

**Vitality Now! A Complete  
Anti-aging Guide to Enhance  
Your Health and Vitality**



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Your Health and Vitality**

Karen Sun, M.D.

## **PUBLISHER'S NOTE**

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# **Dedication**

This book is dedicated to all the teachers I encountered in my life and all my patients who I learned from their experience about healthy aging, disease prevention, and hormone balance.



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# Introduction

Are you a middle-aged woman suffering from hot flashes, insomnia, moodiness, and weight gain? Are you a middle-aged man suffering from declining energy, memory, and libido? Are you curious about the pros and cons of hormone replacement therapy, and what form is the safest and most effective? Are you aware of the toxins in our environment and the ways to help your body detoxify?

Do you want to reduce your stress levels, and experience more peace and joy in your life? Do you want to know how to eat in order to reduce inflammation, indigestion, and lose weight? Do you want to prevent heart disease, stroke, cancer, and Alzheimer's disease? Do you want to slow the aging process down and regain the vitality you once had?

If you answered "yes" to any of the questions above, this book is for you, as it has been written for people who want to take charge of their health and healing. Knowledge is power, and the more you know about your body and the many factors that influence your health and well-being, the more empowered you will be to make informed decisions that will improve the quality of your life.

The quest to achieve a true and lasting healing of the body and to balance those needs with those of the mind and spirit is a goal that many share, and one that I have pursued throughout my professional career. The search has been exhaustive, with gains and setbacks along the way. What I have discovered are the keys to balancing the fundamental cornerstones of our physical, mental, and emotional health, well into mature adulthood. This journey has enabled thousands of patients to regain their vitality and enjoy healthy and active lives at any age. In this book I would like to share these discoveries with you.

## My Story

Throughout my life, I have always been accustomed to fast paced living. Like most of the women I see in my practice, I have to juggle multiple roles: long hours of work, worrying about the health of my patients, and trying to be a good mother at the same time. The challenges have been never ending. Like most women, I have been the last person I have time for.

My health was not great in my younger years. I developed scoliosis early in life and suffered through many years of neck and back pain. My stomach became extremely sensitive, and I had bad reactions to many types of foods with abdominal pain and bloating. My energy fluctuated throughout the day, even after a full night's rest. I also experienced heavy menstrual bleeding and cramps. Yet, despite the clear warning signs that my body was sending, I continued to press on, convinced that the rewards of a fast-paced lifestyle were more than worth the effort.

By the time I entered menopause in my early fifties, things had changed. I had hot flashes that awakened me and poor sleep that lead to a decline in memory and energy. Handling daily tasks became more difficult. My skin became dryer. I had more aches and pains and nothing seemed to interest me. I became frustrated, to say the least. My OB/GYN suggested antidepressants for the hot flashes and to help improve my sleep. Being an internist, I knew better than to risk the potential side effects of these drugs. I did not like the idea of taking birth control pills or oral estrogen, since their side effects are well documented. My desire to avoid the use of heavy-duty drugs led me to try a more benign approach which included natural hormones like progesterone creams and estradiol patches, knowing they would attempt to mimic the hormones my body once produced. Due to my hectic schedule, however, I would often forget to reapply the creams or replace the patches, only to wake up with night sweats the next night. Plus, I was still tired throughout the day and not feeling well overall.

The answer came one day during a routine consultation when one of my patients introduced me to a book about implanted bio-identical hormone pellet therapy. I initially reacted with skepticism. Many questions came to mind, such as: What is this? Why have I not heard about this? Is it dangerous? I had

many reservations about the book. Yet by this time the undesirable symptoms associated with my transition into menopause, coupled with the aches and pains accumulated from my overworked lifestyle, had become a constant ordeal. My experience with hormone creams and patches had already opened my eyes to the possibilities of hormone therapy, so I set aside my doubts and read the book. Interestingly, I found that the information it contained made a great deal of sense and is based on solid medical research.

Encouraged by this, I made the decision to be trained to do this procedure. Right after the training, I treated a few of my patients who were not responding to hormone creams and patches with severe menopausal symptoms with the pellets. The results were immediate and startling. Every one of these patients experienced a dramatic improvement! So, I decided to begin treatment with bio-identical hormone pellets on myself. It turned out to be one of the best decisions I have ever made. My symptoms disappeared! As a matter of fact, the third morning after the pellet implant I slept like a baby, arose early in the morning refreshed, and went for a vigorous jog. I felt energetic and happy and healthy for the first time in a long time

I started introducing the pellets to some of my patients who had been using hormone creams with questionable results. Their improvement was immediate and noticeable as well. Symptoms that responded only mildly to hormone creams disappeared completely once the pellets were implanted. As a result of the wonderful improvement in my patient's health, the news began to spread. As everyone knows, a good secret can be hard to keep, especially when the benefits are so readily apparent both inside and out, as they clearly are with bio-identical hormone therapy. A steady stream of patient referrals began to inundate my appointment lists. Many of these new patients had to drive hours to get to my practice, and quite a few traveled from out of state. Many patients were desperate to find relief after having exhausted just about every other means of conventional and alternative treatments and had heard of my success treating patients with bio-identical hormone pellet therapy. So beneficial were these powerful little pellets, and so rapid was the spread of their praise, that within a span of six years my practice grew to more than 3,000

patients who were benefiting from bio-identical hormone pellet therapy; a powerful testimony to its effectiveness.

Gradually, men began showing up in my office. Usually their wife's or girlfriend's had received treatment from me first. After witnessing the dramatic change their partner had experienced, particularly with their improved libido, these men became eager to try this treatment for themselves. It is no longer a secret that men can benefit from pellet therapy, especially professional men with stressful jobs, who, upon reaching middle-age, find themselves becoming more irritable and short tempered and feel they are losing energy, mental sharpness, and vitality. Many of the men who come to see me have heard of testosterone shots, but they are unaware of the many advantages in safety and efficacy which bio-identical testosterone pellets offer. Once they experience the remarkable benefits of treatment, most men are quick to embrace this approach as well.

