight or few reps):

[5] When will you do this physical activity (time of the day, which days a week)?

[6] How often (number of days per week)?

[7] Start Date:

PART TWO – Divide and conquer the greater goal:

[8] Are you planning to do more of this specific physical activity as time moves forward?
NO, go to part three **YES**, answer a and b

[a] How much of this specific physical activity would you like to be getting by the time you are working on Action Step Four (6 to 12 weeks from now)? Describe amount of time, intensity, distance (if applicable), times per week:

[b] Describe how you plan to make small increases, over the next 6 to 12 weeks, to reach this goal:

PART THREE – Use power tools to achieve success:

[9] What power tools could you use to help you reach your physical activity goal?

- ☐ Record daily physical activity on a habit tracker or log or diary
- ☐ Focus on Peak Health – what are you striving to achieve when you reach the top of Peak Health?
- ☐ Practice body appreciation and positive self-talk
- ☐ Wear your "Make Healthy Choices" bracelet
- ☐ Journal about your weight loss journey or body awareness or gratitude
- ☐ Visualize success or loving to be physically active
- ☐ Practice positive affirmations
- ☐ Derail negative thinking
- ☐ Practice problem solving

REFERENCES

1. Amen, Daniel G. (2010). *Change Your Brain Change Your Body.* New York, NY: Three Rivers Press. (37-127, 256-271).
2. *Baratta MV, Rozeske RR, Maier SF. Understanding stress resilience. Front Behav Neurosci. 2013 Nov 8;7:158. doi: 10.3389/fnbeh.2013.00158. PMID: 24265608*
3. *Basturk B, Koc Ozerson Z, Yuksel A. Evaluation of the Effect of Macronutrients Combination on Blood Sugar Levels in Healthy Individuals. Iran J Public Health. 2021 Feb;50(2):280-287. doi: 10.18502/ijph.v50i2.5340. PMID: 33747991*
4. Baurer, Kathleen, Liou, Doreen, Sokolik, Carol. (2012). *Nutrition Counseling and Education Skill Development.* (Second Edition). Wadsworth: Belmont, CA. (1-45, 76-99, 140-167).
5. Bermon S, Petriz B, Kajėnienė A, Prestes J, Castell L, Franco OL. The microbiota: an exercise immunology perspective. Exerc Immunol Rev. 2015;21:70-9. PMID: 25825908
6. Benedict C, Vogel H, Jonas W, Woting A, Blaut M, Schürmann A, Cedernaes J. Gut microbiota and glucometabolic alterations in response to recurrent partial sleep deprivation in normal-weight young individuals. Mol Metab. 2016 Oct 24;5(12):1175-1186. doi: 10.1016/j.molmet.2016.10.003. PMID: 27900260
7. Block, JP, He, Y, Zaslavsky, AM, Ding, L, Avanian, JZ. Psychosocial stress and change in weight among US adults. Am J Epidemiol. 2009 Jul 15; 170(2): 181–192. PMID: 19465744
8. Childs E, de Wit H. *Regular exercise is associated with emotional resilience to acute stress in healthy adults. Front Physiol. 2014 May 1;5:161. doi: 10.3389/fphys.2014.00161. PMID: 24822048*
9. Choi JH, Lee B, Lee JY, Kim CH, Park B, Kim DY, Kim HJ, Park DY. Relationship between Sleep Duration, Sun Exposure, and Serum 25-Hydroxyvitamin D Status: A Cross-sectional Study. Sci Rep. 2020 Mar 6;10(1):4168. doi: 10.1038/s41598-020-61061-8. PMID: 32144371
10. *Choi DW, Chun SY, Lee SA, Han KT, Park EC. Association between Sleep Duration and Perceived Stress: Salaried Worker in Circumstances of High Workload. Int J Environ Res Public Health. 2018 Apr 19;15(4):796. doi: 10.3390/ijerph15040796. PMID: 29671770*
11. D'Aquila, P., Bellizzi, D., & Passarino, G. (2015). Mitochondria in health, aging and diseases: the epigenetic perspective. Biogerontology. PMID: 25711915
12. Daly, ME, Paisey, R, Paisey, R, Millward, BA, Eccles, C, Williams, K, Hammersley, S, MacLeod, KM, Gale, TJ. Short-term effects of severe dietary carbohydrate-restriction advice in Type 2 diabetes–a randomized controlled trial. Diabet Med. 2006 Jan;23(1):15-20. PMID: 16409560
13. *DiNicolantonio JJ, Lucan SCThe wrong white crystals: not salt but sugar as aetiological in hypertension and cardiometabolic diseaseOpen Heart 2014;1:e000167. Link Here*
14. Dolezal BA, Neufeld EV, Boland DM, Martin JL, Cooper CB. Interrelationship between Sleep and Exercise: A Systematic Review. Adv Prev Med. 2017;2017:1364387. doi: 10.1155/2017/1364387. Epub 2017 Mar 26. Erratum in: Adv Prev Med. 2017;2017:5979510. PMID: 28458924
15. Dukowicz AC, Lacy BE, Levine GM. Small intestinal bacterial overgrowth: a comprehensive review. Gastroenterol Hepatol (N Y). 2007 Feb;3(2):112-22. PMID: 21960820
16. Elliot, Thomas. (1/21/2009) *Low Glycaemic Index or Low Glycaemic Load Diets for Overweight and Obesity.* Retrieved from the Cochrane Summaries website: http://summaries.cochrane.org/CD005105/low-glycaemic-index-or-low-glycaemic-load-diets-for-overweight-and-obesity#sthash.OuiHlNko.dpuf
17. Enig, Mary. (6/9/2009) *Do Saturated Fats and Trans Fats Cause Type-2 Diabetes?* Retrieved from Weston A Price Foundation: http://www.westonaprice.org/know-your-fats/do-saturated-fats-and-trans-fats-cause-type-2-diabetes
18. Enig, Mary & Fallon, Sally. (4/7/2009) *The Skinny on Fats.* Retrieved from Weston A Price Foundation: http://www.westonaprice.org/know-your-fats/skinny-on-fats

