

# The **7** Pillars of a long and healthy life

By Dr. Al Sears, MD



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# Introduction

## How Reading This Book Will Change Your Life

This is a pivotal moment in your life. Since the day you were born, conventional medicine – fueled by the pharmaceutical industry – has encouraged you to make disastrous choices about your health. Without realizing it, you are following advice that leads to disease and premature death.

Today, I am offering you a remarkable opportunity. You now have the option of living a long life without giving up one ounce of youthful vitality. Even if you currently suffer from a particular illness – or feel that you’ve lost that spark of your younger years – you can turn back the clock and begin to live the kind of life that Nature intended:

A life full of power and purpose. A life characterized by wisdom and longevity.

Wouldn’t it be amazing if you could get to the end of your long life and still have the strength, mobility and mental clarity you did when you were younger?

Congratulations. You are now holding all the knowledge you need to make that a reality.

As you absorb this information, you’ll feel a sense of freedom knowing that you now hold the keys to a long and healthy life.

By following these guidelines and working with your own doctor, you’ll be laying the foundation for a bright and healthy future. A future that extends beyond the boundaries of what you thought was possible.

### **Discard Failed Beliefs – Use Strategies That Work!**

The first step on your journey is the realization that your body has a built in anti-aging system. The core of this powerhouse is your heart and lungs. By strengthening your heart and expanding your lung capacity, you can fortify your immune system and add years to your life. Just this one piece of the puzzle is enough to transform you health.

But here’s the problem: The advice you’ve been following is actually making your heart and lungs *smaller*. Traditional “cardio” exercise is slowly destroying the very fabric of your vital organs.

Long duration, moderate intensity exercise – like jogging, for example – forces your heart and lungs to downsize in order to cope with stress. Why? If your heart and lungs become smaller, they are better equipped to handle long duration exercise.

This is why long distance runners have a 50 percent higher rate of heart attack and cardiovascular disease. (Really!)

But this is only the tip of the iceberg. Conventional wisdom is a constant obstacle on your path to energy, youthfulness and longevity.

Your body has the potential to live far beyond the 75 to 80 years that you may expect for yourself. It's the over-reliance on bad advice and prescription medication that cuts your life short.

In spite of their declaration to “fight” heart disease, the medical establishment encourages you to *weaken* your heart and then practically pushes you into the grave. Taken in combination, their recommendation to eat low-fat foods, exercise for hours on end and take dangerous statin drugs, is a recipe for a short and miserable life.

## **Begin Your Anti-Aging Plan**

According to the Centers for Disease Control and Prevention, cardiovascular disease kills more than 950,000 Americans every year. After decades of making alterations to the way you eat and exercise, you are actually at greater risk of heart disease than ever before. And if you're already living with heart disease, a dependence on toxic prescription drugs is almost inevitable.

In spite of years of medical advances, we are left with the contradiction that rates of heart disease are only increasing.

After all these years, the notion that fat alone causes heart disease turns out to be utterly false. The most effective way to beat heart disease is to root out its underlying cause. Instead of sacrifice, denial and debilitating side effects, a natural heart health plan will give you more energy and more confidence in your future.

Giving up meat and eggs, eating low-fat foods and taking cholesterol-lowering drugs will NOT protect your heart or prevent cardiovascular disease.

## **Following the Wrong Advice for More than Half a Century**

Decades ago, when the World War II generation was enjoying a breakfast of steak and eggs, rates of obesity in the United States were relatively constant – hovering close to 10 percent. Diabetes was relatively uncommon – about one case of adult diabetes for every case of childhood diabetes.

All of that was about to change, however...

In 1957, the American Heart Association decided to link dietary fat to heart disease and recommended that Americans cut the amount of fat in their diets. Instead of the protein-based breakfasts of our grandparent's generation, we adopted processed cereals - laden with sugar, sodium and other additives.

This marked the beginning of our struggle with low-fat diets.

Food producers began developing a wide variety of low-fat foods. As a result, Americans began consuming vast quantities of these so-called “healthy” foods, expecting to lose weight and lower their risk of heart disease.

But no one lost weight.

In fact, the rate of obesity quickly tripled. The number of Americans either obese or overweight exploded to 2 out of 3 – levels never seen before in our history. During this same time period, adult diabetes rose by a shocking 900%. We now see a ratio of nine patients with diet-induced (adult) diabetes for every one case of genetic (childhood) diabetes.

These “expert” recommendations from the American Heart Association only led us further away from our natural, protein-based diets. If their goal was to reduce heart disease, they failed.

Heart disease continues to kill more Americans than any other disease.

### **Fortify Your Heart and Increase Lung Capacity by Exercising *Less***

For years, the media has been touting the health benefits of cardiovascular, “cardio,” exercise. This kind of exercise, however, does NOT strengthen your heart. In fact, cardio-induced stress actually speeds up the age-related loss of heart and lung capacity.

When pundits began recommending “cardio” exercises, they didn’t realize that when you repeat the same movement for an extended period, your body responds by making the exertion more efficient. With prolonged, relatively low-level “cardio” like jogging, your body creates greater efficiency by downsizing your heart and lungs. Why? Because smaller can go farther with less fuel. In other words, your heart and lungs actually become smaller and weaker over time. Because this capacity shrinks as you age, cardio exercise only accelerates the negative changes brought on by the aging process.

You can, however, restore a youthful heart and lungs – and boost their capacity – with the right exercise challenge. But that doesn’t mean running mile after mile on a treadmill or spinning your wheels for hours on an exercise bike. To get results, you need short bursts of activity with short periods of rest in between. This unique approach will restore and preserve your heart and lung capacity.

The great news is that you can reverse years, or even decades, of decreasing heart and lung capacity by progressively increasing the challenge with those short bursts of exercise. On my website – <http://www.elsearsmd.com> – you will be introduced to a specific program called **Progressively Accelerating Cardiopulmonary Exertion** – PACE™ for short – to gradually challenge your heart, lungs, and blood vessels and make them as youthful and vigorous as they can be.

## Take Control of YOUR Aging Process

The aging process often seems arbitrary and indiscriminate. Some people age well and look fantastic well into their 80's, while others age quickly and grow old before their time.

Thinking back to childhood, monitoring the aging process was simple and obvious. Children naturally gain weight and grow taller, and these physical changes are easy to measure. But what happens when you reach adulthood? The physical aging your body goes through is harder to monitor because the changes aren't as dramatic.

So how is it possible to monitor your progress in life – especially when the routine tests performed by your doctor reveal nothing about your personal aging process?

With the right tests and evaluations, you can quantify *and* track many of these changes.

These tests and measurements give you a real and practical assessment of your overall strength, your cardiovascular health and can detect heart problems you may not even be aware of. As a result, you can use this valuable information to take action— moving away from disease, toward outstanding heart and lung health.

By effectively addressing the *physical markers* of aging, your “health span” will *soar* and you'll look and feel younger.

### The 5 Benefits of Boosting Your Health Span

- Expand your lung capacity for increased endurance and disease resistance.
- Improve your heart's pumping capability for an ageless heart.
- Strengthen muscle mass and bone density.
- Reverse the age-associated increase in fat around your middle.
- Return your strength, speed and dexterity to younger levels.

In addition, there are *chemical changes* occurring in your body that drive this physical aging. By manipulating what happens at the cellular level, you can affect the way you age to stay younger longer.

You can specifically test and then reverse the biomarkers of cardiovascular aging. Most doctors don't pay much attention to these markers. As you'll discover, this is a tragic mistake if you want to preserve a youthful cardiovascular system.

## The 6 Most Important Chemical Biomarkers

- **Insulin** – The over-looked contributor to heart disease.
- **Homocysteine** – The key indicator of, “oxidative overload syndrome.”
- **CoQ10** – The anti-aging heart fuel.
- **HDL** – The good cholesterol no drug can give you.
- **Testosterone** – The much maligned heart fortifier.
- **HGH** – The natural regulator of most age-related changes.

Each of these six biomarkers undergoes a series of transformations as you age. Taking control of them using specific anti-aging therapies, will reverse the aging process and restore youthful vitality and vigor.



# Chapter 1

## Rediscover the Foods You Really Love

In the late 1950's a government report called, "Dietary Goals for the United States" advised that Americans drastically cut their dietary fat intake. According to the "Dietary Goals," eating fat was the cause of a budding heart disease epidemic.

In response, the food industry produced a slew of "low-fat" products. But without the tasty fat, these new products were very bland. As a result, high amounts of sugar became a common additive.

Americans replaced fat with refined carbohydrates and sugar. The amount of calories from fat in the American diet decreased. And, the amount of calories from refined carbohydrates increased... dramatically.

### Exposing the Low-Fat Lies

The real problem with low-fat is that it also means high-carb. Excessive intake of carbohydrates is the central dietary problem in my patient population. The pervasive low-fat mistake has only worsened this huge problem. And, there is another problem emerging from the low-fat advice. The lower fat intake itself can be detrimental to your health.

