

## Chapter 1

### The State of Male Health – What You Don’t Know May Kill You

#### Every Man’s Problem!

In men the symptoms of testosterone deficiency are often under diagnosed and undertreated. Many a man intuitively feels the change in his health only to inquire about his testosterone level and be told that, “it’s fine” when in reality it is horribly deficient. Based on total testosterone concentration, the prevalence of hypogonadism in men reporting to primary care offices is estimated to be 38.7%. The FDA estimates that somewhere between 4 and 5 million men suffer from low testosterone with less than 5% of men ever being tested.

The medical conditions that are significantly associated among hypogonadal men included increase in abdominal fat, hypertension, hyperlipidemia, diabetes, metabolic syndrome, hypertension, heart attack, stroke, and cancer. As men age, they are susceptible to conditions that share many of the same symptoms similar to hypogonadism. The presence of these conditions may even mask underlying hypogonadism and negatively impact quality of life.

After age 20 male hormones begin a slow gradual decline, some falling about 14% every decade. By the time a man reaches 40, he’s lost almost half the necessary hormones he had at 20 years old. But you don’t have to be middle-aged or older to experience hormone deficiency. Hormone deficiencies are strongly associated with the onset of these serious diseases that often lead to disabling conditions:

- Cardiovascular disease
- Strokes
- Diabetes
- Dementia
- Osteoporosis
- Depression
- Vascular dysfunction
- Metabolic Syndrome
- Cancer

There are striking similarities among the many men who have sought my assistance with what they thought was just low testosterone. More often than not their initial biomarkers disclose significant health risks besides low testosterone. These medical threats to their health usually include cholesterol derangement, pre-diabetes, elevated Hemoglobin A1c, elevated homocysteine; which is a biomarker for inflammation, suboptimal Vitamin D, magnesium, zinc, sarcopenia; which is muscle wasting, cardiovascular deconditioning, osteopenia, endothelial dysfunction, growth hormone deficiency, hypothyroidism and more. Having low levels of vitamin D along with low levels of testosterone raises a man's risk from all cause mortality significantly.

There are three disease states that have become all too commonplace over the last decade and they are diabetes, cardiovascular disease, and metabolic syndrome, all of which are associated with low testosterone. In chapter four I will discuss why it is more about your heart above all else, because what difference does it make if you fix your T, but don't care for your heart.

### **Diabetes and low testosterone**

Diabetes in America affects some 27 million people and it is estimated that around 67 million people have pre-diabetes, both of which have a strong association with low testosterone. Numerous studies have demonstrated the serious effects of consistently elevated HgbA1c levels seen in diabetes on the oxidation of LDL cholesterol.

Epidemiologic studies have shown that *higher levels* are associated with *substantially higher risks* for:

- Congestive Heart Failure
- Heart Disease
- Heart Attacks
- Strokes
- Brain Atrophy
- Cancer
- Vascular Endothelial Dysfunction
- Increased Blood Clotting
- High Blood Pressure
- Diabetes
- Thyroid disorders

It is strongly recommended to identify and treat impaired fasting glucose early as its progression into diabetes and coronary artery disease is silent and progressive until a catastrophic event occurs. This is one of the many reasons why a comprehensive plan to improve your health that encompasses healthy nutrition, exercise, lifestyle adjustments and hormone restoration when necessary is critical to your male health.

### **Metabolic Syndrome and low testosterone**

Metabolic syndrome which is becoming all too common among American men, describes a cluster of conditions that typically includes the presence of 3 or more of the following: elevated blood pressure or hypertension, elevated waist circumference which is central obesity or "belly fat", elevated fasting glucose which is a measure of insulin resistance, elevated triglycerides (hypertriglyceridemia), and reduced levels of "good" HDL cholesterol, all often seen in men with low testosterone.

Metabolic syndrome is associated with increased risk of developing more serious chronic illnesses, such as cardiovascular disease and type 2 Diabetes. In addition to elevated blood pressure and triglycerides, several other risk factors for heart disease may also be present with metabolic syndrome, including elevated levels of "bad" LDL cholesterol (hypercholesterolemia) and an altered body composition, which is an unfavorable ratio of unhealthy fat to healthier lean body tissues, such as muscle.

Here are some alarming statistics as it stands today:

- As many as 1 in 3 American adult men have insulin resistance, even though most don't know it.
- About 1 in 3 U.S. adult men has high blood pressure.
- Over 1 in 3 American adult men is overweight or obese, placing them at greater risk for metabolic syndrome, heart disease, and low testosterone.
- 1 in 3 U.S. adult men may have metabolic syndrome, the likelihood of which increases with age
- More than 1 in 3 American adult men have one or more forms of cardiovascular disease.