There is no doubt pellet therapy can be a powerful and life-altering experience for many people. In my quest to fulfill my patients' desires for optimal health, I came to realize that hormones are only one part of the solution. I continued my study and research, and attended seminars offered by organizations such as The American College of Advanced Medicine (ACAM) and The Institute of Functional medicine (IFM). From those seminars, I learned how to treat the root causes of disease, not just the symptoms. I also learned how to combine conventional treatment methods with alternative approaches to produce therapies that work. Although I have been board certified in internal medicine for over twenty-five years, in 2010 I decided to expand my medical awareness and became board certified in integrative and holistic medicine. The path to achieve healthy aging led me to discover I had multiple internal ailments that are quite common among women today. I had food allergies due to mercury and candida, and I also had adrenal fatigue due to chronic stress. To cure myself of these ailments I needed to change my eating patterns, take supplements, add daily exercise, and train my mind and thoughts.

I want the reader to know I recently felt the need to personally explore stem cell treatments for my own medical well-being. I traveled to a medical clinic in China and feel strongly about the positive results I have achieved from this treatment. I

encourage the reader to examine and consider all the available medical alternatives and question their applicability to your concerns with your physician.

During the course of my practice in medicine, I also came to realize treating the body is not enough. The body also houses our mind and spirit. Unless the mind and spirit are at ease, the body will become diseased. Many of my patients are no different than your friends, neighbors, and relatives. Modern living has given us anxiety and stress related disorders which we all suffer from sometime. However, these problems will sometimes force us to stop and examine our lives, and by doing this, we realize we need to make changes. Thus, we should, at times, be grateful this has happened, for it will force us to focus on the things in our lives which are genuinely important. Love is what is truly important, along with forgiveness and living in the present. We all have important missions to fulfill in our lives, and I believe we are here to learn lessons, enjoy life, and help other people as much as we can.

## **My Observations**

Official statistics estimate the majority of women today suffer from a variety of unpleasant conditions during their menopausal years. While a small portion of women are able to make the transition through menopause with little to no difficulty, a roughly equal to greater number remain on the opposite end of the spectrum, suffering intensely from a variety of uncomfortable, and in many cases, debilitating health issues that dramatically affect their quality of life.

It has been my observation that most patients suffering from severe menopausal symptoms also have adrenal fatigue. This condition occurs when the adrenal glands function below their optimal levels and is usually caused by chronic stress. Before menopause, the adrenal glands contribute approximately 30 percent of the sex hormone production and more than 70 percent after menopause. When the adrenal glands become burned out, they are not able to produce the sex hormones a woman's body requires after menopause. I fit into this category as an overworked career woman. Patients with mild cases of adrenal fatigue respond

wonderfully to pellet therapy, as it helps them to sleep better and increases their energy level. Patients in moderate to severe stages of adrenal fatigue need additional treatment, such as adrenal support products and vitamin supplements. Most importantly, however, they need to incorporate major lifestyle changes to reduce the stressors in their lives.

The thyroid is another hormone that plays a vital role in energy production. I have seen many patients with thyroid function tests in the lower range of normal that have all the symptoms of hypothyroidism. These people gain weight easily and have a hard time losing weight. This type of subclinical (undiagnosed) hypothyroidism is very common, especially in menopausal women, and a low dosage of thyroid medication helps provide health improvement.

I have also observed that certain patients have adverse responses to pellet therapy. In these cases, it is likely that their hormone receptors are altered, due to the effects of the accumulation of toxins in their bodies. Usually, they also suffer from other problems such as multiple chemical sensitivities, leaky gut syndrome, autoimmune diseases, or heavy metals such as mercury toxicity. This group of patients is more difficult to treat. Often, a detoxification program is a necessary first step in treatment. Also, due to their increased sensitivity their pellet dosages need to be carefully adjusted.

## **My Theory**

Women are much more stressed now, due to juggling family lives and careers, not to mention taking care of everyone else's needs before their own. By the time menopause arrives, the adrenal glands are burned out when the ovaries have quit working. The adrenal glands are supposed to take over the production of sex hormones in women after menopause. But, due to adrenal fatigue, an increasing number of women are experiencing very uncomfortable and sometimes debilitating menopausal symptoms.

Men, on the other hand, are not much better off. Chronic stress also causes adrenal fatigue, which reduces testosterone production from the adrenal glands. Andropause, the term coined to describe male menopause, develops more gradually but earlier,

with its own debilitating symptoms like low libido, fatigue, weight gain, mental fog, and cardiovascular diseases.

Stress management has become "Survival 101." Without changing our thoughts and value systems, we will not be able to gain control over the continual firing line of stressors we are exposed to in today's world. As we grow older, stress coping skills such as meditation, creative visualization, and relaxation exercises are important survival tools.

We also live in a very toxic world, tremendously more so than previous generations. By the time we reach middle-age, we have accumulated enough toxins in our body to seriously interrupt our hormone systems. The damage is more pervasive as the body's toxic load interferes with our brain functions and causes inflammation in the body that can lead to neurodegenerative diseases, cardiovascular diseases, and cancer. Because of each person's genetics are unique, the body's detoxification capacities differ. This is why some people, but not all, suffer from diseases like chronic fatigue syndrome, fibromyalgia, breast cancer, prostate cancer, and multiple chemical sensitivities. If we do not pay attention to the toxins in and around us, we run the risk of becoming victims of these diseases sooner or later.

Hormone balance is the first essential step to regain the vitality we once had and slow down the aging process, maintaining a better digestion and intestinal system, stress management and detoxification are the next steps, which involve lifestyle modification, developing stress coping skills, daily exercise routine, along with optimal nutrition and taking supplements that help the body detoxify. The last, and most important, step is achieving emotional and spiritual health.

It is my sincere hope that the information contained in this book helps you prevent disease, achieve optimal health, and defy aging, while experiencing peak physical vitality, mental clarity, and emotional well-being throughout your lifetime.

To your health!

