

Thank you for joining our “The 30 Day Transformation” program. As a functional medicine practitioner with a background in nutrition and personal training, I get to see what clients get the best results and transform their lives. In the absence of running very specific, personalized labs which we do daily with our private patients, I wanted to create a program for everyone to access at a reasonable price. This program will provide you with a background in wellness, a sample nutrition plan that I provide my clients, a six to eight week sample training program I administer with them, guidance on sleep, supplements for chronic health issues and functional medicine labs you can run that will address your symptoms and personal health concerns. We have helped thousands of patients and clients from around the world and have spent over 20 years in health and personal development.

Background on “Leaky Gut”

The term used in the media today that you will hear a great deal about is “leaky gut”. Most practitioners will understand what this intestinal permeability means but the average person will not. The term leaky gut means when your small intestine is not bound by tight junctions and antigens or other foreign substances can pass through your small intestine and into the bloodstream. The intestinal lining of the small intestine is only one cell deep so when it is compromised, the toxins, microbes and undigested food particles have complete access to your bloodstream and subsequently your immune system. *Hippocrates* said “**All disease begins in the Gut**” and research has now proven he was correct in his premise. I see this in my practice every day so I can definitely agree that poor gut health leads to many more symptoms and underlying problems.

Causes of Leaky Gut

The causes of leaky gut will surprise many people. They go well beyond nutrition and can be found in many obscure places. I consciously and even subconsciously think about the foods I eat and the lifestyle I live each and every day. I have to be aware of all the possible triggers for a leaky gut because I have seen the consequences in my practice. This first trigger starts with stress and this represented in increased or severely suppressed cortisol. Increased catecholamines (neurotransmitters) from stress also play a role in breaking down your mucosal lining. I can personally relate as I ran the adrenal profile on myself in 2014 and found that my low levels of cortisol (prolonged stress) were leading to a leaky gut as I completed the Genova IP test and saw my numbers trending toward a permeable gut. Thankfully I had this data in time to implement the solutions I will outline later in this book to help you heal and get better. The second trigger that will disrupt your gut health is medications. These include antibiotics,

antacids, corticosteroids and a variety of different drugs. You see when you take medications, they don't just work on the intended target. They will also destroy the beneficial gut bacteria and can cause a variety of other health issues. This is the exact reason why every single pharmaceutical commercial has a disclaimer. Now I am not saying I am against all medications as some save lives and are absolutely necessary for some patients. Patients should continue to consult with their medical doctor on progression. I have just seen too many cases where the expected result did not happen and the patients had severe side effects.

In our practice, we get to see hundreds of labs each year and that means detection of parasites, bacteria, and yeast which is the third trigger. H-Pylori is a predominant bacteria we see as well as yeast and various parasites. The stool culture we run from Bio-Health or the GI MAPS lab are fantastic at detecting these health issues and helps clients uncover their root causes. Once we eradicate these bugs, we see a direct improvement in their gut health. I just had a patient remove H-Pylori and his energy levels and overall gut health noticeably improved to where he is feeling like a different man. You need to really focus on this as these infections contribute to poor guts. So what is bacteria? In the context of the human body, bacteria are microscopic organisms that consist of a ring of DNA surrounded by cellular components contained within a fatty membrane. They are very small (microscopic) and are categorized by size and shape. They grow in food and in the body and they get their energy from the same sources as humans which include sugars, proteins and fats. Parasites are another concern we see when looking at the third major cause of leaky gut. They are organisms that grow, feed and shelter in another organism. They are variable in size, complex and cannot grow in food rather only in the body. They feed on the nutrients, organs and cells of the host.

The fourth factor that contributes to leaky gut and likely the most relevant is nutrition and diet. As I will discuss in greater detail later in the book, this plays an essential role in the deterioration of the gut and microbiome. Some examples of foods and drinks that will harm your gut are alcohol, gluten containing products like bread, bagels, cereal, dairy, processed foods, sugar, and many of the fast food restaurants that use poor oils and trans fats. This is how the process unfolds when you consume these aforementioned foods. "When your meal reaches your intestines, tissue transglutaminase (tTG), an enzyme produced in your intestinal wall, breaks down the gluten into its protein building blocks, gliadin and glutenin. As these proteins make their way through your digestive system, your immune system in

your gut, the gut-associated lymphoid tissue (GALT), reviews them for potentially harmful substances. In people who have no issues with gluten, the proteins are absorbed. In those with gluten sensitivity, the GALT identifies gliadin as a dangerous substance and produces antibodies to attack it. In celiacs, these antibodies don't just attack the gliadin, they attack the tTG as well, which is what originally broke down the gluten into its two parts. This enzyme, tTG, has a number of jobs, including holding together the microvilli in our gut. Your body collects nutrients by absorbing them through the walls of your intestines, and the more surface area there is, the more they can absorb. Imagine trying to soak up a gallon of water with a paper towel versus a bath towel. Microvilli, which look like hairy fingers, exist in your intestines to increase the surface area and absorb nutrients. When the antibodies your body produced to defend itself against gliadin attack your tTG, these microvilli can atrophy and erode, decreasing your ability to absorb nutrients and allowing the walls of your intestines to become leaky. “ 1

The fifth contributor to leaky gut is hormonal issues. A poor thyroid, sustained elevation of cortisol levels, too much or too little of estradiol, testosterone and progesterone can all impact the gut lining and make it permeable for antigens to have access to your bloodstream. The final one we will discuss is neurological. I have seen a few of these in my practice where brain trauma, concussions, stroke and brain disease have contributed to a poor gut. The reason why this can happen is because of the gut-brain access. The brain can send signals to the gut and the gut can send signals to the brain via the vagus nerve. Most of my patients never suspect this and think the two organs are independent of each other. They are not and we must look at both of them if we want to help you achieve your goal of healing and optimal health.

How to Heal the Gut

This is my favourite part of the gut section as it discusses how we can heal the gut. As we have discussed, there are many variables that can disrupt your gut flora and microbiome. This section will look at food as medicine. What foods heal the gut and allow the junctions to become tight again and

fully functional. You want your nutrients to be absorbed by your gut and distributed throughout your body where required. In the nutrition section of this book, we will discuss the macro and micro nutrients and the optimal foods for the average person. We will discuss what I see working with many of my patients.

The first food that is excellent at healing the gut is bone broth. It contains the amino acids proline and glycine that can help heal your damaged cell walls as well as collagen which is great at holding the body together. Collagen is found in bones, tendons, joints, etc. You have to cook bone broth properly and let it simmer for the appropriate amount of time. This is very helpful when making at home but there are also distributors across the United States that ship bone broth to your front door.

The second very helpful food in healing your gut lining is fermented vegetables. They contain natural probiotics and organic acids that balance intestinal PH. Some examples of fermented vegetables are sauerkraut, kimchi and kvass. A point worth mentioning is that steamed vegetables and fruits are also very helpful in healing a severe leaky gut.

The third group is a staple in our home and contains both Short Chain Fatty Acids (SCFAs) and probiotics is cultured dairy. Some examples are kefir, quality yogurt and butter. They may not always taste the best but they are excellent for your gut health.

The fourth category that is beneficial for your gut is sprouted seeds. This would include flaxseeds, chia seeds and hemp seeds. These sprouted seeds are great sources of fiber that promote the growth of beneficial bacteria. The final Medium Chained Fatty Acid (MCFA) that I enjoy with a morning tea or to cook with is coconut oil. Coconut oil is easier to digest than other fats (due to its structure) so this makes it easier on your digestive system. You can even combine coconut and kefir so that you have

your probiotics and your healthy fats. These foods will help you optimize your gut flora and heal the damage that has been done over the years. I strongly urge you to go out and get them so you can begin your journey back to health and vitality.

1. Nutrition

For thousands of years, people have consumed various types of food ranging from wild animals, plants, fruits, fats and so many other variations. Whether you realize it or not, the type of food you decide to eat has a direct correlation to how you feel and the longevity of your existence. Personally, I think most people are not adequately trained or educated on nutrition and its importance to your health. They rely on diets, fads, what their doctor tells them and what their friends and family recommend. After seeing thousands of patients and clients over the past 20 years, I can tell you first hand that you should be spending a great deal of time understanding your physiology and what works best for your body. The correlation between the types of micro and macro nutrients you consume and your physical and physiological health is almost perfectly linear. Children rely on their parents to provide guidance on their nutrition and grown adults must make the choice on what to ingest themselves. This section of the book will explain the various nutrient groups, how to combine your food, the five foods that cause the most inflammation in the body, how food affects the body, food sensitivities and food allergies and why you have been misguided on how to eat over the past 40 years.

