

© 2016 Mike Daciuk

All rights reserved. No part of this book may be reproduced or transmitted in any form without permission in writing from the publisher, except by a reviewer, who may quote brief passages for review.

All recommendations are made in good faith, but without any guarantee or endorsement on the part of the author or the publisher, who also disclaims any liability incurred in connection with the use of this information.

[www.mikedaciuk.com](http://www.mikedaciuk.com)

My feelings in writing this book are both overwhelming and exciting. These two words come to the forefront because there is so much I want to convey to you, yet how do you describe the human body and evolution in layman's terms? My clients and patients inform me that my passion for health and healing is so evident that our consults routinely go over time and they are left wondering when they will get to talk. I say this in jest but my love for helping people and making their lives better is what brings me so much joy and vibrancy. I also understand that life and health are very complex. It is my obligation to make them as simplistic as possible so my clients can comprehend labs, the brain, subconscious programming, nutrition and other key areas of life. I typically have a small time period in lectures, meetings, or even random conversations to accomplish this. The purpose of this book is to outline and describe nine key areas in life that deserve your attention and which you should focus on in order to live a healthy, happy and fulfilled existence. In over 20 years of studying health, nutrition, physical fitness, functional medicine and human behaviour, I have created a paradigm for you that incorporates the key concepts that will transform the way in which you view health and the corresponding benefits for you, your family and friends.

The nine fundamental categories are:

1) Genetics and Epigenetics

2) The Brain and Subconscious Programming

3) Gut-Brain Axis

4) Nutrition

5) Sleep

6) Exercise Programs and Health Benefits

7) Stress Reduction Techniques

8) The Top Functional Medicine Labs

9) Natural Supplements That Help Balance the Body

With careful consideration, my team reviewed the major components that contribute to health and well-being. In the forthcoming chapters, we will thoroughly describe and explain each section, why they're important to you, specific functional medicine labs you can administer to assess benchmarks and current state, protocols that have helped our clients and then implementation. In seeing hundreds of clients and patients each year, it has become obvious to our team that many people want to get better but they just don't know how to. They know there is an issue but they don't know where to start. Our team bridges the gap between self-care and the conventional medical system. We look at your concerns from a holistic approach while running functional labs to understand your physiology. Our approach is to make continual improvement each and every day while working with you to obtain clinical correlation. Do your lab results match your symptoms? Have you effectively dealt with your childhood and problems that still limit your potential to this day? We will cover many broad topics at first while simultaneously delving very deep into specific areas that interest you.

## **1. Genetics and Epigenetics**

There are certain genes that have been passed on from previous generations that we cannot change no matter how hard we try. These may include eye colour, skin colour, height, etc. They are ingrained in our DNA. DNA is made out of two long strands that contain genetic information. A gene is a part of DNA that is passed down from your parents. To be more specific, genes are grouped into units called chromosomes. As you may recall from your high school science class, humans have 23 pairs of chromosomes. One set of chromosomes for each pair comes from a person's mother, and the other set of chromosomes comes from the father. Genetics can be defined as "The study of genes, heredity, and genetic variation in living organisms." <sup>1</sup> It must be noted that while you have inherited your genes, many factors play a role in determining how your genes are expressed. Although we may have the gene that could trigger a disease, lifestyle, diet and environmental factors play a much greater role in that issue actually coming to fruition. This is what is known as "epigenetics". This emerging field has garnered the attention of cell biologists, doctors, scientists, and nutritionists. What many people referred to as a life sentence for unfavourable gene formation is now being modified and altered by the way in which you live your life. This puts the onus and accountability back in the hands of the individual and the decisions they make each and every day.

In my practice, I tend to hear and see people who blame their lack of progress on their parents, siblings, genetic makeup, etc. They say they are big boned, hot tempered, impatient, or moody. As I have just described, this may be true for some people but the typical ratio I see is 10 percent to 20 percent of your results are genetic while 80 percent to 90 percent are lifestyle, environmental and nutrition based. This means that you can control around 80 percent of what happens to you. "Modern genetics has expanded beyond inheritance to studying the function and behavior of genes. Gene structure and function, variation, and distribution are studied within the context of the cell, the organism (e.g. dominance) and within the context of a population. Genetics has given rise to a number of sub-fields including epigenetics and population genetics. Organisms studied within the broad field span the domain of life, including bacteria, plants, animals, and humans." <sup>2</sup>

We must take a step back and first look at how your parent's and even your grandparent's lifestyle and nutrition decisions affected your DNA. The science is just starting to show that their decisions on type of food, living environment, etc. played a significant role in forming your DNA sequence. Professor Mark Hanson, University of Southampton, says, "Aspects of our early lives stay with us for the rest of our lives and set the control mechanisms of our body processes such as appetite and our predisposition to lay down fat or exercise. These are set early and are affected by a mother's diet, physical composition and even aspects of a father's lifestyle. The environment during development affects gene expression and thereby the setting of physiological control systems that stay with us for the rest of our lives. They affect the way the genes we have inherited from our parents actually operate and can be influenced by aspects of mother's and father's diet and lifestyle." <sup>3</sup> Now that we can thank our parents for setting the genes in motion with their decisions, we will also review how our own lifestyle actually expresses them.

Responsibility and ownership of your own life will invariably fall back on you and that is exactly how it should be. We control our destiny and I am going to explain how our own decisions actually alter our genes and the subsequent results. "In terms of heart disease, we were able to show, for the first time, that it could be reversed by changing lifestyle, and these improvements occurred much more quickly than had once been thought possible. Usually within hours, and almost always within days to weeks, your heart can receive more blood flow. As a result, we found over a 90 percent reduction in the frequency of angina or chest pain. People not only felt better but also, in most cases, they were better in every way we could measure. Their hearts received more blood flow and pumped more normally. The arteries that feed the heart became measurably less clogged in one year and showed even more improvement after five years. Using cardiac positron emission tomography (PET) scans, we found that 99 percent of the patients in our research were able to stop or reverse the progression of heart disease simply by changing lifestyle, without drugs or surgery. These findings may capture people's imagination—so often, people think there is not much they can do, what I call genetic nihilism: "Oh, it's all in my genes, what can I do?" Well, it turns out you can do a lot, more quickly than we had once realized and to a much greater degree than had been thought possible." <sup>4</sup> This research is revolutionary and confirms the suspicions that your daily decisions affect the chances of activating specific genes and consequently serious illness.

Someone who I respect immensely surmises it very eloquently when he discusses how the environment affects your genes. He is a leading cell biologist and world expert. Here is what Dr. Bruce Lipton has to say: “Each cell membrane has receptors that pick up various environmental signals, and this mechanism controls the "reading" of the genes inside your cells. Your cells can choose to read or not read the genetic blueprint depending on the signals being received from the environment. So having a "cancer program" in your DNA does not automatically mean you're destined to get cancer. Far from it. This genetic information does not ever have to be expressed... What this all means is that you are not controlled by your genetic makeup. Instead, your genetic readout (which genes are turned "on" and which are turned "off") is primarily determined by your thoughts, attitudes, and perceptions! The major problem with believing the myth that your genes control your life is that you become a victim of your heredity. Since you can't change your genes, it essentially means that your life is predetermined, and therefore you have very little control over your health. With any luck, modern medicine will find the gene responsible and be able to alter it, or devise some other form of drug to modify your body's chemistry, but aside from that, you're out of luck... The new science, however, reveals that *your perceptions control your biology*, and this places you in the driver's seat, because if you can change your perceptions, you can shape and direct your own genetic readout.”<sup>5</sup> This is exciting news as we now can impact our gene expression and what genes we turn on and turn off. The victim mentality does not even hold merit from a genetic perspective. Of course there are some instances but in the majority of cases, we can control our destiny.

## **Labs to Run**

Every day in my practice, I get asked about the best labs to run that look at your genetics and how they are expressed. The first step in finding out more about your genes comes from understanding your SNPs (Single nucleotide polymorphisms) and how they are categorically different between individuals. They reveal critical data that helps determine your genetic makeup and where you may require lifestyle or dietary changes to live an optimal life. “Single nucleotide polymorphisms, frequently called SNPs

(pronounced “snips”), are the most common type of genetic variation among people. Each SNP represents a difference in a single DNA building block, called a nucleotide. SNPs occur normally throughout a person’s DNA. They occur once in every 300 nucleotides on average, which means there are roughly 10 million SNPs in the human genome. Most commonly, these variations are found in the DNA between genes. They can act as biological markers, helping scientists locate genes that are associated with disease. When SNPs occur within a gene or in a regulatory region near a gene, they may play a more direct role in disease by affecting the gene’s function. Most SNPs have no effect on health or development. Some of these genetic differences, however, have proven to be very important in the study of human health. Researchers have found SNPs that may help predict an individual’s response to certain drugs, susceptibility to environmental factors such as toxins, and risk of developing particular diseases. SNPs can also be used to track the inheritance of disease genes within families.” 6

## **DNA Fit**

The two most prevalent genetic labs that I encounter in my practice are DNA Fit and 23andMe. From a fitness perspective, DNA Fit provides data on genes related to power and endurance, post-exercise recovery speed, injury risk profile, recovery nutrition needs, aerobic (VO2 Max) trainability, full genotype report and breakdown, DNA benchmark against a British Olympian and a DNA collection kit and sample analysis. It does so by looking at many gene markers which include but are not limited to ACTN3, ACE, PPARA, NRF2, VDR, AGT, BDKRB2 and IL-6. This is important because you can determine your genetic composition and this can influence what sports you want to play. Some people have a hard time with this as they feel individuals or parents are playing “God” and trying to manipulate them into playing a certain sport while limiting them in other areas. The reality is that testing gives you an idea of what you are best at and then you can make the decision in terms of what you’ll want to pursue. You are making an informed decision now and who doesn’t want more data? I think it is a great idea if you want to pursue athletics as a profession or play at an elite level. Leverage your God given abilities with hard work and determination.