Defy Aging

Hormone Balance and Beyond



# **Part I: Understanding the Disease Process and Aging**



# Chapter 1

## How Diseases Start

Modern medicine has done great things to improve the quality of our lives. Over the course of the last century, its ability to understand disease has made incredible progress. Significant advances in key areas of medical research and technology have enabled physicians to employ increasingly sophisticated techniques in the treatment of illnesses. For example, impressive innovations in the field of diagnostic technology including imaging methods like computed tomography (CT) and magnetic resonance imaging (MRI) allow physicians to accurately and rapidly diagnose diseases in patients and help spot potential problems before they occur. Major advances in surgery and medications have been made for treating cancer, heart disease, and other acute and chronic diseases.

Modern medicine also has major shortcomings. It focuses more on treating diseases rather than preventing them from occurring in the first place. With modern medicine's emphasis on medication or surgery as its main tools, it is much better suited to treat acute illnesses, rather than chronic conditions. Indeed, there are times when people need antibiotics to knock out infections or pain killers to alleviate headaches. But for chronic illnesses such as hypertension, diabetes or arthritis, treatment by medication alone solves only part of the problem. Consideration must also be given to proper nutrition and necessary lifestyle practices, such as maintaining proper weight, getting regular exercise, managing stress, and avoiding tobacco as well as excessive use of alcohol.

Another concern about modern medicine is that it divides diseases into separate systems instead of viewing the body's systems as closely interrelated. Specialists and sub-specialists for everything worsen this fragmented perspective. While

focusing on a single system has helped doctors to better understand the disease process within each system of the body, this narrow view often ignores the fact that a symptom can have complex causative factors involving multiple body systems. A headache, for example, can be brought on by emotional issues, food sensitivities, hypertension, hormonal imbalance, recurring stress, allergies, or several of these factors combined. So, if a doctor were to treat a patient complaining of a headache with pain medication, the symptoms might well subside for the time being, but the underlying or root cause of the headache will not have been addressed. As a result, the headaches might continue to come back and neither patient nor physician will be aware of the deeper, persistent problems at work. Furthermore, the long-term use of pain medication carries with it the potential for dangerous side effects such as stomach ulcers, kidney or liver damage, and even addiction, all of which contribute to more health problems.

Symptoms are like the leaves on a tree. If you trim the leaves but leave the roots intact, the leaves are guaranteed to return. It is important to look for and treat the root causes of disease, so that patients can achieve a deep and truly effective healing: one that helps to ensure a lasting return to good health.

## **Root Causes of Diseases**

We all inherit different sets of genes from our parents, which can make us prone to certain illnesses. This does not necessarily mean we will get these diseases. A lifestyle burdened by unhealthy habits, however, can make these diseases much more likely to affect us. If adult onset (Type II) diabetes runs in your family, and if you live a sedentary lifestyle that includes poor diet and lack of exercise, then the likelihood you will develop diabetes dramatically increases. But, if you watch your diet, exercise regularly, maintain proper weight, and manage stressors well, then your likelihood of developing diabetes is greatly reduced.

Lifestyle is a major factor that has the power to aggravate or prevent many diseases. This is true not only for genetically inherited diseases but for many other diseases as well.

## Four Factors that Influence Health

The following four factors play a major role in determining an individual's overall health and well-being. Maintaining a healthy balance between these factors is especially important for individuals whose bodies have begun to curtail or cease production of the vital hormones that allow us to cope with stressors and imbalances in our lifestyles.

1. **Nutrition and intact gut:** We are what we eat. Eating a balanced diet helps to build a strong body. The GI (gastrointestinal) tract plays an important role in our health, as its functions are digestion, absorption of nutrients, waste elimination, and detoxification. It also serves as a first line of defense to prevent toxins, bacteria, or large food molecules from entering our bodies.
2. **Mental processes:** We are what we think. The mind is the arbiter of our thoughts and emotions. Positive thoughts lead to a mental state where feelings of peace, calm, and happiness flow naturally and lead to optimal function of the body. A consistently negative outlook on life can make one far more vulnerable to anxiety, depression, worry, anger, and fear, thus triggering the body's stress response.
3. **Toxins:** We live in a world full of toxins. Our body also produces free radicals through chemical reactions that are continually occurring. If we are exposed to more toxins than our body's detoxification system can handle, or more free radicals than our antioxidants can neutralize, then toxins start to accumulate, leading to inflammation and aging. Toxins cause inflammation, which contributes to degenerative diseases like arthritis, atherosclerosis, or Alzheimer's disease. Toxins also cause DNA mutations that lead to cancer. Additionally, toxins weaken our immune system, which leads to allergies, infections, and autoimmune diseases.
4. **Hormones:** Our body's hormones are the chemical messengers which govern how cells, tissues, and organs communicate with each other. There are many different kinds of hormones that are typically categorized as either

major or minor, depending upon the role they play and the amount of influence they exert upon our body's functions. Certain major hormones such as thyroid and adrenal hormones are so critical to our health that without them we run the risk of disease and death. Without minor hormones like estrogen and testosterone, our body's ability to function optimally is critically impaired.

If our hormones are in plentiful supply, balanced, and working together then our body will have the tools it needs to function optimally. We will look our best, feel our best, and enjoy the benefits of renewed energy and vitality as the aging process dramatically slows down.

In addition to exerting a fundamental influence on our health, all four of these factors are closely interrelated. If you suffer from hormonal imbalance, for instance, you may feel tired, depressed, moody, or anxious. If you are stressed, you may not eat the best foods, exercise properly, or sleep well. If you are exposed to certain toxins that disrupt your thyroid hormones, you will gain weight and feel sluggish, even if you eat well and exercise regularly.

## **Activating Your Healing Systems**

Having a healthy body is important, but the extent in which we can fully embrace optimum health is largely determined by our mental and emotional state as well. A healthy body depends on an active, alert mind, which, in turn, draws support from our balanced emotions and strength of spirit. This vital balance of mind, body, and spirit is the cornerstone of our health and well-being. In order to get well and stay well, we need to manage all the root factors of disease in order to promote our own internal healing systems.