A certain amount of fat is critical to absorb vitamins. You cannot absorb fat-soluble nutrients like vitamins A, D, E, and K and coenzyme CoQ10 without fat. One study published in the *Journal of Clinical Nutrition* found that low-fat diets affect calcium absorption. The study found low-fat diets were associated with 20% lower calcium absorption than higher fat diets.<sup>1</sup>

The State University of New York at Buffalo, found that people who eat low-fat diets develop weaker immune systems.<sup>2</sup> Another study examined people eating only 14% fat. They showed no improvement in body composition, blood sugar levels, insulin levels, or blood pressure levels. The study's authors called very low fat diets "counterproductive" to health.<sup>3</sup>

The good news is that fixing this mess is not as hard as you might think. You alone can reverse your consequences of this weak science and decades of bad advice.

Just follow a few simple rules for selecting your food. You will be able to eat better tasting foods and feel more satisfied.

### Here's Why Your Diet Doesn't Work: Understanding Carbohydrates and the Glycemic Index

Many carbohydrates spike your blood sugar and stimulate your body to produce insulin. This insulin then causes you to build and store fat. Do it for long enough and this will make you fat

and tired. It will also lead to other health problems like high blood pressure, high cholesterol, heart disease and diabetes. So how can you tell the difference between carbs that spike insulin and those that are less harmful?

You'll see it's not sweetness that makes the difference. Just because it tastes sweet doesn't mean that it will spike your blood sugar. That is a concept that many of my patients have a hard time accepting at first. But it makes sense when you look at it in terms of the glycemic index. The glycemic index is a rank of how carbohydrates in different foods affect blood sugar levels. Carbohydrates that breakdown the fastest, rank the highest on the glycemic index.

The index is in percentage terms. It is a comparison to pure glucose. For example, a food with a glycemic index of 50% will cause half of the rapid rise in blood sugar that glucose would.

The real problem is with starches. They not only produce more blood sugar but they cause a much more prolonged elevation of sugar and insulin than simple sugars do.

<b>Glycemic Index of Common Foods<sup>1</sup></b>		
<b>Low (0-50)</b>	<b>Medium (50-70)</b>	<b>High (Above 70)</b>
All Meat & Fish Eggs Apples Pears Cherries Milk Berries	Most Pastas Carrots Yams Ice Cream White rice Sodas Pound cake	Rice cakes Waffles Breakfast cereals Breads (white and whole wheat) Sports Drinks Bagels

<sup>1</sup> Adapted from: Foster-Powell K. et al., International table of glycemic index: *American Journal of Clinical Nutrition*, Vol. 76, No. 1, 5-56, July 2002

Notice that most fruit and berries fall in the low glycemic group despite tasting quite sweet. Notice man-made starches like cereals and breads have the very highest glycemic indexes even though they are not sweet. This is a difficult message to get across. The media is flooded with ads for starchy cereals, touting them as healthy. Some sources, including our government, are still clinging to the disastrously poor advice of recommending multiple servings of starchy grains every day.

You may also be surprised to see that:

- Most natural foods have low indices while processed foods have high rankings.
- Corn flakes raise blood sugar twice as much as orange juice.
- You get more blood sugar from bagels than you do ice cream.

Think of it like this: the starchier the food, the more likely it is to have a high glycemic index. So foods like potatoes, spaghetti, and corn are all high on the glycemic index. Conversely,

foods that are naturally sweet but not starchy like berries and most fresh fruit are likely to have low glycemic indexes. In other words fruit is not nearly as fattening as breads, pastas, cereals, potatoes and corn.

There are many good reasons to try to keep low glycemic foods in your diet. Foods low on the glycemic scale:

- Will help you to feel fuller longer
- Cause a smaller rise in blood sugar
- Can improve insulin sensitivity
- Can inhibit fat storage
- May increase your endurance (the fuel doesn't burn up so quickly)

In short, stay away from foods that are starchy, made from grains, or have been artificially sweetened. The more you reduce these foods that are high on the glycemic index, the better you'll feel.

And don't be worried that eating meat is going to drive up your cholesterol.

A number of studies have been done concerning lean meat and cholesterol. One of the most recent studies has proven that the incorporation of lean meat into the diet helps reduce cholesterol levels. By the way, it didn't matter whether it was white meat and red meat. Both lowered bad LDL cholesterol and raised good HDL cholesterol.<sup>4</sup>

Numerous studies have proven that low-carbohydrate diets improve diabetes. One important study analyzed diabetic patients for 8 weeks. Some of the patients ate a diet with 55% of calories from carbohydrates (very similar to the average American's diet). The other group ate a diet where 25% of the calories came from carbohydrates. The group eating the 25% diet experienced a drop in blood sugar levels. People eating the 55% diet experienced a rise in blood sugar levels. Those eating more carbohydrates worsened their diabetic condition.<sup>5</sup>

### **Your High Powered Diet Plan: Eating the Foods that Make a Difference**

The most important action is changing your diet to include more natural foods in their natural forms. To the right is my **suggested daily eating plan**, which is very different from the USDA Food Pyramid.

#### **Your Sure-Fire Action Plan:**

##### **Eat Quality Proteins**

- Eat protein at every meal.
- Choose free-farmed meat and poultry.
- Eat seafood, especially Alaskan or wild salmon.
- Drink organic milk.

<p><b>High-Quality Protein</b> Red Meat, Fish, Poultry, Eggs (The Main Course of Every Meal)</p>
<p><b>Above Ground Vegetables</b> (3 to 5 Servings Daily)</p>
<p><b>Nuts, Fruit and Plant Oils</b> (1 to 2 Servings of Each, Daily)</p>
<p><b>Dairy</b> (1 to 2 Servings Daily)</p>
<p><b>Grains and Tubers</b> (Rarely)</p>

**Eat Quality Carbohydrates**

- Eat low-glycemic foods. All real vegetables and berries are okay.
- NOTE: Potatoes (tubers) and corn (grain) are not vegetables.
- Avoid high-glycemic foods. Do not eat grain products (cereals).

**Eat Quality Fats**

- Increase Omega-3 fats. Good sources of Omega-3s include grass-fed red meat, fish, olives, eggs, nuts, and avocados. NOTE: Peanuts are not true nuts.
- Decrease Omega-6 fats.
- Avoid all trans fats.

## Chapter 2

# Use These 5 *Physical* Markers to Reverse Your Aging Process

### Physical Marker #1: Building Your Muscle Mass Muscle is the Best Indicator of Youth!

The first physical marker of aging is muscle. People who age well, who seem to be far younger than their years, are well muscled. This healthy muscle protects your body from aches and pains, disease and other age related ailments...

#### The 7 Benefits of Healthy Muscle

- Reduces Risk of Bone Fractures By Supporting Bones
- Improves Sexual Health By Stimulating Sexual Hormone Production
- Makes You Appear Younger By Stimulating Human Growth Hormone
- Keeps You Trim By Boosting Your Metabolic Rate
- Gives You More Energy By Storing More Glycogen
- Decreases Risk of Disease By Strengthening Your Immune System
- Prevents Chronic Pain By Building Surrounding Tissues and Ligaments

Muscle loss begins at age 30. From then on, you lose an average of 3 pounds of muscle every decade. Most people feel a bit weaker but for the most part, they don't notice any difference in size. Why? Because this muscle is replaced with *fat*. But it doesn't have to be that way. Muscle loss is preventable and completely *reversible*. I've seen patients of all ages regain *100%* of their youthful muscle mass!

To really make a difference, muscle-building exercise must engage the biggest muscle groups in your body: the quadriceps, the gluteus muscles, and the hamstrings. Perform exercises that flex and extend the hip joint. Practice exercises that *provide resistance through a broad range of motion at the hip joint*. This can include weight training, bicycling, stair-steppers and elliptical machines or walking up and down stairs. (For more on muscle, see chapter 4).

### Physical Marker #2: Trimming Your Body Fat Fat Will Defeat Your Anti-Aging Plan

Increasing body fat is the second physical marker of aging. If you don't act to prevent it, fat slowly but relentlessly moves into your cells and pads your waist for no reason other than age. But again, this shift is by no means inevitable. You can manage it if you know how.

Several tests can identify and track this change in fat. The most accurate test is the hydrostatic body fat test. It works like this: you get into a tank of water and go under. Test takers record your

weight while you're underwater. You can get a hydrostatic test at some health clubs, university health centers and hospitals. You can also measure fat yourself with a set of calipers. What's a youthful body fat range for a man? 10-14%.

So you need to drop a few pounds of fat? Don't jump on the treadmill just yet. Fat loss starts with adequate protein. *Over-consume protein, and minimize everything else.* This is the one piece of advice where I get the most resistance. If you can have some faith and try it, you'll see too how much easier it makes losing weight and achieving a more youthful body.

Finally, you need to perform *effective* fat burning exercise. Short bursts of exercise burn fat best. Short bursts will use energy from carbohydrates stored in muscle rather than from fat. Carbs are capable of burning energy at a much higher rate. You then burn much more fat for energy during the recovery period as you replenish the carbs. Short bursts of exercise are better for your heart and lungs too.