Alarmingly, almost 50% of adult Americans suffer from at least one of these chronic illnesses and for adults over 65 years of age, more than 50% are being treated for multiple chronic conditions. Proactively treating low testosterone to prevent any and all of the chronic medical conditions such as cardiovascular disease, vascular dysfunction and osteoporosis can preserve and maintain a high quality of life for decades to come and spare the individual heartache and misery.

The CDC estimated that the cost for managing these chronic illnesses in the United States accounts for close to 78 percent of our health care expenditures. Having one of these chronic illnesses will mean that you will most likely spend 3 times as much as a man without any chronic disease, making prevention our and your number one goal.

Besides what we spend there is also what we lose. Having one of these chronic diseases with low testosterone leads to decreased productivity and absenteeism from work. The CDC estimated that almost 7 out of 10 deaths are due to chronic disease from heart attacks, strokes, and cancer, which all have a connection to low testosterone in both men and women.

Chronic illness caused in part by low testosterone steals years of life from our potential health and vitality. The burden of discomfort, pain, and progressive dysfunction and disability that an individual suffers cannot be truly measured. As men, we see ourselves as providers and protectors of our family, friends, and nation and to become a burden to the ones we love and the pain and anguish of surrendering the quality of our lives is unimaginable.

***The only cure for hormonal deficiency is restoration of hormone balance!***

Many of the symptoms of male hormone imbalances come on very gradually. You may not notice them at first, but as more symptoms appear and become worse over time, they rob you of your youth and vitality. These symptoms may include:

- Erectile dysfunction
- Low libido
- Decreased bone mass or osteoporosis
- Night sweats or hot flashes
- Decrease in energy or “get up and go”
- Decline in neuromuscular response
- Depression or anxiety
- Decreased sense of well being
- Constipation or increased bowel movements
- Increased body fat & male breasts
- Hair loss
- Fatigue or lack of energy
- Memory loss
- Decline in focus or concentration
- Heart palpitations
- Sleep apnea or insomnia
- Mood swings or irritability
- Muscle loss or weakness

Many times people often mistake the symptoms of testosterone deficiency in men with signs of aging. The good news is that these hormone imbalances are easily correctible, when you take action.

Most men measure their health by the triad of manliness. What they do for a living, how many dollars are in their bank account, and what’s their status between the sheets! If anyone of these areas is not in alignment then all is wrong with the world. But, what most men forget to take into account is that their personal health is really the cornerstone to their overall well-being. When their health suffers so does every other aspect of their life.

Alarmingly, the level of testosterone in men has been steadily declining over the past 2 decades. The reasons for this decline are not completely clear. A study has suggested that neither aging nor changes in certain health factors, such as obesity, smoking, or metabolic disease can completely explain the phenomenon.

According to Thomas G. Travison, Ph.D., of the New England Research Institutes (NERI) in Watertown, Mass., and lead author of the study. “Male serum testosterone levels appear to vary by generation, even after age is taken into account,”

“In 1988, men who were 50 years old had higher serum testosterone concentrations than did comparable 50-year-old men in 1996. This suggests that some factors other than age may be contributing to the observed declines in testosterone over time.”

Personally over the last decade I have noticed a drastic increase in the number of younger men with testosterone deficiency linked to sometimes-identifiable lifestyle and environmental causes. Later in the book I will discuss natural remedies to increase testosterone levels that have been lowered by these alarming environmental trends.

It is my opinion that the constant low level exposure to the abundance of chemicals with estrogen like activity that permeate the majority of plastics, food wrappers, household chemicals, pharmaceuticals, pesticides, thermal paper, and food items play an ever increasing role in decreasing testosterone levels.

So what can you do to limit your exposure to chemicals with estrogen like activity?

- Eat Organic
- Use Natural Cleaning Products
- Use Natural Personal Care Products
- Avoid scented or fragrant oils

Testosterone is the primary male sex hormone. It is important for maintaining bone and muscle mass throughout life. Insufficient levels of testosterone have been linked to diabetes, low libido, and other medical conditions. Typically, testosterone levels in men peak around their late 20s, and then begin a gradual decline from age 30 onward. Testosterone also is present in women, but at significantly lower levels.