The answer to the wide array of issues facing our health in the world today lies in a multifaceted approach that takes each aspect of our individuality into account. If we improve our nutritional habits, make exercise a priority, foster emotional wellbeing, reduce the stressors in our lives, balance our hormones, maintain proper weight, avoid tobacco and excessive alcohol, and use supplements to aid in the prevention of disease, we will have taken crucial and empowering steps toward the goal of living long, healthy, and happy lives.

# **Chapter 2**

## **Theories of Aging**

A few years ago I attended my forty-year high school reunion. Since I had gone to an all-girls' school, I saw a room full of middle-aged women. They had familiar faces and voices, yet were very different from what I remembered during our teenage years. Some had gained a lot of weight, and others had gray hair. But even those who had not gained weight or grayed still had different faces, due to sagging skin that had fine wrinkles or lost its elasticity. I felt that I was in a time machine tunnel that had moved way too fast!

While aging is an inevitable fact of life, there are many things we can do to slow the process down. Before we discuss these approaches, let us take a moment to go behind the scenes of the aging process and examine its primary causes. Along with the many advances in the study of medicine today, several promising theories have come that help to explain the fundamental causes of aging.

### **Gene Control Theory and Telomeres**

Each time a cell in the body duplicates, it creates entirely new structures of DNA called chromosomes. Telomeres (derived from the Greek sub-specialists, or end, and meres, or part) are small fragments of DNA that form the protective ends of chromosomes. The telomeres protect a cell's chromosomes from fusing with each other or rearranging. Each time the chromosomes duplicate, the telomeres get a little shorter, and after their structures shrink to a certain size, cell division stops. At this point, no additional new cells can be made

One abnormality of this cell duplication process is a genetic disorder called progeria, an accelerated aging disease. Progeria is an extremely rare condition. An individual affected by progeria

looks like a miniature elderly person and they typically do not live past ten years of age. Children afflicted with this condition develop the diseases associated with aging, such as arthritis, osteoporosis, and heart attacks.

Diseases like progeria have helped to increase attention on the issues of aging and longevity and their link to our genes. Studies have observed that certain species of animals have programmed life spans. For human beings, the genetic potential for longevity has been estimated at about 120 years. Most people, however, never meet this potential due to premature aging, or because they are genetically susceptible to certain diseases.

Genetic engineering has been a controversial subject for many years. Research in genetic engineering has led to improvements in agricultural crop technology, and the manufacturing of synthetic human insulin through the use of modified bacteria.

Will advances in gene therapy and genetic engineering someday provide the keys to unlocking our vast lifespan? Possibly, but it is important to remember that the human body is a complex organism. Many questions concerning genes and their effect on the human body still remain unanswered. Although research continues to make strides forward, it must be tempered by respect for what "Mother Nature" has already accomplished and the knowledge that the artificial manipulation of genes has the potential to backfire.

## **Neuroendocrine Theory**

The Neuroendocrine Theory was first proposed in 1954 by the well-known Russian gerontologist, Vladimir Dilman. Professor Dilman believed the cause of aging could be traced directly to the loss of sensitivity that occurred in the hypothalamus, a walnut sized gland located in the brain. A large amount of hormones are needed to repair and regulate our body's functions and are regulated by the hypothalamus. The hypothalamus controls high level chain reactions which instruct organs and glands like the pituitary, pineal, and thymus glands to release hormones to our body as needed.

The pituitary gland secretes HGH (human growth hormone) to regulate growth, TSH (thyroid-stimulating hormone) to regulate thyroid hormones, ACTH (adrenocorticotrophic hormone) to

regulate the adrenal glands, and FSH (follicle-stimulating hormone) and LH (luteinizing hormone) to regulate estrogen, testosterone, and progesterone.

The pineal gland, also located in the brain, secretes melatonin, which regulates sleep patterns. In the chest, just behind the breast bone, is the thymus gland, which stimulates certain infection-fighting cells to boost the immune system.

As we age, our hormone levels decline. This translates to the body's reduced ability to regulate and repair itself. Much like an old car that requires regular tune-ups and maintenance, the body depends upon optimal hormone levels to repair damaged tissue so the body can function at its best. Without such care to the car, it runs the risk of breaking down very quickly. If done correctly, replacing the declining hormones helps to slow down or even reverse the aging process in our bodies.

## **Free Radicals and Oxidative Stress Theory**

The Free Radical and Oxidative Stress Theory was developed by Dr. Denham Harman and introduced during the 1950s. Since then it has become widely regarded as one of the most popular and influential theories on the aging process, helping to spark strong public interest in the concepts of anti-aging, age-related diseases, and antioxidant supplementation. Today, terms like "free radicals" and "antioxidants" are a part of our common vocabulary, but in order to go beyond the buzz words and learn more about this concept we need to explore some of the lesser known functions of the body, beginning with electrons.

Electrons are required to produce electricity. The body also has an electrical system which utilizes electrons to perform its many vital functions, such as contraction of the heart and skeletal muscles, as well as to ensure that each of the body's organs and tissues work properly.

A car burns gasoline to produce energy, creating toxic exhaust as a by-product. The body behaves in much the same way, burning sugar to produce energy in a process called oxidation. One of the main side effects of oxidation is the production of extra electrons, called free radicals, which are the body's own toxic

exhaust. Unfortunately, extra free radicals circulating in the body attack and interfere with the functions of our cells. This free radical damage is called oxidative stress, which starts as soon as we are born. When we are young, the body has high levels of hormones to combat this oxidative stress and reduce the inflammation caused by the free radicals. As we grow older, our dropping hormone levels are not able to protect us from the damage of free radicals to our tissues, leading to inflammation, tissue destruction, and aging.

Environmental toxins can also pose a hazardous threat; acting either like free radicals in the body or by directly damaging our cells, or by a combination of both negative effects. As we age, we are exposed to more toxins. Our environment, compared to the past, has more chemicals which infiltrate our water systems, foods, consumer products, and the air. Many of these chemicals are not biodegradable, meaning they will continue to persist in our environment for generations to come. The long- term impact these new toxins have on our planet and the human race has yet to be determined.