19. Farnetti S, Zocco MA, Garcovich M, Gasbarrini A, Capristo E. Functional and metabolic disorders in celiac disease: new implications for nutritional treatment. J Med Food. 2014 Nov;17(11):1159-64. PMID: 25072743
20. Foster, GD1, Wyatt, HR, Hill, JO, McGuckin, BG, Brill, C, Mohammed, BS, Szapary, PO, Rader, DJ, Edman, JS, Klein, S. A randomized trial of a low-carbohydrate diet for obesity. N Engl J Med. 2003 May 22;348(21):2082-90. PMID: 12761365
21. Gerritsen RJS, Band GPH. Breath of Life: The Respiratory Vagal Stimulation Model of Contemplative Activity. Front Hum Neurosci. 2018 Oct 9;12:397. doi: 10.3389/fnhum.2018.00397. PMID: 30356789
22. Gooley JJ. How Much Day-To-Day Variability in Sleep Timing Is Unhealthy? Sleep. 2016 Feb 1;39(2):269-70. doi: 10.5665/sleep.5424. PMID: 26888455
23. Grenville-Cleave, Bridget. (2002). *Positive Psychology – A Practical Guide.* London, England: Icon Books LTD. (pp. 1-210).
24. Haas, Elson M., Levin, Buck. (2006). *Staying Healthy with Nutrition a Complete Guide to Diet and Nutritional Medicine.* (21st Century Edition). Berkeley, CA: Celestial Arts. (30-82, 684-694).
25. *Healthy Foods Pyramid.* (2010). Retrieved from University of Michigan Integrative Medicine: http://www.med.umich.edu/umim/food-pyramid/index.htm
26. Ho, KY, Veldhuis, JD, Johnson, ML, Furlanetto, R, Evans, WS, Alberti, KG, Thorner, MO. Fasting enhances growth hormone secretion and amplifies the complex rhythms of growth hormone secretion in man. J Clin Invest. 1988 Apr;81(4):968-75. PMID: 3127426
27. Hoensch HP, Oertel R. Emerging role of bioflavonoids in gastroenterology: Especially their effects on intestinal neoplasia. World J Gastrointest Oncol. 2011 May 15;3(5):71-4. doi: 10.4251/wjgo.v3.i5.71. PMID: 21603032
28. Hyman, Mark. (2006). *Ultra-Metabolism.* New York, NY: Atria Books. (73-275).
29. Kim EJ, Dimsdale JE. The effect of psychosocial stress on sleep: a review of polysomnographic evidence. Behav Sleep Med. 2007;5(4):256-78. doi: 10.1080/15402000701557383. PMID: 17937582
30. *Kubota S, Liu Y, Iizuka K, Kuwata H, Seino Y, Yabe D. A Review of Recent Findings on Meal Sequence: An Attractive Dietary Approach to Prevention and Management of Type 2 Diabetes. Nutrients. 2020 Aug 19;12(9):2502. doi: 10.3390/nu12092502. PMID: 32825124*
31. Lanzi, R, Luzi, L, Caumo, A, Andreotti, AC, Manzoni, MF, Malighetti, ME, Sereni, LP, Pontiroli, AE. Elevated insulin levels contribute to the reduced growth hormone (GH) response to GH-releasing hormone in obese subjects. Metabolism. 1999 Sep;48(9):1152-6. PMID: 10484056
32. Lipski, Elizabeth. (2012). *Digestive Wellness.* (4th Edition). New York, NY: McGraw-Hill. (51-102, 163-168, 379-384).
33. Lowenstein, Arlene J., Ford-May, Lynn, Romano, Jane C. (2009). *Teaching Strategies for Health Education and Health Promotion Working with Patients, Families and Communities.* Sudbury, MA: Jones and Bartlett Publishing. (43-68, 105-116, 151- 228, 379-224).
34. *Ma X, Yue ZQ, Gong ZQ, Zhang H, Duan NY, Shi YT, Wei GX, Li YF. The Effect of Diaphragmatic Breathing on Attention, Negative Affect and Stress in Healthy Adults. Front Psychol. 2017 Jun 6;8:874. doi: 10.3389/fpsyg.2017.00874. PMID: 28626434*
35. *Mariotti A. The effects of chronic stress on health: new insights into the molecular mechanisms of brain-body communication. Future Sci OA. 2015 Nov 1;1(3):FSO23. doi: 10.4155/fso.15.21. PMID: 28031896*
36. McGuire, Michelle, Beerman, Kathy. (2013). *Nutritional Science*. (Third Edition). Belmont, CA: Wadsworth. (321-360)
37. McKay, Gary, Dinkmeyer, Don. (2002). *How You Feel Is Up To You*. (2nd Edition). Atascadero, California: Impact Publishers, Inc. (126 – 127, 166 – 174, 180 – 182).
38. Monda V, Villano I, Messina A, Valenzano A, Esposito T, Moscatelli F, Viggiano A, Cibelli G, Chieffi S, Monda M, Messina G. Exercise Modifies the Gut Microbiota with Positive Health Effects. Oxid Med Cell Longev. 2017;2017:3831972. doi: 10.1155/2017/3831972. Epub 2017 Mar 5. PMID: 28357027