### **Physical Marker #3: Intensify Your Bone Density Build Your Bones for an Age Resistant Frame**

Bone density loss is the third physical marker of aging. Just like muscle, you lose bone density every year. In fact, research shows adults lose 1% of bone mass annually. With loss of bone minerals, your bones become lighter, more porous, and weaker – and are at greater risk for fracture.<sup>6</sup>

Unfortunately, ordinary X-rays can't detect bone density loss in its early stages. A bone must lose at least a full quarter of its weight before a standard X-ray can see the problem. Instead, get a bone mineral density test, (BMD). The best BMDs test the bones of your lower spine and hip. These areas are at higher risk for fracture as you age.<sup>7</sup>

If your BMD detects trouble, you can increase bone density and strength with weight-bearing exercise such as walking, bicycling, swimming or weight training. Focus on increasing intensity in all of these exercises. As you age, taking calcium will have little effect on this hormone-driven loss of bone density. You can help reverse this process with the only vitamin that is actually a hormone, vitamin D. For maximum anti-aging preservation of bone density, take 400 IU of vitamin D daily.

### **Physical Marker #4: Expand Your Lung Volume Boost Your Lung Capacity for a Longer “Healthspan”**

As the years pass, your lung volume decreases making lung capacity one of the best markers of physical age. Your doctor can give you a pulmonary function test, (PFT) to check your lung capacity. This test is not invasive or dangerous. I find it very valuable at my Center for Health and Wellness to monitor the benefits of exercise at reversing the loss of lung volume that afflicts so many elders.

I have found that the right physical challenge can reverse this loss of lung volume. For fast results, use a progressive exercise plan like my PACE™ program. As we discussed previously, the

idea behind PACE™ is to advance the intensity of your exercise gradually over time. As simple as this seems, very few people do it. But this is what makes all exercise effective.

### **Physical Marker #5: Fortify Your Heart Feel the Rhythm of Your Own Heart**

Many people don't realize something's wrong with their heart until it's too late, when they're in the emergency room after a heart attack. Yet the real problem started years earlier. You can measure this gradual loss of heart capacity. It's your fifth physical marker of age.

You can easily gauge your heart with a resting and recovery heart rate. To measure the resting heart rate, locate your pulse. Most people use the wrist. If you can't feel the pulse in your wrist, place the same two fingers just to the side of your Adam's apple, in the soft hollow area at the side of your neck.

Your pulse should have a steady, regular rhythm. Count the number of beats for 15 seconds, then multiply by 4 to get the beats per minute. See how you rank using the chart below<sup>8</sup>.

<b>Check Your Resting Heart Rate</b>	
<b>Fitness Level</b>	<b>Beats Per Minute, (bpm)</b>
Normal Adult	60–100
Well-Conditioned Athletes	40–60

### **Develop the Heart of a Warrior**

Now check your recovery heart rate. It's a good gauge of heart fitness. To start, walk out and get the mail, or walk around in your house for a couple of minutes. Then take your pulse. Remember the number; it's your normal activity heart rate.

For the next step, begin cardio exercise. Gradually increase the level of intensity in your work effort. Then, at the peak of your intensity measure your heart rate again. Next, decrease your intensity back to normal, check your heart rate until it's the same as it was when you were walking around. The difference between the peak activity and your normal-activity heart rate is your recovery time. The fitter you are, the faster your heart rate will recover back to normal.

If you don't do much short burst cardiovascular exercise, your cardiovascular system probably needs some work. Here's what to do. When you're performing your PACE™ program, exercising with short bursts of exercise, try to get your heart rate within the target range for your age. (These ranges use the maximum heart rate of 220 minus your age.) You can start at 60% of your maximum heart rate. After you've worked with the PACE™ program for a few weeks, work up to 80% of your maximum heart rate.



## Chapter 3

# Measure Your Biological Age... Then Reverse it 5 to 10 Years

On the surface, you can observe aging as your hair turn gray, your waistline grows, and your body goes soft. But there are bio-chemical changes underneath that drive this physical aging. Manipulate what happens at the cellular level and you can control the way you age to stay younger longer.

I'm going to show you how to test for and then reverse the chemical biomarkers of aging. Most doctors don't pay much attention to these markers. As you'll discover, this is a BIG mistake if you want to hold onto your youth. I'll show you how to take control of:

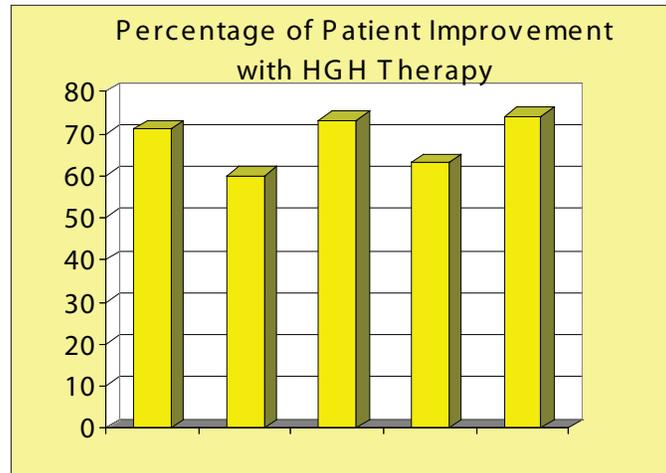
- **HGH** – Nature's truest Fountain of Youth.
- **Insulin** – The over-looked secret to high energy and a lean body.
- **Triglycerides** – More important than cholesterol for heart health.
- **HDL** – The good cholesterol no drug can give you.
- **CoQ10** – The often deficient anti-aging nutrient.
- **Testosterone/Estrogen Ratio** – The key to staying masculine at any age.

Each of these six undergoes a transformation as you age. Taking control of them starts with getting a blood test to check your levels and then using specific anti-aging therapies to improve them. I'm going to share them with you starting with one of the most promising anti-aging discoveries ever...

### Human Growth Hormone: Your Path to Eternal Youth Starts Here

Human growth hormone or HGH is the closest thing to the Fountain of Youth we have. Your body produces high amounts of HGH when you're young, but production declines throughout your adult life. HGH is responsible for rejuvenating and repairing all tissues in your body. As your HGH declines, it orchestrates many of the changes of aging. Changes like loss of muscle tone, wrinkles, energy decline and excess fat gain. But *add* HGH back and you reverse some of these consequences of aging...

A recent study at the National Institutes on Aging once again proved that HGH improves lean body mass and decreases body fat-- even in healthy men<sup>9</sup>. Studies also show it improves strength, sexual capacity, and physical function and reduces frailty in elders.



*Source: Cenegenics Institute*

So how do you use HGH? I've found you can elevate HGH in three ways:

1. **Eat More Protein:** Since HGH makes you build muscle, and when you eat high amounts of protein you have the material to build muscle, it makes sense that your HGH would rise in response to a high protein diet. And indeed, it does. This is a mild elevation, but nonetheless, HGH is so powerfully beneficial, even a slight increase can make a big difference.
2. **Perform Strenuous Exercises:** Strenuous exercise also increases levels of HGH in your body. Now I'm NOT talking about a brisk walk around the block, I mean gut-wrenching exercises like heavy squats and dead lifts. This is not a tip for the faint of heart. If you're athletic and in good shape, you should try it.
3. **HGH Injections.** If you want real HGH, it must be by injection and a doctor must prescribe it. You must get your blood levels of HGH checked. If your doctor will authorize it, you can get a handy HGH cartridge for home use without needles. I've used it in patients from 35 to 95 years old at my Wellness Center in south Florida. I've seen some remarkable changes.

### **High Insulin is Your Fast-track to Obesity**

When you hear the word 'insulin', you think of diabetes. But insulin isn't just about this disease. Even if you aren't diabetic, you can still benefit from having your insulin levels measured. Why? Because insulin plays a key role in aging...

Insulin tells your body to build fat. The more insulin you have, the more fat you'll pack on. Most hormones decline with age, but insulin increases with age. If you want to stay lean, strong and vigorous at any age, keep your insulin low.

<b>Optimize Your Insulin</b>	
Risky	20 and up
Normal	11 to 20
Best Anti-Aging	4 to 10

To control insulin it's very important you maintain your blood sugar with a low carb diet. Remember, focus on protein and avoid processed foods. Use the Glycemic Index as a guide to help you choose the healthiest carbs. And remember to exercise.

### **More Important than Cholesterol? Don't Miss this Critical Factor for Avoiding Heart Disease**

Triglycerides are a type of fat in your blood. High levels put you at risk of heart disease. What's more, as you age, your triglycerides can rise. That's why it's essential to get a triglyceride test. Here's an idea of where yours should be if you want to maintain a healthy heart:<sup>10</sup>

<b>The Truth About Your Triglycerides</b>	
High	200 mg/ dl or higher
Risky	150 to 199 mg/dl
Best Anti-Aging	Less than 100 mg/dl

The most effective way to lower triglycerides is to make the focal point of your diet lean protein. Protein from fish and grass-fed beef is best because these animals have healthy levels of omega-3s. These good fatty acids will also help to reduce your triglycerides, not to mention your waistline.

