Health and Wellness Series Book #3

*Power Yourself Daily*

The Ultimate Guide to a Healthy Life!


# Feeding the Body
## What, When & Why?

**This Book Answers the Big Question:**
**What Are the Real Daily Nutrient Needs of the Body?**

RICHARD HELFRICH

Also By
Richard Helfrich

Books in the Health & Wellness Series:

***Immune Response***

***Take Control of Your Health***

***Young Inside & Out***

# The 24 HOUR BODY

Praise for

# THE 24 HOUR BODY

"Having known and worked with Richard for almost twenty years, his guidance and knowledge in maintaining the quality of my health has been invaluable. This has extended to other members of my family with results that have always been nothing short of amazing."

**— Chris Cortazzo, Mailbu Real Esatate**

"Richard exemplifies the spirit of true health care and has applied that same spirit to sharing his information of what he's learned on the front lines of true healing. Through his example and teaching, you will move your own health to the next level."

**—James Cordell, Author**

"This book seems to have taken a life time of research and organized it into an understandable and presentable format. Richard's ability to outline what the nutrient requirements for the 200 different cell types are, and organize them into categories for optimal absorption is mind boggling genius! In all my years reading health and wellness books, this is the first book I have come across that not only outlines what to take, but also HOW TO TAKE. Brilliant and captivating read from start to finish."

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"I met Richard in the early 1980s when I was beginning the television series Dallas. Health was Richard's passion and he was such an inspiration. I have been a disciple ever since. His approach to keeping the body healthy and slowing the aging process is revolutionary, and it has definitely worked for me."

**— Linda Gray, Actress**

"Richard is in a league of his own when it comes to helping others who are dealing with health issues. He knows the body masterfully and knows what nutrients are needed for certain conditions that help people get on the correct, effective healing path for life."

**— Paul Thomas, Health & Wellness Coach**

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### What, When & Why?

RICHARD HELFRICH

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*To*
*Dell.*

*My sister, my friend.*

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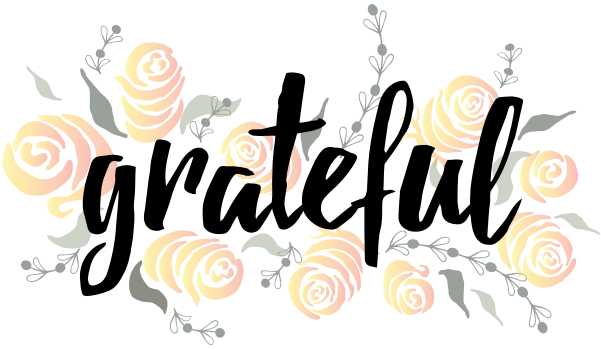


When I started my first book I had no idea the amount of work involved in putting ones thoughts on paper. Now having finished all four of my third book, I want to thank the friends and family who encouraged and helped me bring this dream to reality.

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And to my longtime friend, Paul Thomas for encouraging me to reinvigorate my books with new designs and get them out to the world with a freshly inspired enthusiasm—thank you Paul. I am thrilled and grateful we made this happen.

Finally to all the people who have trusted me with their health. Together we have been able to validate the incredible potential of the body to heal itself.


***"We're all only seven years old, because that's how long it takes for the body to completely replicate itself.*** *Every skin cell, connective tissue, muscle and bone cell, etc., are virtually brand new."*

–Richard Helfrich

# Introduction

We're all only seven years old, because that's how long it takes for the body to completely replicate itself. Every skin cell, connective tissue, muscle and bone cell, etc., are virtually brand new; it takes three to four years for all soft tissue and a total of seven years for every bone cell to regenerate. The only thing that exists in any of us from seven years ago is our teeth, heart and brain cells (which do not divide).

So why do we age, and why are we not replacing dying cells that are aging and atrophying faster with healthy cells? The answer to the aging question begins with what it takes to feed and nourish the body's 100 trillion cells. What are those daily nutritional needs (70% of which have to come from sources outside the body) for cells to function at an optimum level, thereby, preserving health and well being?

Unfortunately, most people are starving to death - getting nowhere near the nutrient base the body needs to fuel the hundreds of thousands of chemical reactions it performs every day.

The analogy I like to use is that of a plant, like the one you may have bought at the flower shop or nursery. When you took it home it was vibrant and healthy, but over the next

year or two you watched it die a slow death as you watered it with tap water (its only source of nutrient were those already in the soil).

With our bodies, we actually go one step further. Not only do we starve it, we bombard it with chemicals, pollution, viruses, bacteria, parasites, etc., and expect it to stay young and healthy.

I wrote my first book, *Take Control Of Your Health*, in 1996 as an owner's manual to try and explain how the body works. Over the last 18 years (starting with my own recovery as a heart transplant candidate, and working with hundreds of patients and speaking to thousands of people at health seminars), I have found that most individuals do not understand how the body works.

In my second book, *Immune Response*, in 1997 I explain that any disease can be defeated if you have a properly functioning immune system. I further explain how the body defends itself against the things that bombard it daily.

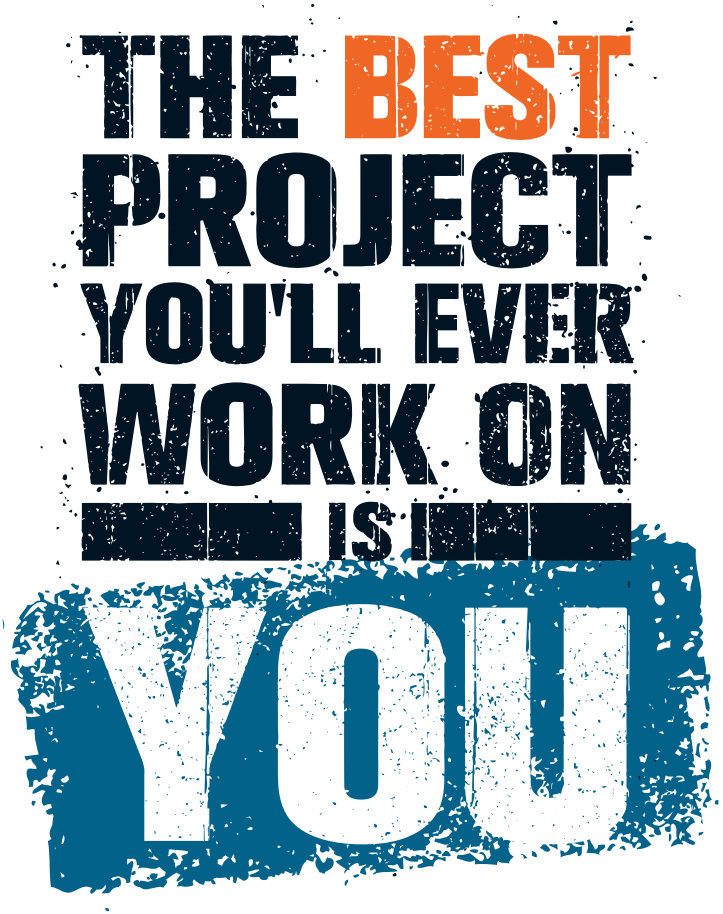
This book, *The 24 Hour Body*, will complete the circle of understanding the body and its operating rules. This knowledge, coupled with the daily nutritional needs mentioned above that defend the body by arming its natural defense system, will allow you to slow down and even reverse the aging process.