39. Murray, Michael, Pizzorno, Joseph. (2012). The Encyclopedia of Natural Medicine. (Third Edition). New York, NY: Atria Books. (220-240).
40. Nation Institutes of Health – Office of Dietary Supplements (NIH). (11/4/2013). *Magnesium – Fact Sheet for Health Professionals.* Retrieved from NIH website at http://ods.od.nih.gov/factsheets/Magnesium-HealthProfessional/#h5
41. Nikkhah Bodagh M, Maleki I, Hekmatdoost A. Ginger in gastrointestinal disorders: A systematic review of clinical trials. Food Sci Nutr. 2018 Nov 5;7(1):96-108. doi: 10.1002/fsn3.807. PMID: 3068016
42. Pellissier S, Dantzer C, Mondillon L, Trocme C, Gauchez AS, Ducros V, Mathieu N, Toussaint B, Fournier A, Canini F, Bonaz B. Relationship between vagal tone, cortisol, TNF-alpha, epinephrine and negative affects in Crohn's disease and irritable bowel syndrome. PLoS One. 2014 Sep 10;9(9):e105328. doi: 10.1371/journal.pone.0105328. PMID: 25207649
43. Rakel, David. (2012). *Integrative Medicine*. (Third Edition). Philadelphia, PA: Elsevier. (370).
44. Raygan, F., Bahmani, F., Kouchaki, E., Aghadavod, E., Sharifi, S., Akbari, E., Asemi, Z. (2016). Comparative effects of carbohydrate versus fat restriction on metabolic profiles, biomarkers of inflammation and oxidative stress in overweight patients with Type 2 diabetic and coronary heart disease: A randomized clinical trial. PMID: 28607566
45. Russo MA, Santarelli DM, O'Rourke D. The physiological effects of slow breathing in the healthy human. Breathe (Sheff). 2017 Dec;13(4):298-309. PMID: 29209423
46. Singh TD, Patial K, et al., Oxidative stress and obstructive sleep_apnea syndrome. 2009 Oct-Dec; 51(4): 217-24. 20073373
47. *Strean WB. Laughter prescription. Can Fam Physician. 2009 Oct;55(10):965-7. PMID: 19826144*
48. Steckhan, N., Hohmann, C.-D., Kessler, C., Dobos, G., Michalsen, A., & Cramer, H. (2016). Effects of different dietary approaches on inflammatory markers in patients with metabolic syndrome: A systematic review and meta-analysis. Nutrition, 32(3), 338–348. PMID: 26706026
49. *Stults-Kolehmainen MA, Sinha R. The effects of stress on physical activity and exercise. Sports Med. 2014 Jan;44(1):81-121. doi: 10.1007/s40279-013-0090-5. PMID: 24030837*
50. *The Acute Effects of Interrupting Prolonged Sitting Time in Adults with Standing and Light-Intensity Walking on Biomarkers of Cardiometabolic Health in Adults: A Systematic Review and Meta-analysis 2022. Sports medicine.*
51. *Thoma MV, La Marca R, Brönnimann R, Finkel L, Ehlert U, Nater UM. The effect of music on the human stress response. PLoS One. 2013 Aug 5;8(8):e70156. doi: 10.1371/journal.pone.0070156. PMID: 23940541*
52. *Thomas DD, Stockman MC, Yu L, Meshulam T, McCarthy AC, Ionson A, Burritt N, Deeney J, Cabral H, Corkey B, Istfan N, Apovian CM. Effects of medium chain triglycerides supplementation on insulin sensitivity and beta cell function: A feasibility study. PLoS One. 2019 Dec 23;14(12):e0226200. doi: 10.1371/journal.pone.0226200. PMID: 31869355*
53. Tyagi A, Cohen M. Yoga and heart rate variability: A comprehensive review of the literature. Int J Yoga. 2016 Jul-Dec;9(2):97-113. doi: 10.4103/0973-6131.183712. PMID: 27512317
54. Volek, J, Sharman, M, Gómez, A, Judelson, D, Rubin, M, Watson, G, Sokmen, B, Silvestre, R, French, D, Kraemer, W. Comparison of energy-restricted very low-carbohydrate and low-fat diets on weight loss and body composition in overweight men and women. Nutr Metab (Lond). 2004 Nov 8;1(1):13. PMID: 15533250
55. Volek, JS, Westman, EC. Very-low-carbohydrate weight-loss diets revisited. Cleve Clin J Med. 2002 Nov;69(11):849, 853, 856-8 passim. PMID: 12430970
56. *Y. Joel Wong, Jesse Owen, Nicole T. Gabana, Joshua W. Brown, Sydney McInnis, Paul Toth & Lynn Gilman (2018) Does gratitude writing improve the mental health of psychotherapy clients? Evidence from a randomized controlled trial, Psychotherapy Research, 28:2, 192-202.*
57. Yancy, WS Jr, Foy, M, Chalecki, AM, Vernon, MC, Westman, EC. A low-carbohydrate, ketogenic diet to treat type 2 diabetes. Nutrition & Metabolism20052:34.