Overview of Proteins, Fats and Carbohydrates

We will start with a brief overview of proteins, fats, carbohydrates, vitamins and minerals and the role that each play in the body. I don't want to spend too much time on this but a refresher is in order for what is to come later on. Proteins are a macronutrient that are vital to building, repairing and maintaining major tissues in the body like your muscles, skin and internal organs. They also play a major role in autoimmune conditions, your hormones and how they are transferred and your immune system.

The building blocks of protein are called amino acids and there are 22 amino acids that contribute to your health and vitality of which 14 are non-essential (your body makes them) and eight are essential. The eight essential amino acids are usually acquired through food but high grade supplements are also an option for some people. The foods that contain the eight essential amino acids are meat, various animal sources, eggs and cheese. Additional protein options are fish, chicken, nuts, seafood, beans, peas and many more. Your genetic makeup is comprised of proteins as discussed earlier in the book and proteins are extremely important for those looking to build lean muscle.

The second macronutrient is healthy fats. In my experience, people are so scared of the word fat and avoid it from a dietary perspective at all costs. I can understand this point of view because the medical community has incorrectly indoctrinated in people that eating healthy fats is what makes you gain weight and causes cardiovascular disease. As you will see shortly, this is the furthest thing from the truth. In working with depression and mental illness patients around the world, I find that most are deficient in healthy fats and most make significant improvement when they include them back into their diet. I will not decipher between monounsaturated fats or polyunsaturated fats rather I will discuss the one that gives my clients and patients the most health benefits so they can lead a happy and healthy life. So the question then becomes, what are some healthy fats? As described, many nutritionists and the medical community have vilified saturated fats but they have been completely inaccurate. The saturated fats like coconuts and coconut oil, olives and olive oil, butter made from raw, grass fed milk, organic pastured egg yolks, raw nuts like almonds, pecans, Brazil nuts and macadamia nuts, avocados, grass fed meats, almond butter, fish and fish oil are actually very healthy for you.

The next question I get is why are these fats good for you? What is the foundation of science and what are the benefits to the body? Let's use coconut oil as an example. What makes coconut oil unique is that it is mainly comprised of medium chained fatty acids (MCFA) and these have remarkable healing properties. Many medium chained fatty acids used in research and food products come from coconut oil. It is also used in a variety of baby formulas around the world. So the question is why is coconut oil and the MCFAs that are inherent in it so helpful? MCFAs are smaller, they require less energy and less enzymes to break them down for digestion. This means there is less strain on the digestive

system and pancreas. This is very important for clients who have metabolic or digestive issues. The nutrients that coconut oil produce and the ability for the body to absorb them with minimal strain allows patients and even healthy people to receive the benefits in an efficient manner. Another key benefit of coconut oil is the energy and vitality it provides. Because MCFAs are funnelled directly to the liver and converted into energy there, people get a boost of liveliness. This boost of energy transcends into the cells and then speeds up their metabolism as well. This has a pronounced effect on the entire body. When your metabolic rate is increased, you also get the corresponding benefits of healing. Athletes have been taking coconut oil to get a competitive advantage from injuries (speed healing) and the ability to increase their metabolism.

Aside from all of the aforementioned benefits, saturated fats or the healthy fats as I like to call them have many benefits to your physiology. This includes providing building blocks for cell membranes, hormones, and hormone-like substances. When I explain to my patients that your hormones such as testosterone, estrogen, DHEA (dehydroepiandrosterone), etc. come from fats and cholesterol to be more specific, they are completely surprised. Saturated fats are also good at assisting with mineral absorption, helping to lower bad LDL cholesterol levels, acting as carriers for important fat-soluble vitamins D, A, E, and K, acting as an antiviral agent (caprylic acid), modulating genetic regulation and providing fuel for the brain. As we will discuss later in the book, a ketogenic based diet is excellent for weight loss and brain function. From assisting with weight management to mental illness, healthy fats should be a major component of your daily nutrition plan.

The third and final macronutrient that we will discuss is carbohydrates. Most people consume upwards of 60 percent of carbohydrates in their total daily consumption. There are five main classifications of carbohydrates and they are monosaccharides, disaccharides, oligosaccharides, polysaccharides and nucleotides. It is not my intent to discuss the classifications but rather the main carbohydrates found in food and the terms most people are aware of. They are starches (complex carbohydrates), sugars and fiber.

Starches or complex carbohydrates consist of foods like peas, beans, corn, potatoes, lentils and various grains like oats, barley and rice. This group will contain the breads, pastas, crackers, etc. Another subgroup of grains is whole grains versus refined grains. The second group which most people are familiar with is sugar which is absorbed into your body at a much quicker rate than the complex carbohydrates. This is where you will find naturally occurring sugar like those found in fruit (fructose) and milk (lactose) and also the processed sugars that are added to cookies, chocolate bars and other unhealthy foods. Fiber is the third and final group and it comes from plant based foods and is the indigestible part of plants like fruits, vegetables, whole grains, nuts and legumes. This is why fiber is so good at helping people with constipation. Some examples are black beans, kidney beans, berries, apples, bananas, strawberries, almonds, walnuts and so many more which we will discuss later.

Vitamins and Minerals

We can't forget about our micronutrients and they are vitamins and minerals. Vitamins are organic and can be broken down by air, heat or acid whereas minerals are inorganic and hold on to their chemical structure. There are two types of vitamins: fat-soluble and water-soluble. Fat-soluble vitamins are found mainly in fatty foods and animal products, such as vegetable oils, milk and dairy foods, eggs, liver, oily fish and butter. A great benefit is that your body stores these vitamins in your liver and fatty tissues for future use. Fat soluble vitamins are A, E, D and K. Water soluble vitamins are not stored in your body and they are found in a wide range of foods, including fruit, vegetables, potatoes, grains, milk and other dairy foods. Vitamin C and all the B vitamins are just a few examples of water soluble vitamins.

Minerals on the other hand are used for regulating body fluids both inside and outside of the cells, turning your food into energy and building strong bones and teeth. Minerals are found in many foods but three of my preferred choices are vegetables, fruit and nuts. There are too many minerals to list but some include magnesium, calcium, iron, zinc and potassium. These micronutrients are very important

to your health and don't receive the attention they deserve. I run panels on my patients to check for nutrient imbalances as they can cause a host of symptoms that affect your daily vitality.

Combining Foods for Optimal Health

This section will be a little more advanced because we are now discussing combining your carbs, proteins and fats in the most optimal way for weight loss and energy. This is beneficial for competitors, athletes, people looking to shed a few pounds and for professionals looking to make it through a long day at the office. These are the clients and patients I see all day long in my practice and this is a general guideline for the average person. Please remember that each person is unique and we can run specialty labs to determine your best course of action. There is also metabolic typing assessment that can determine if fats, proteins or good carbs work best for you or a combination (mixed type) of the three. With that being said, most people who read this book won't be running serum and urine tests to figure out their optimal levels.

Let's start with some factual information. Insulin levels are high in the morning and most people grab cereals, bread or bagels which increases insulin even more leading to a midday crash. Even the healthy carbs like vegetables and fruits are best to have in moderation in the morning so you can level out your insulin levels and not have the highs and lows that come with blood sugar fluctuation. Traditional recommendations have been to start your day with lots of carbohydrates and then have more protein later in the day. I can surmise a general observation that diabetes and obesity have never been at higher rates than in the past five years and people are consuming energy drinks at an alarming rate. Take a look around your office or workplace and look at all the people grabbing a coffee or energy drink at 2 or 3 p.m. They are looking for excessive caffeine or sugar to prop up declining blood sugar levels or even hypoglycemia. You see when you have carbs like bagels, bread, cereal in the morning, your blood sugar levels rise, insulin is produced by the pancreas to carry the excess sugar to the cells. If the cells are full, the excess sugar is sent back to the liver (glycogen) for use later on and/or it is stored as fat. My

recommendation is to start your day off with more protein and healthy fats. This will normalize your blood sugar and insulin levels in the body and give you sustained energy.