This shell we have been given was meant to serve us for 150 to 200 years; it was not designed to fail. (I read a report about a man in Malaysia with a documented 1857 birth date who is attempting to get in the Guinness Book of World Records as the oldest man alive.) Only through starvation and disease

does it succumb, but even then it puts up a tremendous fight.

What I hope to impart in this book is that with the right knowledge of how the body works and the chemistry needed daily to protect and rebuild your body, that no matter how long you live, your quality of life can be healthy, active and disease free.

To your great health for life,


THE BEST
PROJECT
YOU'LL EVER
WORK ON
IS
YOU

# CHAPTER 1
# Body Chemistry & Digestion

What does it take to feed the body so that it can produce all the chemistry involved in constantly rebuilding and repairing itself? – ***LOTS***!

To understand this premise we have to reflect back on the point I made in the introduction that most people are the plant I described, dying a slow death from being indirectly starved.

If seventy percent yes, 70%, of what the body requires daily needs to come from outside sources, are we getting it? Which invariably leads to the even more important question: if we are getting the vital nutrients the body needs from diets and supplementation are they in fact actually getting into the body? These are some of the critical questions I want to address in this chapter.

There is a huge misconception that if we're eating well balanced meals, of high quality food, that we are actually getting the proper nutritional benefit. This misconception also extends to supplementing with vitamins, minerals and herbs. Yet, in fact, it is statistically estimated that the majority of people who take supplements get little or nothing out of them.

In both instances, the reasons are the same, the nutrients in

food and supplements are not being absorbed into the bloodstream. This is due to either the lack of digestion (because digestion was inhibited or interrupted once it began), improper food combining, or mixing supplements that conflict or neutralize each other, thereby, preventing their absorption into the blood stream.

With everything we eat, whether food or supplements, what we are actually doing is playing chemistry. This is the chemistry I mentioned earlier that the body needs to perform daily the hundreds of thousands of chemical reactions that feed, build and repair the body's two hundred different cell types.

Our well-being is dependent on how well we achieve this vital chemistry, which is why digestion is the most important player in this process.

Imagine that everything you eat is nothing but molecules, and when we eat food or take supplements (especially those requiring digestion), that we are eating molecules the size of oranges. In order for the body to access the nutrients, the body has to reduce them to the size of a pinhead.

This is why to facilitate digestion, the body produces the enzyme ptyalin or amylase in saliva which begins breaking down complex carbohydrates (starches into glucose). The stomach then releases hydrochloric acid, which acts as a protein splitting acid, breaking down protein (proteolytic). Once passed from the stomach into the small intestine, messages (using hormones, the body's chemical language) are sent to the gallbladder and pancreas to release the thousands of different enzymes that are required to complete the digestive process. It is here, in the small intestine (duodenum), that the fat-decomposing 'lipolytic' enzymes complete the diges-

tive process involving all three-food groups. (Everything we eat that needs to be digested, is a carbohydrate, protein or fat).

Digestion is the biggest job the body will perform because fifty percent of all the energy the body produces daily will go towards making digestion happen. The stomach produces almost two liters (67.6 ounces) of gastric juices every day. Besides containing hydrochloric acid, these juices also contain several other protein-degrading enzymes, including trypsin, chymotrypsin, and along with the peptidases, elastase and cathepsins.

Hydrochloric acid also plays an important role in activating these protein-degrading enzymes, plus destroying bacteria in the food, and promoting the intake of minerals and trace elements into the bloodstream once they are in the small intestine.

Back in the duodenum, the first of the three sections of the small intestine, the enzymes released from the pancreas and gallbladder begin their work of degrading or breaking down the food particles to size of a pinhead. Besides providing the hormones, insulin and glucagon, the pancreas provides about a liter and a half of digestive juices to the duodenum every day. It is now that these microscopic food molecules can be absorbed along the walls of the next two sections of the small intestine, the jejunum and ileum.

A brief clinical description of the digestive process follows. But more importantly, how can we relate to it in terms of our daily intake of breakfast, lunch and dinner? I have found, over the last eighteen years, that most people have no concept of how food is digested and how nutrients actually get into the body. Very few people are aware that the body has

very specific rules on how this process takes place. What has happened over the last century is that we have made up our own rules and not followed the body's eating protocol rules. That's why it is not surprising to hear that colon cancer is one of the most prevalent forms of cancer. The bowel conditions so common today, such as irritable bowel syndrome (IBS), crohns disease and colon cancer can have a direct relationship to our dietary habits. I am asked constantly, when I give lectures or do interviews, what food should people eat. The answer I provide is that it is not only the type of food you are eating, but also how you're eating it. Food falls into two categories: those which require digestion and those which do not.

## Category 2:

Foods that require digestion are those structures or consistencies which require the digestive process to break them down, thereby, releasing the nutrients. These include meats, fish and poultry, vegetables and related items in these categories. Having already described the digestive process up to the point where assimilation takes place in the jejunum and ileum sections of the small intestine, I want to reinforce the fact that digestion begins with saliva. It proceeds to the stomach with the release of hydrochloric acid and its protein-splitting action. Yet, it really takes place with the thousands of enzymes that adhere to the food molecules breaking them down to a size that can be assimilated in the sections of the small intestine mentioned above. It is only then that the body benefits from the food we eat.

## Category 2:

Fruits, fruit juices, breads, pastries, cereals and simple sugars require no digestion and pass relatively quickly through the stomach and into the bloodstream. The enzymes in saliva,

ptyalin and amylase, which I mentioned earlier, break down complex carbohydrates, i.e.: grains, cereals and breads into starches then into glucose. The only consideration with fruits, sugars and grains, referred to as simple and complex carbohydrates, is how fast they enter the bloodstream. Foods with a high glycemic index, meaning the rate by which they enter the bloodstream and induce insulin release, play havoc with the bodies energy levels and metabolic rate.

Too much glucose entering the bloodstream releases too much insulin to counteract it. This causes the brain to step in and shut down the liver, stopping the flow of glucose, thereby, stopping the release of insulin. Sounds good, right? - WRONG! By shutting down the liver, the brain has effectively deprived itself of its primary source of energy. (An important fact to remember is that one of the two things the brain does not store is energy and oxygen). Now the brain has to conserve the available glucose circulating in the bloodstream. To do this, it slows down the body's metabolic rate while it goes after its second source of energy, muscle. So every time you feel fatigued and sleepy after eating a meal, you need to know that the sugars and carbohydrates entered your bloodstream too quickly, initiating this process. This is why most people who go on diets lose muscle not fat, because body fat is the most difficult for the body to convert into fuel.

## High Glucose Foods Include:

- Commercially made refined cereals, i.e.: corn flakes, puffed rice, puffed wheat, oat bran and all the sugared cereals (targeted for children)
- Rice (white and brown) and rice cakes
- Potatoes, carrots, corn, parsnips, pinto and garbanzo beans
- Bananas, raisins, apricots and oranges
- Pasta (all types) and refined breads.