The second main benefit of using DNA Fit is the nutrition testing modules. This test uncovers which nutrition plan will best suit you. It will look at fats, proteins and carbohydrates and this is based on analyzing genes like ADBR3, APOA2, ADRB2, FABP2 and many more. You may presently be eating foods that are not complementary to your genetic makeup or that actually hinder your progress. This test will see what foods work best based on your profile and how you can maximize the benefit. A major benefit of this test is you will receive meal plans tailor made for you. This is important as every person is different in their makeup and their food should be customized towards that. We will discuss nutrition in greater detail later on in the book but the data revealed in the nutrition module is very important.

## **23andMe**

The second genetic test that my clients run if they are so inclined to do so is the 23andMe panel. It is a genetic scan of your SNPs in your genome as described above. This saliva based test looks at over 40 reports on inherited conditions, 10 reports on your body's response to certain drugs, more than 10 reports on your genetic risk to specific diseases and over 40 reports on genetic traits you carry. It provides a wealth of DNA information and a baseline of your physiology. The results are typically mailed back to the client but the concern for many people is they don't understand them or can't articulate the meaning. Many of my peers are routinely asked to help interpret the data and put them into layman's terms for the patient. It is imperative that you get a qualified practitioner who can help you assess the information and analyze the genes and variants.

The real merit of these labs comes in the form of implementation. It is one thing to know your DNA and it is another to know if you ever "turn on" the genes. In working with some of the best doctors and specialists in the world, your life is 10 percent genetic and 90 percent lifestyle as we advised earlier. This means that what you do every single day matters much more than what genes your parents passed on to you. When you fully comprehend this, you must then start to make decisions each and every day that will contribute to your longevity. This means eating the appropriate foods which we will discuss

later in the book, exercising where necessary, meditating and balancing a lifestyle that is void of stress and disease. The results can guide you in a certain direction and this is where the care of a health coach or practitioner is beneficial. Their experience in working with patients under similar circumstances is extremely valuable.

The final point on genetic testing pertains to the psychological state of patients once they receive their results. I find in my daily practice that once they receive the results, they feel it is a death sentence and they are doomed to develop that disease. The FDA in the United States of America required 23andMe to have disclaimers on their website stating that diseases and gene expression are influenced by many factors. If only 10 percent of what happens to you is genetic, then it would be wise to spend your time creating the lifestyle that will bring you the most health, peace and happiness. I routinely have to remind my patients of this because as Dr. Bruce Lipton describes your beliefs and perception of your environment have a major impact on your physiology. As practitioners, we spend the majority of our time working through solutions and finding how to empower our patients so they can form the proper mindset and utilize their inherent strengths. By doing this, we allow them to focus on what matters and shift their vision to productivity not fear.

## **Methylation**

You will likely hear a great deal about this topic in the coming years as the research is starting to support its involvement in so many processes in the body. I receive many questions from clients asking what methylation is, why it is important and how can you test it? I will explain in great detail as my clients and patients need to be well versed when they speak with their doctors or health care practitioners. Methylation is a natural biochemical process that produces energy, processes hormones, creates immune cells, builds neurotransmitters, regulates gene function, synthesizes DNA and helps protect your nerves. From a science based perspective, it is the process of taking a single carbon and three hydrogens (methyl group) and applying it to many critical functions in your body that have been



outlined above. Methylation happens in all the cells of your body by distributing methyl groups to dozens of chemical processes in the body.

The question then becomes what can impair your methylation cycle? What causes it to become out of balance and cause problems for your body? Some of the factors are insufficient diet, genetic mutation, toxic exposure, high stress, anxiety, medications, drinking alcohol, xenobiotics, virus, infection or any combination of them but not limited to. We measure toxicity every day with the labs we run and we can tell you that many of our clients have very high toxicity levels and they are not necessarily the result of working in a toxic environment. Many manufactured items you come in contact with leave traces of industrial chemicals in your body. These can range from cans of food, plastic bags, styrofoam cups, cleaning products, shampoos, hairsprays and makeup. Virtually any consumer product you touch can introduce chemicals into your body. This is why we always have our clients run the BH101 toxicity lab.

The most popular SNP currently getting a great deal of attention in 2016 is the MTHFR gene (methylenetetrahydrofolate reductase). Almost half of all people living have this trait which is the main reason for all the press. You can thank your parents if you carry the gene but as mentioned previously, lifestyle and nutrition play an important role on if it is expressed and utilized within the body. Vitamin and mineral deficiency will play an important role in disrupting the methylation pathway. The reason is that these nutrients are required to make the active form of folate known as methylfolate. They include B2, magnesium, B6, Zinc, B12 and Folate. There are other SNPs that are looked at and they include SHMT, BHMT, MTRR, COMT and MTR. As previously mentioned, you can run genetic tests to find out what you are predisposed to.

So why does all of this matter? It matters because it is believed that methylation defects have been tied or associated with many health issues and diseases. Here is a sample list of potential health risks associated with poor methylation. Some conditions that can arise from methylation defects are:

Diabetes

Fibromyalgia/Chronic Fatigue Syndrome

Cancer

Pulmonary Embolism

Addictive Behavior

Insomnia/Sleep

Mental disorders

Allergies or Multiple Chemical Sensitivities

Atherosclerosis

Spina Bifida or Cleft Palate or Neural Tube Defects

Multiple Sclerosis and other Autoimmune Disorders

Hashimoto's or Hypothyroidism

ADD or ADHD

Dementia/Alzheimer's

Anxiety

### **Testing For Methylation**

There are a few ways in which you can test your methylation cycles and certain SNPs. One way is from the genetic testing mentioned above in 23andMe. It will show if you have relevant DNA polymorphisms that will reduce your ability to make many of the enzymes which collectively form the methylation cycle. The second approach is a serum test of homocysteine levels which will highlight problems with recycling methionine back to homocysteine. The third and final test I recommend is from Genova Diagnostics called the NeuroGenomic profile. They offer various test panels which monitor how your methylation processes are working. I use this lab for many of my functional lab tests and they are always excellent in their efficiency and quality. Please reach out to our team if you have any questions at all about genetics or methylation.

## **2. The Brain and Subconscious Programming**

This is likely my favourite topic as it is so profound and important in your life yet so many people don't fully understand it. Let's take a step back and review why subconscious programming is relevant to life and health. In the first seven years of your life, you are in what is called a theta or hypnotic state. You are being influenced by your friends, family, school teachers, neighbours, classmates, etc. Their behaviours, personalities, mannerisms, actions and words are being embedded into your subconscious mind. These formative years of your life are effectively forming a program about people, the environment and life that you will go on to reference when you become older. Everything you learn in those seven years is being unconsciously stored and categorized. I will use the analogy of a computer. Think of your subconscious mind as software with all the programs, applications and intelligence. Now think of your body as the computer hardware which is the physical infrastructure. The hardware is more or less a shell that is only really valuable by the software/programs that are played in it.

### **The Difference between Your Subconscious and Conscious Mind**

It is very important to understand the difference between the subconscious and conscious mind. They are both very different and independent of one another but there is some common ground in specific situations that you encounter. Most people believe that they are interchangeable and that one influences the other. The conscious mind in physical terms is the neural tissue right behind your forehead called the pre-frontal cortex. The conscious mind represents who you are as an individual and entity. The subconscious mind is the creative mind and it contains your wishes, desires, aspirations and

every hope and dream you want to pursue. It is the mind that says, I am going to go out today and find my dream job. It gets your mind all excited and ready to enter the workforce in hopes of finding your desired role. It really creates and describes what you want to do and achieve. A great benefit of the conscious mind is that it can learn in many different ways such as watching a presentation, reading a book, listening to podcasts, going to conventional schools, or coming up with your own creative ideas from brainstorming. The real differentiator is that the conscious mind is creative by nature whereas the subconscious mind is more habitual and relies on the habits you have developed. Try and think of the conscious mind as being used when someone asks you what you are doing for the weekend. You will invariably pause, think about it and then respond. You are using the creative side. Now think of the subconscious mind as the mind that is used when you are driving the car. You are sitting in the car talking to your friend, listening to the radio, daydreaming, etc. yet you still get to your destination somehow. Your subconscious mind is driving your car. It is like you are on autopilot. Your subconscious mind also helps your heart beat and assists with various other physiological functions.