### **HDL: The Longevity Lipoprotein**

HDL is the good kind of cholesterol. HDL delivers life-giving nutrients and helps remove the bad LDL cholesterol from your arteries. Although a certain amount of LDL in your blood is normal and healthy, excess LDL often accumulates in elders. When this happens, doctors often prescribe cholesterol-lowering drugs.

But if your doctor tries to put you on cholesterol-lowering medication, be warned. Those drugs DO lower LDL, but they don't increase HDL-- and that's what matters. Whether you have high cholesterol or not you should work to increase your HDL to above 80...

<b>The Truth About Your HDL</b>	
Risky	40 or Below
Normal	Between 40 and 80
Best Anti-Aging	Above 80

The best way to increase your HDL is with high intensity, short duration exercise such as my PACE® program. For more information, check out my website: <http://www.alsearsmd.com>

### **Replenish this Nutrient and Forget About Heart Diseases – *Forever!***

CoQ10 plays a key role in creating the energy you use to function. It’s an anti-oxidant and can help prevent and even *reverse* heart disease. CoQ10 can improve your immune system, reverse gum disease and increase your overall energy.

Unfortunately, once again, CoQ10 levels decline with age, as much as 80% through the years. Studies link this decline to the diseases and illnesses of aging, especially cardiovascular problems.<sup>11</sup> In fact, most of my heart patients have turned out to be deficient in CoQ10.

You can measure this critical nutrient in your blood but very few doctors order it. You will have to ask. It’s imperative you get your levels checked and see how much CoQ10 anti-aging power you’re missing. Then you can start doing something about it. First, you can add more CoQ10 to your diet by eating red meat and eggs. However, modern animal husbandry has led to lower levels of this anti-aging wonder so supplementation is important. For maximal anti-aging benefit, I recommend taking between 150 to 300 mg per day. (For more on CoQ10, see chapter 7.)

### **Testosterone: This Vital Force Powers More than Just Your Sexuality**

We all know that testosterone is the hormone that makes a man, a man. But this hormone does much more than that. Testosterone helps to control body fat, mood, energy, sexual desire, cognitive function, and yes, even aging...

<b>The 7 Powers of Testosterone</b>
<ul style="list-style-type: none"> <li>• Improves Sexual Performance</li> <li>• Promotes Libido</li> <li>• Stimulates Muscle Growth</li> <li>• Increases Energy Levels</li> <li>• Improves Memory, Mood And Mental Clarity</li> <li>• Builds Stronger Bones</li> <li>• Keeps Urinary And Reproductive Systems Healthy</li> </ul>

These are all characteristics of youth. But of course, time begins to work against you, robbing you of vital testosterone as the years pass. Your testosterone levels peak in your twenties, but by age 80, they've dropped between 50% and 70%.<sup>12</sup> And by this time, you've lost muscle, energy, mental clarity, bone density and sexual ability. Keep your testosterone up, and you slow down the loss of these masculine features that occurs with age.

You can improve your testosterone levels and regain all of the health benefits that go with it from restored libido to better energy and strength. What's more, you don't have to take drugs to do it.

### **Reduce Your Estrogen and Relive Your Glory Days**

Yes, men have estrogen too. Unfortunately, estrogen levels increase the older you get and this isn't healthy for your prostate or your waistline. Studies implicate estrogen in prostate problems and my research with older men links high estrogen to obesity. But you can take control of the estrogen in your body, first by learning where your levels lie, and second by working to lower them.

Remember your six biomarkers of aging: HGH, insulin, triglycerides, HDL, CoQ10, and your testosterone/estrogen ratio. Ask your doctor to test your levels. All it takes is a simple blood test and you can take control of the way you age. You can actually slow down damage by Father Time and even regain characteristics of youth-- characteristics like more strength, better libido, higher energy, and a sharper mind, healthier heart and better physique.



# Chapter 4

## Muscle is Youth!

### Restore Your Power, Drive and Mobility

Right now, you are losing a vital asset for virility and youth: your muscle.

Unless you stop it, you will lose muscular strength and mass as you age. And, contrary to popular belief, science is showing that muscle actually becomes even more important as you grow older. Unfortunately, most doctors completely ignore this problem. They wait until it has produced serious health consequences and then prescribe drugs for the symptoms.

Loss of youthful muscle is responsible for many of the other unhealthy changes we see with aging. It not only causes weakness and fatigue but fat gain, apathy, sexual dysfunction, chronic illness, bone fractures, depression, sagging skin and multiple hormonal declines have all been linked to loss of muscle.

Fortunately you don't have to accept muscle deterioration with all its consequences. You can restore 100 % of your youthful muscle mass. In doing so, you restore virility, power, drive, and abilities of your youth.

In this letter, I'll show you new evidence that reveals why building muscle is so important. I'll also give you my advice on the best food, supplements and exercise for achieving and maintaining peak muscle mass and strength.

#### Your Body's Secret Powerhouse

When I teach anatomy and physiology to college students, I stump them with the question "What are the functions of muscle?" Most students can only give me one; muscle moves your body. But muscle does so much more than that. Your body's muscles form a complex interconnected organ. It stores energy, regulates metabolism and generates vital feedback control to hormone production.

Your muscle is responsible for a wide array of body functions. Here are just some of the most important.

In addition to being an anti-aging physician, I am also a personal trainer. This combination has given me a special appreciation of the

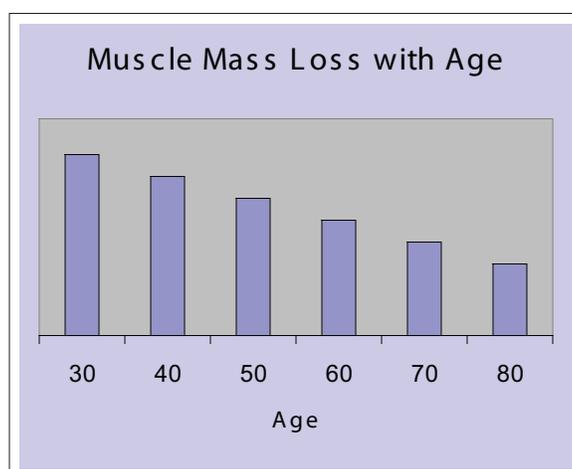
<b>Benefits of Healthy Muscle</b>	
<b>Improves sexual health</b> by stimulating sexual hormone production	<b>Preserves youth</b> by stimulating human growth hormone
<b>Reduces risk of bone fractures</b> by supporting bones	<b>Keeps you trim</b> by boosting your metabolic rate
<b>Decreases risk of disease</b> by strengthening your immune system	<b>Gives you more energy</b> by storing more glycogen

value of muscle in reversing many of the consequences of aging. I see men in their 60s, 70, and 80s who think that muscle is no longer important. But they couldn't be more wrong.

When I see these patients for the first time, I perform body composition tests on them. This way I can tell how much of their body is made of fat and muscle. Older men often measure dangerously low percentages of muscle.

### **Hold On to Your Freedom and Mobility – Even When You're 92!**

You begin losing muscle around the age of 30. Every decade after that you lose about 3 pounds of muscle –unless you do something about it. Many people blame their weakness, fat gain, and sluggishness on “just getting older”. But it largely due to the decrease in muscle and its effects on the body. And, that is reversible.



This muscle loss with age has a medical term: sarcopenia. Sarcopenia literally means “loss of flesh”. There is growing evidence linking sarcopenia with:<sup>13</sup>

- Functional Disability
- Glucose Intolerance
- Decreased Physical Activity
- Oxidative Stress
- Derangement of normal hormone production

Most importantly, sarcopenia causes weakness. This leads to the loss of the capacity to perform activities of daily living. It is a major cause of nursing home institutionalization of so many elder Americans. And it is the biggest cause of falls in elders with all its sequelae. I believe sarcopenia is the root cause of more fractures in men than osteoporosis.

### **Enjoy Your Favorite Activities Long Past Retirement**

Muscle loss is NOT inevitable. Your age doesn't have to dictate your health. We have proven that

even elderly nursing home residents can restore their youthful muscle mass. You can build back 100% of your muscle with the right techniques.

For 20 years I have observed and measured muscle's youth preserving effects. Now I have more supporting evidence. An ongoing Finnish study called the Evergreen Project is currently studying the effects of muscle on the aging process. Men and women between the ages of 65 and 94 are participating in the study.

The study is proving wide-ranging benefits that go hand in hand with muscle building. Results show that the participants with the most muscle are experiencing better mental function, fewer chronic illnesses, and longer life spans.<sup>14</sup>

When I see that a new patient is suffering from muscle loss, I immediately put them on a muscle-building plan. The plan is simple. I give them a program to optimize their nutrition and exercise to put them on a road to build back the muscle of their youth. Here are the most important features for you to benefit from the muscle of your youth.