58. *Zaccaro A, Piarulli A, Laurino M, Garbella E, Menicucci D, Neri B, Gemignani A. How Breath-Control Can Change Your Life: A Systematic Review on Psycho-Physiological Correlates of Slow Breathing. Front Hum Neurosci. 2018 Sep 7;12:353. doi: 10.3389/fnhum.2018.00353. PMID: 30245619*
59. Zhao Z, Zhao X, Veasey SC. Neural Consequences of Chronic Short Sleep: Reversible or Lasting? Front Neurol. 2017 May 31;8:235. doi: 10.3389/fneur.2017.00235. PMID: 28620347

About the Author

Laurie Jean Ellis is a health and nutrition educator/coach. Being a health and nutrition educator/coach is much more than a career for Laurie. **It is her passion!!** The fire that fuels her passion and enthusiasm for this work, is a deep desire to help people live longer healthier happier lives. It is this passion that led Laurie to pursue a master's degree in health and nutrition education [MS-HNE] in addition to her bachelor's degree in nursing [BSN] from the University of Wyoming. This dual degree allowed Laurie to emerge from this program as a master level health coach and a holistic nutritionist. Laurie's passion for this work has also led her to strive for and attain the certifications of Certified Diabetes Care and Education Specialist (CDCES), Certified Diabetes Prevention Life Coach and Certified Health Coach.

During Laurie Jean Ellis' 35 year career, she has frequently helped individuals adopt habits to achieve a healthier weight. However, the last 12 years of Laurie's career has been primarily devoted to helping individuals manage diabetes and achieve a healthier weight. During this time Laurie has developed and published 4 different weight management programs. Each program with a holistic approach, utilizing natural interventions.

Laurie has enjoyed a wide variety of accomplishments during her 35 year career as a health educator. She has developed a variety of disease management programs, and health and wellness programs. Three of her programs have been published and another program received nation recognition for program excellence. BiW4Aults in now her fourth program to be published. She has extensive experience as a presenter and has spoken at a national conference, multiple state conferences, and was the keynote speaker for a positive thinking retreat. She has been a guest speaker on a day time talk show and has written a weekly wellness column in a local newspaper. Laurie has helped hundreds of individuals, of all ages, attain a greater level of health.

Laurie Jean Ellis is the founder and owner of Positive Patterns for Life, LLC, a company dedicated to promoting a greater quality of life via natural health interventions and nutrition education/coaching.

Part 6 - Appendix