As described, the subconscious mind learns from the programs or information embedded in the first seven years of your life or by changing your state of mind when you're older through theta state programming. The subconscious mind captures everything like snapshots of movies and images and the conscious mind is not really alert or aware during your early years. So the first way the subconscious is programmed is from ages 0-7 but also through habit and building new paradigms when you are older. When there is a stimulus that enters your mind, your conscious mind will absorb it and then your subconscious mind will decide if this new information matches what is stored in your programs. Is there a connection and does it correlate with what you have learned in the past? Another major difference is the conscious mind changes easily and frequently depending on the stimulus you see and think about during the day, while the subconscious mind is more hardwired into your brain. As mentioned, the subconscious controls your walking, heart rate, and various physiological functions so you don't want to be changing that. Why would you want to relearn how to ride a bike, walk down the street or relearn how to drive to work every single day? That is why once you learn how to ride a bike at the age of five or six, you never have to learn it again as it is built into your subconscious programs. Here is how you can reprogram your subconscious mind later in life if you don't like the person you have become or want to overcome an addiction.

1. Hypnotic behavior happens in "Theta" state. Humans are in this state primarily in the final two hours before you go to bed. You are also in this state 30 minutes after waking up. One final time is just after meditation. These are the best times to do the following, but these can be used throughout the day as well:

a) Use affirmations like these:

I am a genius and use my mind, talents, gifts and abilities to produce value wealth.

I am living a life of divine purpose and destiny.

I am emotionally, mentally and psychologically sound.

I am focused and driven to create the life I want and deserve.

b) Visualization. Focus on positive mental images in order to achieve a particular goal.

c) Meditation. This stills the mind and your brain becomes more receptive and a fertile ground for whatever you want to implant.

d) Positive Self-Talk. We spend more time talking to ourselves than any other person. Our self-talk dictates our mood, behaviour and decisions. Your subconscious mind believes whatever you tell it. It cannot differentiate between what is real or fake.

2. Be specific about what you want to change. For example, if you want to be free of addiction and have abundance into your life...then do not say, I don't want this addiction or problem. It does no good to say

do not, don't, can't, or won't because the subconscious can't decipher negative connotations. It will interpret your words as I want this addiction and I want to be broke. It is important to consider the difference and how your words and perspective should be cultivated.

3. Find successful people and emulate what you like about them. Mentors are valuable in your development and when you practice their methods you can move forward more productively. This will save you time and effort because they have spent years and decades working through similar problems.

4. Be Humble and open to new ideas that generate a positive response. People gravitate towards humble and caring people. It also shows self-confidence.

5. Use Emotional Freedom Techniques. This involves tapping different points on your body and reaffirming what you want to change.

### **Emotional Freedom Techniques**

All of the aforementioned are fairly self-explanatory except Emotional Freedom Technique (EFT). So what is it? EFT is a psychological acupressure technique that involves tapping different parts of your body while you state affirmations. "Simple tapping with the fingertips is used to input kinetic energy onto specific meridians on the head and chest while you think about your specific problem (addiction, traumatic event, pain, stress) and release positive affirmations." 7 You do this to restore a healthy balance within your body's meridians. I heard about EFT while looking at eastern medicine and from countries like Japan, Korea, China, Germany, Spain and many more. They have been using these techniques for many years and North America is only starting to accept them as an approach to changing mindset. The body's energy and the flow of energy through the body is less studied and there are skeptics due to the more holistic approach.

## Size of Subconscious vs Conscious Mind

I have tried to illustrate just how important the subconscious mind is and how it is initially inundated with information when you are a young child. It may seem like I am beleaguering the point but the reason for this is that your current daily activity as an adult is around 95 percent controlled by your subconscious mind. “The major problem is that people are aware of their conscious beliefs and behaviors, but not of subconscious beliefs and behaviors. Most people don’t even acknowledge that their subconscious mind is at play, when the fact is that the subconscious mind is a million times more powerful than the conscious mind and that we operate 95 to 99 percent of our lives from subconscious programs. Your subconscious beliefs are working either for you or against you, but the truth is that you are not controlling your life, because your subconscious mind supersedes all conscious control. So when you are trying to heal from a conscious level—citing affirmations and telling yourself you’re healthy—there may be an invisible subconscious program that’s sabotaging you.”<sup>8</sup> We will use a real life example of this. Many people use will power to quit smoking but will power is from the conscious state. They keep trying to convince themselves to quit consciously but the habit is embedded in their subconscious mind and their subconscious programs don’t agree with what the individual is saying. There is a conflict and the subconscious mind wins out as it is too strong for the conscious mind. I see this time and time again with addictions. To successfully transform, you have to reset your mind, use positive affirmations while in theta state and then give it some time. I talked about this in my previous book “The Transformation From Within”.

It is important to discuss how the subconscious mind and conscious mind can sometimes interact. I will use an example of this. As stated, the conscious mind is creative, is responsible for solving math problems, making plans for the weekend, and completing activities throughout your life. It is in use less than five percent of your day and can’t process details anywhere near the speed of the subconscious mind. Here is an example of how the two minds work. Someone asks you what you are doing for the weekend. Most people immediately look upwards, start thinking about it in a conscious state and the

moment they do, their mind defaults to a subconscious program. When you are in thought, your mind goes into subconscious mode. I find that extremely intriguing. I personally catch myself looking up when asked a question in a conscious state. A second example is that your subconscious mind can scan a newspaper page in seconds and it goes right to the words you are thinking about. Your conscious mind may take five minutes to read that page but if your subconscious mind has a program in it like red, it will find the colour red or the word red in seconds. It is like when you go and buy a red SUV for example. Once you buy it and focus on it, you start seeing red SUVs everywhere. You notice them all over the place now because your mind is looking for it. They have always been there but you never noticed them before. Your mind is now fixated on them and they show up everywhere. That is an example of the power of the subconscious mind. The goal is to have subconscious programs that support your wishes and desires. When you have cohesiveness and congruency, the world becomes yours to enjoy and master.

As I have been informing my patients for years, if you want to know what the root cause of any problem is then you will want to start by testing it. We run various labs in my functional medicine practice but this example below is more of an applied test that anyone can do at home. Rob Williams from Psych K used this technique when presenting and I found it applicable as well. Read below and take a few minutes to do this with a partner so you can test your subconscious programs.

**Practical Exercise:**

Hold your right arm out from the side of your body at shoulder height. Your assistant applies some force to try to push your arm down. You resist the downward pressure. You do not try and hurt the other person or make it uncomfortable but apply just enough tension. You are trying to find a balance where you can comfortably resist your assistant's pressure with reasonable effort.



You now test a concept which your subconscious mind is highly likely to support. For most of us, this is as simple as saying your name. While keeping your arm out, and while your assistant continues the downward pressure, you say my name is Mike (use your name). Because your subconscious supports this, the balance between downward pressure and your resistance will remain the same. There will be a balance between the two.

The second part is to test a concept which your subconscious mind will not be in agreement with. The assistant maintains the same pressure and you say a name other than yours. At this point, your muscular resistance will weaken, and your arm will slump down. This is because the statement conflicts with your subconscious programming. Your subconscious mind does not believe what you are saying and the built in programs are in conflict causing weakness in your system. This can get very metaphysical by asking if you love yourself, do you believe in yourself, do you love your spouse etc. Try it out and see how powerful your subconscious programs can be. This is not a standard physiological lab that we will discuss later in the book but it is easy enough to do in your home and also have a little fun with.

I will conclude with a little story that will bring your subconscious programming full circle. I once had a patient ask me if I knew why he couldn't gain any weight and why he didn't really enjoy eating. He is a 47 year old male and said I don't expect you to know the answer but I will ask you anyhow. I paused and then asked him what his childhood was like. He started to cry a little and said that they always ate dinner in separate rooms and the parents would yell and tell them to speed up. The parents made their children feel uncomfortable and guilty for eating. For over 40 years, this patient of mine has been carrying subconscious programs that associate pain with eating. He doesn't like to eat and can't put on weight because the memories come back of his parents yelling at them and not eating dinner as a family. This is very sad and I wonder how many people carry subconscious programs with them that are detrimental to their current life. You remember events when emotion is tied to them and this is clearly an example of that. Being in a hypnotic state as a child also adds to the subconscious programming. We are working with this patient in healing his mind and giving him the tools and techniques to overcome his limiting beliefs.