## Low Glycemic Foods Include:

- Oatmeal, barley and rye cereals and whole grain breads
- Apples, pears, peaches, grapes, grapefruit, plums and cherries
- Lentils, soybeans, kidney beans and tomatoes
- Fruit sugars (fructose).

Just a note on juicing. The fiber in fruits and vegetables play a role in slowing the release of glucose into the bloodstream. Most fruits and vegetables are high in fiber, other than bananas, dried fruits, carrots and corn. Juicing fruits and vegetables removes all the fiber, allowing for the rapid release of sugar into the bloodstream. You do not want this rapid release of sugar.

## What interferes with this very structured digestive process? Typically, the way we eat our food.

Most people will follow a meal of meats, vegetables and starches with dessert, made up of simple sugars or carbohydrates. **SUGARS IN ANY FORM WILL STOP DIGESTION IN ITS TRACKS**. If digestion has already begun with the release of hydrochloric acid into the stomach, you will have the adverse effects of bloating and the accompanying gas. Sugar overrides digestion by telling the brain that no digestion is required, but unfortunately by this time digestion has usually begun. By stopping digestion you have prevented the body from realizing any benefit from the ingested food.

It does not matter how good, healthy or nutritious the food was because the body realized nothing without proper digestion. This is the way most people are eating every day. It does not matter whether it's health food or fast food, except that

with the fast food you also have the adverse effects of the nitrates, hydrogenated oils and additives that tax an already devitalized body. Most people are eating more and getting less (nutrients that is), resulting in obesity. What the body cannot process or eliminate it stores as fat. The United States population is one of the most obese on the planet, spending 600 billion dollars a year on health care. Yet the U.S. has one of the highest standards of living of any nation. If so, then why are we one of the sickest and one of the most malnourished?

I often think the only difference between most Americans and Rwandans or Ethiopians is that they are human skeletons from starvation, and we are food skeletons, overfed and overweight but starving nevertheless.

A statistic that particularly stood out with me, is if you weighed 260 million Americans on one end of a scale and 1.2 billion Chinese on the other end, the scale would be even. It doesn't have to be this way. Start today by feeding your body and not just your palate. This can happen if you follow the body's rules for digestion, and not the rules we have made up over the last 100 years to satisfy ourselves.

You must realize that talking about supplementation (and what we eat) is rather meaningless unless we are eating in a way that the body can access the nutrients.

When people say to me that they eat only organically grown food, or the highest quality food money can buy, the first thing I ask is how are they eating it?

If you accept the argument that no matter what we eat we're eating molecules,❖ then you must know that these molecules are too large to pass through the lining (villi) of the

small intestine or be absorbed into the bloodstream. It is these molecules that require proper digestion so that the body can assimilate the nutrients. Eating foods in combinations that facilitate digestion will allow the nutrients to be released and the body to be fed. What has worked for me over the last eighteen years, and also for everyone I have worked with to recover their health (from chronic or acute conditions to serious life threatening conditions), has been designed around feeding the body properly. By that I mean giving the body what it needs to achieve those hundreds of thousands of chemical reactions mentioned earlier. Specifically feeding the 200 different cell types that make up the body, each with different requirements, i.e.: a skin cell has different nutrient needs than let's say a bone cell.

By taking the nutrient needs down to a cellular level, this includes not only feeding the cells but also protecting them. This requires antioxidants and specific nutrients that build and protect the cell membrane, which in turn protects the DNA from the daily bombardment of radiation, viruses and chemical pollution. This allows the cells to live longer without the mutations that can be carried into new cells.

Instead of reproducing originals, we're producing copies of copies of a copy, etc. As these mutations alter the DNA more and more, genetic weaknesses that lie in the 100,000 genes that make up our DNA become the weak links in the breakable chain. This can lead to illness as well as the physical effects of premature aging and atrophying of the body. By constantly feeding the cells and the cell membrane, we not only protect the cell but prevent these permutations from developing. We do not have to suffer the ills of our parents even if we carry the genetic proclivity.

❖ **Some of these molecules are macromolecules. When more than 1000 atoms are bonded together in a molecule, it is called a macromolecule whereas a molecule is made up of two or more atoms. These molecular structures can range from 10,000 and 60,000 atoms per molecule and larger.**

In my book, *Immune Response*, I included a chapter on DNA, and used male pattern baldness as an example of a genetic weakness that can be averted. Slowing the aging process, preventing disease (especially genetic or inherited disorders) and replacing every one of the body's 100 trillion cells every seven years, starts with feeding and protecting the cells.

This is probably the most important point I can make in this book. If you can abstract this concept you will understand everything else I've written. So many people are concerned not only with the onset of illness and disease, but also with the physical effects of aging. The fountain of youth is not in what we do outwardly but what we do internally. By keeping the cells fed, oxygenated and protected, the body does not age from the inside out, thereby, resulting in profound external benefits.

For example, if the skin cells are fed (the skin is the largest organ of the body, almost 18 feet in diameter if you laid it out with all its folds) oxygenated (by middle age the skin can lose 50 percent of its oxygen) and protected, the skin will not lose its elasticity, softness or become cross linked and wrinkled. This has to happen from the inside-out not the outside-in. This does not mean that the 100 billion dollars a year spent on creams and lotions provide no benefit, but this is momentary and does nothing to feed, oxygenate or protect the skins cells.

After living in California for ten years, I was concerned about the effects of the sun on the skin. I realized very quickly that the damaging effects of the sun are internal and that the external cross linking (loss of elasticity) and wrinkling are the manifestations of damaged skins cells. This subject was discussed in length in my book, *Take Control Of Your Health*, but it is such a good analogy to explain the physical effects of cell destruction, especially since most people can relate to the effects of the sun. Think of the cell damage on an internal level. We can't see the destruction to organs, glands, tissues and bone, but should it make us any less concerned?

As you get further into this book, I would like you to always come back to this point: **unless we are feeding, oxygenating and protecting each one of the body's cells, we are aging faster than we should be every day. Instead of replicating our body every seven years with healthy cells, we are replacing cells with mutated, damaged cells that are more susceptible to cell destruction**.

Consequently, we are seven years older but look ten or more years older, especially after the peak age of 25 when the effects of slowly starving the body of nutrients becomes more pronounced.

# BODY TIP

"***Unless we are feeding, oxygenating and protecting each one of the body's cells, we are aging faster than we should be every day***. *Instead of replicating our body every seven years with healthy cells, we are replacing cells with mutated, damaged cells that are more susceptible to cell destruction."*

–Richard Helfrich

# The 24 HOUR BODY

*"If you are not getting these basic nutrients in some form and quantity,* ***there is a very good chance your body is aging faster because of the loss of its ability to build and repair itself****."*

–Richard Helfrich

# CHAPTER 2
# Feeding the Body

I have been asked the question repeatedly, what does it take to feed the body? My answer is always the same, ***A LOT***. The body has 100 trillion human cells (200 different cell types that build bone, skin, organs, tissues, teeth, etc.) that must be fed daily. With 70% having to come from outside sources, what are the chances of getting everything needed to fuel the body's daily needs? Not very good! It is like a village in Ethiopia of 200 thousand people who are in the midst of a famine. What happens is the structure collapses as malnutrition, disease and death overcome the village.