### **The Nutrients that Keep You Active**

You can't build muscle if you don't give it the nourishment it needs. A high protein diet and the right supplements will increase the effectiveness of muscle-building exercises. Here are some of the best nutrients. They are proven by the trial and error of athletes and by controlled scientific studies. They'll give your body the boost it needs to become a muscle-building machine.

**Protein:** The change here is simple. Eat more protein. Protein constitutes muscle. Your body needs excess protein to support new muscle growth. The best sources of muscle-building protein are lean red meat, fish, eggs, milk, cheese, beans and nuts. Make sure that protein is the main course of every meal. Throw out the carbohydrate snacks and snack on boiled eggs, nuts, sliced turkey breasts and nuts instead.

**Creatine:** Supplements can also help your body to build muscle. One of the safest and best researched supplements to increase muscle mass and strength is creatine. Creatine increases sports performance, endurance, strength and speed and will increase the muscle built during resistance training.

One recent study analyzed 28 healthy participants over the age of 65. Half of the participants took creatine, while the other half took a placebo. All of the subjects followed the same weight training program for 4 weeks. The participants taking creatine had a larger increase in muscle mass than those taking the placebo.<sup>15</sup> I recommend taking 5 mg of creatine daily until you build the muscle you need.

**L-Arginine:** Another supplement for muscle building is the essential amino acid, L-arginine. One double-blinded study measured the change in muscle strength and lean muscle mass in men taking L-arginine.

Twenty-two men on a strength training program either took the L-arginine supplement or a placebo. The men taking the arginine supplement showed a significant increase in muscle strength and lean muscle mass after only 5 weeks.<sup>16</sup> I have used arginine containing supplements for 20 years. Like creatine it is natural and safe. From 500mg to 1g of L-arginine will support muscle growth.

**Carnosine:** Carnosine is a multi-functional substance made from two amino acids. Carnosine is naturally present in your nerve and muscle cells. Carnosine protects the integrity of the muscle you have, and the muscle you are building.

I recommend taking 500mg of carnosine, twice a day. You need carnosine to ensure that the muscle you are trying to build will be healthy and last.

**Glutamine:** The amino acid glutamine is an important muscle-building supplement for a couple of reasons. For starters, glutamine helps to stabilize your energy levels. But more importantly, glutamine actually boosts the natural growth hormone in your body. Growth hormone tells your body to shed fat and build muscle. In addition, I use glutamine in athletes to prevent muscle breakdown.

Doctors have now begun to use glutamine to reduce muscle loss in cancer patients. Cancer patients often have severe muscle breakdown. A recent study showed that a glutamine cocktail actually helped cancer patients to reverse their muscle loss.<sup>17</sup>

For maximal muscle growth take glutamine as a powder at 5grams per day. You can dissolve it in water or put it a protein shake.

## Here's the Key to Building Real Muscle

Exercise is, of course, key to preserving muscle. But probably not in the way you are thinking. When I measure muscle mass in my clinic and prescribe building X pounds of muscle back, nearly everyone thinks of gym exercises for the arms, chest and shoulders. Yes, that can build some muscle, but it can't address the consequences of age associated sarcopenia. Here's why:

Your upper extremities only contain about 15% of your body's muscle mass. You can increase their size by 200% and yet I will barely be able to measure a difference in your body's total muscle mass. To affect this number, you must go where the big muscles are.

The biggest muscles in the body are the quadriceps on the front of your thighs. The second largest are the gluteus muscles in your buttocks, and third are the hamstrings on the back of your thighs. Therefore, your most important anti-aging, muscle-restoring exercises must flex and extend the hip joint.

Another important principle for building muscle is to do the compound (moving more than one joint) and heaviest exercises at the beginning of your workout. Work your large muscle groups first; i.e. – your legs and back. You can do any exercise that provides sufficient resistance over a

wide enough range of motion for the large muscles of the legs and back.

For most men the fastest muscle building workout is a split routine. This means that you don't perform the same exercises every time you work out. You split the exercises into 2 groups done on different days. Here is my favorite split routine 4 times a week.

<b>Weekly Muscle Building Routine</b>				
<b>Days</b>	<b>Muscle Group</b>	<b>Exercise</b>	<b>Reps</b>	<b>Sets</b>
<b>Monday &amp; Thursday</b>	Legs	Squat	8-10	2
		Leg Press	8-10	2
		Leg Extension	10-15	2
		Leg Curl	12-15	2
		Calf Raise	12-15	2
	Abs	Crunch	20-25	2
		Leg lift	20-25	2
<b>Tuesday &amp; Friday</b>	Back	Seated Row	8-10	2
		Pull Down	8-10	2
	Arms	Standing Curl	10-12	2
		Triceps Press	10-12	2
<b>Wednesday &amp; Saturday</b>	Heart and Lungs	P.A.C.E™ Program		
<b>Sunday</b>		Rest		

For many of these exercises, you can use dumbbells. If you are not well conditioned, start out light. Then, progressively increase the weight.

You also need a cardiopulmonary activity. Avoid long-term cardiovascular exercises. This can actually strip you of muscle. Cardio endurance activities like jogging will burn off your hard gained muscle.

But you do need some activity to support peak cardiopulmonary function. My P.A.C.E™ program will give your heart and lungs the workout they need without stripping you of muscle. A recent study looked at the effect of exercise on sarcopenia. Twenty-one frail, elderly subjects took part in a resistance-training program for 11 weeks. After the program, their muscle fiber in the area increased by up to 60%. And the men showed an overall improvement in balance, strength, and physical ability, making them less likely to fall.<sup>18</sup>

**Testosterone:** Muscle building in men would not be complete without addressing testosterone. Testosterone tells your body to become manly and produce lean muscle mass. If your levels of testosterone are low, your body will find it harder to build muscle.

I always check a man's testosterone levels if he is trying to gain muscle. Often a combination of herbal testosterone boosters dramatically improves muscle gains.

## Chapter 5

# Antioxidants: Slowing Down Your Aging Process

Want to live as long as you possibly can? Here's one way: shut yourself in, don't smoke or drink, eat very little, go to bed early, abstain from sex and never allow yourself to become excited.

Want to actually *enjoy* your life... and still live to a ripe old age? Then learn how to burn ample energy without burning yourself out. That's what antioxidants are all about. Here are the seven most important things you can do to protect your vital parts from oxidation – without living the life of a monk.

### Live Fast, Feel Good – Die Old

I want to tell you about an 88-year-old patient in my practice. He is different from other elder men. Despite drinking, smoking and eating whatever he likes, he's never spent a day in a hospital and takes no medications. I noticed a quick wit and spring in his step very uncharacteristic of a man his age. So with his consent, I decided to investigate.

I measured just about every chemical in his blood I can. His labs were normal in every way except one. He had the highest levels I have ever seen of several key antioxidants. Since that time, I have confirmed this correlation in my patients and in the literature. I have also confirmed that you can mimic his levels of antioxidants.

### Oxidation: The Fire of Life

Like every other animal on the planet, you get your energy through a process called oxidation. The process liberates energy. It occurs outside of living systems as well. For instance, when oxidation occurs externally and rapidly, we call it fire.

Fire can be useful because it creates an enormous amount of energy quickly. But it is dangerous because it is a destructive process. Similarly, you have to burn energy through oxidation to live, but oxidation damages surrounding tissues. Higher rates of oxidation produce more damage.

For example, it's not the **amount** of cholesterol you have but the **oxidation** of LDL cholesterol that correlates to cardiovascular disease. Scientists are discovering that oxidative damage correlates with the negative effects of aging in other organ systems as well. Oxidation, in effect, accelerates the aging process.

This is the reason behind one of the main paradoxes of modern medicine. Many of the health and dietary recommendations are tantamount to not living at all. These wet-blanket prescriptions minimize activities that cause oxidation. That's why doctors and health gurus are constantly admonishing you to avoid this or that until there is nothing left for fun at all.

But it doesn't have to be that way. Antioxidants are your body's natural free-radical fighters. Boost their presence in your body as you age, and you can continue to rev on high without burning out your engine.

## **Antioxidants: The Antidote to Aging**

Antioxidants are a group of diverse vitamins, minerals, and enzymes that protect your delicate biomachinery from the fire of living. The problem is that your antioxidant system declines with age. The longer you live and the harder you live the more you overwhelm your natural antioxidants.

But I don't want to stop living hard. I don't really even want to slow down. And I don't advise my patients to do anything that I'm not willing to do myself. So my solution for them and myself has been an aggressive regimen of antioxidant supplementation.

Many antioxidants are also your body's free radical fighters. Free radicals are fragments of unstable oxygen molecules produced as byproducts of oxidation. They are very high-energy molecules. They are the "bull in the china shop". When they collide with delicate living structures, they set off a chain reaction of destruction. The higher the rate of oxidation the more free radicals you produce.

Through research and testing, I have sorted through the hype and found which antioxidants really work. The seven most effective antioxidants are vitamin C, carotenoids, tocopherols, alpha lipoic acid, coenzyme Q10, lutein, and lycopene.

You may be able to live longer by swearing off high energy producing activity. Or if you chose to live your life at a more robust pace, you might want to do as I do and take "The Magnificent Seven" battery of antioxidants.