### 3. Gut-Brain Axis

#### The Gut

This section will really focus on the science and how your gut health and brain health are intrinsically linked. As I have been telling patients for years, you can really gauge a person's health by looking at their gut health and the damage they have done to their mucosal barrier over their lifetime. I see many patients from all over the world and some have over 100 symptoms, multiple diseases and are on dozens of medications. Where would a logical mind start with healing someone who appears to have so many issues? My answer is usually the same in that you start with the gut. If your gut is not functioning properly, then you open yourself up to a poor gut flora, damaged microvilli, "leaky gut", an influx of bad bacteria and then autoimmune conditions. Once you have come this far you can then open yourself up to more serious illness like stomach cancer. In this chapter, we are going to focus on the anatomy of the gut, gut health, anatomy of the brain, brain health, the gut/brain connection, factors that are detrimental to both and also look at some labs that can test your overall gut and brain function. I can't stress enough how important it is to take care of your gut health by implementing the recommendations we will discuss later in the book. This new approach to health and disease will be the focus for the research and medical community over the next 20 years.

Before we get into greater detail on the connection between your gut and brain, we must fully comprehend how food is absorbed and digested. Salivary glands secrete saliva to start the chemical digestion of breaking down food. Food particles are pushed into the pharynx and then into the esophagus. One way movement of the food mass is now called the bolus. Muscle contraction called Peristalsis pushes the food into the stomach. The stomach cells secrete hydrochloric acid (HCL) and

various regulatory hormones that chemically digest the bolus/food. Chyme is now formed and exits the stomach and moves into the small intestine. The majority of digestions occurs in the small intestine which consists of three parts: the duodenum, the jejunum and the ileum. Bile from the liver and digestive enzymes from the pancreas spill into the duodenum to aid in digestion. Chyme not absorbed by the small intestine flows into the large intestine. As it is passed through the various parts of the colon, water and salt are absorbed and chyme is converted into feces. The rectum stores the feces until nerve stimulation happens to release the feces. This is a high level explanation on how your food is digested in your body.

The term used in the media today that you will hear a great deal about is “leaky gut” as mentioned above. 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. Your mucosal barrier has all of these little microvilli that line it and they are supposed to absorb all of the nutrients and other particles that you consume on a daily basis. Healthy microvilli look like fingers with little hairs all over them and they are lined with epithelial cells.

So why are epithelial cells important? They protect various organs throughout the body including the gut. As mentioned, they form tight junctions with other cells so you can absorb and digest your food properly. When these junctions become loose and the cells start to wear down, you now have leaky gut and it is a serious problem. Antigens/particles/food can get into your bloodstream by going between the cells or through the cells. Both scenarios are not favourable and we test for this every day in our practice. We can run a Genova Intestinal Permeability (IP) lab which measures how well the sugar molecules lactulose and mannitol go between and through the cells. It tells the practitioner how strong

your mucosal barrier is and where we can begin to start the healing process. Having leaky gut causes the inflammation process throughout your body and other problems. We have seen dozens of these labs in my practice and the correlation is very strong between severe leaky gut/IP labs and autoimmune conditions like celiac, rheumatoid arthritis (RA), lupus, crohns, etc. The mannitol and lactulose numbers are usually off the charts. Other well documented diseases or issues that can arise from having a permeable gut are allergies, asthma, autism, eczema and psoriasis, type 1 diabetes, IBD, food sensitivities, thyroid issues and so many more.

### **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 is 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. Some examples of bacteria we find are lactobacillus, bifidobacterium, helicobacter pylori as mentioned above and staphyococcus. The reason why people care about bad bacteria in the gut and body is that it can lead to diseases such as cholera, tuberculosis, lyme disease, salmonella, staph infections, e.coli, leprosy and many more. 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. Some examples of parasites (groups) are tapeworms, fleas, barnacles and protozoa. They can cause some serious issues like giardiasis, cyclosporiasis and cryptosporidiosis, trichinosis, anisakiasis, etc. Many of my clients start by feeling weaker, fatigued, general malaise and some discomfort in their gut. This is not true for everyone but something you should be aware of.

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. “ 9

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.

## **Facts about the Gut**

There is a reason why we are discussing the gut in such great detail and this is because it is paramount to your well-being and sustained longevity. The food you eat and the nutrients you absorb have a direct correlation to how you feel and how well you will perform throughout the day. The peculiar part is that

the gut was rarely viewed 25 years ago as a contributor to many of the current diseases and issues people face today. I think part of the problem is that the gut is so complex and ever evolving. The gut can literally change some of its composition in as little as twenty minutes. It is due to our constant consumption of food and the digestive system always having to work. It is always working on overdrive due to cravings for sugar and caffeinated beverages that give people a superficial energy boost. Here are some facts on the gut and why it is so important to your overall health.

“1. The types of bacteria present in your intestine are vital to your health. There are about one hundred trillion bacteria of 500 different species present in your body. The ratio in which the good bacteria and bad bacteria are present in your intestine is critical to your overall health status. The ideal ratio is 85:15 for good and bad respectively.

2. Antibiotics taken for any bacterial illness can kill both the good and bad bacteria present in your gut, thereby, disturbing the ratio and favoring the growth of bad bacteria.

3. Majority of the cells of your immune system (80%) are present in your gut. Hence, a healthy gut is critical for a healthy body.

4. The various digestive illnesses that can be caused due to reduced levels of good gut bacteria include inflammatory bowel disease, irritable bowel syndrome, Leaky gut, and lactose intolerance, H. pylori infection that causes stomach ulcers and intestinal infection.

5. The various systemic illnesses that can be caused due to good and bad gut bacteria imbalance include skin infections, autism, acne, urinary tract infections, genital tract infections in females, diabetes, cancer of bladder, premenstrual syndrome, and gum disease and tooth decay.

6. The pH of our stomach is highly acidic (pH 4) due to the presence of hydrochloric acid and pepsin. This acidic pH is helpful in killing any harmful pathogens that may have entered the stomach through foods. The stomach is protected from this acid by the presence of a protective mucus lining.

7. As we age, the stomach acid is reduced leading to problems of digestion such as indigestion, heartburn, GERD etc. Hence, contrary to the popular belief, the fact is that such problems of digestion are caused due to a decreased level of stomach acid and not due to its overproduction.

8. You can improve your reduced acid production by taking hydrochloric acid (Betaine HCL) supplements. However, while you are doing so, you should not drink water or other alkaline beverages, which will disturb the acidic environment of stomach.

9. Taking the popular antacids such as proton pump inhibitors and H2 blockers (Zantac, Prilosec etc.) may actually worsen your problem as they reduce the production of stomach acid.

10. Your digestive system is fooled by chewing gums. The act of chewing signals the body that your gut is about to get food to digest for which various enzymes and digestive juices are produced and activated. This can actually lead to symptoms of bloating and stomach acid overproduction.

11. There are two types of digestive aids whether natural or manmade: One that helps in increasing the stomach acid, enzymes and good gut bacteria and other that help reduces the stomach acid. Probiotics, Hydrochloric acid and enzymes are the type of digestive aids that help in increasing the acidic environment of the stomach and maintaining an optimum functioning of your digestive tract.” 10

12. “There are over 100 Million brain cells in your gut. Your gut’s power to think for itself is no surprise; there are millions of brain cells, or neurons, in its lengthy coils (9 meters of intestines, from esophagus to anus). That’s more neurons than are found in the spinal cord or peripheral nervous system.



13. The gut sends signals to the brain. There's one big, bad visceral nerve embedded in your gut—the vagus nerve. Research has revealed that up to 90 percent of its fibers carry information from the gut to the brain, rather than the other way around. In other words, the brain interprets gut signals as emotions. So you really should trust your gut.

14. New research shows links between autism and fewer strains of gut bacteria. In as many as nine out of 10 cases, autistic people have common gut imbalances such as leaky gut syndrome, irritable bowel syndrome, and fewer strains of “good” bacteria. Research on mice is looking at possible treatments of some of the behavioral disorders of autism by balancing microbes in the guts, though many warn that such treatments can't produce a “cure” for autism.

15. Your gut can become addicted to opiates just like your brain. Inside your gut are opiate receptors, which are also found in the brain. The gut is just as susceptible to addiction as the brain and may, in fact, contribute to the intense difficulty some addicts have trying to kick the habit. “ 11

## **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.

## **The Brain**

Health and well-being can't be discussed without fully understanding the brain and how it works synergistically with the gut. The brain is comprised of many parts like the cerebral cortex, frontal lobe, occipital lobe, limbic system, amygdala, medulla, spinal cord, cerebellum, central nervous system (CNS) hypothalamus and the pituitary gland. There is also what researchers and scientists call the second brain and that resides in the digestive lining of your gastrointestinal tract (GI). It is called the enteric nervous system (ENS) and it is two, thin layers of more than 100 million nerve cells that populate your GI tract from the esophagus to the rectum. For the context of this book, we will be focusing on the relationship between the CNS and the ENS, the hypothalamus/pituitary relationship and the vagal nerve.