Substances which neutralize free radicals and prevent the harmful effects of oxidation are known as antioxidants. Eating fruits and vegetables supplies natural antioxidants to combat damage from free radicals. Other beneficial substances, called free radical scavengers, seek out free radicals and bind them before they attack body cells. Many vitamins and minerals are both antioxidants and free radical scavengers and also help the body's detoxification process. Accordingly, if we can reduce the damage generated by free radicals and oxidative stress, we can slow the aging process.

## **Other Theories**

### **Mitochondrial Depletion**

The energy producers for our body are tiny mitochondria found in each cell. When mitochondria quit working due to DNA damage, toxins, nutritional deficiency, or hormonal imbalance, we become very fatigued. Loss of mitochondrial energy production will lead to cell and tissue death. Many nutritional supplements such as alpha lipoic acid, CoQ 10 and magnesium can support mitochondria function.

## **Chronic Inflammation**

Recent research has identified chronic inflammation as a common, underlying factor in several age related diseases like Alzheimer's disease, heart disease, diabetes and arthritis. Inflammation is our body's first line of defense against infection. When we are hurt or injured, immune cells respond quickly to prevent the spread of infection and repair damaged tissue. However, chronic inflammation, which can be caused by oxidative stress, chronic infection, accumulated toxins, or hormonal imbalance mistakenly signals our immune systems to continue this process, turning a healthy mechanism for healing into a continued assault upon otherwise healthy body structures. Left unchecked, this process can lead to a host of ill effects which help speed up the aging process.

## **Digestive Enzyme Deficiency**

Digestive enzymes play a central role in our body's ability to break down and process the food we eat. Through the chemical reactions they create, our food is converted into the essential nutrients that our bodies require in order to build and repair cells, tissues, and organs. As we age, the number of digestive enzymes we are able to secrete declines, a process that eventually leads to inefficient digestion and absorption of nutrients. Without the ability to fully utilize vital nutrients, our body cannot function optimally, allowing the aging process to accelerate at a faster rate. Simply taking digestive enzyme with your meals and eating smaller meals will help the digestive process and, thus, your nutritional status.

## **Circulatory Deficiency**

The circulatory system is our body's super highway. This amazing infrastructure composed of the heart, blood, and blood vessels connects all of the body's cells and is responsible for transporting nutrients, oxygen, and water throughout the body. A healthy, functioning circulatory system is critical to our body's ability to maintain optimum health. When the circulatory system's ability to deliver crucial nutrients is hampered, a number of problems can develop. Atherosclerosis, a hardening of the arteries, leads to poor

circulation due to narrowing of the blood vessels. Reduced circulation to the capillaries in the eyes can lead to blindness, and reduced circulation to the brain can cause senility. Like an irrigation canal to crops, reduced circulation in our bodies leads to worn out and poorly performing organs.

## Summary

Normal aging and pathological aging or premature aging are different. Normal aging is a process that occurs in every living organism. Our bodies are no exception to this rule, and normal age progression is recognized as a part of the cycle of life. However, pathological or premature aging is quite different. It is not a normal aging process and is brought on by diseases such as Alzheimer's, diabetes, heart disease, and strokes, conditions that are largely preventable by improving the health and quality of our lifestyles.

The causes of premature aging are quite similar to the root causes of diseases. Many of the causative factors involved in the disease process lie in the choices we make each day. Poor nutrition, obesity, lack of exercise, excessive tobacco and alcohol consumption, and over-reliance on medications contribute to a large portion of this process. The power to change begins with us, and we can make the decision to take positive steps toward better health today, by making simple adjustments to our daily habits and lifestyle choices.

Making the commitment to achieve emotional well-being and reduce the stress in our lives is critical as well. The time and effort we spend detoxifying our negative thoughts and minimizing stressors at work and home will pay lasting dividends. These self-empowering choices will help form the foundation of optimum health.

As medical research advances and gives us more options to use in our healing process, and as you and I choose to make positive changes, changes in our eating choices, eliminating toxins, improving our mental outlook, and physical wellbeing and, of course, balancing our hormones, we can immensely improve our quality of life. We now have the ability to slow down the aging process and return to you the youthful energy, vitality, and healthy outlook about the future we once had.

## **Part II: Hormone Balance**



# Chapter 3

## Menopause and Bio-identical Hormone Replacement Therapy

Making the transition through menopause can be a turbulent and distressing time for women. The physical discomfort, emotional unrest, and lack of energy that accompany this midlife process can take a huge toll on women's vitality, usually when they need it the most.

Every day I see women in my office with similar stories. They have worked hard all of their lives either raising families, as business professionals, or both. Now they have reached menopause and without warning their lives have suddenly started to deteriorate. Hot flashes keep them awake at night and the interrupted sleep leads to fatigue. They gain weight, even with more exercise and less food. Their moods become crabby and irritable. They are unable to concentrate and have poor memories. They experience increasing vaginal dryness making intercourse painful, which often is enough to kill any libido that remains. Their skin becomes dry and itchy, wrinkles creep up on their face, their breasts sag, and more fat begins to accumulate around their abdominal area. They look in the mirror and are horrified at what they have become.

Some choose to suffer through these symptoms in silence without getting any type of hormone replacement treatment due to fear of breast cancer. Some try over-the-counter remedies such as Estroven, black cohosh, or progesterone cream. Some are treated with birth control pills, antidepressants, or sleeping pills. Some receive conventional hormone treatment with Premarin<sup>®</sup> and/or progestin. Others try bio-identical hormone treatment with hormone creams, patches, or gels.

The patients who come to see me often do so because the treatments they tried had little effect or bothersome side effects. They have heard from friends that the treatments I applied have changed their lives. Thanks to treatment with bio-identical hormone implanted pellets, their friends now sleep better without hot flashes or night sweats, their energy levels have soared, their moods are improved, and their libido has returned. It is easier for them to lose weight and, best of all, they feel young again. Their sense of well-being has returned and they no longer feel trapped in a menopausal state.