The second step is to have more healthy carbs in the afternoon to keep the sugar levels normalized and a steady balance within the body. Again, this goes against the conventional model you have been taught but it works at reducing fat and keeping your energy levels naturally high throughout the day. I would go with some lean meat and avocados, almond butter in the morning with one vegetable and some more vegetables and a couple of fruits in the afternoon augmented with some more meat/eggs and coconut, nut butter, etc. Try it out and see how it works. This is from a mentor of mine whom I respect in the health field. Dr. Sara Gottfried states: “Focus on protein and healthy fats in the morning and carbohydrates in the evening. We tend to be more insulin-resistant in the morning so if we eat carbohydrates at that time, like fruits and grains, we will store it as fat more quickly.” 14

Intermittent Fasting

People hear this term a great deal but most of my clients don't know what it means and why it may be useful for some people when trying to lose weight. Intermittent fasting is simply a temporary pattern in the timing of how you eat. It's a way of scheduling your meals so that you get the most out of them with the greatest benefit specifically for weight loss. I will recommend this to some of my clients if they want to change things up and avoid becoming stagnant. It is a way to get your body moving again. Here is a little background on how the body recognizes food. Your body is in a “fed state” when it is digesting or absorbing food. This typically lasts for three to six hours. Your insulin levels will be higher as insulin is being produced to deal with the influx of nutrients. Your body typically goes into a fasted state around 10 to 12 hours after your last meal and your insulin levels will be lower. The way in which I will describe or define intermittent fasting is eating your normal daily caloric intake of healthy fats, proteins and carbohydrates from 11 in the morning until 7 at night. That will leave 16 hours where you go without food. People who are in good health with no underlying health issues can try this if they want to lose

some weight and understand their body better. I would consult with your doctor as people with documented health issues should not try this. Some examples of people who should not try this are diabetics, people with autoimmune conditions, HPAA deficiencies, disease, and many more health concerns.

Five Foods That Cause Disruption in The Body

Grains/Wheat

There is no doubt that when it comes to affecting your physiology and creating a cascade of health problems for individuals, grains is the number one offender. Let's be clear that the grains and grain products like pizza, bread, bagels, cereal, etc. that are produced today are nowhere near what was harvested and consumed over 2000 years ago. There were two major events that changed the course and quality of wheat that you eat today. The first was the Industrial milling in the 1870s which was the advent of white flour and the birth of the processed food industry. You could now separate the component parts, allowing the purest and finest of white flour to be easily produced at low cost, so every class of person could afford the new flour. Beyond being cheap and wildly popular, this new type of flour shipped and stored better, allowing for a long distribution chain. In fact, it kept almost indefinitely. So how about nutrient value? This excerpt from Wikipedia says it well: "From a human nutrition standpoint, it is ironic that wheat milling methods to produce white flour eliminate those portions of the wheat kernel (bran, germ, shorts, and red dog mill streams) that are richest in proteins, vitamins, lipids and minerals." 2

The second major shift occurred in the 1960s and 1970s. Let's call it the Green Revolution. For 10,000 plus years, we cultivated wheat, stored it, milled it and consumed it. It was a very calculated and practical process. The system worked and it nourished civilization with beneficial sources of sustenance. This all changed in the industrial era where we invented mechanical technologies to turn wheat into

barren white flour. That was followed by introducing chemical and genetic technologies (GMO) to make it resistant to pests and drought while at the same time making it easier to harvest. The final negative intervention was figuring out how to increase glutens for better texture, appearance and to hold the wheat together. If you break the word gluten down, it stands for glue. From the modified seeds grown in poor soil, washed with chemicals and devoid of all nutrient value, the breads and grains we eat today are almost unrecognizable by the body. Your body was not meant to digest the grains and its variants that are sold today.

So what really is the problem with the breads, pastas, pizzas, bagels, cereals, etc? It is not just gluten, rather the opioids and amylopectin A. Let's define what gluten is and where it can be found. "Gluten is a general name for the proteins found in wheat (durum, emmer, spelt, farina, farro, KAMUT® khorasan wheat and einkorn), rye, barley and triticale. Gluten helps foods maintain their shape, acting as a glue that holds food together. " 3 Most people think that gluten is only a problem for people who suffer from Celiac Disease (Celiac disease is an immune disorder in which people cannot tolerate gluten because it damages the inner lining of their small intestine and prevents it from absorbing nutrients) or are gluten sensitive. Gluten sensitivity is harder to define but typically patients of mine experience symptoms such as brain fog, depression, mood disorders, abdominal pain, bloating, diarrhea and/or constipation, headaches, malaise, and chronic fatigue when they have gluten. The difference between gluten sensitivity and celiac disease is that gluten sensitive clients do not experience the small intestine damage or develop the auto-immune response where your body attacks your tissue (tissue transglutaminase (tTG) antibodies). Another issue with eating gluten containing products is that even people without celiac or a sensitivity do not digest gluten properly. The structure of the gluten protein is not easily broken down or absorbed by the human body.

The second issue with the pizzas, bagels, bread, etc. are the chemicals within them that bind to opioid receptors in the nervous system. The peptides found in wheat are so powerful and addictive that they have been compared to heroin and other drugs. Dr. William Davis who is also the best-selling author of *Wheat Belly* says "the peptides in gliadin, the enzyme in wheat, mimic an opiate in the brain. The same way a drug addict needs another hit, wheat stimulates the appetite in an

insatiable manner. They tend to stimulate appetite for junk carbohydrates. All compounded by this gliadin opiate affect.”⁴ Another reference is made by gluten expert Dr. Tom O’Bryan. “No one on the planet is eating the same wheat Jesus Christ ate. Modern wheat today has 42 chromosomes, Emmer wheat in the Bible had 28 chromosomes, Einkorn wheat which preceded Emmer had 14 chromosomes. Before we ate the seeds of grasses tooth decay was virtually unknown.”⁵ As you can see, the gluten and opioid effect on the human body is profound and a major reason why so many people feel the symptoms they do when consuming this food.

The third and final point when dealing with grains is the starch structure of wheat also called amylopectin A. This A structure is easily broken down by enzymes into glucose which elicits a higher glycemic index response. This spike in sugar in the blood is followed by insulin being released as described earlier in the book. The point I want to clearly articulate with grains is that they are not the beneficial food you have been led to believe they are. They will do much more harm to your body than good. In my experience, most people are simply unaware of the research and data that we have provided above.

Dairy

The second food/liquid that I see causing many problems for my patients and clients and that we touched on earlier is dairy. Dairy can come in many forms such as cheese, yogurt, milk, etc. Studies show it is the second most researched food just behind wheat and gluten. Just some information when using milk as an example: Lactose is the sugar found in milk, lactase is the enzyme that breaks down the sugar and casein is a protein found in milk (whey is another one). Most people stop producing the enzyme lactase around the age of five. This is important because as mentioned, it is used to break down the sugar lactose that is found in milk. Logically this tells me we don’t need milk after the age of five. I have looked at various studies from reputable sources and almost all of them contradict what we have been told are the benefits from consuming milk. The first misconception is that milk is excellent for your

bones and preventing fractures. Dairy has never been shown to reduce fracture risk and there are studies showing that it can actually increase fracture risk. Countries that have the lowest rate of dairy and calcium consumption ironically also have the lowest rates of osteoporosis. I would advocate that vitamin D is more effective at helping with bones and joints than calcium products or supplements.

A growing trend I see with the general population is people complaining of constipation or diarrhea after consuming dairy. You may have heard the term lactose intolerance and the research is starting to validate many of the symptomatic and asymptomatic patient's description of their concerns. "About 75 percent of the world's population is genetically unable to properly digest milk and other dairy products - a problem called lactose intolerance. Our bodies just weren't made to digest milk on a regular basis. Instead, most scientists agree that it's better for us to get calcium, potassium, protein, and fats from other food sources, like whole plant foods -- vegetables, fruits, beans, nuts, seeds, and seaweed." 6

Corn

This next food will surprise many people but it is indeed a trigger food that can cause problems for people. Sweet corn that has not been modified is actually ok for you. It contains some fiber, C vitamins, B vitamins, magnesium and potassium. However, the issue is with field corn and the corn crop as they have been known to contain genetically modified organisms (GMOs). A major reason why farmers genetically modify the corn is so that it can withstand the herbicides and pesticides that they spray on them. Farmers spray them to kill the weeds and insects. However, these sprays can penetrate the corn or even other plants for that matter. Another component that is extracted from corn is called high fructose corn syrup (HFCS). It is found in many foods and drinks like bread, yogurt, cereal, pop, etc. and is a sweetener that has been shown to cause a whole host of health problems for people. I will leave the HFCS for another discussion but just make sure that if you are going to eat corn that you get it from organic, quality controlled sources.

Soy

This is a very sensitive topic as the paleo community will look at soy in a very different way as opposed to the vegetarian community. First off, soy is a protein derived from soybeans. As I have always stated, there are pros and cons to everything in life and you have to determine what works best for you. In my experience and from the literature that I have read, soy can create more adverse effects on the body than positive. It is a food that in my opinion is better to avoid than to consume. Science and researchers are also uncertain of the impact of soy and soy containing foods. Here are some of the arguments against soy. Soy can potentially cause thyroid issues in people who are iodine deficient and the actual soybeans contain phytoestrogens which mimic the body's natural hormones. This can lead to low testosterone in men and estrogen dominance in women. The higher levels of phytic acid in soy inhibit the body's ability to absorb important minerals, including zinc, calcium, copper, iron and magnesium. Remember that you want to have a balance in vitamins and minerals. Soy also contains protease inhibitors, which can block the enzymes that are necessary for the digestion of certain proteins. It also contains lectins and phytates which we have mentioned before and cause signaling/receptor problems in the body. Many countries like Germany, Israel and New Zealand have warned about the consumption of soy. The decision is always yours but the purpose of this section is to describe to you some of the foods I see cause problems for my patients and clients.