Travison and colleagues based their study on data from the Massachusetts Male Aging Study (MMAS). The MMAS comprised three separate data-collection periods over 17 years (1987-89, 1995-97, and 2002-04). The study involved collecting blood samples, as well as health and biographical data, from approximately 1,500 randomly selected men residing in the greater Boston area.

During each phase of the study, the researchers analyzed the subjects' blood samples to measure total testosterone, from which they also calculated the amount of "bioavailable testosterone". Bioavailable testosterone includes both free testosterone, which is unbound to proteins like albumin, and testosterone weakly bound to proteins like albumin. Bioavailable testosterone is available to tissues to support various functions within the body, because it is loosely bound.

The NERI team analyzed the data to compare men of similar ages during each phase of the study. After accounting for age and additional factors such as obesity, smoking, and medications, the researchers found that, each year, the subjects' total testosterone decreased an average of 1.2 and bio-available testosterone decreased an average of 1.3 percent.

For men 65-69 years of age in this study, average total testosterone levels fell from 503 ng/dL in 1988 to 423 ng/dL in 2003. A normal, asymptomatic, healthy adult male usually has blood total testosterone concentrations that range anywhere from 300-1000 ng/dL. In my experience that number is generally in excess of 550 ng/dL. Travison acknowledged that hormone concentrations in the blood are difficult to

measure, primarily due to normal daily fluctuations. To ensure these changes did not bias the results, two samples were obtained at each visit, and all were taken early in the morning, when testosterone levels are at their highest.

In addition, each MMAS data collection period utilized the same laboratory and the same technology to analyze subjects’ blood. “Nevertheless,” said Trivison, “time and technology march on, so it’s impossible to completely rule out the influence of subtle changes in the way the samples were obtained or processed. That being said, our results appear to be consistent across the various waves of the study.”

The researchers point out that, although subjects’ current health was taken into account as part of the analysis, it is impossible to account for certain health or environmental influences that may have impacted the subjects’ testosterone levels prior to being enrolled in the study.

“This analysis deals with men who were born between 1915 and 1945,” said Trivison, “but our baseline data were not obtained until the late 1980s, when the elder subjects were about 70 years old, and the youngest about 45. Events occurring in earlier decades could certainly help explain our results, if their effects persisted into recent years.” It is also possible that current, but unmeasured, health or environmental factors could be the root cause of the observed declines.

A study by Dr. Araujo reported in the *Journal of Sexual Medicine* (Vol. 10, Issue 2, 2013) sought to quantify the cost burden imposed by testosterone deficiency in men.

After examining six national databases, scientists estimated that testosterone deficiency was affecting 13.4 percent of men between the ages of 45 and 74. They also estimated that testosterone deficiency is involved in the development of approximately 1.3 million new cases of cardiovascular diseases, 1.1 million new cases of diabetes, and more than 600,000 osteoporosis-related fractures in the first year it is present

Over a 20-year period, the researchers estimated that testosterone deficiency would be responsible for up to \$525 billion in healthcare expenditures in the United States.

As this study points out, the cost of not treating testosterone deficiency is severe; decreases in bone mass, muscle mass and strength, increases in metabolic syndrome, diabetes, cardiovascular disease, dementia, osteoporosis, and erectile dysfunction are all related to testosterone deficiency.

The most frequent complaint I hear from men with low testosterone is fatigue and lack of well-being. Other significant complaints include irritability, low libido, declining cognitive skills; concentration, memory, muscle loss, and weight gain around the mid-section. It comes as no surprise that:

**“OPTIMUM HEALTH IS NO ACCIDENT. IT IS THE REWARD FOR TAKING A PREVENTATIVE AND PROACTIVE APPROACH TO YOUR PERSONAL HEALTH. HEALTHY NUTRITION, EXERCISE, AND PREVENTION ARE THE MOST POWERFUL PRESCRIPTION TO CORRECT HORMONE IMBALANCES. IN COMBINATION WITH HORMONE RESTORATION THERAPY WHEN NECESSARY, THEIR EFFECTS ARE IMPROVED QUALITY OF LIFE AND POTENTIAL LONGEVITY.”**

As such, every patient at our facility undergoes an intensive laboratory, diagnostic, and physical evaluation. Optimizing a man's testosterone level many times is a life changing treatment with numerous health, physical, and social benefits. I often hear from many of our clients, “I feel like me again!” And what could be better than feeling like you did when you were in your twenties? The optimization of the hypogonadal man's testosterone is a lifesaving treatment.