It is no different in the microcosm of the body. As it becomes malnourished over a protracted period of time, the metabolic structure or metabolism begins to break down, and disease in its many forms manifests and death occurs.

Most people are shocked by the supplements I take on a daily basis, but I am just as shocked that there is so little understanding about the body's needs. What I take may seem like a lot, but in reality it is what I have realized is necessary to feed my body on a daily basis, even though I no longer suffer from the heart condition that started me on this journey eighteen years ago. When faced with the prospect of a heart transplant, I realized that if my body could deteriorate to my condition there had to be a way for my body to heal itself.

What soon became obvious to me and became the basis of my own recovery over the next five years was that all we are is chemistry, or more specifically, hundreds of thousands of chemical reactions that determine the well-being of the body.

To figure out which specific chemistry was involved with my heart's deterioration, I had to understand how to control my body's chemistry. To do this required an understanding of how the heart works, a knowledge of the overall or systemic effect of the chemical interplay within the body and what it takes to fuel that chemistry.

I don't want you to become overwhelmed because I keep throwing around this word chemistry. Each one of us plays chemistry every day with the chemical (nutrient) makeup of what we eat and also with the unknowing exposure to chemicals, pollutants, heavy metals, etc. So over the next few chapters I want to talk about what it takes to feed the body and the protocols involved in getting nutrients into the body. I then want to recommend specific nutrients, their antidotal properties, and what they provide to the body.

## What It Takes To Feed The Body

You probably remember me saying earlier that seventy percent of what the body needs to function, grow and repair has to come from outside sources; in other words it needs to come from what we ingest on a daily basis. You will also recall my answer to the question most asked, What does it take to feed the body? ***A LOT***!

The seventy percent of what needs to come from outside sources include vitamins, minerals, amino acids and essential fatty acids.

B vitamins and vitamin C are water-soluble vitamins that must be constantly replaced in the body because the body only uses what is needed and then it throws off the rest (this is why your urine can be so yellow). The body does not store these vitamins and usually has enough to sustain itself for eight hours when not being used up by alcohol, smoking, pollution, etc.

## Vitamin A

Vitamin A's primary role is maintaining: functional integrity of epithelial cells, which line hollow organs of the respiratory, digestive and urinary systems; mucous secretions in nasal passages, stomach, intestines, vagina, etc.; as well as salivary and sweat glands. An important immune enhancer that stimulates antibody response of both T and B cells to antigens, vitamin A restores mucosal cell surface integrity and function. Vitamin A is important to vision (especially night vision), bone growth and all membranes and synthesis of Mucopolysaccaride, the ground substance of collagenous or connective tissue. As a fat-soluble, vitamin A is stored in the liver.

## Vitamin B

Some B vitamins are produced in the bowel, but the conditions for that to happen require the intestinal microflora or friendly bacteria species that colonize the bowel to dominate over the unfriendly species. Unfortunately, because of the processed dead foods, alcohol and diets lacking in any living enzymes, the balance of friendly to unfriendly is inverted, preventing the body from realizing any benefit from its ability to produce B vitamins. The importance of having sufficient quantities of B vitamins available to the body is vital to not only a broad spectrum of cell and metabolic reactions,

but also to the body's ability to defend itself and almost every aspect of immune response. An example is B6 (Pyridoxine) which plays a major role as a coenzyme or catalyst for many of the metabolic steps involved in the transformation, uptake and use of many nutrients critical to body function.

Zinc, B-6's twin in the mineral family, is one of the other nutrients playing a major role as a catalyst for what I like to refer to as the alchemy that takes place in the body. Nutrients like B-6 and zinc are perfect examples in that nothing happens in the body by itself. The transformation, intake and use of nutrients involves a complex interplay of co-factors, coenzymes and catalysts for the body to be the ultimate beneficiary from what we eat. This is another reason why I will discuss in a future chapter the protocols involved in getting nutrients into the body and why most people get little or nothing out of the food or supplements they take. You have realized zero unless the catalysts, co-factors and coenzymes that are necessary for nutrient uptake are in place. This is the chemistry I talk about or at least the initial chemistry of actually getting nutrients into the body. The rest of the body's chemistry takes place once it has the raw materials.

## Vitamin C

Vitamin C is involved with so many of the body's metabolic and immune functions, that you always want to have a supply available in the body. Why? Because the amount available to the body, at any given time, is dependent on the oxidative stress due to pollution, diet, lifestyle issues, alcohol and tobacco; these will use up the available C and B vitamins immediately. Vitamin C, just to refer to a few of its functions, is the major antioxidant in the bloodstream. Protecting the blood (fats) from free radical damage, vitamin C stabilizes the three most potent free radicals: superoxide, hydroxyl and

singlet oxygen, as well as playing an important role in cell movement. In future chapters I will fully discuss vitamin C, recommend specific nutrients and explain how they affect your body. This is the reason why so many books and research papers have been written just on vitamin C because its role in body function is so enormous.

## Amino Acids

When we eat meat, chicken, fish, lentils, beans and wheat germ, we are not eating protein but complete or incomplete proteins from which the body has to extract amino acids. This is usually done through digestion, as in the case of everything mentioned above except wheat germ, which requires no digestion. Only when the individual amino acids have entered the bloodstream and arrived in the liver through the small intestine can the liver then produce the body's proteins. Complete proteins mean that the food contains all the essential amino acids that the body must ingest before it can produce its own protein. These include L-lysine, L-leucine, L-isoleucine, L-methionine, L-phenylalanine, L-threonine, L-tryptophan and L-valine.

Incomplete proteins are foods that lack all the essential amino acids. Once the liver has the essential amino acids available, it can produce the nonessential amino acids, which include: L-alanine, L-arginine, L-asparagine and aspartic acid, L-carnitine, gamma aminobutyric acid, glutamic acid, glutamine, L-glycine, L-ornithine, L-proline (and hydroxy-L-proline), L-serine and L-taurine.

Next to water it is protein that comprises the largest part of the body's weight and substance. It is the nucleus of all cell structures, including those that build our bones, muscles, tendons, internal organs, nails, hair, glandular function, en-

zymes, etc. Almost every conceivable structure and function of the body requires the protein derived from amino acids to produce up to the 50,000 different proteins and tens of thousands of enzymes the body requires daily.

Amino acids are the body's fundamental biochemical structures for cell growth, hormones, enzymes and the immune system. In my first book, *Take Control Of Your Health*, I covered in detail all the individual amino acids and their function in the body.

## Minerals

Amino acids form enzymes, which join together and reproduce whole chains of other amino acids called coenzymes. Minerals and trace ele-ments are the vital components we need to ingest in order to produce coenzymes. Like the amino acids scenario where amino acids produce enzymes, which produce other amino acids, coenzymes are necessary to produce other enzymes critical to body function.