Naturally these women come with all sorts of questions. If this is such a wonderful treatment, why haven't their doctors told them about it? Is it safe? Will it cause breast cancer? How are the hormone pellets implanted under the skin? How long do they last? What types of side effects occur? These are good questions, and their answers will help you better understand this effective treatment for any menopausal symptoms you may be experiencing. Let us start by examining the basic physiology of hormones. This information will assist you in understanding the variety of treatment options available so you can make an informed decision when it comes to choosing the safest, most effective form of hormone replacement for your needs.

## **What Are Sex Hormones?**

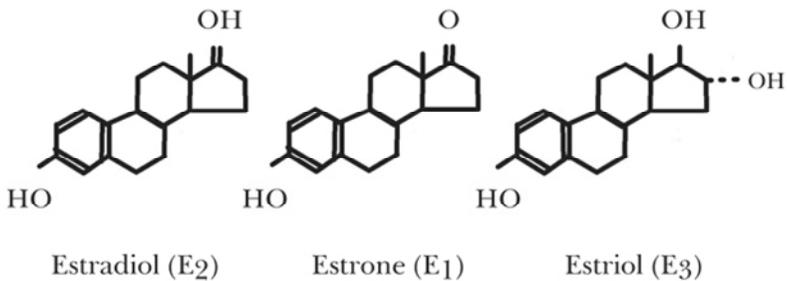
The sex hormones consist of three types: estrogens, progesterone, and testosterone. Both men and women have all three hormones, but estrogen is predominant in women and testosterone is predominant in men.

### **Sources of Sex Hormones**

1. Ovaries: The ovaries are the body's primary source of estrogen and progesterone before menopause. There are three forms of estrogen in the human body: estrone (E1), estradiol (E2), and estriol (E3). As you can see from the figure below, they show only a slight difference in their molecular structures. However, these subtle differences lead to quite

important distinctions in the roles they perform. Before menopause, the ovaries mostly secrete estradiol, which accounts for the functions of estrogen we see in young women. Most of the positive effects of estrogen are due to estradiol. Estradiol is produced in large amounts during pregnancy. It is a weak form of estrogen. Estrone and estradiol have to be metabolized into estradiol before they can be excreted from the body. Our body needs estradiol to restore the normal physiology we had before menopause. Ovaries secrete progesterone only after ovulation, which happens at mid-cycle. After menopause the ovaries discontinue production of estrogen and progesterone, but continue to produce testosterone.

#### Natural Estrogens



2. Adrenal glands: The adrenal glands produce DHEA, a hormone precursor which can convert into testosterone. They also produce pregnenolone, which can convert into cortisol, DHEA, progesterone, testosterone, and estrogen. The adrenal gland's contribution is critically important as they produce up to 30 percent of the sex hormone production in our younger years and after menopause become the major source of sex hormone production.
3. Fat cells: Fat cells, especially those found in the abdominal area, can produce hormones. They secrete estrone. There is a theory that women gain fat after menopause in order to compensate for the demand of estrogen in the body. Researchers have found that the ratio of estrone to estradiol changes after menopause. Whereas higher levels of estradiol

are found in the body before menopause, that balance shifts to higher levels of estrone after menopause.

## **What Are the Functions of Sex Hormones?**

### **Estrogen**

1. **Reproductive organs:** The reproductive organs of the female body; the breasts, ovaries, vagina, and uterus all depend on the growth hormone estrogen. Without estrogen the body is negatively affected in numerous ways. For instance, breasts lose their volume and begin to sag. The lining of the uterus becomes atrophic (withered) and there are no more menstrual periods. Estradiol maintains the health of the cells of the vagina and urinary bladder, which reduces vaginal dryness and urinary problems like infections or incontinence.
2. **Estradiol in the cardiovascular system.** It dilates blood vessels, reducing blood pressure and limiting the formation of arteriosclerotic plaque on blood vessel walls. Loss of this estrogen is one of the reasons women tend to develop hypertension and cardiovascular disease after menopause. Insufficient estradiol also causes heart palpitations. Many women spend time and money having their hearts checked because of palpitations, only to discover that nothing is wrong and that the palpitations go away with adequate hormone replacement therapy.
3. **Central nervous system:** Estradiol increases blood flow to the brain protecting nerve cells and brain function. It has a deep impact on our central nervous system. By increasing neurotransmitters like acetylcholine and serotonin, estradiol helps with memory, relieves anxiety and depression, as well as promoting a normal sleep pattern. The sharp drop in estradiol makes it easy to see why many menopausal women complain of insomnia, anxiety, irritability, the inability to concentrate, and lack of mental alertness.
4. **Skeletal system:** Estradiol is also vital to the skeletal system. It reduces bone loss and helps our body make new bones. Lack of estrogen and other sex hormones in the long term

leads to brittle bones, a condition we call osteopenia, and as it progresses becomes osteoporosis. Estradiol also improves the connective tissues in the joints, thereby reducing the likelihood of the onset of degenerative arthritis.

5. Skin and hair: Estradiol helps to promote smoothness and elasticity of the skin, improves skin dryness, and prevents the loss of subcutaneous fat and collagen. Lack of it also leads to hair loss.

## **Progesterone**

1. Balances estrogen: Progesterone helps to balance the effects of estrogen in the uterus and breast. Secreted by the ovaries after ovulation, it prevents overgrowth of the endometrium, the inner lining of the uterus. Menopausal women on HRT who still have a uterus need to take progesterone to prevent excessive buildup of the endometrium, which can lead to a heavy period and increase the possibility of getting endometrial cancer.
2. Protects the nervous system: Progesterone protects nerve cells and brain functions, and increases gamma-aminobutyric acid (GABA), a neurotransmitter that keeps us calmer and more relaxed. It also helps to restore normal sleep patterns.
3. Natural diuretic: Progesterone helps to prevent fluid retention by working as a natural diuretic.
4. Optimizes estrogen receptors: Lastly, progesterone helps estrogen receptors to function better.