## **Here's the Best Way to Fire Proof Your Body**

These are the most powerful antioxidants—the ones that really work. I take them every day.

## **Vitamin C: The Ultimate Life Sustaining Nutrient**

No discussion of anti-oxidants could be complete without discussing the unique role of Vitamin C.

Vitamin C is required for many of the body's life-sustaining functions. Humans are among only a handful of animals that do not naturally produce Vitamin C. We get Vitamin C from our diet. Here are some of Vitamin C's important functions:

- **Fights free radicals** before they can do damage.
- **Maintains structure of collagen.** Collagen's integrity is dependent on Vitamin C.

- **Helps the immune system** stimulate antibodies and other immune system cells.
- **Aids the nervous system** to produce amino acids that regulate the nervous system.
- **Helps to break down histamines** which are the inflammatory element of allergic reactions.

**Food Source:** Oranges, strawberries, broccoli, and bell peppers are good sources.

**Supplement:** For antioxidant amounts of Vitamin C, you'll probably have to take it in supplement form. I recommend at least 500 mg twice a day. Many of my anti-aging patients are taking 2-5000 mg per day in divided doses. Take it with food to avoid an upset stomach.

### **Carotenoids: The Multi-Tasking Super Food**

Carotenoids are a family of vitamins that include Vitamin A. They are fat-soluble and very important for maintaining a healthy and youthful body. Carotenoids aid in good eyesight. But these vitamins are good for much more than that. Here are some other attributes of mixed carotenoids:

- **Prevents night blindness** and prevents free radical damage in the eye.
- **Lowers the risk of macular degeneration**, the most common cause of blindness in the elderly.
- **Decreases the risks of lung and breast cancer** and supporting the immune system.
- **Maximizes skin health** and plays a key role in the integumentary system.

**Food Source:** Carotenoids are naturally in meat, milk, eggs, liver, carrots, and spinach.

**Supplement:** I recommend taking 2,500 IU of mixed carotenoids per day.

### **Tocopherols: The Hidden Power Behind Vitamin E**

The term "Vitamin E" is perhaps outdated. There are actually eight related compounds. These compounds include four types of tocopherols and four types of tocotrienols. Put simply, tocopherols and tocotrienols are specific types of Vitamin E like compounds.

Tocopherols and tocotrienols:

- **Fight free radicals** that cause diseases of inflammation (such as rheumatoid arthritis)
- **Lower risk of heart disease** increasing blood circulation
- **Lower risk of cancers** in the prostate, colon, and breast

**Food Source:** Tocopherols and tocotrienols concentrate in "fatty foods". The best way to get tocopherols and tocotrienols is as a mix of all eight compounds. Too much of one tocopherol in the body can stop the absorption of the other tocopherols. So a good mix is to your greatest advantage. Eat meat, fish, nuts, oils and avocados.

**Supplement:** I recommend 400 IU of mixed tocopherols and tocotrienols a day.

## **Coenzyme Q10: The Miracle Heart Nutrient is Also a Potent Antioxidant**

CoQ10 is crucial in the creation of energy. Your energy guzzling organs use the most. The body cannot survive without the presence of CoQ10. In nature's clever design Co Q10 simultaneously provides "high octane" fuel and protects them from the resultant oxidation. For more on CoQ10, see chapter 7.

Coenzyme Q10:

- **Destroys free radicals** in the cell membranes.
- **Prevent arteriosclerosis** protecting against the accumulation of oxidized fat in blood vessels.
- **Successfully treat heart disease, high blood pressure, and high cholesterol.**

**Food Source:** The food with the most CoQ10 is the organ meats of animals. Grass feed animals have up to 10 times more CoQ10 than grain feed. Unless you regularly consume wild game, it is difficult to maintain good blood levels. The case of CoQ10 is perhaps the strongest argument for using a supplement.

**Supplement:** For antioxidant protection, I recommend taking a 100 mg supplement once per day.

## **Alpha Lipoic Acid: The Universal Antioxidant**

Scientists discovered alpha lipoic acid (ALA) in 1951. It plays a vital part in the production of cellular energy. It is the "Universal Antioxidant" because of its ability to fight free radicals in both the fatty and water areas of cells. Here are some other functions of ALA:

- **Lowers the risk of atherosclerosis, lung disease, and neurological disorders** fighting the specific free radicals that contribute to these afflictions.
- **Recycles and extends the life of other nutrients** like Vitamin C, E, and CoQ10.

**Food Source:** ALA is one of the most effective free radical fighters known. It is most in red meat.

**Supplement:** Take 100 mg per day.

## **Lutein: Protect Your Eyes and Sharpen Your Vision**

Lutein is a member of the carotenoid family. Carotenoids give bright colors to your vegetables. Lutein contributes to pigment in your retina. It is a critical nutrient for eye health. Lutein:

- **Protect vision** neutralizing free radicals in the lens and retina.
- **Acts like sunglasses** shielding the eye from harmful sunlight.
- **Lowers the risk of certain cancer and cardiovascular disease** stopping free radical damage that contributes to these diseases.

**Food Source:** Lutein is in red grapes, egg yolks, squash, peas, and oranges.

**Supplement:** I recommend taking 20 mg of lutein every day.

### Lycopene: The Disease Fighter

Lycopene is also part of the carotenoid family. It is the pigment in many vegetables. It is high in tomatoes. Once absorbed, lycopene is widely distributed in the body. It is concentrated most in the liver, lungs, prostate, colon, and skin. Lycopene's many functions include:

- **Prevents coronary artery disease** stopping the oxidation of LDL (bad) cholesterol.
- **Reduces the risk of prostate and pancreatic cancers** fighting free radical damage.
- **Aids in preventing macular degeneration** neutralizing free radicals in the eye.

**Food Source:** Lycopene is in tomatoes, guava, peppers, watermelon, and pink grapefruit.

**Supplement:** I recommend taking 20 mg of lycopene a day for maximal prostate protection.

### Supplementation is Essential to Vibrant Health

It is possible to get some of these vitamins from your food. But in order to get the antioxidant levels, supplements are necessary. For example, antioxidant doses of Vitamin E are virtually impossible to get in the diet. You would have to eat 2 pounds of sunflower seeds every day!

All of these antioxidants (except for Vitamin C) are oil soluble. You should take them in gel cap form. Try to find as many of them as you can together in a single supplement. Take them with a teaspoon of flaxseed oil or peanut butter for best absorption. Or taking them during a meal with fat or oil in it will do the trick.

Taking these antioxidants will help quench oxidative damage. Remember that antioxidants slow age-associated changes to your cells. They help you look and feel younger as well.

The Magnificent Seven		
Antioxidant	Daily Dose	Unique Benefit
Vitamin C	1000 mg (500 mg 2x/day with food)	Protects telomeres to slow aging.
Mixed Carotenoids	2500 IU	Preserves vision and protects against cancers.
Mixed Tocopherols	400 IU	Cardiovascular & cancer protection
Coenzyme Q10	30 mg	Protects heart and brain.
Alpha Lipoic Acid	100 mg	The only water and oil soluble antioxidant.
Lycopene	20 mg	Protects prostate from disease.
Lutein	20 mg	Defends the eyes from degeneration.



# Chapter 6

## Telomerase: The Anti-Aging Gene

### The Secret to Aging is in Your Genes

In 1990, three scientists, Cal Harley, Carol Greider, and Bruce Futcher, published a groundbreaking article in the scientific journal *Nature*. They discovered a simple yet ingenious genetic counter. This would turn out to be the basic genetic clock that allows for a master control of aging. It would be the beginning of a revolution in aging that will change human society forever.

Previous theories of aging, such as free radical damage and glycation are *consequences* of aging not the *cause*. We can't isolate our bodies from these natural results of metabolism. Thankfully, we are born with systems that repair the damage. But, as we age they slow down.

Our bodies begin to lose the battle against oxidative damage. This allows for the processes of aging. The oxidative stress on our cells does not increase as we age, but our defenses against it decline. In order to understand aging, we must understand why we slow repairing ourselves.

### The Unseen Mechanism of Aging

The story begins with Leonard Hayflick's accidental discovery in the 1960s that cells grown in culture would only divide about 50 times, then slow down, and stop. We now call this the "Hayflick Limit." Most cells can only divide a maximum of about 80 times. Hayflick's cells had already divided about 30 times before he took them from the subject.

We now know why our cells stop dividing. There is a mechanism built into each cell that limits the number of times a cell can divide. It's called the telomere.

When I was in medical school, my genetics professors taught that the telomere had no genetic purpose. We thought telomeres served only as caps to "tie off" the ends of chromosomes. The repetitive string of DNA bases that made up the telomere did not seem to "code" for anything.

We should have known better. It is unlike nature—the master of economy and efficiency—to design in dead weight. As it turns out, the telomeres are far from meaningless DNA acting as chromosomal clothespins. They are the computers that run our "aging" program. History may partition the development of mankind into two eras...before and after the mastering of the telomere. The telomere holds the key to agelessness.