There are approximately 103 elements that make up the earth, and every one of them is a constituent of the body. These minerals, metals and trace elements are broken down and used by the body to produce coenzymes, as well as the inorganic materials that help build muscle, nerve, brain, connective tissue, bone, cartilage, hair, etc. **IN OTHER WORDS, ALMOST EVERY CELL OF THE BODY IS DEPENDENT ON COENZYMES**. Therefore, we must always be replacing minerals to maintain the body's homeostasis or balance. To do this, we must constantly ingest minerals in forms that the body can access and utilize. Some of these minerals and metals include sodium, potassium, calcium, zinc, magnesium, manganese, selenium, copper, iron, molybdenum and nickel.

## Essential Fatty Acids (EFA's)

Every day radiation, chemicals, pollution, viruses and bacteria bombard our cells. I mentioned earlier that antioxidants protect the cells, but what builds the cell membrane, the outer shell or cell wall, is essential fatty acids. These fatty acids, which again must come from outside sources, are the major constituent of all cellular membranes in the body. There are eight EFA's that fall into three groups: omega 3, omega 6 and omega 9.

- Apart from protecting the cells, fatty acids also produce something called eicosanoids, a variety of super hormones such as prostaglandins, thomboxanes, leukotrienes, lipoxins and hydroxylated fatty acids, that exert control over almost all body functions.
- Prostaglandins fall into two categories PGE-1 and PGE-2. PGE-1 performs many functions in the body, such as maintaining the cardiovascular system. In the immune system, PGE-1 promotes the proliferation of immune cells in response to antigens and regulates autoimmune conditions where the body attacks itself. It regulates stomach acid and reduces inflammation of sinus and bronchial membranes. PGE-1 stimulates the production of adrenal, thyroid and pituitary hormones. It also regulates the nervous system, calcium metabolism and the release of insulin from the pancreas.
- The reverse of all these positive effects on the body occurs when the effects of diet, stress, age and disease produce PGE-1's evil twin, PGE-2. For instance, dietary factors play a big role in the production of PGE-2. In America we consume significant quantities of trans fatty acids from hydrogenated oils found in many processed foods. Some of these include deep fried foods, commercial baked goods, lunchmeat, potato chips, French fries, etc. Trans fatty acids are

fats and oils that are no longer soluble at body temperature and whose molecular shape has been altered from a bent or what is referred to as cis, a form of natural fats to a straight trans-form. This altered form fits differently into cells and body structure. In the cell membrane it blocks the cis-form and creates holes or permeability in the cell wall. This allows in-fections by viruses, bacteria and parasites to have easy access. When you realize that the surfaces of our skin, digestive tract, mouth, sinuses and throat are covered with billions of bacteria, viruses, parasites and yeast, it is not surprising that the immune system is compromised in so many people because one square inch has millions of these.

PGE-2 also increases LDL, the bad cholesterol, and decreases HDL, the good cholesterol, as well as preventing the liver's detox abilities. Other dietary factors that promote PGE-2 production are triggered by insulin. Controlling your diet, so that ingested foods are not constantly elevating blood glucose and the pancreas is not over producing insulin to neutralize the glucose, is a big step in preventing the production of PGE-2. Earlier, in chapter one, I talked about being fatigued after a meal, but besides the fatigue, you now realize the profound effect elevated blood sugar or the constant eating of unbalanced meals has on the body.

The inhibitors of PGE-2 that provide disease fighting benefits and constitutional properties to the body are the omega 3 fatty acids, EPA (eicosapentaenoic acid) and DHA (docosahexaenoic acid), all essential fatty acids.

## Some of Omega 3's Benefits Include:

• Anti-inflammatory, helps in early phase of inflammation.
• Growth, development and function of the central nervous system.

• Builds membranes of brain, nerves and eyes.
• Beneficial in cardiovascular disorders, cancer and autoimmune conditions.
• Helps in the treatment and prevention of Alzheimer's disease and chronic respiratory conditions.
• Important to all phases of pregnancy, prolongs gestation, increases birth weights and reduces incidence of premature birth.

## Beta-Carotene

It is one of more than 500 carotenoids. Carotenoids function as sources of Vitamin A, with beta-carotene having the highest provitamin A activity. Besides providing vitamin A on demand to the body, beta-carotene and carotenoids do so without the toxicity, which can result from an oversupply of vitamin A.

Beta-carotene provides antioxidant protection against tissue and cell (DNA) damage.

Carotenoids antioxidant effects include protection against cancer (particularly lung cancer). The carotenoid lycopene, found abundantly in tomatoes and watermelons, provides antioxidant protection against cardiovascular disease and prostate cancer in men.

The same protection carotenoids provide plants from damaging sunlight is provided in the body, preventing photosynthesized oxidation by quelching singlet oxygen.

The immune enhancing functions of carotenoids include lymphocyte proliferation, T-helper cells, macrophages, increased natural killer cell activity (cytotoxicity) and increased bacterial resistance.

## Vitamin E

Vitamin E is an essential component of all cell membranes, including nuclear and mitochondrial membranes. It also plays a dual role in protecting the cells from free radical damage with its antioxidant and immuno-enhancing properties.

Studies have shown that vitamin E interacts with and destroys the products of lipid peroxidation and the oxidation of arachidonic acid and prostaglandin (PGE-2) formation which causes platelet clumping, promotes pain and depresses the immune system. Vitamin E also interacts with vitamin C to regenerate the reduced form of vitamin E by oxidation of vitamin C. With selenium, vitamin E interacts in glutathione peroxidase synthesis, and it also acts as a free radical scavenger of hydrogen peroxide in the mitochondria portion of the cell.

Vitamin E also acts as a scavenger of singlet oxygen, which is generated as a result of certain white blood cells engulfing (phagocytosis) bacteria. Singlet oxygen is very toxic to healthy cells by altering their biological structure; it is also a primary factor in aging and disease. Vitamin E enhances immune function by increasing the number of antibody-forming cells, phagocyte activity and its free radical scavenging contribution.

These are the building blocks or the nutrients the body requires daily to maintain health and well-being. If you are not getting these basic nutrients in some form and quantity, there is a very good chance your body is aging faster because of the loss of its ability to build and repair itself. We are always attempting to bridge these two important functions in the body. Typically, the same nutrients are required for both

the building and the repair. I have tried to highlight both properties in the brief description of these basic nutrients in the previous pages.

**One of the approaches I have always taken with the body, and the one I have realized the greatest success from, is treating the body on a daily basis**. By this I mean giving the body what it needs on a daily basis to build, repair, defend and in some cases, give the antidote to environmental contacts that use up precious body re-sources.

If you accept the principal that the body replicates itself completely every seven years with the exception for the teeth, heart and brain cells, you have to realize that the body can only accomplish so much in a given day. Seven years is equal to about 2,555 days, and when you divide 100 trillion cells by 2,555 days you get 400 million cells. That's 400 million new cells being formed each day to replace old cells, and this represents just cell growth and division. The requirements for this chemistry alone are tremendous.