Eggs

The final food that makes my top five that can trigger symptoms in people is eggs. I remember years ago when bodybuilders used to only eat the egg whites and avoid the yolk for fear of raising cholesterol. That theory has finally been disproven and most people know that eating the entire egg is beneficial for your health. That is not the reason why eggs makes this list. Eggs cause concern for people with leaky

gut because the specific protease in egg whites that people with autoimmune disease or severe allergies/leaky gut need to be concerned with is called lysozyme. Lysozyme has the ability to form strong bonds with other proteins. So, lysozyme from egg white typically passes through your digestive system in large complexes with other egg white proteins. Many of the proteins present in egg whites are protease inhibitors. This means that the lysozyme/egg whites protein complexes are resistant to digestion by your digestive enzymes. In layman's terms, the enzyme passes through the digestive system with the other egg proteins but because some egg proteins are protease inhibitors, these proteins are not broken down. Other proteins and bacterial proteins can bind to the lysozyme complex and when this happens, your immune system can mount a response against the foreign invader. This creates inflammation, symptoms, potentially leaky gut and autoimmune disease.

Please consult your primary care provider before undertaking this nutrition program as it is meant as a general guideline. Some people have specific allergies or sensitivities and may not be able to follow this plan in its entirety. Thank you.

Nutrition Plan for 175 - 215 lbs Male

Daily consumption for Carbohydrates, Fats, Proteins:

Carbohydrates – 35%

Fats – 35 %

Protein – 30%

- **Proteins** - essential to growth and repair of muscle and other body tissues.
- **Fats** - one source of energy and important in relation to fat soluble vitamins. Important for cells, the brain and nervous system.
- **Carbohydrates** - our main source of energy, important for chemical reactions, vitality and fuel.
- **Minerals** - those inorganic elements occurring in the body and which are critical to its normal functions.
- **Vitamins** - water and fat soluble vitamins play important roles in many chemical processes in the body.
- **Water** - essential to normal body function - as a vehicle for carrying other nutrients and because 65+% of the human body is water.

3.5 litres of water per day for an active male

Health plan for your stature includes:

Grains – buckwheat, millet, and other non-gluten grains. Need to drastically reduce these. Today's grains are not very good for human health. Provided best options if you "need" them still. I prefer no grains at all but these are gluten free while you transition.

Vegetables – 3 servings of vegetables per day. Fresh organic is preferred.

Fruit – 3 servings per day. Aim to consume fruit over juices which are high in calories & low in fiber content.

Dairy – 2 cups/servings per day (organic milk, real butter, quality yogurt).

Protein – 4 – 5 ounce equivalents ((fish, organic eggs (if not sensitive), grass fed organic meat)).

Fats – 3 servings per day. Include avocados, almond butter, ghee, coconut oil, olive oil, dark chocolate, macadamia, raw nuts, and fish.

Three different daily plans. Pick one each day.

7:00 a.m (breakfast): 1) 3 organic eggs with natural juice, half cup of fruit with some almond spread

2) 1 serv. of grass fed bacon with yogurt and banana

3) 3 turkey/meat sausages (grass fed) with asparagus, half cup of fruit

10:00 a.m (snack): 1) quarter cup of almonds, sesame seeds, walnuts, with some vegetables

2) Pumpkin seeds, flaxseeds, chia seeds, with a fruit.

3) Avocados, one piece of fruit (banana, pears, blueberries, etc.)

12:30 p.m (lunch): 1) 4 ounces of chicken, raw vegetables like carrots, spinach, cucumber, celery, etc.

2) 4 ounces of turkey, vegetables like eggplant, cauliflower, beets with cottage cheese

3) 4 ounces of fish (Salmon or Tuna), vegetables like fennel, asparagus, brussels sprout

Have one glass of water, or natural green tea with your lunch.

3:00 p.m (snack): 1) Organic yogurt, peanuts.

2) Dark chocolate (quarter to half a bar) and a few almonds.

3) Nuts, cottage cheese, tea (with coconut oil in it)

6:00 p.m (dinner): 1) 5 ounces of Shrimp with brown rice and sea vegetables. Salad can be mixed in.

2) 5 ounces of lamb or chicken with sweet potatoes, collard greens, kale and salad.

3) 5 ounces of steak or red meat with vegetables (green peas, broccoli, spinach)

Have one glass of water or natural green tea with your dinner.

8:30 p.m (snack): 1) 1 teaspoon of peanut/almond butter on a fruit of choice.

2) Some additional nuts, strawberries, raisins, or watermelon.

3) One of Oranges, papaya, pineapple, carrots, cucumbers.

Avoid these if possible to reduce allergies as they are the five main “culprits” I see in clients:

1) Commercial dairy with all the hormones, bovine, etc. (\$3.97 bags of milk for example).

2) Grain fed corn (GMO)

3) Wheat, rye and barley (gluten rich foods)

4) Soy

5) Eggs (non-free range injected with hormones)

2 Sleep

As I start this chapter, I reflect upon the times I have been at my best and achieved the goals I have documented. You don't fall into success or wake up with all the accolades and glory. You have to plan your future, develop a strategy on how to get there and then implement. I can tell you first hand that one of the most important factors in determining how well your day will go is the quality of sleep you had the night before. You wake up feeling refreshed and your body has physiologically and physically repaired itself. Now we all have friends and family who say they can get by on two to three hours sleep each night. I will tell you that may be so for a year, two or five but not over an extended period of time. It will eventually catch up with you in the form of some type of illness. I have seen it time and time again. It is true that some people can get by with six hours while others need ten. The "sweet spot" is around eight and many people are aware of this.

Physiological

Sleep is an integral part of your 24 hour day and synergistically works with your circadian rhythm. Your body produces higher amounts of the stress hormone cortisol in the morning to get you up and ready to face your day. As the day moves along, you produce less cortisol and there is very little left around 10 p.m. at night. The antagonistic part of cortisol is melatonin in the sense that it increases later in the day and closer to 10 p.m. when you are getting ready to go to sleep. Melatonin is primarily produced in the gut and it will assist with helping you sleep. This process is also known as your circadian rhythm or circadian clock. You wake up when the sun rises and your body starts to prepare for sleep when the sun is going down. It does not like to be disrupted as evidenced when you travel overseas and experience jet lag. That is why I recommend you take your shoes off and let your feet touch the earth when you travel. This grounding technique is excellent for resetting your circadian clock.

To understand what the body and mind are doing while you sleep is very important. There are two main types of sleep and they are Non Rapid Eye Movement (NREM) and Rapid Eye Movement (REM). Think of NREM Sleep as your body physiologically repairing itself. This is where your breathing slows down, your heart rate slows down and your blood pressure drops. It is a time of repair and there are four stages of NREM sleep. Stage 1 is where you feel drowsy and brain waves start to slow down. Stage 2 is characterized by light sleep, a drop in heart rate as well as body temperature. Stages 3 and 4 are what we call deep sleep and this is where you have delta brain waves. Everything is very low and resting and the body does not want to be disturbed during this time. It is the kind of sleep we can all hope for.

The other main type of sleep is REM and this is where your brain waves are fast, limb muscles become paralyzed, heart rate and BP increase and you will dream a great deal. Think of this stage as your body physically repairing itself while your muscles and limbs rest. Over the course of an eight hour sleep, your body will move back and forth between NREM and REM sleep. There will be 60 or 90 minute periods of REM sleep augmented by the same duration of NREM. The amount of time in each also varies as you get older in life. Sleep is also very important at repairing biochemical processes, regulating and nourishing hormones, and ensuring the body is ready for the next day. The take away is that your body goes through periods of physiological and physical repair throughout the night.

How Can a Lack of Sleep Harm You?

People don't seem to care until it affects their health. They will talk about it in passing or mention how they only had two hours the night before but everything gets serious when they get a poor medical report. Lack of sleep can really impact your health in numerous ways. The first point is that it hurts your immune system. Cytokines are chemicals our immune system uses to help fight an infection and are also powerful sleep-inducers. Lack of sleep reduces prominence of cytokines. The second way in which a lack of sleep affects your body is by hurting your hormones. Sleep is the time when the body releases hormones that affect development, energy control, metabolic control and the endocrine system. As you

start to wake up, cortisol is released and is highest around 6 a.m. in the morning. It is high so you have the energy to face your day. Growth hormone, follicle stimulating hormone (FSH) and luteinizing hormone (LH), are also utilized while you sleep and they are important for reproduction. I see it all the time in my practice for clients with fertility issues.