## **Gut/Brain Relationship**

So the question is how do the CNS and ENS interact? The main role of the ENS is to control digestion, assist with swallowing, facilitate the release of enzymes that help break down food and finally control of blood flow that helps with nutrient absorption. One component that is being studied thoroughly is that inflammation of the GI tract can send signals to the ENS which in turn causes mood and behavioural changes in the brain. For quite some time, researchers have known that when you take medication/antidepressants for the brain, improvements are frequently seen in IBS, IBD, and crohns patients. This reverse or bi-directional shift from the irritability in the GI tract affecting the brain and causes changes is relatively new and exciting. "These new findings may explain why a higher-than-normal percentage of people with IBS and functional bowel problems develop depression and anxiety. That's important, because up to 30 to 40 percent of the population has functional bowel problems at some point." 12 An issue that has been prevalent for so long is that many doctors and specialists have looked at the body as individual parts. Neurologists look at the brain only and GI specialists only look at the intestinal tract. I am optimistic that people will start looking at the body as a whole and complete

system. We need the neurologists and GI specialists to work together so we can resolve these chronic issues that are becoming an epidemic.

The medical community has really started to focus on this relationship and there have been hundreds of studies illustrating the impact of each organ on the other. A recent study by UCLA researchers found the following: Researchers have known that the brain sends signals to your gut, which is why stress and other emotions can contribute to gastrointestinal symptoms. This study shows what has been suspected but until now had been proved only in animal studies: “that signals travel the opposite way as well. Time and time again, we hear from patients that they never felt depressed or anxious until they started experiencing problems with their gut. Dr. Kirsten Tillisch said. Our study shows that the gut–brain connection is a two-way street.”<sup>13</sup> They were given probiotics which many of you know contain beneficial bacteria and they looked for changes or improvements in the mood and brain activity. Without getting into great detail, the trial group who ingested the probiotics had better results in the two brain regions that control central processing of emotion and sensation.

The vagus nerve is very important in the connection of the gut and brain. It is thought of as a major player in communication and method of delivery. The vagus nerve has multiple branches that diverge from two thick stems grounded in the cerebellum and brainstem. It starts from here and meanders down to the lowest part of your abdomen interacting with your heart and most major organs along the way. The vagus nerve is constantly sending signals and relaying information about the state of your organs up to the brain. Around 85 to 90 percent of the nerve fibers in the vagus nerve are dedicated to communicating the state of your internal abdominal organs up to your brain. Afferent signals are sent to the brain whereas efferent signals are sent from the brain to the rest of the body. That gut instinct you get is basically an emotional feeling that gets transferred to the brain via the vagus nerve. Signals from this vagus nerve travelling from the gut to the brain have been linked to influencing mood and certain types of fear and anxiety. This feedback loop is very important to balancing out various hormones and enzymes.

The last example I want to discuss in this section is the Hypothalamus Pituitary Adrenal Axis (HPAA) and Hypothalamus Pituitary Thyroid Axis (HPTA). This is another example of the brain signalling various organs located outside of the brain. The HPAA axis is another negative feedback loop where the hypothalamus releases corticotropin releasing hormone (crh) to the pituitary which in return releases adrenocorticotrophic hormone (ACTH) to the adrenal glands. The adrenals release many hormones but let's focus on cortisol for now. If you are not producing enough cortisol, the hypothalamus will receive a signal saying that you are low and it will begin to send more to the pituitary and so forth. I see this loop all the time in my practice and it is very good at regulating itself. However, issues arise when you have burnt out your adrenal reserves, when there is severe disease or structural problems with the hypothalamus or pituitary. I have seen this in patients who have had surgeries on their pituitary or concussions in the past. The most notable issues I see are depleted cortisol due to prolonged stress and the cell receptors not functioning properly anymore (resistance). We have to check these in our patients so they can begin to heal.

This is very similar to the HPTA and the hypothalamus releasing thyrotropin releasing hormone (TRH) to the pituitary which in return releases thyroid stimulating hormone (TSH) to the thyroid. The thyroid then releases free t3 and free t4 into the bloodstream and liver. The negative feedback loop is also prevalent here and when the pituitary senses low amounts of t3 and t4 being produced, it starts to produce more TSH to compensate. I have seen extreme thyroid numbers in my career and it should be noted that the HPAA and HPTA are synergistic where one can affect the other. An example would be where CRH can inhibit TSH production. This is why I like my patients to have both tested (for thyroid cases) as they are intricately linked and we can get a better picture of their overall health.

The purpose of this chapter is to illustrate that your gut and brain work in tandem with one another and the health of your gut impacts brain related concerns like depression, anxiety, mood, etc. That is why it is vitally important to eat nutrient dense foods and take care of your gut flora and microbiome. It has a modulating effect on your brain. The inverse relationship is true where brain tailored protocols

seem to control gut conditions like IBS, IBD, crohns, etc. This will be where science and research is focused in the next 20 years. There are simply too many chronic conditions in the world that are not getting the proper treatment. People continue to live in pain and we need to change that. We need to acknowledge the issue, what is causing it and how we can implement solutions that will help you lead a vital and healthy life. The next few chapters in this book will outline how you can do that and what steps you can take to get your health back on track.

## **4. Nutrition**

I am excited to start this chapter of the book as nutrition has the most influence and impact on your overall health and well-being. 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 in most people. 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, individuals 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 and 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, HPA axis 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." 15

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 glutes 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."<sup>16</sup> 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. Described below is the structure of two of the most prominent food opiates that have had their amino acid structure slightly altered over time. "These "food opiates" are heavily concentrated in wheat and dairy products, especially cow's milk. Wheat contains the following opioid peptides, known as gluten exorphins, alongside which are listed their amino acid structure:

- Gluten exorphin A5: H-Gly-Tyr-Tyr-Pro-Thr-OH
- Gluten exorphin B4: H-Tyr-Gly-Gly-Trp-OH
- Gluten exorphin B5: H-Tyr-Gly-Gly-Trp-Leu-OH
- Gluten exorphin C: H-Tyr-Pro-Ile-Ser-Leu-OH
- Gliadorphin: Tyr-Pro-Gln-Pro-Gln-Pro-Phe

Cow's milk, depending on the milk variety (A1 or A2), contain a variety of combinations of the following casomorphin peptides:

- $\beta$ -casomorphin 1-3: H-Tyr-Pro-Phe-OH
- Bovine  $\beta$ -casomorphin 1-4: H-Tyr-Pro-Phe-Pro-OH
- Bovine  $\beta$ -casomorphin 1-4, amide: H-Tyr-Pro-Phe-Pro-NH<sub>2</sub>
- Bovine  $\beta$ -casomorphin 5: H-Tyr-Pro-Phe-Pro-Gly-OH
- Bovine  $\beta$ -casomorphin 7: H-Tyr-Pro-Phe-Pro-Gly-Pro-Ile-OH
- Bovine  $\beta$ -casomorphin 8: H-Tyr-Pro-Phe-Pro-Gly-Pro-Ile-Pro-OH" 17

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.”<sup>18</sup> 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, Einkhorn wheat which preceded Emmer had 14 chromosomes. Before we ate the seeds of grasses tooth decay was virtually unknown. “<sup>19</sup> 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." 20

## **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.

A quick story and this pertains to where I get my haircut. The wonderful lady who cuts my hair said Mike, I know what you do for a living and I have a question for you. I have allergies all the time, brain fog, sniffing, headaches and can't sleep very well. Can you help? I first ask about diet and said have you eliminated bread? She said yes. Have you eliminated dairy? She said yes. Have you eliminated corn and its constituents? She said yes. Have you eliminated soy? She was getting irritated but said yes. I said ok, have you eliminated eggs? She stopped cutting my hair and said I eat them twice a day. I said you have nothing to lose so try eliminating eggs from your diet and see what happens. She hesitantly agreed. I saw her a month later and she said you will not believe this Mike but all of my symptoms disappeared after removing eggs from my diet. She was very kind and she is very grateful that she asked me that one simple question. Does this sound familiar to you folks? I am just here to provide options and open your mind up to a new way of thinking when it comes to food.

## **Food Allergies, Food Sensitivities and Food Intolerance**

## **Food Allergies**

In this section, we want to differentiate between a food sensitivity, food allergy and food intolerance. I find that most people are not clear on the distinction. A food allergy is an immune reaction to a specific food. It will occur each and every time you eat that food, even if you only consume a small amount. A food allergy occurs when your immune system mistakenly believes a food or food element (like peanuts, lactose or gluten) is detrimental to your body so it produces specific immunoglobulin E (IgE) antibodies to neutralize that foreign invader. To bring your body back into balance and mitigate the perceived antigen, your body will release histamine as well as other chemicals into your bloodstream anytime you eat the offending food. Inflammation is then created and it's these chemicals that cause the entire range of allergic symptoms (rashes, runny nose, wheezing, diarrhea to the more severe anaphylactic shock). Only true food allergies can produce life-threatening anaphylaxis. This is why kids with peanut allergies have to carry an EpiPen. An EpiPen simply carries epinephrine which narrows blood vessels and allows the flow of oxygen. The reaction is usually immediate anywhere from minutes to hours. Allergies are not very common and are prevalent in less than 5 percent of the population. They may also be permanent. The most common food allergens are milk, eggs, fish, peanuts, soy and wheat.