Then you have to include proteins, peptides, nucleic acids, etc., not to mention the fatty acids and other nutrients necessary to build the cell membranes (walls). Still, to complete the cycle this protocol does not include what it takes to keep major organs functioning every day, such as the heart, the brain, the liver, which performs 500 different functions daily, the endocrine system (pituitary, thyroid, hypothalamus, adrenals, ovaries, testes, etc.), the vascular system, the digestive tract (which uses 50 percent of all the energy the body produces daily for digestion), the nervous system, the lymph system and the vast arsenal of the immune system. All of this metabolic function is sustained on a daily basis by the food we put into our mouth.

If you accept this as the principal by which the body functions, then you have to ask yourself are you getting, on a daily basis, what your body needs to achieve all the above? If not, then chances are you fall in with the vast majority of people whose bodies are aging, atrophying and diseased from being malnourished. Also, as discussed earlier in the book, not only are most people malnourished but they further tax their bodies with stress, pollution, chemicals, bacteria, viruses, alcohol, tobacco, drugs, and many other factors that use up precious nutrient resources that are diverted to doing damage control rather than supporting body function.

This is why it's always made sense to me to approach the body's requirements one day at a time. The body can only accomplish so much in a given day. Our responsibility is to make sure it has the nutrients available to accomplish all of its tasks of building, repairing and sustaining metabolic function for all of its operating systems.

In the following chapters I will give you the information regarding those daily nutrients the body requires to accomplish all of its tasks, as well as other nutrients that address specific issues in the body.

# BODY TIP

*"The body has 100 trillion human cells (200 different cell types that build bone, skin, organs, tissues, teeth, etc.) that must be fed daily. With 70% having to come from outside sources.* ***What are the chances of getting everything needed to fuel the body's daily needs? Not very good!****"*

–Richard Helfrich


*"Since it has been proven that we are re-creating ourselves all the time, then it would stand to reason that* ***it's never too late to begin creating the bodies we want****."*

–Richard Helfrich

# CHAPTER 3
# How To Take Charge of Your Health

This is no longer the Garden of Eden or even the garden of our grandparents two generations ago in terms of the food we eat. Statistics are often cited that we are living much longer since the turn of the century. Could it possibly be the cures for tuberculosis, pneumonia, influenza and the sanitary improvements in health care and food handling? These are arguments for a different forum, but the point I would like to make is if we are living longer, are we living healthier in terms of the quality of life?

Statistically, seventy million Americans have dysfunctional immune systems, compromised with auto-immune conditions like arthritis, diabetes, lupus and chronic respiratory problems. There is a large increase in cancers, including lung, colon, breast and prostate, just to mention a few. Are we living better or just living longer? We happen to be the most medicated population on the planet. If we're living better, then why are we spending 600 billion a year on health care?

What I have found, after analyzing thousands of blood tests, is that most people are malnourished or just plain starving nutritiously. In both my prior books I explained how to read and interpret your own blood tests. In *Take Control Of Your Health*, I included blood chemistry and a complete blood

count, including white blood cell and an immune system analysis. In Immune Response, I gave an expanded interpretation of blood chemistry and a much more extensive complete blood count, including the most up-to-date immunological tests, in order to establish a detailed immune competency.

It is only by using this valuable tool, our blood analysis, which is a photograph of what is going on in our body at this moment, that we can determine our strengths, weaknesses and deficiencies.

By explaining blood analysis, I have endeavored to supply the tools necessary to establish an understanding of your well-being. By doing so, I want to demystify the medical premise that you are not capable of understanding or interpreting your own blood work. This will allow you to be proactive concerning you health and not someone who goes in for a consultation with a practitioner who has probably spent a few minutes out of the 20-60 patients he might see in a day to tell you, "you are fine." Or worse, he has prescribed medications which have no relationship to your condition. One hundred and forty thousand people a year in the United States die from reactions after being prescribed the wrong medication.

It is incumbent upon you to become more informed and proactive about your health when seeing a medical practitioner. How can you do this? By asking questions and expecting answers that are based on a thorough review of your blood work. With the evolution of HMO's, less and less testing is taking place. I have seen people with life threatening cancers, whose treatment was based on blood tests that included only 30 percent of the information necessary to accurately diagnose and treat this type of illness.

I wanted to mention blood analysis in this chapter, because yes, the goal is to eat and have our bodies benefit by getting the nutrients, but there also has to be an understanding of our own unique biochemistry. As I mentioned earlier, our blood analysis helps us to determine our strengths, weaknesses and deficiencies. Since our deficiencies are directly related to what our bodies are not getting, hopefully, by studying your blood analysis, you will learn what your body is lacking, and from this chapter you will learn how to get it into your body.

I started this book talking about digestion because this is a body function that we exert direct control over daily, and it is probably the least understood. With digestion we are always playing by the body's rules and not our own. Unless the body can access nutrients from eating the most wholesome, nutritious, organically grown food or taking the highest quality supplements. The body realizes nothing without the principals of digestion and assimilation.

When we eat something, our body has two main decisions, to digest or not to digest. The decision is fairly simple because most simple carbohydrates (simple sugars, fruits) and complex carbohydrates and starches require no digestion. Their molecular size is very small and they can enter the blood stream with little or no digestion. The sugars and fruits pass quickly through the stomach into the small intestine where they are absorbed. Complex carbohydrates, grains, cereals and certain vegetables like potatoes, are broken down into starches by the ptyalin or amylase enzymes in saliva and amylases found in the stomach. The starches are then converted to simple sugars, which quickly enter the blood stream as glucose.

Proteins, minerals and fats are a different story because they

are large molecules and these nutrient groups require digestion. Because the nutrients in these groups are usually locked in larger molecules and trapped in tissue, it takes a tremendous effort on the body's part to gain access to these nutrients. Hopefully, the food was chewed into a paste to speed up the process in the stomach. Once in the stomach, the brain sends signals through certain hormones to the gallbladder and pancreas initiating the digestive process. By triggering this process, hydrochloric acid, the only acid produced by the body, is released.

An amount of one to two quarts of gastric juices a day is produced, which also includes the enzymes, cathepsin and pepsin. Hydrochloric acid, being the largest constituent of the gastric juices, begins degrading and breaking down the food. As it does, it begins splitting the proteins in the food to release the individual amino acids. This is when the enzymes cathepsin and pepsin also provide protein splitting activity to assist in this process.

This process can take two to four hours, depending on how much work the stomach has to do to prepare the degraded food for the next stage of digestion. This is also the stage where digestion and the process of degrading the food can be sabotaged or aborted. As mentioned in the first chapters eating simple sugars will interfere, which will send new signals to tell the brain that no digestion is required.

The sugars (usually desserts) will not only interfere with digestion, but they will also have a negative interaction with the hydrochloric acid that has already been introduced into the stomach.

This is why many people experience the bloating and gas after a meal. Now because this important initial stage of

digestion has been aborted, the food that would normally pass through the digestive tract in 18 to 36 hours will remain in the system for up to 72 hours or more, putrefying and becoming toxic in the bowel. It is not surprising that the incidence of colon related illness has never been higher, with colon cancer being one of the most prevalent cancers. It is also alarming to look at statistics that the average person can carry ten to fifteen pounds or more of waste (trapped in the colon) at any given time.

