## Nutrition Basics Mini-Course

**Congratulations!** You have decided to embark on a journey of self-discovery that, I guarantee, will change your life. By choosing this program I assume you believe there is a need in your life for such change. A change to become a healthier individual and a change that will result in all the benefits an improved state of health affords.

Like any focused venture this journey will require effort. Time will need to be set aside each day in order for you to grasp the information presented and develop the healthy habits necessary for your body to maximize its self-healing capabilities.

But don't let this scare you. While this journey may at times challenge your comfort zones it is designed to pique and satisfy your intellectual curiosity and to provide a healthy community within which you will receive the support needed to easily achieve your goal of improved health.

**Education:** The program will cover on a basic level many areas of human physiology, allowing you to master the anatomy and physiology of the **body's stress response.** It is the body's stress response that, while normal and life-saving during periods of acute distress, is at the root of chronic illness.

**Belief Systems:** This program will not force any particular "belief system" on you. Belief systems are simply intellectual conclusions you arrive at yourself after any educational experience.

**Behavior:** After being educated on how our bodies are programmed for health and not disease I believe new and self-concluded belief systems will empower you to choose healthy behaviors regarding diet, exercise, and positive attitudes that support these self healing abilities.

**Health:** By addressing your diet, exercise habits and attitude based on Health Care / Self Care concepts you will enjoy all the benefits that an improved healthy state allows: vitality, energy, intellectual stimulation, and improved focus on pursuing whatever it is that you believe will make you a more fulfilled human being.

Yours in Health,

Joe Dockery, D.C. Certified Chiropractic Wellness Practitioner



# I. NUTRITION MODULE

a. Fruits

**b.Vegetables** 





c. Lean meats (Preferably grass fed)

d.Free range or wild fowl

e. Free range eggs

f. Wild caught fish, seafood

g. Nuts

h.Seeds



Well, there you have it! Enjoy!!





# The listed foods are those foods eaten by our lean and physically fit hunter-gatherer ancestors.

Understanding what they ate is essential for understanding what we should eat today to improve our health.

If the development of our genetic makeup, the "nuts and bolts" instruction manual for how our cells actually function, was fueled by the nutrients available, then it makes sense that the maintaining of that makeup would require the same nutrients.

> Research today supports this concept 100% (See B. Eaton, L Cordain)

- Our genes determine our nutritional and exercise needs. Genes that evolved over millions of years.
- The ideal diet is found in the nutritional practices of our Stone Age ancestors.
- We literally have Stone Age constitutions, and any food beyond what they ate our body must adapt to.
- Adaptation is an irritant that eventually leads to lowered defenses.
- Lowered defenses lead to disease.

#### In a nutshell:

Modern foods and sedentary lifestyle are at odds with our genetic makeup, and that is what is causing many of our modern diseases.



What you may have noticed missing from the list were some staples of the modern diet!





Dairy



**Table Sugar** 



Bread



Wheat Pasta

**Hot Dogs** 







Soft

Drinks

Pizza







**Processed Foods** 

Remember... We are animals, and there is nothing magical about human physiology that allows us to eat toxic and deficient diets without severe health consequences.



Health Care Self Care, however, is not about GIVING UP anything as much as it is about ADDING TO.

> So, let's not focus right away on what foods to **GIVE UP**...





...but focus, instead, on how we can **ADD** the hunter-gatherer foods into our diets.

As you make a habit of slowly transitioning to a healthy diet you will begin to lose your cravings for the toxic food.

HC/SC Cardinal Rule

# **Fresh Fiber First**

- If you love your cereal or toast in the morning, just make sure you first eat a piece of fresh fruit.
- If you have to eat French fries at lunch, make sure you have a salad or fresh vegetables first.
- If you must eat pizza for dinner, serve yourself a piece of fresh fruit and one fresh vegetable first (not just as a topping!).

# Agriculture

In the six million year timeline of human evolution agriculture has been around for a mere "drop in the bucket" of 10,000 years.

As our genes were evolving they were dependent on a diet of fruits, vegetables, wild game, fish, and nuts and seeds. Science supports that this diet is still essential in maintaining the healthy functioning of those genes.

Remember, our genes are a blueprint (instruction manual) for the cells to follow as they function in whatever capacity the organ which they are associated with functions. Our genes located in the nucleus of a liver cell instructs it to store fat or produce cholesterol; the genes located in the nucleus of a muscle cell instruct it to contract; the brain cell conducts an impulse; etc.

Our genes have not changed in the last 10,000 years, therefore, it can be deduced that we continue to benefit from the hunter-gatherer diet.

Agriculture, the cultivation of grains and the domestication of animals for consumption, introduced wheat, barley, rye, and oats along with readily available meat and dairy products to our diets.