The third way in which a lack of sleep affects your body is through the interference with your leptin receptor. Leptin tells you when you are full and if this hormone has been adversely impacted, then this can lead to diabetes and obesity. Lack of sleep also contributes to impaired judgement and slower reaction times. Your nervous system is not firing as it should and your motor skills are affected by this. As you can see, there are many reason why you need to get a solid eight hours of sleep. Your mood, energy levels and overall vitality depend on quality sleep. Don't cut corners and ensure you balance out your 24 hour day with a strong circadian rhythm.

3. Exercise Programs and Health Benefits

Exercise

The impact of exercise on your mood, hormones, body chemistry, strength and heart is substantial. The amount and duration of exercise you should attempt is dependent upon your physiological levels (hormones, toxicity, digestive health, etc.). Exercise is a stressor to the body and needs to be done in moderation. A healthy individual who is not an athlete or competing should be training three to four days a week for 45 minutes per session. These workouts are a combination of body part training augmented with functional, full body exercises. This promotes muscle growth and cardio vascular activity while also enabling proper recovery. Your muscles stretch and wear down when you workout and then they replenish and repair in between workout days. It is extremely important to allow this

growth and rejuvenation. Stretching is also critical for elasticity and synovial fluid activation. This will greatly reduce injury and more serious tears, pull and strains.

One Size Doesn't Fit All

Having been a personal trainer and functional medicine practitioner for many years, I have come across thousands of people looking to change their lives. They are all unique and have a story to tell which is what makes them both challenging and rewarding. It is true that you do start to see trends and patterns over time but people are inherently different with varying body types. In my practice, I serve children, women, men, the elderly, clients who are underweight, overweight, tall, short and the list goes on. I have to approach each one with the fundamentals I have been educated on, augmented with the specificities of each individual. This means that both healthy and chronically sick people are typically within certain ranges on their lab results but there are anomalies and unexplained variances that are unique to each client. It is my responsibility to uncover the deficiencies and build a sustainable plan for that person. For the purposes of this book and from a training perspective, I will describe the typical clients I see below and what type of exercises and workout protocol they would benefit from.

Overweight with Limited Training Experience

I would say this client is by far the number one type who walks into my office. They are overweight and want to get into better shape. They are apprehensive about working out for all of the fears and stigmas that come with it but have finally had enough of their current state. They are ready to take action but need guidance in how to achieve their desired outcome. Once we have reviewed all of the information covered in the book, I would then develop a program that is more tailored towards full body, functional exercises that have a combination of compound exercises and body part training. This

type of client needs to move and engage all muscle groups. When you engage your legs with squats or deadlifts, you also release hormones that benefit your upper body as well. I would suggest performing some core exercises like barbell (bb) twists, medicine ball (MB) throws, band exercises along with multi joint movements like burpees, one arm snatches, light runs and squat rows. It is imperative to get their metabolism and metabolic pathways moving so they can burn some energy and stimulate the muscle fibres. I would start them off with a four day program of which three days would consist of full body, multi joint exercises complemented by a day of body part exercises like bench press, pulldowns, squats, shoulder presses, etc. My clients are typically on eight week phases where they are given a three or four day routine with a variety of exercises. Phase two would start eight weeks later with different movements, types of exercises, different reps, different body parts and potentially adding in drop sets or supersets depending on their skill level. We keep pushing their limits and challenging them as the body adapts very quickly and they are thirsting for more. The initial goal is to help them lose fat and weight while increasing muscle density and shape. We want them to feel better physiologically (internal markers) first and foremost but we also want them to start looking better aesthetically. Both are important as I am routinely reminded.

Underweight and looking to put on Muscle and Size

A second client who I see is the one who is underweight or “skinny” and wants to put on muscle and shape. They are looking to have more energy, become stronger and become more proportionate. Once again, aside from all of the nutrition, functional medicine, past history, lifestyle and other concepts we talk about, their workout program will be more suited towards lower reps and more body part training. Once we get acclimated with their capabilities, we would have them perform more relevant exercises like the squat, deadlift, lunges, abdominal work, bench press, pull-ups (assisted if need be), curls, tri-cep pushdowns, shoulder raises, etc. There would be three days of body part training (leg day, back day, chest, shoulders, arms, etc.) augmented by a functional workout day where we sweat and push the clients to their limit. That may mean sled pushes, battling ropes, sprints, ladder drills, etc. Those are what I typically refer to as functional or full body workouts. It engages all muscles and keeps your body guessing. The body part way of training is more “old school” and still has its place for a small percentage

of my clients. As described, it is a great way to increase the volume of each muscle group and you can really control the reps and sets when you do it. Even in this group though, I still use my functional approach as that is the new paradigm and I find it more effective for the population as a whole (as mentioned with the first group).

Athletes and Competitors

This group makes up about 10 percent of my clients. They are the ones who have a firm understanding of exercise and physiology but want to take it to the next level. They are either playing at the elite level, have scholarships, are MMA fighters, turning professional or play professionally already. You would expect them to be well versed and have the science dialed in but you would be surprised at how much they can learn and how receptive they are to new techniques and ideas. This group will be nurtured and guided very carefully as their income and livelihood may depend on their progress. It could mean being cut from a team or making a million dollars. You have to really balance nutrition, functional medicine and a proper training protocol. This will really depend on the discipline that these competitors are performing in. If they are a marathon runner, then we will be focusing more on cardiovascular activity and more aerobic training. They need to have the lung capacity and a strong heart rate that can endure a long race. We will do very little if any explosive activity. They also consume more carbohydrates than others as their glycogen stores are depleted quickly and they burn an immense amount of fuel when they train and race.

The second athlete group will be called the hockey players or MMA athletes. They are a mixture of power and stamina. They need to have the explosiveness and power for a hockey shift which can last one minute or a five minute MMA round. They will be moving in and out of anaerobic and aerobic state which basically describes oxygen flow through the body. They will need strength exercises as outlined above (squats, core, jumps, sled push, kettlebells, lateral movement, lunges, box jumps, presses, pull-ups, etc.) supplemented with functional movements and more aerobic based like the treadmill, sparring,

jogging, sustained reflex drills, bag drills, seal fit type military drills, etc. They will train up to six days a week and three days will be more strength based followed by three days of functional, full body, cardiovascular training. Their biggest asset is resting in between training. You don't want to burn out or risk injury by overtraining. Unfortunately, this is very common in athletes.

Please see attached six week workout program and the corresponding videos here:

Mike Daciuk Youtube Channel

<https://www.youtube.com/channel/UCpHuyeFUnh8qBFTxsVOenKw>

Please consult your primary care provider before undertaking these exercise programs. Thank you.

4. The Top Functional Medicine Labs

As I was reviewing and researching all of the functional medicine labs I run for my patients around the world, it became obvious that there is no shortage of quality laboratories to select from. They have industry leading scientists with quality control at the highest level. In my experience, most people elect to pursue the functional medicine or alternative tests when the conventional system has not provided the pertinent tests, accuracy or availability of them to the general public. I currently reside in Canada and we have a health care system funded through our taxes and where all Canadians have access to health care. This is different than many countries around the world since it allows the less fortunate access to our medical system. There are pros and cons to this system but I am going to concentrate on what you can do when standard, conventional results are within range (can't find the problem) or when you have many symptoms but no disease or medical issue is diagnosed. I have patients who are on three month waiting lists just to run labs that I can run in two weeks via USA based functional labs. I also have many patients who are told their lab values are fine and it is all in their head but they know there is something amiss in their body. They just don't feel like themselves.

Now it is one thing to know which labs to run based on your symptoms and your own queries but it is entirely different when it comes to finding a qualified practitioner to order them for you and then interpret them in a comprehensive and understandable manner. The quality of practitioner would be the first prerequisite you should look for. Have they helped people with similar health concerns as you? Do they look at the body holistically or just target lab results? How long have they been a practitioner and what are their credentials? Have you read their reviews or consulted with their previous patients? You really need to do your due diligence when selecting your practitioner as it could be the best decision you ever make or a waste of more money. Just like everything in life, there are good professionals and not so good ones. Always interview them first before allowing them to run your labs and be your practitioner. I typically have a 45 minute call with each prospective patient before we both agree to work together. It is a two way street and both have to feel at ease in working with one another. I have listed the most important labs that I use in my practice and I may use only one lab at a time with a

patient or many more. It all depends on their needs and level of dysfunction and symptoms. You should look at these labs like your dictionary or reference point should you want to heal holistically. As a brilliant doctor Dr. Mark Hyman MD says, I am a holistic doctor as my patients have a “whole list” of issues. Cute but very applicable.