Why? Because the food was not degraded in this initial stage of digestion, resulting in the body getting little or none of the nutrient value from the food. It basically waved it through without the ability to access the nutrient base. Something else that inhibits hydrochloric acid's effectiveness is over hydration, drinking too much fluid with a meal.

The gastric juices containing the hydrochloric acid and other protein degrading enzymes become so diluted they are unable to be effective. **Limiting your fluid intake to ten to twelve ounces during a meal will prevent this from occurring**. Some people will drink up to 64 ounces with a meal. The optimum time for drinking large amounts of water is between meals.

**I often tell people that if you want something sweet, have it one hour before a meal or three hours after a meal**. Sugars require no digestion, and they pass through the stomach quickly. If you crave something sweet with a meal, I suggest fresh pineapple. Pineapple consists primarily of the protein-splitting enzyme bromelain. Bromelain acts in the same way as hydrochloric acid in that it doesn't interfere with digestion but assists it.

A lot of people do not produce enough hydrochloric acid

because of pancreatic insufficiency or the lack of nutrients the body needs to produce hydrochloric acid, for example B-1, B-2, etc. Bromelain can substitute for the protein splitting activity of hydrochloric acid and the enzymes pepsin and cathepsin.

Hydrochloric acid also stimulates hormones that initiate the next three stages of digestion in the small intestine, beginning with the duodenum. It begins breaking down or degrading minerals and trace elements, allowing them to act as the coenzymes necessary for the uptake of other minerals and vitamins as I mentioned earlier. It also destroys some types of bacteria that may have been ingested with the food.

It should be pretty obvious by now that although a few nutrients are absorbed through the stomach, it is this critical first stage in digestion that determines whether nutrients will be absorbed in the next stage.

Once the stomach empties into the duodenum, the hormones that were stimulated in the stomach signal or alert the pancreas that digestion is in process. The pancreas produces about a quart and a half of its own digestive juices into the duodenum daily. These include some of the same proteolytic enzymes or proteases from the stomach, such as trysin, chymotrypsin (along with peptidases), elastases and cathepsins that degrade approximately 300 grams of protein per hour.

Once the fat has been made soluble by the bile acids, the lipolytic enzymes or lipases emulsify or breakdown approximately 175 grams of fat per hour. Amylolytic enzymes or amylases, like those in saliva, can breakdown approximately 300 grams of carbohydrates per hour.

These enzymes produced by the liver as bile and stored

in the gallbladder and the pancreatic enzymes along with thousands of other coenzymes formed by minerals and trace elements, complete the job of reducing the food particles to a molecular size that can be ab-sorbed.

As the nutrients pass through the duodenum, water, ions (sodium, calcium, iron, chloride, sulphate, and water and fat-soluble vitamins) are absorbed. In the jejunum, the next segment of the small intestine, glycerol and fatty acids along with simple sugars (glucose and galactose) and amino acids continue to be absorbed. In the last section called the ileum, sodium, hydrogen ions, gamma globulins, bile, salts and vitamin B12 are absorbed.

As amazing as the digestion process is, proper digestion, which the body needs to perform everyday in order to function, takes very little to upset it.

This is why the vast majority of people are eating like there is no tomorrow, but they are basically still starving. The only thing gained are empty calories, bad fats and chemical additives. More and more the average diet consists of dead (no living enzymes) processed food.

If we were to take just one example, the average school lunch program, I doubt that you could sustain a lab rat on that type of diet for very long. Today, prepackaged lunch servings have become popular for children. When you look at these lunches you quickly realize that they consist of processed lunch meats (full of nitrates), cheese that has been pasteurized (turns to mucus in the body), crackers full of preservatives (no nutritional value) and a dessert or candy (full of artificial sweeteners and preservatives). From this we expect healthy, energetic young bodies with bright inquisitive minds.

Of course, we can't leave out the fast food restaurant industry who urge people not to cook dinner, but to feed you and your family a well balanced meal of hamburger, French fries, sodas and sugary deserts. In my lectures I often tell older people that they are the lucky ones, the generations of our parents and grandparents who were raised on home cooked meals. I tell them that the ones they should feel sorry for are their grandchildren who are raised on fast food diets.

Feeding the body properly is critical to health and well being. It is as simple as following some of the principles I have discussed in this chapter: **not eating sweets or sugars with a meal that requires digestion, limiting your fluid intake during lunch or dinner so as to not dilute hydrochloric acid or enzymatic activity and using salt sparingly because salt acts as an enzyme inhibitor, limiting their activity**.

Also try to eat something that has living enzymes in it with lunch and dinner, the two meals where you want digestion to take place. This can include fresh or raw salads, vegetables, especially leaf or stem, i.e.: fennel, celery, beet tops, broccoli, etc., or lightly steamed root vegetables. Try eating enzyme rich foods that aid digestion of proteins, like onions, garlic, raw sauerkraut or herbs like ginger or try taking a digestive enzyme that contains proteases, lipases, amylases or pronases (aspergillus oryzae).

Other foods rich in digestive enzymes or in supplement form that provide highly active enzymes are papain from papayas and bromelain from pineapple. By doing so, we are not only supporting digestion and the intake of nutrients from what we eat, but we are also reducing the load on the body's enzyme pro-duction from the liver and pancreas.

As we age, the liver and pancreas are constantly overtaxed by

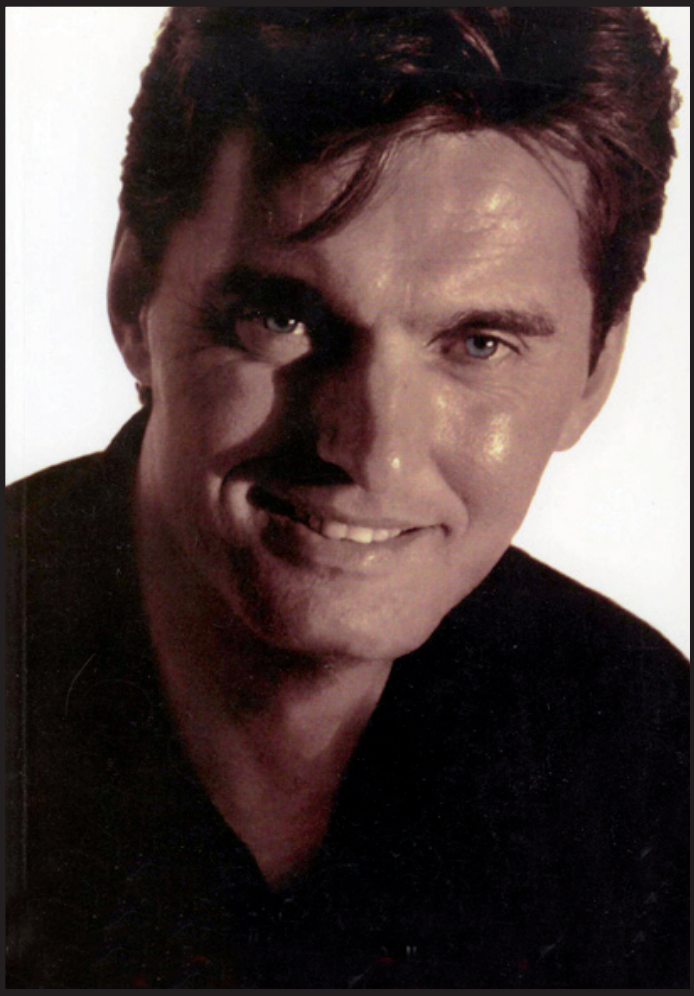
devitalized diets of processed dead foods. This contributes to the decrease of enzyme production which is due to a lack of the nutrients that sustain their function. As the liver and pancreas are constantly called upon to give more from less, they become enlarged and their functioning capacity compromised.