### Every Time Your Cells Divide, Time is Slipping Away

Most of the cells in your body have the ability to reproduce at will. When you need new cells to respond to trauma, infection or disease, a cell simply divides to create two new cells. In the process, the cell copies its DNA and passes it on to each daughter cell.

But, contrary to a century of scientific doctrine, we now know that each daughter cell does not receive a *complete* copy of the parent cell's DNA. Harley, Greider, and Futcher discovered that each time a cell divides a tiny portion of the telomere is lost.

Each new generation of cells have slightly shorter telomeres than their parents do. In fact, you can determine the age of a cell (and the age of its donor) by measuring the length of its telomere. When the telomere gets sufficiently short (after 80 divisions) the cell enters into apoptosis, or programmed cell death.

So the telomere serves as a counter or clock for the cell. It makes each cell mortal and determining its lifespan. But it is an oversimplification to say that we are mortal because our cells are mortal. We do not die because we run out of cells. Even if we die of "old age" we still have billions of functioning cells with cell divisions left.

Something more than the Hayflick Limit is at work in aging. The telomere does more than just tell time. As the telomere shortens with each cell division, it changes the behavior of the cell. Cells with shorter telomeres begin to slow down. They stop contributing to the function of the tissue, organ, or gland. When enough cells act old your body can no longer defend itself from the destructive forces of the environment (such as free radicals) and succumbs to disease.

### **Telomerase: The Key to Eternal Youth**

It turns out that nature has already solved the problem of the shortening telomere for us. Cancer cells and germ cells have one striking thing in common. When they divide, their telomeres do not get shorter, but remain their original length. This means they are immortal. Given an adequate environment, they will divide forever. But it also means that they undergo no change in cell behavior, no senescence. They are also ageless.

The key for both cancer cells and germ cells is an enzyme called telomerase. Telomerase rebuilds the telomere back to its original length each time the cell divides. Without it a cancer couldn't survive beyond 80 cell divisions and would die off while still microscopic.

Without it egg and sperm cells couldn't survive through generations. Shortly after an egg is fertilized the gene for telomerase is turned off. The cellular clock is set at one and starts ticking. When the count gets to 80, the game is over. So amazingly, all of our cells have the gene for telomerase to rebuild the telomere and stop aging but it's turned off.

Telomerase is the anti-aging mother load. Not because it can make cells *immortal*. The critical thing is that the preservation of telomere length preserves the cell's *youth*.

With your telomeres rebuilt after each cell division, you will not age. Most of the weakening we associate with aging: heart disease, arthritis, hearing loss, failing eyesight, and osteoporosis will not happen. Your bones and joints will remain strong and your skin supple. Your immune function will remain vigilant and your heart vigorous.

## **Telomerase Therapy: The Future of Immortality**

A biotechnology corporation called Geron is leading the research on the use of telomerase as an anti-aging therapy. They have cloned the gene for human telomerase. They have patented it and have succeeded in inserting it into various cell lines. So far, their results are extremely encouraging.

By inserting a gene for telomerase into old human cells, they have succeeded in restoring the short telomeres to lengths typical of cells from younger individuals. Most importantly, says Michael Fossel, PhD, MD, of Michigan State University, the rejuvenated cells then “display all of the other identifiable characteristics of young, healthy cells.”<sup>19</sup>

The implications of this are without precedent. It means that we have the capacity to take old cells and make them young again. This demonstrates the most direct control over the aging mechanism itself. It is direct proof that anti-aging is not only possible but happening already.

There is concern that stimulation of telomerase in cells could promote cancer. Remember an abnormal presence of telomerase is necessary for cancer to survive beyond 80 cell divisions.

Two independent teams of researchers, at the University of Texas, and Geron Corporation in California, have encouraging preliminary answers to this question. The scientists tracked human fibroblasts immortalized with telomerase therapy to see if they would display any cancerous changes. All of the malignancy checkpoints remained stable.

The University of Texas researchers, led by Dr. C.P. Morales, then exposed the immortalized cells to cancer causing proteins to see if they could provoke cancerous behavior. Dr. Morales concludes that telomerase therapy “does not result in changes typically associated with malignant transformation.”<sup>20</sup>

The end of aging is in sight. It will be a reality. There has never been a better reason to take care of yourself. Do everything you can to bolster your general health and fitness. This will allow you to reap the maximum anti-aging benefits from telomerase therapy when it becomes available.

There are strategies that you can put into play *immediately* that will help slow the shortening of your telomeres, thus slowing the aging process.

### **Decrease Your Homocysteine and Live 3 Times Longer**

It's no coincidence that homocysteine levels correlate with most degenerative diseases of aging. We now know why. Researchers have found that high levels of homocysteine *triple the amount of telomere length lost during cell division.*

This is tantamount to tripling the speed at which you age. Researchers also found that homocysteine increased the cell's expression of cancer and cardiovascular disease. This tendency is more pronounced in cells with shorter telomeres.

Your doctor can test homocysteine with a simple blood test. It is easy and inexpensive to lower homocysteine with the following nutrients.

<b>Homocysteine Blocking Nutrients</b>	
Vitamin B12	500 mcg
Folic Acid	800 mcg
Vitamin B6	25 mg
Riboflavin (B2)	25 mg

You can find these doses in a good B-complex supplement. For extra protection, add: TMG (trimethylglycine) 500mg

### **Vitamin C: Protector of a Long Life**

Telomerase therapy will one day make it possible to restore shortened telomeres to their youthful length. In the meantime, aggressive antioxidant therapy may help to limit the shortening of telomeres.

They laughed when visionary Linus Pauling claimed that vitamin C could extend your life. Japanese scientists led by Dr. K Furumoto recently found that raising the level of vitamin C in human cells slowed their loss of telomeres by 52 to 62%. Looks like Dr. Pauling was onto something after all.

An effective dose of vitamin C for the purposes of preserving telomere length is 1000 mg, twice a day.

### **Restricting Your Calories: More Important than Ever**

We have known for years that restricting calorie intake is a reliable way to extend life. It works in every animal model increasing life span by about one-third. In humans, this amounts to an additional 25 years of life. Not only do calorie-restricted animals live much longer than those who eat more, but they also look and behave far younger.

Now the work of Drs. Wolf and Pendergrass at the University of Washington, shows that caloric restriction slows the rate of cell division and loss of telomeres, preserving a more youthful cellular function.

Although we know it works, caloric restriction has failed to become popular, for obvious reasons. To be most effective, you must reduce your caloric intake to about 2/3 of what it takes to maintain your normal weight. Initial weight loss tapers off as the metabolism adjusts to a lower metabolic rate.

If you are highly motivated to slow aging in the anticipation of the advent of telomerase therapy

you might want to consider caloric restriction as an interim strategy. I advocate a modified version of caloric restriction, consisting of regular fasting for one or two days about once a month. For me, this is more realistic.

Although there is no proof this modified approach will slow cell aging over the long term, regular fasting definitely has shorter term anti-aging benefits. For instance, fasting triggers increased production of human growth hormone, one of the most important anti-aging hormones, which declines dramatically after the age of 40.

Here are a few more of my favorite anti-aging tips:

### **Remember These Simple Longevity Tips:**

- **Exercise:** Physical activity can prevent or delay the onset of hypertension, obesity, heart disease, falls and osteoporosis.
- **Detox Periodically:** Flush out the toxins that accumulate in your cells.
- **Eat Less:** I'm not suggesting you employ a Cronie's strict diet. But make every meal count. Make sure each meal provides the nutrients you need, especially protein. Don't over indulge.
- **Watch Your Starches:** Remember it's the starches that really hurt. You are better off having a bowl of ice cream than a rice cake. A rice cake has a glycemic index rating of 82!
- **Antioxidants:** A diet rich in antioxidants will prevent free radical damage. So enjoy a glass of Bordeaux, eat plenty of berries.
- **CoQ10:** This nutrient is your armor against heart disease. Don't worry so much about your overall cholesterol. Having a high CoQ10 and a low homocysteine will keep you out of the E.R.
- **Prevent Glycation:** Minimize your exposure to the aging chemicals by avoiding overcooked food.
- **Get Lab Results:** Have your doctor check your testosterone, estrogen, homocysteine, CoQ10, and HGH. Follow a natural treatment to correct hormonal imbalances.
- **HGH:** Growth hormone Injections carefully monitored by a physician directly reverse some aging. They can improve muscle strength and mass, reduce wrinkles and sagging skin, and reduce joint pain and inflammation.
- **Testosterone:** Low testosterone is responsible for loss of muscle, bone and brain in older men. Restoring youthful testosterone can reverse some of these changes.

- **Don't Worry, Be Happy:** A study of 1500 centenarians found their diet, activity, even smoking, varied widely. But, they all possessed a good sense of humor and didn't waste time worrying

# Chapter 7

## CoQ10: The Heart-Saving Nutrient

### Here's a Little Secret the Drug Companies Don't Want You to Know...

Medicine has known about a natural heart cure since Frederick Crane discovered it in 1953. By the 1960s Japanese researchers recognized its important role in proper heart function.<sup>21</sup> And since then over 100 studies have shown its direct link to the prevention of heart disease.