Gastrointestinal (GI) Labs

Bio-Health (BH) 101 (Metabolic Assessment)

This was one of the first labs I ran on myself when I was in the program and it measures liver function, protein digestion/indican levels, oxidative stress and small intestine bacterial overgrowth (SIBO). A positive urinary indican means you are not breaking down the protein or there is an increased presence of bacteria in the small intestine. This can be caused by insufficient hydrochloric acid (HCL), insufficient digestive enzymes, parasitic or bacterial infection and much more. Another very important measurement is small intestinal bacterial overgrowth (SIBO) as this is where your small intestine contains excess bacteria that can produce abnormal amounts of methane and hydrogen gas. The third marker measures bile acids and any damage to liver cells. If you have an unhealthy liver, excess bile will be spilled into general circulation and then excreted through the urine. The fourth and final lab on the BH101 is the lipid peroxides. This measures oxidative stress or free radical damage to the cells. This can lead to degenerative disease. I typically see patients with poor oxidative stress numbers when they have been working in factories, touching chemicals (like hairdressers) or have been exposed to a great deal of toxicity.

Genova Intestinal Permeability (IP)

This is an older but still useful test. It measures what mainstream media would term “leaky gut”. You basically drink two non-metabolized sugar molecules called lactulose and mannitol to see if they will permeate your intestinal mucosa. It takes six hours of periodic urination into a cup and will measure how well the sugar molecules permeate through the cells and between the cells. The level of permeability is measured by the amount produced in the urine. We look at the ratios of lactulose recovered, mannitol recovered and the ratio between the two. It is a more basic, cost effective test but a good marker as I have seen some numbers that were off the charts. We ran further testing on them only to uncover they had celiac disease, RA, Lupus, H. Pylori, etc. A practical way to test the gut.

Cyrex Array 2

I must say I really enjoy Cyrex Laboratories, their labs and their work with autoimmunity, gluten and other food based diseases. The Array 2 lab test measures intestinal permeability in a different way than the previous two labs. This lab measures antibodies against bacterial endotoxins (LPS), tight-junction proteins (occludin/zonulin), and cell cytoskeleton (actomyosin). As I have mentioned before, zonulin and occludin are the two main proteins that line that mucosal barrier and they can get damaged from foods like gluten. Gluten has the ability to break down zonulin which in turn causes leaky gut. Once that barrier is compromised, many other antigens will then have free access to your blood. The Array 2 challenges both transcellular (through the cell) and paracellular (between cell) routes of intestinal barrier penetration by large molecules with the ability to also challenge the immune system. I highly recommend this Array 2 and Cyrex. Led by world renowned scientist Dr. Vojdani, this lab is very vigorous in its testing procedures.

Thyroid

Full Thyroid Panel from Spectracell Labs.

The thyroid is one of the top three issues that I receive questions on. People are gaining weight, feeling tired, cold, losing their hair, etc. No matter what they do, they keep gaining weight and they feel as if their metabolism is slowing down. Most will just get one panel run from their doctor and that is usually just their TSH (Thyroid Stimulating Hormone). Unfortunately that number alone or even the added t3 or t4 are not sufficient and many people with a thyroid condition go undiagnosed due to outdated test methods. The full panel from Spectracell measures TSH, Free T3, Free T4, T4 Total, Thyroglobulin, Thyroxine-Binding Globulin, Anti-Thyroglobulin Ab and Anti-TPO Ab. It measures antibodies, potential irregularities with the thyroid and much more. I recommend this test for patients who want to have a comprehensive review.

Adrenal Glands

Bio-Health 205

We literally run hundreds of these labs and it is the primary lab when measuring salivary hormones. It is used to measure how well you handle stress, how well you respond from a stressful situation, your melatonin levels, and all of your sex hormones. It is a four point cortisol test (morning, noon, afternoon and night), measures DHEA, melatonin, estradiol, estriol, progesterone and testosterone. We use this test for the unbound hormones as it measures what is free for use by the body and not what is already tied to a protein. As I have stated, I can't tell you how many stressed out patients I have seen. It is a serious problem as it affects every part of their day exhibiting low energy, low sex drive, infertility, anxiety, depression, weight gain, mood swings, brain fog, etc. I highly recommend you find a practitioner who can run this panel as it will explain a great deal of what is going on with

you from a physiological point of view. It is non-invasive and can be done from the comfort of your home.

Nutrient Testing and Full Blood Panel

Spectracell

These labs are very important and I see them with many of my autoimmune patients. When checking for autoimmune disease, it is very important to check for the basics like white and red blood cell count but also to check for many nutrients that they are typically deficient in. One of the labs we run in our practice is the Spectracell Micronutrient Test and it checks for the B complex vitamins (B1, B2, B3, B5, B6, B12, Folate, Biotin), amino acids and metabolites (Serine, Glutamine, Asparagine, Choline, Inositol, Carnitine, Oleic Acid), ancillary vitamins and minerals (Vit D3, Vit A, Vit K2, Manganese, Calcium, Zinc, Copper, Magnesium), antioxidants (Glutathione, CoQ10, Cysteine, Selenium, Vit E, Alpha Lipoic Acid, Vit C) and carbohydrate metabolism (Fructose Sensitivity, Glucose-Insulin Interaction, Chromium). We also use the Spectracell CBC and CMP blood panels to check for anemia, liver and kidney function, blood sugar levels and so much more. These panels are very thorough and they give the practitioner a good look into your physiology and where you are deficient. Again, this is even more valuable for people suffering from autoimmune and other diseases.

A second panel that we can run that is covered in nutrient and mineral testing is Hair Tissue Mineral Analysis (HTMA). We typically use ARL or Trace Elements and they test for macro and micro minerals, toxic metals and significant ratios. Some of the minerals tested are calcium, magnesium, sodium, potassium, iron, copper, manganese, zinc, chromium, selenium, phosphorus, nickel, cobalt, molybdenum, lithium, boron, lead, mercury, cadmium, and aluminum. This is measured by testing hair

strands. It gives us great insight into adrenal function, thyroid function, protein digestion/absorption and many more processes. The potential downside to the HTMA is that this test only measures what is excreted rather than what is currently in the body. The first Spectracell blood panel measures what is in your serum and it is my preferred choice but both have their benefits.

Organics Acids Testing (OAT)

Genova

This is perhaps one of my favourite tests to run because not only does it show you what you are deficient in, it also provides key markers that lead to the deficiency in a process. For example, conventional tests may just say you are low in B12 and give you a B12 injection or supplement. This lab will say you are low in B12 but that is an issue with a precursor like methylmalonic acid (MMA). When you start looking at acids that build up along the pathways, you can start to pinpoint where the exact root cause is. “The OAT provides insight into the body's cellular metabolic processes. Organic acids are metabolic intermediates that are produced in pathways of central energy production, detoxification, neurotransmitter breakdown, or intestinal microbial activity. Marked accumulation of specific organic acids detected in urine often signals a metabolic inhibition or block. The metabolic block may be due to a nutrient deficiency, an inherited enzyme deficit, toxic build-up or drug effect. Several of the biomarkers are markers of intestinal bacterial or yeast overgrowth. “⁷ We use Genova Labs for this test and anyone suffering from weight issues, sleep abnormalities, depression or chemical sensitivities should consider this urine based test. Some markers included on this test are fatty acid metabolism, energy production (citric acid cycle), B complex vitamin markers, methylation cofactor markers, neurotransmitter metabolism markers, oxidative damage and antioxidant markers, detoxification indicators and bacteria and yeast markers. This lab can really reveal critical markers of your underlying concern.

Pathogen Testing

Bio-Health 401H

There are so many different labs for testing pathogens and they all have their pros and cons. The one we use primarily is the Bio-Health 401H lab. It looks for the presence of pathogens, including H Pylori, in the gastrointestinal tract (GI). The main markers on this test are stool culture (*e coli*, *citrobacter*, *klebsiella*, *enterobacter*, etc.), ova & parasites (*blastocystis hominis*, *cryptosporidium parvum*, *dientamoeba fragilis*, *endolimax nana*, *entamoeba coli*, *giardia lamblia*, *lodamoeba butschlii*, etc.), stool antigens (*cryptosporidium*, *giardia*, and *H pylori*) and additional markers (*fungi*, *C difficile toxin A & B*, *Yeast*, *Occult Blood*). People with parasites or bacteria typically show symptoms such as low energy, fatigue, periodic abdominal pain, constipation, diarrhea, etc. It is imperative to determine if you have too much bad bacteria or parasitic infections as you can't fully heal until you eradicate them. One of the first steps we use in healing fatigue, gut or autoimmune issues is to go on a natural protocol to remove these pathogens and then have the proper food to heal the gut.