If I can leave you with one thought on this subject it would be this: **enzymes, enzymes, enzymes are what makes the body work**. What is even more amazing is that the enzymes you take in supplement form allow the body to recycle them back to the pancreas to be used again.

# The 24 HOUR BODY

*"Vitamins, if properly understood and applied, will **help us reduce human suffering** to an extent which the most fantastic mind would fail to imagine."*

–Albert Szent-Gyorgyi,
Discoverer of vitamin C



**Nutrition Expert, Richard Helfrich**
Author of the Health Spectrum's Health
and Wellness Series of Books

# About the Author

A leading expert in the nutrition world, Richard reaches deep on many levels on how the body works and what needs to be done to keep it in balance for optimum health and wellness.

Richard's life was changed forever when he discovered he had a serious heart condition called cardio-myopathy. Cardiomyopathy, or heart muscle disease, is a type of progressive heart disease in which the heart is abnormally enlarged, thickened, and/or stiffened. As a result, the heart muscle's ability to pump blood is less efficient, often causing heart failure.

Rather than consider the heart transplant option he was presented with, Richard decided to take control of his condition and control of his life through a course of alternative medicine. Within five years he completely and successfully rebuilt his heart. 39 years later his heart is still in great condition and working beautifully.

This courageous step resulted in a voyage of self-discovery, which included a change in lifestyle, a disciplined study of medicine, and the attainment of an extensive knowledge of how the body works.

The result has been Richard's creation of a program of health that has now succeeded in helping thousands of individuals, as well as a private clientele of international film stars and famous personalities.

Richard is also the author of four books, published in the United States and Europe, including *Take Control of Your Health*, *Immune Response*, *Young Inside and Out* and of course this one, *The 24 Hour Body*. His books give the reader not only a manual on how the body works, but also a guide to how to recover their health, no matter their condition.

Richard's success rate in helping others has been startling — particularly in his work with viruses, auto-immune disorders and cancer. Besides his dedication to these conditions, his focus has also been on slowing down the aging process and enhancing the body's ability to rejuvenate itself.

With over 30 years of vital research and applied practice, Mr. Helfrich equips the reader with the information necessary to understand the body. He explains the technical without bombarding with theory. Richard has set out to demonstrate the incredible potential of the human body, bolstered by the proper resources to heal itself.

"***Prevention***
*is better*
*than cure."*

–Desiderius Erasmus


## Thank you for exploring *The 24 Hour Body* which was written to help you better understand how the body must be fed every day.

I hope you found great value in this book. I invite you to share your personal stories, ideas, insights, feelings and experiences relating to health and wellness issues.

*Email us at: support@richardhelfrich.com*

***I would love to hear from you.***

Richard

***Richard Helfrich***
Health and Nutrition Expert
Author of the Health and Wellness Series of Books

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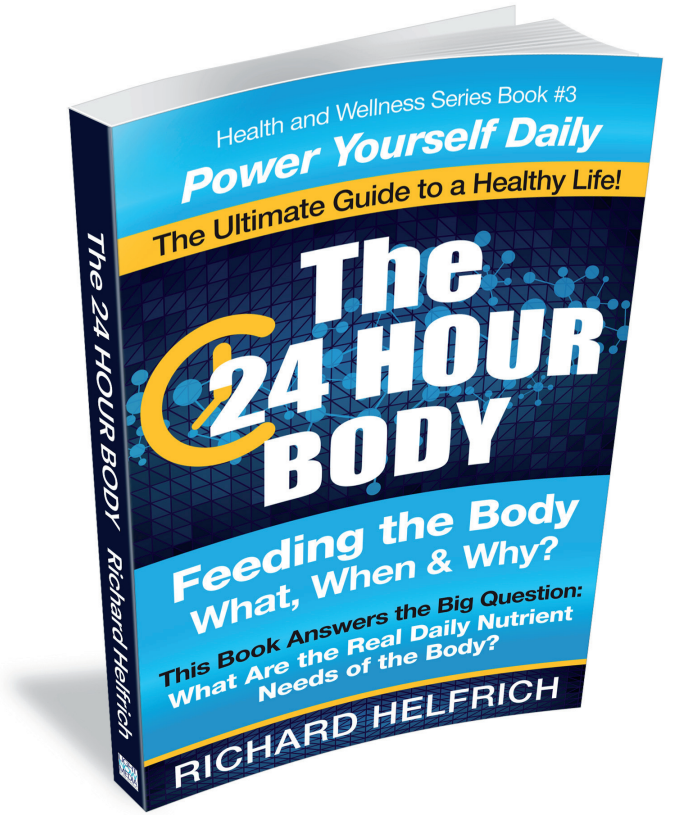


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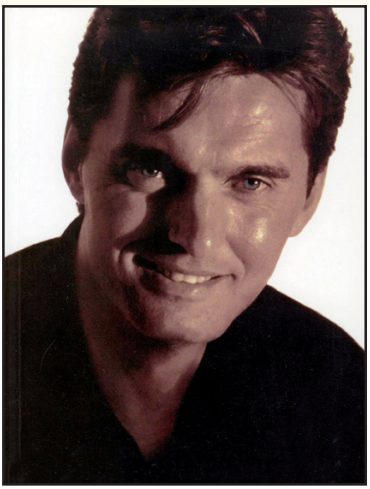
**www,RichardHelfrich.com**

# THE 24 HOUR BODY

**Feeding the Body. What? When? Why?**

## 70% OF WHAT IT TAKES FOR THE BODY TO FUNCTION PROPERLY HAS TO COME FROM WHAT WE FEED IT EACH DAY.



**the most important question: What are the daily nutrient needs of the body?** It gives you a daily routine to follow that not only incorporates daily needs, but it explains how food and supplements need to be taken in order to realize their benefit. It also provides a comprehensive guide of additional nutrients and their contribution to the treatment and relief of specific health conditions.

This book, #3 in the Health and Wellness Series by Richard Helfrich, follows #2, ***Take Control of Your Health***, an owner's manual to the body's functions, and #1, ***Immune Response***, a guide to building and maintaining a functioning immune system. ***The 24 Hour Body*** offers the information necessary to know what nutrients you need to feed your body, also when and how you need to take them and why you need them. For those with the enthusiasm for understanding their

A leading expert in the nutrition world, Richard reaches deep on many levels on how the body works and what needs to be done every 24 hours to keep it in balance for optimum health and wellness.

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**"The body was not designed to fail" —Richard Helfrich**