But preventing heart disease is just one of the benefits of this miracle nutrient. It also treats cancer, AIDS, high blood pressure, Alzheimer's and gum disease just to name a few.

I'm talking about Co-enzyme Q10 or CoQ10. I've been talking about it for years. It's that important to your health.

### Why You Won't Hear About CoQ10 from Your Doctor

Chances are you won't hear about this super nutrient from your doctor. If you ask them about it, they'll probably say they've never heard of it. Why? Because most doctors don't know what a "co-enzyme" is. And most researchers know it only by its official name, *ubiquinone*.

Although CoQ10 is widely used in Japan, Europe and Israel, it's virtually ignored by the majority of cardiologists and conventional medical doctors in the U.S. because:

- Some physicians are dead-set against any natural medicine, including CoQ10.
- The limited bioavailability of CoQ10 when administered orally has often discouraged clinicians. However, the development of a newer hydro soluble version of CoQ10 has opened up a whole new opportunity for research.<sup>22</sup>
- Since CoQ10 is a nutrient, it cannot be patented. Drug companies can't make billions from it, so they have no incentive to study it.

### Statin Drugs are Depleting Your Body's Supply of CoQ10

Drug companies don't want to you know their statin drugs deplete the body of this vital nutrient by up to 40%. However, to offset the CoQ10 that is stripped from the body, one company developed a statin drug that also contained CoQ10. Unfortunately, they decided to hold the patent without releasing the nutrient/drug combination to the public.

Although drug companies recognize that their drugs drain the body of CoQ10, they have done nothing to educate physicians and patients about this very real danger of taking statins. Instead, they downplay this fact in hopes that the news about this side effect does not interfere with drug sales.

## **Her Doctor Threw Her CoQ10 in the Garbage!**

Most doctors don't know enough about the link between statin drugs and CoQ10 to recommend that their patients take supplements. Some even aggressively discourage it—regardless of what studies prove.

For instance, a woman came to my clinic with high blood pressure. After we put her on CoQ10 supplements, she was able to stop taking two blood pressure medications and now maintains normal blood pressure. She also reported feeling “energized” and having a sharper memory.

When she returned to her cardiologist to tell him the good news, rather than rejoicing in her success, he became irate. He told her CoQ10 could not possibly help her blood pressure and threw her CoQ10 in the trash!

Incredibly, this is not the only story like this one. And they all reveal a troubling double standard. Most doctors are well informed of the uses and benefits of drugs, but uninformed and suspicious of nutritional solutions.

With all of these obstacles, it is very difficult to educate the public on the benefits of CoQ10.

In this article, I'll show you how powerful CoQ10 is for stopping heart disease in its tracks (even reversing it)...preventing numerous other diseases...helping you look and feel younger...and super-charging your energy levels—no matter what your age.

## **You Can't Survive Without CoQ10**

Your body needs CoQ10 to produce energy. Every cell in your body uses it as a powerful antioxidant.

In fact, all of your major organs need CoQ10 to function normally. It provides your body with “high octane” fuel so it is especially important to the energy-guzzling organs, like your heart, brain, kidneys, and liver.

But this co-enzyme also gives your body five more vital benefits. CoQ10...<sup>23</sup>

- Destroys free radicals before they can damage your cell membranes.
- Prevents arteriosclerosis by reducing the accumulation of oxidized fat in your blood vessels.
- Eases heart disease, high blood pressure, and high cholesterol.
- Reduces chest pain and improves exercise tolerance in patients with chronic stable angina.
- Regulates the rhythm of the heart rate.

Most forms of heart disease have one thing in common: low energy production in the mitochondria (the powerhouses) of the cells. This leads to a condition researchers aptly dubbed: “The Energy-Starved Heart.”

CoQ10 enhances the chemical reactions required for to produce energy. This is essential to keep the mitochondria working efficiently. In effect, CoQ10 provides a virtual Fountain of Youth for the cells in your heart and every cell in your body.

### **Your Ultimate Weapon for Disease Prevention**

Like iron that rusts when exposed to the air, the energy-making process in your cells produces free radicals (by-products that stress the cell). Once damaged by free radicals, cells tend to malfunction and cause even more stress, sending it into a vicious downward spiral. Researchers have linked this process to cancer, arteriosclerosis and heart disease, cataracts,<sup>24</sup> arthritis, Alzheimer’s and a number of other diseases.

Researchers have found that CoQ10 helps the body neutralize free radicals in the cell. The same way baking soda neutralizes stomach acid. CoQ10 reduces stress on the cells by bolstering the body’s antioxidant defenses and cleaning up free radicals before they can damage the cells. Plus, when you increase levels of CoQ10 in your body, levels of other antioxidants go up as well, offering further protection to your cells.

### **Rejuvenate Your Cells and Fire-Up Your Body’s Storehouse of Energy**

As you age, your cells start running out of CoQ10, and the mitochondria simply cannot produce enough energy to meet your body’s demands. When stockpiles run low, the mitochondria are less efficient and they may produce adenosine diphosphate (ADP), which is a less potent fuel. Over time, running your body on cheap fuel takes its toll, damaging the mitochondria and contributing to a growing sense of fatigue. But when you restock your body with CoQ10, it can operate efficiently.<sup>25</sup> The result: rejuvenated cells and renewed energy.

### **Here’s Why You Need to Supplement with CoQ10**

It’s a complex process for your body to make CoQ10. It requires the amino acid tyrosine (derived from proteins), numerous vitamins and trace minerals. A deficiency in any of these nutrients can impair the body’s ability to produce CoQ10.

You’ll find CoQ10 in some foods, mainly organ meats. But, most people do not eat these meats. Even if you didn’t mind the idea of eating sheep heart, or cow brains, studies show that today’s commercially raised livestock have very low levels of CoQ10. Consequently, the average diet provides less than 10 mg per day.<sup>26</sup>

Aging, environmental stress, a diet deficient in specific nutrients, certain cholesterol-lowering and psychotropic drugs, chronic high intensity exercise and other lifestyle factors also reduce the levels of CoQ10 in the body.

So it's not surprising that researchers say many Americans don't have adequate levels the vitamins and minerals needed to process CoQ10 even for limited health much less for optimum health.<sup>27</sup> To make sure you maintain proper levels, you need to supplement your diet.

### **Give Your Body More of What it Needs Most**

I recommend taking 30 mg of CoQ10 per day for anyone who is not regularly consuming wild game but is otherwise healthy. If you have high blood pressure, heart disease, high cholesterol, gingivitis, age-related memory loss, chronic fatigue, or are a vegetarian, increase your dose to 100 mg per day.

You can buy CoQ10 in the form of tablets, chewable wafers, or gel caps at many nutrition stores, but you may have to search for the adequate therapeutic doses I recommend. Powdered capsules are not as well absorbed. Gel caps or chewable forms are absorbed better. Because CoQ10 is a fat-soluble nutrient, take it with fat for optimal absorption.

You can take it when you eat dairy, eggs, fish or meat. You can even take it with a teaspoon of olive oil or fish oil. Grass-fed red meat, eggs and cod liver oil make the best fat choices to take with your CoQ10 because they contain CoQ10 naturally.

CoQ10 is not generally toxic, even at high doses in animals or humans. Any ill effects are minor and rare, usually nothing more than mild nausea. You can minimize this effect by taking CoQ10 with food.

### **What About Drug Interactions?**

If you use cholesterol-lowering drugs, like statins, I recommend you supplement with CoQ10.

Beta-blockers and certain psychotropic drugs like phenothiazine and tricyclic antidepressants also inhibit CoQ10-dependent enzymes, so you should speak to your doctor about supplementation there too.

Patients on Coumadin therapy need to have their proteins checked at regular intervals, and should take CoQ10 only under a physician's supervision.<sup>28</sup>

If you suffer from any serious health condition, you should consult with your physician prior to taking CoQ10.

CoQ10 has been shown to be effective in combination with conventional heart drugs. And with the consent of your physician, it may even allow for a reduction in dosage of conventional medicine.

*At the Center for Health and Wellness, more than half the patients who were taking drugs for high blood pressure were able to stop their medication once they began taking CoQ10.*

Your doctor may not tell you...and the drug companies may never admit it...but CoQ10 is nothing short of a miracle heart energizer!

## **You Have All the Answers**

You are holding in your hands, all the information you need to live a long and healthy life. It all starts with the basics of Age-Proofing your Heart and Lungs. Now, it's up to you to make the changes that will both improve your current state of health and extend your vital, active life.

Now that you have the answers, put your plan into action. Work with your doctor and build an anti-aging plan that fits your individual needs. Get back into the gym. Take it step-by-step.

Are you starting to see that turning back the clock is really possible?

I've been using these same techniques with my own patients. For twenty years, I've seen nothing but positive results.

Now the opportunity is yours. The door is open.

To Your Good Health,

Al Sears, MD

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