Since nature designed progesterone to balance estrogen, much like the yin and yang, it is vital that levels of both hormones reach equilibrium to help maintain health. Estrogen dominance (excessive estrogen compared to progesterone), especially from environmental xenoestrogens, leads to fibrocystic breast disease, fibroid tumors, and even endometrial or breast cancer. When estrogen and progesterone are not balanced after ovulation, it leads to premenstrual tension or PMS, which includes such symptoms as heavy menstrual flow, fluid retention, moodiness, and migraine headaches.

## **Testosterone**

Testosterone, considered by many to be a male sex hormone, is also important in women's health. Testosterone affects the body in many ways:

- Increases muscle mass
- Boosts libido
- Assists in bone building and helps prevent osteoporosis
- Plays a very important role in protecting the cardiovascular system
- Helps with mood and works as an antidepressant.
- It also helps keep the mind focused and sharp
- Promotes sensitivity to insulin and improves carbohydrate metabolism

Testosterone's role in men's health has been well researched. Yet, the role of testosterone in women's health has long been neglected. This is tragic since testosterone plays the same roles in both men and women. Women, however, only have about 10 percent of the amount of testosterone as men, which is why women in general are neither as aggressive nor muscular as men.

The body's production of testosterone drops by about half between the ages of thirty and fifty. Since the ovaries continue to produce testosterone after menopause, women do not experience the dramatic drop in testosterone that they do with estrogen and progesterone.

## **Bio-identical versus Synthetic Hormones**

Bio-identical hormone replacement is clearly superior to conventional synthetic hormone replacement because of its nearly perfect similarity to the hormones the body naturally produces. That is why it is called bio-identical. Both bio-identical hormones and synthetic hormones are produced by pharmaceutical companies and are FDA (Food and Drug Administration) approved. Bio-identical hormones have molecular structures exactly the same as the body's hormones. Synthetic hormones

mimic the body's hormones, but are not an exact match. When using hormone replacement, it makes sense to use bio-identical hormones, since they have virtually the same chemical structures as those made by the body. Examples of bio-identical estrogens that have been available to date are: Estrace<sup>®</sup>, Estradiol, Vivelle-Dot<sup>®</sup> patch, Climara<sup>®</sup> patch, bi-estrogen (bi-est) natural hormone cream or tri-estrogen (tri-est) natural hormone cream.

Typically, bio-identical hormones are derived from plant sources like yams or soy. Unfortunately, humans do not have the enzymes in their bodies to convert these substances into bio-identical hormones, so adding soy or yams to your diet will not raise your hormone levels. Rather, these hormones must be synthesized in such a way that they can be delivered safely in the body, such as with implanted pellets.

Hormones function by fitting into their own unique receptors which are on the membranes of the cells. Synthetic hormones that are not exactly identical to our own do not fit as well into the receptors and therefore may not be able to perform optimally. In addition, they can also produce side effects. Using synthetic hormones is comparable to opening a door with a copy of a key that is not identical to the original key; it may not open the door, or may open a wrong door.

The synthetic hormones Premarin<sup>®</sup> and Provera<sup>®</sup> are the most commonly used forms of hormone replacement therapy and the most studied to date. Premarin<sup>®</sup> is a brand name that stands for "pregnant mare's urine" and is produced by Wyeth Pharmaceuticals and has been in use since its introduction in the 1950s. This hormone medication is manufactured by keeping a mare in a constant state of pregnancy and inserting a catheter into the horse's urinary bladder to collect her urine. It is from this urine that "conjugated equine estrogen" is extracted, which is approximately 75 percent estrone (E1) and ten other forms of horse estrogens. The estrogen secreted by premenopausal women is primarily estradiol (E2), not estrone (E1). Replacing estrone instead of estradiol does not restore a woman's premenopausal physiology.

Provera<sup>®</sup> (or medroxyprogesterone) belongs to a class of drugs that are termed "progestins," which are synthetic progesterone. While it is supposed to perform the functions of progesterone, since it is not bio-identical, it can cause many

negative side effects. Synthetic progestins were originally developed to be more potent and longer-lasting than natural equivalents. They are also patentable by the pharmaceutical companies who make them. It is important not to confuse progestins with progesterone since their actions are so different.

## **Why Do We Need Hormone Replacement Therapy?**

The most common reason women seek hormone replacement therapy (HRT) is the many miserable symptoms which typically accompany menopause. Women suffer from hot flashes, which can be socially embarrassing during the day and usually wake them up in the middle of the night. This leads to poor quality of sleep and fatigue. They gain weight due to the slowdown in metabolism associated with diminished hormone levels. Additionally many suffer from moodiness, depression, anxiety, poor memory, lack of concentration and mental fog. At the same time, women suffer from lack of libido and painful intercourse, but are often too embarrassed to complain of these symptoms to their doctors.

The second reason women need HRT is to help prevent, as well as treat, diseases that are related to aging. Studies have shown HRT improves blood sugar control in patients with diabetes, lowers blood pressure in patients with hypertension, delays the onset and decreases the risk of Alzheimer's disease, reduces age related eye diseases such as macular degeneration, reduces the risk of colorectal cancer, and prevents osteoporosis and fracture.<sup>1,2,3,4,5,6,7,8</sup>

If you have a family history of diabetes, hypertension, dementia, macular degeneration, colorectal cancer, or osteoporosis, utilizing hormone replacement therapy is an important step you can take to prevent these deadly diseases.

The third reason to consider HRT is its ability to slow the aging process. Aging is significantly accelerated by hormone decline. By keeping hormones in the ranges we had during our thirties and forties, we can maintain our vitality, youthful appearance, and retard the aging process.

A century ago human life expectancy was fifty years; now it is about eighty years. It may become 100 years in the not-so-

distant future. Thirty or more years of low hormone levels may well lead to a miserably poor quality of life. Imagine lying in a nursing home bed, wearing a diaper, and being confused most of the time. It is not a pretty picture.

Hormone replacement therapy relieves the suffering that comes with menopause. Adequate hormone therapy gives people the assurance they can enjoy life well into their golden years by preventing many of the diseases that accompany the aging process.