Food Sensitivity Testing

This is a very sensitive topic for many people as the credibility of the labs administering the tests is always called into question. They have made great strides in this area. We use two labs and they are the Oxford Biomedical MRT Test which tests for 150 different foods and chemicals. Some of the foods and chemicals tested are fruits, vegetables, grains, beans/nuts/legumes, seafood, meats and poultry, dairy, chemicals and flavour enhancers. So how does the lab test for sensitivities? Diet-induced inflammatory reactions cause mediator release (cytokines, histamine, leukotrienes and prostaglandins)

from various white blood cells (lymphocytes, neutrophils, monocytes, eosinophils). MRT uses a patented combination of flow cytometry and proprietary impedance technology to measure subtle volumetric changes in white blood cell populations simultaneously. Volumetric changes after food or food-chemical challenge are quantified and reported as non-reactive, moderately reactive, or reactive.

Cyrex Array 3

Now you already know how much I like the various Cyrex labs and their ability to test for gluten and various autoimmune conditions so the array 3 is a preferred lab of choice. It measures antibody production (IgG/IgA) against nine wheat proteins and peptides and three essential structure enzymes to help you accurately identify gluten sensitivity. Here are some of the markers of the array 3: wheat IgG/IgA, wheat germ agglutinin IgG/IgA, native and deamidated gliadin 33 IgG/IgA, gliadin peptides: alpha-gliadin-17-Mer, gamma-gliadin-15-mer, omega-gliadin-17-mer, & glutenin-21-Mer 33 IgG/IgA, gluteomorphin + prodynorphin IgG/IgA, gliadin-transglutaminase complex IgG/IgA, transglutaminase-2 IgG/IgA, transglutaminase-3 IgG/IgA and Transglutaminase-6 IgG/IgA. In my opinion, the *array 3 is the best gluten sensitivity test available because it tests for numerous ways an individual can react to gluten.*

Cyrex Array 4

Another great lab is the Cyrex Array 4. It measures antibody production (IgG/IgA) against foods that contain gluten (rye, barley, spelt, polish wheat), foods that are known to cross-react with gluten (dairy, yeast, oats, millet, rice, and corn), foods that are newly-introduced and commonly over-consumed on a gluten-free diet (rice, sorghum, quinoa, etc), and foods that are common

allergens (corn, soy, eggs, etc). This is an expanded test but really focuses on the main foods that cause problems for people as mentioned earlier in the book.

Cyrex Array 10

This lab measures antibody production (IgG/IgA) against 180 different foods (raw and/or modified), foods enzymes, lectins and artificial food additives (including meat glue, colourings and gums). It is very similar to the MRT test with an expanded number of foods. Cyrex really is the standard when it comes to testing sensitivities and allergies and I recommend this lab all the time to patients. A major advantage is that it tests raw and uncooked foods where many other labs will not.

Inflammatory Markers

Homocysteine and CRP

These are two very important inflammatory markers that we like to look at in our clinic and they are a great predictor of heart disease and the issues that arise from there. Homocysteine is simply an amino acid. As our body breaks down protein through the digestive process (HCL, enzymes, etc.), elevated levels of various amino acids like homocysteine may make their way into the bloodstream. The issue with this is that having too much homocysteine in the blood has been linked to hardening of the arteries and blood clots. Homocysteine is made from another amino acid called methionine. Methionine is found in foods like meat, fish, and some dairy products. The B vitamins are needed to make this conversion occur and to properly consume homocysteine. Your primary care provider (MD or GP) can run this serum marker at his local office.

CRP (C-Reactive Protein) is another excellent marker for measuring inflammation in the body. It is a protein produced by the liver that increases when there are higher levels of inflammation in the body. They can be from acute injuries or chronic long term inflammation. Understanding CRP, when it is produced and how it is produced is fundamental to long term health and vitality. This is another serum marker your doctor can run for you and I highly recommend it if you have chronic pain and fatigue.

Lyme Disease

Immunoscience Labs

Lyme disease is a real concern for many people yet it doesn't get the attention it deserves. So what is Lyme disease? It is bacterial illness spread by tick bites. It can affect your bones, joints, heart, skin and nervous system. Most people don't even know they have it and it is misdiagnosed all the time. Many doctors diagnose it as chronic pain, RA, etc. It is real and very serious. It gained international media attention last year as Avril Lavigne claimed she almost died from it. This lab by [Immunosciences Lab Inc. \(Immunoserology of Lyme Panels\)](#) measures antibodies to antigens of *Borrelia* grown in culture (the traditional method), as well as the antibodies to proteins associated with the spirochete's expression of a variety of antigens during human infection. Some of the more notable markers on this test include: Lyme specific antibodies (*borrelia burgdorferi*, *OspA + OspC peptides*, *OspE peptide*, *leukocyte function associated antigen*, *immunodominant protein*, *variable major protein*), *borrelia* subspecies antibodies (*B. b. sensu stricto*, *B. garinii*, *B. afzelii*), lyme co-Infection (*babesia*, *ehrlichia*, *bartonella*), western blot (*lyme panel B only*). It should be noted that IgG and IgM antibodies are tested for each marker. If you have any suspicion of Lyme or have unresolved chronic pain with increasing fatigue, then I recommend this panel.

Autoimmunity

[Cyrex Array 5 \(Multiple Autoimmune Reactivity Screen\)](#)

I just sent this particular lab out to one of my patients this morning. The Array 5 measures antibody production (IgG/IgA) against multiple organs and tissues in the body including the brain, heart, thyroid, liver, pancreas, gut, bone, joint, and ovary/testis. These predictive antibodies can appear up to ten years before the clinical onset of autoimmune disease. This is very important as you can start making lifestyle changes well before you get any symptoms. Some of the markers measured on this test are gut antibodies, thyroid antibodies, adrenal antibodies, heart antibodies, reproductive organ antibodies, joint antibodies, liver antibodies, pancreas antibodies and brain antibodies. As mentioned, they are one of the top labs in the world for measuring antibodies and I highly recommend you work with a practitioner who has access to their labs.

Pyroluria

Health Diagnostics Research Institute

The [Health Diagnostics and Research Institute \(HDRI\) Kryptopyrrole test \(24 hour\)](#) measures the level of pyrroles in the urine to determine whether pyroluria may be present. So what is Pyroluria? "Pyroluria is known by many different names including Pyrrole Disorder, Kryptopyrrole, Kryptopyrroluria, Pyroluria, Mauve Factor and Hemepyrrole. As many as 50% of those with autism, 40% of alcoholics, 70% of schizophrenics, 70% of persons with depression and 30% of persons struggling with ADD may have pyroluria underlying their conditions. There are lifelong symptoms associated with it that

tend to worsen with age and stress. During the synthesis of hemoglobin in the body, waste products called kryptopyrroles are generated. Kryptopyrroles are normally excreted uneventfully. In those with pyroluria, kryptopyrroles bind very strongly to zinc, vitamin B6, and Omega 6. This especially occurs when the individual encounters any sort of bodily stress, whether it be an illness, over-exertion, or mental/emotional stress. The kryptopyrroles are then excreted in the urine, taking these 3 important nutrients with them, which is a very big problem. These nutrients are critical for the functioning of your entire body and mind, including your digestion, immune system, cognitive functioning and emotions. “ 8 You will be hearing more about Pyroluria in the coming years.

5. Natural Supplements That Help Balance the Body

This is a very important chapter of the book for me and it is where we recommend natural supplements for people where required. We run hundreds of labs each year and we get to see where people are deficient and where they need the most improvement. They could be low in vitamins and minerals, depleted in the steroidal hormones, have parasites or bacterial infections, liver issues, gut dysbiosis, etc. I just want to preface this next section by saying that I am all for acute care in terms of medications for some people as they can literally save lives. There are a small percentage of people who require medication (s) in order to survive. They could be type 1 diabetics who don't produce insulin or people who use thyroid medication because they don't have a thyroid. Your primary physician's care is important and you should always follow their directive when it is life or death and there are no other alternatives. I have many friends who are medical doctors, surgeons, chiropractors, etc. and we love them dearly as they have spent their entire lives trying to help people. They have beautiful hearts with pure intentions. With that being said, I find that medication is prescribed too frequently these days especially when the patient's issues could be resolved by lifestyle or nutrition alterations. There are so many alternative approaches to give a patient for chronic care but most conventional models don't allow for this or don't have the expertise in this area. Dr. Mark Hyman talks about this a great deal when he lectures. He is a well respected medical doctor who leads the Functional Medicine Division at the Cleveland Medical Clinic.

Hormone Balancing Herbs and Botanicals

Before we list some supplements that may help you with your condition, please be sure to see a qualified practitioner who knows your specific case and has run some labs on you to see where you are out of balance. I never give out supplements or hormones unless I have seen the patient in my office and have run the required labs. Health is not a game and should be looked at with the utmost care. See your primary care provider's advice first before trying the following supplements. Below are simple recommendations that have worked for my patients who have shown these symptoms.