## **Food Sensitivities**

Food sensitivities are different than allergies in many ways. Delayed reactions manifest in many different ways as they can affect any organ system in the body and can take anywhere from 45 minutes to several days for symptoms to become apparent. They generate an immune response known as immunoglobulin G (IGG) and not necessarily to protein. This is why it is more difficult to determine if you have a sensitivity to a food. The delayed onset of symptoms and complex physiological mechanisms

involved in food sensitivities make them an especially difficult puzzle to solve. I have my patients keep a journal of what they eat for a week. If they experience any symptoms, I always ask what they had in the past 24 – 48 hours. Sensitivities are very common affecting between 25-50 percent of the population. They can be cured and the underlying cause is usually “leaky gut” or a compromised mucosal barrier. We will describe in a later chapter how you can test for food sensitivities.

## **Food Intolerances**

The final reaction to food I want to discuss is food intolerances (non-IgE mediated food hypersensitivity or non-allergic food hypersensitivity). They are a digestive system response rather than an immune system response. It occurs when something in food irritates a person’s digestive system or when a person is unable to properly digest food. An example of this is an intolerance to lactose, which is found in milk and other dairy products as described above. Symptoms can be bloating, migraines, headaches, a cough, etc. Some causes of intolerances can be an absence of certain enzymes, specific chemicals, toxins, or some histamine in food. These are fairly common in people and an elimination diet is very helpful in curing these.

## **The Canada Food Guide**

This will just be a quick overview of the Canada Food Guide and why it is seriously flawed based on what I have already described above and from my own clinical experience. Among other recommendations, it suggests five to 12 grain products a day and they include bread, cereal, bagels, pitas, buns, pasta and rice. The section on grains and wheat clearly articulates why these foods will initiate a cascade of health problems from sensitivities, allergies, autoimmune diseases and even worse. The Canada Food Guide is outdated and our children should not be subjected to the kind of weight gain

that comes from recommending these grains. I am an optimist and I hope the “nutritionists” and “consultants” who oversee this guide will change their approach and focus more on the healthy fats that I have described previously, quality organic vegetables/fruits and grass fed protein. They also need to take a serious look at the milk and dairy recommendations. I truly believe that people mean very well and they try their best to form a paradigm with the data they have at the time. That being said, research and education evolves and so should the dietary recommendations that are in our schools and medical offices. Unfortunately, society has never been more ill and overweight. That in itself should tell you something about how people have been eating over the past 40 years. Seek a qualified practitioner and really test them on their skill and knowledge base. See if they have evolved with the times and follow the current literature and research. It will allow you to lead a life of sustained health and vibrancy.

## **5. 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 reasons 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.

## **6. 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 work-out 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.

### **Benefit to Hormones**

One of the most overlooked benefits of exercise is the impact on your hormones and subsequently on your overall vitality. When you exercise, the movement directly impacts a variety of hormones like irisin, testosterone, peptide YY, epinephrine, norepinephrine, aldosterone, cortisol and growth

hormone. Your hormones play a vital role in your overall health and well-being, and when your body is in balance other areas of your life tend to fall into place as well. Exercise has been a staple in my life for 24 years and it has helped me through many difficult times. From enhancing athletic performance, stimulating endorphins and improving overall mood, physical fitness can achieve results no pill can match. I highly recommend resistance training for individuals who are looking to transform their life and who are physically capable of engaging in such a program.

So why does exercise even matter? In this section we will look at how exercise benefits your hormones. Remember that hormones are chemical messengers and extremely vital to your health and well-being. The first hormone is irisin. Exercise causes the hormone to break off into your bloodstream and circulate throughout your entire body. Irisin has been shown to reprogram fat cells to burn energy instead of storing it. This is important as people are always looking to increase their metabolic rate and increase proper energy expenditure. Increased irisin levels are also starting to be correlated with longer telomere length. Telomeres are the ends of your chromosomes. The analogy is like shoelaces and the caps on the end. The shorter the cap, the shorter the life span. Shorter telomere lengths are linked to all kinds of disease.

The all and mighty testosterone is the next hormone we want to discuss and how exercise affects it. As many of you know, testosterone is responsible for libido, sex drive and bone, hair, and muscle growth. There is typically an increase in testosterone as soon as you finish your workout. This is when your body starts using the circulating testosterone to make muscle gains. It should be noted that testosterone is created primarily during high intensity, heavier lifting anaerobic exercise. This means that the exercises are typically less than two minutes in length with a break in between sets. You are using glucose as your fuel and are not dependent on oxygen as your reserve. Think anaerobic is without oxygen and aerobic is with oxygen. Testosterone will also support production and replication of new red blood cells. This is important because red blood cells carry oxygen throughout the body and this has a cascade of benefits for many other chemical reactions in the body. The third benefit of exercise on hormones pertains to Peptide YY. It is a hormone released in your gut that acts on areas of the brain to

reduce appetite and increase satiety after a meal. We discussed this in the gut/brain section of the book. This is produced during the aerobic phase of exercise.

As you can tell already, exercise has a profound impact on your hormones and generates a great deal of benefit. Two hormones that are closely tied to your adrenal glands and utilized during stress are epinephrine (adrenaline) and norepinephrine. When you are working out, you are actually putting additional stress on the body. To deal with this additional stress, your body releases these hormones. One of epinephrine's responsibilities is to cause constriction of the blood vessels. As we discussed earlier in the allergy section, people with life or death allergic reactions are given adrenaline to reduce the swelling so they can breathe. Norepinephrine on the other hand is responsible for keeping your blood vessels under tension. This is the cause of the increase in blood pressure that is experienced during exercise. So having the blood vessels slightly constricted and under tension means that your heart will have to work harder. This is how people improve and get better in health and competition. The more you train your body and the harder you push yourself, the more hormones that are secreted.

A couple of other hormones I see in my practice are aldosterone which helps your body limit sodium excretion. It's important for your body to conserve sodium so that it can maintain a good electrolyte balance. My favourite one as you know is cortisol and its job is to maintain stable blood sugar levels during rigorous exercise. The final hormone that is affected from exercise is growth hormone. It is made up of almost 200 amino acids and is responsible for protein synthesis and cell transport. It is excreted in high levels during exercise and hence why working out is great for your hormones and body.

### **The Benefits of Exercise on Sleep**

We discussed a great deal about sleep in the earlier chapter but I wanted to point out a few facts about the benefits of exercise on sleep. "A nationally representative sample of more than 2,600 men and women, ages 18-85, found that 150 minutes of moderate to vigorous activity a week, which is the

national guideline, provided a 65 percent improvement in sleep quality. People also said they felt less sleepy during the day, compared to those with less physical activity.” 21. The question then should be why does this happen? When you exercise, your body goes through a period of exertion and stress as mentioned. Everything in life has an opportunity cost. The more you challenge yourself during the day, the more prolonged periods of exhaustion at night. The old adage goes, if you want to get something done then give it to a busy person. A lazy person will just lay around all day. Getting your circadian rhythm in check by balancing out your day with exertion augmented with rest means your body will get on a better schedule and your mind will rest better at night. Exercise has also been known to lower anxiety and depressive symptoms.

### **Benefits of Exercise on Heart Health**

“As many as 250 000 deaths per year in the United States are attributable to a lack of regular physical activity.” 22 Now how is that for a statistic? As we mentioned before on blood vessel tension and restriction, working out keeps your heart strong and vibrant. Working out is excellent at normalizing your insulin and leptin levels. Other beneficial biochemical changes also occur during exercise, including alterations in different metabolites. This is important because these compounds help you burn calories and fat. As I always say to my clients and patients, feeling good physiologically and exercising regularly creates a healthy feedback loop within the body. It sends the proper signals to the receptors on your cells and to your organs to start producing the hormones and proteins. Exercise can reduce your risk of cardiovascular disease while also helping you look and feel your best.

### **Exercise on the Brain**

Perhaps the most intriguing and complex organ in the body is the brain. Did you know that the increased blood flow to the brain during exercise promotes the growth of new brain cells? In the hippocampus region of your brain, the new brain cells will help boost memory and learning. Consistent workouts also keep the surge of blood flow to the brain and the brain adapts by turning genes on and off. This is referred to as epigenetics as we mentioned earlier in the book. This is advantageous in fighting off dementia and other brain related degenerative diseases. We can't possibly talk about the brain without mentioning neurotransmitters and how exercise affects them. Exercise has a direct impact on a number of neurotransmitters like serotonin, dopamine, glutamate, and GABA. As you know, many of these neurotransmitters directly affect your mood and that is why the endorphin rush you feel from working out makes you feel better.