## **Breast Cancer and Hormone Replacement Therapy (HRT)**

The most common reason women do not want HRT is due to the fear of breast cancer. Conventional thinking about hormones and breast cancer does not extend much beyond estrogen. As a matter of fact, there are many hormones that affect breast cancer in many different ways both positively and negatively. Those hormones include estrogens, progesterone, testosterone, DHEA, melatonin, oxytocin, insulin, T3 (thyroid hormone) and human growth hormone (HGH). It is important to pay attention to the levels of all these hormones when considering HRT.

### **Estrogen**

- The Women's Health Initiative (WHI) study was designed to identify the potential benefits and risks of hormone replacement therapy. This study revealed that women who received estrogen only (Premarin<sup>®</sup>) did not have an increase in the occurrence of breast cancer. Only women who received Provera<sup>®</sup> in addition to Premarin<sup>®</sup> in the form of Prempro<sup>®</sup> had an increase in breast cancer risk from thirty per 10,000 women years to thirty-eight per 10,000 women years.<sup>7,9</sup>
- A Swiss HRT study of 23,000 women, most of them using estradiol rather than conjugated equine estrogens (Premarin<sup>®</sup>), showed an actual decrease in the death rate from breast cancer.<sup>10</sup>

- Two studies out of MD Anderson demonstrated that estrogen use in women with a prior history of breast cancer showed a lower recurrence rate compared to the control group.<sup>11,12</sup>
- A review article analyzed twenty-four studies on women with a prior history of breast cancer published from 1986 to 2001. The recurrence rate of breast cancer and mortality rate were compared in women who received HRT versus women who did not receive HRT after breast cancer treatment. The meta analysis (combining the data from all twenty-four studies and analyzing them together) showed that breast cancer survivors using HRT experienced a slightly reduced (8.2%) breast cancer recurrence rate, and an almost four times reduction in mortality rate.<sup>13</sup>

Most studies linking hormone replacement therapy with breast cancer use premarin and provera, which are not bio-identical hormones. Our detoxification system plays an important role in cancer prevention. Premarin<sup>®</sup> blocks the important Phase II detoxification enzyme, glutathione S-transferase.<sup>16</sup> This blocking action of a critical detoxification step helps explain why Premarin<sup>®</sup> does not show the same breast protective effect that estradiol does. Studies have also shown that metabolites of equine estrogens cause oxidative damage to DNA, which also helps explain how long term use of Premarin<sup>®</sup> is linked to breast cancer.<sup>17</sup>

## **Progesterone**

Progesterone appears to be an anti-breast cancer hormone. Several studies have been published that support the existence of this effect.

- A prospective epidemiological study done at Johns Hopkins Hospital demonstrated the protective role of natural progesterone against breast cancer. They followed 1,083 women who were evaluated and treated for infertility for thirteen to thirty-three years. The results showed that the breast cancer rate was almost five and a half times higher in women who had a lower progesterone level compared to those with a normal progesterone level.<sup>18</sup>

- Application of progesterone gel to the breast has been shown to reduce the growth activity of the breast glands.<sup>19</sup>
- Studies have demonstrated that in progesterone receptor positive breast cancer cells, progesterone regulates the gene expression and results in cancer cell death.<sup>20,21,22</sup>

It must be emphasized only bio-identical progesterone had those anti-cancer effects, not synthetic progestins like medroxyprogesterone. Unfortunately, most medical literature does not distinguish between natural and synthetic progesterone and most physicians believe progesterone and progestins are the same thing, when in fact, the minimal change in the natural molecules that transform it into a progestin changes the entire action and function of the molecule.

We also know estrogen helps with good health in the areas of mood, memory, blood pressure, and the cardiovascular system. So why did the WHI study produce such discouraging results as increased cardiovascular complications, stroke, and dementia? It is very likely that some of the complications were related to the use of edroxyprogesterone (a synthetic progestin), rather than bio-identical progesterone.

- Articles show that medroxyprogesterone increases the progression of coronary artery heart disease and causes insulin resistance and subsequent hyperglycemia.<sup>23, 24</sup> Both of these outcomes are related to diabetes.
- In a study published in *The American Journal of Cardiology*, researchers studied two groups of postmenopausal women who had coronary heart disease. Both groups used estradiol (E2) for two weeks, then one group received intravaginal progesterone and the other group received oral progestin. Treadmill exercise tests were performed before hormone treatment as a baseline, two weeks after use of estradiol alone, and then at ten days after adding progesterone or progestin. The study found that patients exercised on the treadmill longer without chest pain (myocardial ischemia) when they took two weeks of estradiol compared to their baselines. After adding bio-identical progesterone, the benefit of

longer exercise time persisted, but with the use of synthetic progestin the benefit disappeared.<sup>25</sup>

## **Testosterone**

Testosterone has been shown to have a direct anti-breast cancer effect. Consider the evidence below:

- A NIH (National Institutes of Health) study demonstrated that testosterone decreases the activities of breast cancer cells in monkeys.<sup>26</sup>
- In Italy, researchers demonstrated that testosterone inhibits breast cancer cells through its own hormone receptor.<sup>27</sup>

In a clinical setting, this means the addition of testosterone, along with progesterone, has the benefit of breast cancer protection. However, if someone has a very high aromatase enzyme in the breast which converts testosterone into estrogen, the situation may be different.

## **DHEA**

Low DHEA levels have been associated with higher breast cancer risk in pre-menopausal women; on the other hand, high DHEA levels have also been associated with a higher incidence of breast cancer.<sup>28</sup> So for the time being, the best strategy is to keep DHEA levels within the normal range.

## **Melatonin**

Melatonin is not just a sleep hormone; it also has anti-inflammation and anti-cancer effects. Night shift workers, such as nurses, tend to have lower melatonin levels and higher rates of breast cancer.<sup>29</sup> Using melatonin in a physiological dose should be considered in all women suffering from insomnia.

Many women are afraid to use HRT and will choose to suffer and have a low or poor quality of life and continuous battles with age related diseases. The actual causes of breast cancer are compromised immune systems due to stress and