Energy and Stress

This is probably the one area almost everyone struggles with. People have so much stress in their lives from finances, children and personal issues to career considerations. I see executives, doctors, teachers, business owners and just about every profession all day long in my office to deal with these chronic concerns. They are sick and tired of feeling sick and tired. Two of the most common herbs for low energy are licorice root and ginseng. Licorice root contains compounds called flavonoids and the herb's key therapeutic benefit is found in glycyrrhizin. I have personally taken licorice root and I noticed an increase in energy almost immediately. It has many beneficial effects on the body but it should be noted that it is not to be taken by individuals who have high blood pressure. Consult your physician or practitioner before taking it. Ginseng is also used to increase energy and it is plant based and comes in a variety of forms (American, Asian, Siberian, etc.). I typically give this to patients who need a boost but cannot tolerate the licorice root.

From a stress perspective, when my clients have high cortisol, we can use Rhodiola and low cortisol equals Licorice Root or ginseng as mentioned above. Rhodiola is known as *Rhodiola rosea* (other names include Arctic or Golden Root). It is generally classed as plants and fungi which are also named

adaptogens. An adaptogen just means that it helps the body adapt to physical, chemical or environmental stress. *Rhodiola rosea* relieves stress by balancing the body's stress-response system. The Russians have also used it over the years for strength, endurance and to fight off depression. It is grown in the arctic areas of Europe and Asia.

PMS and Sex Drive

PMS is an issue for both women and men. Women experience the physical, physiological and emotional issues while the men just experience the emotional ones. I am being a little facetious but it is a serious concern for many people. Chasteberry and saffron are two excellent herbs at helping women deal with menstrual cycles. Chasteberry is indigenous to the Mediterranean region and it is a fruit that grows on flowering shrubs. You can get it in supplement form or from dried fruits. Saffron is another herb and it is also a very expensive spice. It is produced from the saffron crocus flower. A herbal saffron supplement can help induce menstruation as well as help relieve the pain that many females feel with periods. Another benefit is that saffron can also help to reduce chronic uterus bleeding. As always, do not use if you are pregnant and keep out of reach of children.

Sex Drive is very important and I see many patients who have lost their sex drive usually due to being stressed and the subsequent depleted hormones that follow chronic stress. Their libido is very low and they don't even want to be around their partner. This is heartbreaking as intimacy is very important in relationships. Maca is a plant that grows in Peru and Maca root contains many chemicals, including fatty acids and amino acids (protein), natural sugars, potassium, iodine, iron, magnesium, fiber and calcium. It has been shown to increase libido and this is due to the high nutritional content of the root.

Sleep

This is a very loaded word and most people underestimate how important it is as described earlier in the book. You simply can't function optimally without it and it becomes a major problem for people as they age. I must get asked this question five times a day. How can I sleep better? What can I take to help me sleep? The answer from an herb or botanical point of view is Valerian Root or Ashwagandha. Valerian Root is a perennial plant and is native to Europe and Asia. The dried root part is most beneficial and it contains acetic acid, ascorbic acid, magnesium, calcium, manganese and quercetin. It has been used for over 2000 years in assisting with sleep. Ashwagandha is also very popular in the herbal community and is an adaptogenic herb popular in Ayurvedic medicine. It is plant based and its constituents consist of phenolic compounds, flavonoids, saponins and alkaloids. I recommend you look into these two supplements if you are looking for herbs to assist with sleep.

Sugar Cravings and Weight Loss

I would say these two go hand in hand. As mentioned earlier in the book, most people in 2016 are following a heavily weighted carbohydrate based diet. This means they are eating breads, pastas, cereal, pizza and other wheat based carbs. Their brains now crave these kinds of food and they will get headaches, anxious, jittery and moody if they don't eat more carbohydrates. This is exactly the opposite of what you are supposed to do. I won't repeat what I said earlier but eating more protein and healthy fats as food is always my number one antidote to stopping the cravings. That said, there are two great supplements that you can take and they are L-glutamine and resveratrol. L-glutamine is an amino acid found in the body. It helps stabilize blood sugar and alleviates the need for sugar consumption. One of my favourite supplements is also resveratrol and from a food perspective it is found in the skin of red grapes. An amazing antioxidant as well but is also known for its ability to improve insulin sensitivity, which means that your body is better able to upload glucose into muscle tissue for storage energy.

I could write an entire chapter on supplements for weight loss and many people would buy all of them. I understand human psychology quite well and that most people want a quick fix for their health concerns. Unfortunately, it is not that easy. The previous chapters will guide you on how you can truly live an optimal life and balance your weight but I will provide you with a couple of the best herbs and botanicals that can move you in the right direction. [Conjugated Linoleic Acid \(CLA\)](#) is an Omega-3 fat derived primarily from organic grass-fed beef and dairy products. I prefer getting it from these sources but you can also get CLA in supplement form. I have seen patients do well with it as it has been known to reduce fat, increase muscle tissue and lean out the midsection. I have clinical experience with it and the benefits have been quite pronounced. The second supplement is Relora. Relora is a proprietary blend of two plant extracts (Phellodendron amurense and Magnolia officinali) and works on the central nervous system to relax you. In curbing stress and cravings, it will invariably help you lose weight. The therapeutic benefits are a big contributor to an optimal weight.

Toxicity

Toxicity is very important to measure and also rectify when it comes to damage to your tissues and cells. Toxicity can block the cell's receptors and cause a whole host of problems. Some natural herbs and supplements to help with toxicity are CoQ10, green tea, rosemary and grape seed extract. CoQ10 is synthesized in the body and found in many foods as well. It is involved in many of the chemical reactions that occur within the body and generate energy within the cells. This is important as it is found in every major organ in the body. Another one of my favourites is green tea. It is loaded with [polyphenols](#) like flavonoids and catechins, which function as powerful antioxidants. It is a staple in our kitchen and is used on a regular basis.

Rosemary is another very powerful antioxidant that we will recommend for clients. It is a herb that is a member of the mint family. It is a good source of calcium, iron and vitamin B6. It helps boost the immune system and improve the circulation of blood and is great at removing free radicals. The fourth

supplement that is great in helping with toxicity is grape seed extract. Grape seeds contain natural plant compounds called oligomeric proanthocyanidin complexes (OPCs) and come from grapes. These have been shown to help with chronic disease, have antiviral, antioxidant and antibacterial properties. Improvements in blood flow and circulation are also being studied as a potential benefit.

Autoimmune

We are seeing a growing number of these cases in our practice each and every year. As described earlier in the book, there is a complete protocol on how to heal the various conditions we experience but I will give you a general overview on some of the natural supplements that can help. The first one are the B vitamins (Vitamin B12 and B9). “Vitamin B12 works together with folate in the synthesis of DNA and red blood cells. It’s also involved in the production of the myelin sheath around the nerves, and the conduction of nerve impulses. You can think of the brain and the nervous system as a big tangle of wires. Myelin is the insulation that protects those wires and helps them to conduct messages.”⁹ Another one is Evening Primrose oil as it is also anti-inflammatory and will reduce the triggers for the immune system to attack. The third natural herb and supplement is N-acetyl cysteine (NAC) and it is used to support the liver. N-acetyl cysteine helps to support your liver’s production of the powerful antioxidant glutathione. Glutathione as we have mentioned helps to reduce inflammation in the body. The final recommendation I will provide in this book are Probiotics. They are used to support healthy digestive function and reduce gut inflammation. The proper strains of probiotics will enhance the beneficial bacteria in your gut and start to rejuvenate your microbiome.

Rheumatoid Arthritis (RA)

I selected this particular autoimmune condition for the book as I see it a great deal in our practice. RA is an autoimmune condition where your immune system mistakenly attacks your bones and joints. Getting plenty high-quality, animal-based omega-3 fats is ideal but you can also find high quality fish oil. Krill oil seems to be particularly helpful here as well and this is due to its anti-inflammatory properties. The master antioxidant glutathione is a primary line of defence against RA. “Glutathione helps regulate the immune system. It strengthens the underperforming areas of the immune system and calms the body’s overactive defense mechanisms. This leads to a balance in the immune response which helps prevent the progression of rheumatoid arthritis and helps ease the signs and symptoms of the disease.”

10 Vitamin D is the third and final supplement that is helpful. Most people are deficient in Vitamin D yet it plays a vital role in so many metabolic processes in the body. Vitamin D has been known to lower inflammatory cytokines (IL17 and IL23) and is also believed to inhibit the part of your immune system that is known to cause inflammation in arthritis. What this means is that less inflammation means fewer symptoms from RA. I typically recommend these to patients as a way of augmenting their personalized protocol that is created from their lab results.

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