I want to mention Brain Derived Neurotrophic Factor (BDNF) in this section. When you are under perceived stress, your brain releases the protein BDNF. This protein helps repair neurons, and also activates brain stem cells to convert into new neurons. Through the exercise process and the release of BDNF, numerous chemicals are released that promote neural health. I see it every day in my practice. Clients have a hard time getting to the gym but once they do, they have this feeling of euphoria and pleasure towards the end. It can be underestimated how important exercise is on the brain.

## **7. Stress Reduction Techniques**

If you asked me 15 years ago if this was important, I would have had a different answer. With that said, stress reduction is more important today for some people to start with than exercise. In 2016, more people spend their day in perpetual motion burning through their stress and sex hormones only to find themselves on long term disability or with a serious illness. I see it every day in my practice and it is a major catalyst for writing this book. One of the more practical ways to heal the body is through stress reduction techniques. This includes meditation, yoga, prayer, spiritual guidance, quiet time and the like.

It is a time where you start to activate the parasympathetic nervous system and regenerate the body. It is also an important time to connect with your soul and listen to your real purpose and calling in life. As I have said many times, my quiet time is in the evening when the kids are asleep and I run a nice warm bath with Epsom salts. The magnesium calms me and I put on some theta state music to slow my brain waves down so I can listen to the quiet voice that directs my life. It is very important for everyone to do this and especially relevant for people with children, careers, etc.

## **Meditation**

What exactly is meditation and how can it help you? In simplistic terms, meditation is a way of transforming the mind. To me, meditation is a way of connecting your mind to your soul and being one with your entire body. You can do this through quiet time, breathing techniques, listening to music and deep concentration. This is a time when you let your mind go and bring into your world what you desire and aspire to be. Focus on positivity, bliss, peace, harmony, congruency, calm, love and any other form of awakening that will progress you forward in this material world. You are a spiritual being having a material existence. By being still and silent, you start to understand what your mind and soul require. You start to manifest what is truly important in life and what will bring you closer to peace. Meditation has been around for thousands of years and dates back to ancient times. Many people associate meditation with the Buddha and they are one of the biggest proponents of meditation. Buddhists have been practicing as early back as 500 Before Christ (BC) and we can all learn from their techniques and wisdom.

## **Prayer**



Prayer is another fundamental technique you should use when practicing stress reduction. It is much more involved and deeper than meditation and it is direct relationship with God. There are many religions around the world and they all have their own form of prayer. It is done with sincerity, openness and humility. You are professing your dependence on God and exercising your faith and hope in Him. As a family, we reserve our prayer time for Sunday mornings and each night before our family goes to bed. We talk with God and show love and praise for that day and forthcoming events. We thank Him for what we have in our life and ask Him to bless the people around us with His glory. Personally, it is a very quiet connection like no other. Your Saviour is literally the only one who can change your life in an instant. I was born and raised in a Catholic Church and we practice our values each and every day. Not every day will be perfect but we were all born imperfect but with the potential to improve every day.

## **Yoga**

Most of my patients and clients already engage in some form of yoga as they realize the benefits that are derived from mindful movements and calculated physical presence. It is about being still and knowing and trusting your body. "Yoga is a simple process of reversing the ordinary outward flow of energy and consciousness so that the mind becomes a dynamic center of direct perception no longer dependent upon the fallible senses but capable of actually experiencing Truth." 23 As I have discussed, many people look outward for approval and affirmation rather than looking from within to develop that inner guidance. Yoga is all about harmonizing the body by concentrating on mind and breathing techniques. When you let go and let God in, your body and physiology become loose and open for growth. I have seen yoga help spinal problems, digestive issues, liver function, degenerative disease and so many other serious health issues. I cannot express enough how valuable it is.

We could literally write an entire book on stress reduction techniques because they are critical to your longevity and overall health. Most people are so focused on getting ahead in their career and financial

aspirations that they neglect the inner peace that is vital to everything. The research and literature also validate the anecdotal evidence. “A recent Norwegian study found that yoga practice results in changes in gene expression that boost immunity at a cellular level. And it doesn’t take long: The researchers believe the changes occurred while participants were still on the mat, and they were significantly greater than a control group who went on a nature hike while listening to soothing music.”<sup>24</sup> Blood flow is one of the many benefits stress reduction improves. If there is one thing you can take away from this chapter, it is to slow down and take some time for yourself. I have seen dozens of patients who get poor medical reports due to their hectic and busy lifestyle. Unfortunately, it is only at that point that they see the benefit of practicing mindfulness and spirituality.

## **8. 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. “ 25 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. “

26 You will be hearing more about Pyroluria in the coming years.

## **9. 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. 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 officinalis*) 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**

As mentioned in the lab section of the book, 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.” 27 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.”<sup>28</sup> 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.

### **Hormone Balancing with Bio-Identical Hormones**

We just reviewed the herbs and botanicals you can use to help with chronic conditions and even acute bouts of stress. These have helped many people achieve the level of vitality and energy they deserve. That being said, sometimes we have to use bioidentical hormones to increase their depleted state. Their condition has typically been deteriorating for many years and their hormone levels are almost non-existent. As I will mention one more time, please consult your primary care provider before trying any or all of these recommendations. I only use bioidentical hormones when someone is my patient and I have run extensive lab work augmented with the way he or she is presenting. This is intended for reference only. When talking about hormones, they are typically classified as bioidentical and synthetic. So what is the major difference? “Simply put, a synthetic hormone is a hormone synthesized in a pharmaceutical laboratory from synthetic (man-made) chemical compounds. Bioidentical hormones are synthesized in a pharmaceutical laboratory from plant sources. Hence, the term natural versus synthetic.” <sup>29</sup>

The one area of contention that I hear frequently is that there is no such thing as bioidentical hormones and they are all classified the same. Many people in the conventional model like to use this approach and it is simply not true. “The significant difference between synthetic hormones and bioidentical hormones, however, is how they act in the human body. Synthetic hormones, like Premarin, a synthetic estrogen, and Prempro, a synthetic progesterone, have a molecular bond which is not recognized by the human body. Therefore, they are not metabolized efficiently, and can, according to some researchers, release toxins into the body. Conversely, bioidentical hormones *are* recognized by the human body because their molecular structure is exactly like that of the hormones produced naturally in your body. Because the molecular structure of bioidentical hormones *is* recognized by the human body, they are more efficiently metabolized and have not been shown to increase carcinogens in the process. “ 30 Here was a study that was conducted in 2009 explaining the effects on the body and the corresponding results. “A thorough review of the medical literature supports the claim that bioidentical hormones have some distinctly different, often opposite, physiological effects to those of their synthetic counterparts.” 31 It also goes on to describe the long term side effects of taking synthetic vs bio-identical hormones. I want to be very clear on this point as I don’t feel the general population really knows the difference between the two and the harm they could be doing to their body by seeking targeted, Hormone Replacement Therapy (HRT). This doesn’t help the body from a holistic standpoint as it just seeks to treat a specific lab marker or symptom.

## **Energy and Stress**

Most of the patients who come and see me have an issue with stress and very low energy especially during the mid-afternoon. This is exacerbated by the stimulants they believe are helping them but are actually making the condition worse (energy drinks, excessive caffeine, etc.). Two hormones that are beneficial in helping with stress and low energy are pregnenolone and DHEA (dehydroepiandrosterone).

Pregnenolone is the master steroidal hormone and filters down into DHEA and then testosterone and the estrogens. In most of my patients, their labs reveal that they are extremely low in DHEA, testosterone, the estrogens and pregnenolone. Depending on their lab results (low numbers) and clinical correlation, we may recommend they supplement for a short period of time with pregnenolone and DHEA. DHEA helps you recover from stressful situations. It is produced in the testes as well as the adrenal glands.

## **PMS**

Pregnenolone plays a major role in PMS symptoms. Many of my patients suffer from irritating symptoms during their time of month and using pregnenolone has been helpful. This master steroidal hormone has been used for quite some time to deal with PMS and menopause. “Researchers conclude that pregnenolone plays a promising role in the pathophysiology of PMS, and according to my colleague and hormone expert Ray Sahelian, M.D., it can help alleviate PMS and menopause symptoms, particularly hot flashes and loss of libido.”<sup>32</sup> Typically, females who are under a great deal of stress tend to shunt pregnenolone over to progesterone and cortisol while reducing the amount that is available for the estrogens and DHEA. This can leave them unbalanced and moody and this is due in large part to the changing bio-chemistry during their cycle.

## **Sex Drive**

Another very important complaint from my patients when we review their questionnaire is sex drive. As discussed, most people just don't have the desire anymore and intimacy is more of an afterthought as opposed to desired. If their DHEA is low, we can add some sublingual drops and the same can be true for pregnenolone. I notice a sharp increase in libido when clients start healing their adrenals and sex

hormones. This is another reason why couples struggle with infertility. They have so much stress in their lives causing their reproductive hormones and sex hormones to become depleted. It is almost impossible to feel alive when you are barely getting by in life. Most patients feel like every day is a struggle so any assistance we can provide is usually welcomed.

## **Sleep**

We could write an entire book on sleep but we kept it at just a section earlier on. I can't tell you how many patients struggle with this. We could berate the point forever but people need help and the labs usually reveal just how much they're struggling. The typical salivary lab reading for melatonin is around 12 - 35 pg/ml with greater than 18 preferred. Patients that show a melatonin score under 18 typically have underlying gut issues as a great deal of melatonin is produced by the gut. Serotonin is also the precursor to melatonin so it is a concern when these levels are low for overall circadian rhythm and happiness. If the client/patient is presenting with many of the symptoms of fatigue/sleep concerns/wakefulness and their labs reveal a deficiency, then we may use sublingual melatonin pills for a short period of time to boost their levels and help them sleep. As with all hormones, they are only to be taken for a short period of time and always seek the advice of your primary care provider before starting any protocol.

## **Weight Loss**

It is what people want initially when they see a health practitioner as aesthetics are very important to people. In my eyes, you will lose the weight and become healthy if you first correct the physiological imbalances within the body. This is my priority when seeing patients as the corresponding benefit of internal health is what you see in the mirror. I have always preached that you start from the inside out

and weight loss is no different. DHEA is also excellent in helping people lose weight. This is especially true if your lab numbers agree with you. “The results of the study were gratifying indeed. They showed, first of all, that the 50-mg/day treatment increased the plasma DHEA levels in both the men and the women about 5-fold, restoring them to youthful levels. Concurrently, the plasma levels of estradiol (an estrogen) increased significantly in both the men and the women. By contrast, the women—but not the men—experienced significant increases in their plasma levels of testosterone (which is prosexual in women as well as in men). This finding may explain why DHEA is known to stimulate the libido in elderly women (especially those over 70) but not in elderly men.”<sup>33</sup> Better health, improved libido and increased estrogen and testosterone levels are desired by many.

## **Conclusion**

The genesis for writing this book was a desire to share the various components that contribute to your health and how you can enhance them. We wanted to take you step by step through each key area while also giving you a general understanding of the topic. When taking control of your life, you need to be able to effectively communicate with the people who you entrust with your health. I don't want you to just get by in life or to accept chronic conditions as the inevitability of getting older. Most clients and patients who we have helped in our practice were previously told there was nothing that could be done for their condition and they would have to live with their symptoms and that was just part of life. As you can tell by how thorough we were in each chapter, poor health or lack of direction and purpose is usually not caused by one problem. It is usually a combination of three or four concerns mentioned above or even more. Unfortunately, this is why other practitioners or doctors may miss the underlying problem. They may think it is a neurological issue when it may be an imbalance in the gut or the client may be dealing with pain from their past that doesn't allow them to move forward.

Our journey through life is filled with many milestones and celebrations that stay with us until our spiritual existence in this material world has come to an end. They bring us joy and happiness but sometimes also sadness. These are emotions that we will all feel as we evolve on our path to love, peace and tranquility. It is important to celebrate the major events but you must become more aware

of the little nuances that present themselves each and every day. These could include time with your children, reading, driving, working out, making dinner and many of the activities we take for granted because they seem so routine. They are not and we must enjoy every minute of each day. Part of the process to living a life of abundance and prosperity involves appreciating the beauty and calm in small endeavours. I mention this because nothing is accidental in this world and everything and everyone has a role to play. What you encounter has something to teach you and guide you down your path.

We are very passionate about this book because we have seen this paradigm work with hundreds of patients and clients from all over the world. As we discussed in our first book “The Transformation From Within”, you need to uncover and determine why you have tendencies and character traits and then develop an approach to change them for the better or improve your current state. The one thing that makes people feel alive is progress. As we have said many times, if you are making even the slightest progress, you feel invigorated and capable of pressing forward. If you are not growing, you are dying. There is no common ground. Just existing is no way to live your life. You were destined for more than that. Our intent is that this book will open your eyes to your own life and some areas that you may be struggling with. I suggest you digest the content and then reread certain sections as we went in depth on purpose to help you grasp the complexity of the human body while also illustrating how everything is intrinsically linked. Our philosophy of treating the body as a holistic being is not new but rather forgotten. We all need to get back to the basic principles of health and that taking from one part will invariably affect another. The human body and life are about balance and flow. The more we can get in congruence with the environment, ourselves, other people and our spirit, the better off our lives will be.

Mike

## References:

1 Griffiths, Anthony J. F.; Miller, Jeffrey H.; Suzuki, David T.; Lewontin, Richard C.; Gelbart, eds. (2000). "Genetics and the Organism: Introduction". *An Introduction to Genetic Analysis* (7th ed.). New York: W. H. Freeman. ISBN 0-7167-3520-2.



2. Hartl D, Jones E (2005)

3 <http://www.physoc.org/press-release/2013/your-children-could-inherit-your-lifestyle-their-genes>

4 [https://edge.org/conversation/dean\\_ornish-changing-lifestyle-changes-gene-expression](https://edge.org/conversation/dean_ornish-changing-lifestyle-changes-gene-expression)

5 <http://articles.mercola.com/sites/articles/archive/2012/04/11/epigenetic-vs-determinism.aspx>

6 <http://ghr.nlm.nih.gov/handbook/genomicresearch/snp>

7 <http://eft.mercola.com/>

8 <https://www.brucelipton.com/resource/article/epigenetics>

9 [http://www.huffingtonpost.com/amy-myers-md-/effects-of-gluten-on-the-body\\_b\\_3672275.html](http://www.huffingtonpost.com/amy-myers-md-/effects-of-gluten-on-the-body_b_3672275.html)

10 <http://blog.probiacto.com/21-facts-you-should-know-about-your-gut-but-you-dont-which-could-help-you-live-healthier-and-longer/>

11 <http://mentalfloss.com/article/64685/10-brainy-facts-about-your-gut-its-smarter-you-think>

12 [http://www.hopkinsmedicine.org/health/healthy\\_aging/healthy\\_body/the-brain-gut-connection](http://www.hopkinsmedicine.org/health/healthy_aging/healthy_body/the-brain-gut-connection)

13 <http://articles.mercola.com/sites/articles/archive/2013/06/20/gut-brain-connection.aspx>

14. <http://www.saragottfriedmd.com/7-essential-steps-in-resetting-your-bodys-natural-clock/>

15 [https://en.wikipedia.org/wiki/Wheat\\_middlings](https://en.wikipedia.org/wiki/Wheat_middlings)

16 <https://celiac.org/live-gluten-free/glutenfreediet/what-is-gluten/>

17 <http://www.greenmedinfo.com/blog/do-hidden-opiates-our-food-explain-food-addictions1>

18 <http://nourishingplot.com/2014/04/17/foods-that-cause-an-opiate-effect-in-the-brain/>

19 <http://nourishingplot.com/2014/04/17/foods-that-cause-an-opiate-effect-in-the-brain/>

20 [http://www.huffingtonpost.com/dr-mark-hyman/dairy-free-dairy-6-reason\\_b\\_558876.html](http://www.huffingtonpost.com/dr-mark-hyman/dairy-free-dairy-6-reason_b_558876.html)

21 <http://oregonstate.edu/ua/ncs/archives/2011/nov/study-physical-activity-impacts-overall-quality-sleep>

22 <http://circ.ahajournals.org/content/107/1/e2.full>

23 [http://www.yogananda-srf.org/what\\_is\\_yoga,\\_really\\_.aspx#.Vs3AZPkrKUK](http://www.yogananda-srf.org/what_is_yoga,_really_.aspx#.Vs3AZPkrKUK)

24 <http://dailyburn.com/life/fitness/health-benefits-yoga/>

25 <https://www.gdx.net/product/organix-comprehensive-profile-metabolic-function-test-urine>

26 <https://therivertorecovery.com/pyroluria/>

27 <https://chriskresser.com/b12-deficiency-a-silent-epidemic-with-serious-consequences/>

28 <http://pure-healing.net/2012/11/12/five-benefits-of-glutathione-in-rheumatoid-arthritis/>

29 <http://www.healthline.com/health-blogs/hold-that-pause/premarin-premro-bioidentical-hormones>

30 <http://www.healthline.com/health-blogs/hold-that-pause/premarin-premro-bioidentical-hormones>

31 <https://www.holtorfmed.com/the-bioidentical-hormone-debate-are-bioidentical-hormones-estradiol-estriol-and-progesterone-safer-or-more-efficacious-than-commonly-used-synthetic-versions-in-hormone-replacement-therapy/>

32 [http://www.huffingtonpost.com/ann-louise-gittleman-phd-cns/pregnenolone\\_b\\_1631742.html](http://www.huffingtonpost.com/ann-louise-gittleman-phd-cns/pregnenolone_b_1631742.html)

33 <http://www.life-enhancement.com/magazine/article/1020-dhea-wins-the-battle-of-the-bulge>