I need to mention the Agricultural Revolution was indeed a boost to mankind. It allowed people to live in larger communities that sprouted cities, technology, education, and scientific knowledge. But it had its downside. The foods the revolution brought us, cereals, dairy, fatty meats, salted foods, and refined sugar and oil are responsible for today's obesity and chronic disease.

People still worked very hard which helped burn many of the calories from this high calorie/low nutrient diet. But in the past 50 years our society has slowed down in the physical activity department and the combination of poor food quality and sedentary life has accelerated the rates of chronic illness.

61% of the energy consumed in the western diet – from cereals, dairy, soda beverages, sweets, and processed oils – comes from foods never eaten by our ancestors. And 38% comes from high fat, unhealthy meat – hot dogs, ground beef, bacon and lunch meats. (Cordain, *The Paleo Diet*)

# Inflammation and Inflammatory Foods

"Inflammation" is a word coming up a lot lately when discussing health care. *Inflammation* is the flood of white blood cells and chemicals that our immune system unleashes in response to injury or infection. Swelling comes to mind, and, in fact, is a form of inflammation.

Injuries occur via *m<u>a</u>cro-traumas* like a broken arm, *m<u>i</u>cro-traumas*, as in repetitive stress activities, and in *dietary traumas*. Yes, that's right, food can actually be traumatic. And when it is, the body sets up the inflammatory response to aid tissue healing the same way it would for a broken arm. It is just not as obvious since there isn't the mass swelling.

The cell trauma associated with poor food is subtle and occurs without symptoms at first. But eventually the altered cell biochemistry leads to cell and tissue damage, and subsequent inflammation. Eventually this diet-driven inflammation will lead to the chronic diseases of modern living if we don't break the cycle.

Researchers have identified the foods that cause inflammation, and as you can imagine, they do not include foods that our ancestors ate: high fat foods, dairy, and sugar foods.

So you see, poor foods can be traumatic, just like smoking can be, and will lead to chronic illness as sure as smoking will. Now there's a great way to deter eating poor quality food. When you put that pop tart in your mouth, visualize it as a cigarette and that each bite is like a puff.

Inflammation, you would think, should lead to healing. And it does in acute injury. But eating poorly is a constant (chronic) activity, and it results in a constant (chronic) state of stress on our body's cells; cells that are programmed for healthy food. Chronic inflammation is the result, causing conditions such as fibrositis, fibromyalgia, and myofascitis, and will lead to far greater "pro-inflammatory" conditions including heart disease, diabetes, cancer, dementia, and many other diseases you may have a genetic tendency to developing.

# Why are these foods inflammatory?

### Dairy

Milk, butter, cheese, fermented milk products (yogurt), ice cream, and many processed dairy products (powders, Cool Whip, etc.) Humans are the only animals that drink milk after weaning!

*Saturated Fats* – Dairy consists mostly of saturated fats. These fats raise your body's cholesterol leading to heart disease.

Milk is also broken down into galactose. When the enzymes that break down galactose are used up galactose builds up and can lead to ovarian cancer in

WOMEN. Galactose ... ovarian cancer. Lancet 1989.

# **Grain Products**

Bread, pasta, muffins, pastries, etc.

First of all these foods are lacking in vitamins and minerals, so when your diet consists of grain products you need to eat more in order to nourish the cells. That's why cereals are "fortified" with vitamins and minerals.

Next, grains are carbohydrates, broken down as sugar and stored as fat. Cows are fed grain to "fatten them up". Refined grains rapidly raise your blood sugar levels.

Whole grains, while they release carbs slowly, are filled gluten, lectins, phytates and other pro-inflammatory factors that outweigh that benefit.

The phytic acid in grains have a tendency to make your body's ph more acidic, also fostering inflammation.

#### Sugar

Candy, sodas, frostings, high fructose corn syrup (in just about everything) Our ancestors ate sugar in the form of fresh fruits. The sugars from fruit break down slowly causing less of a roller coaster blood sugar/insulin dynamic. The sugar additives, the refined table sugar, etc. cause the blood sugar to spike quickly.

Insulin resistance is a consequence of too much sugar leading to diabetes. More on that later.

# **Five Indicators of Inflammation**

- 1. High Blood Pressure
  - a. Normal is around 120/80 (without medication)
    - i. Blood pressure is a reaction to a greater problem, so simply lowering blood pressure is like turning off the oil warning light in your car.
  - b. Inflammation leads to high blood pressure due to low density protein (LDL) that builds up in the blood stream attracted by injured and inflamed blood vessels.
- 2. Elevated cholesterol
  - a. Normal is anything less than 200mg/dl
  - b. Cholesterol itself is good builds cells, maintains cell membranes, transports hormones, insulates nerve cells, helps synthesize vitamin D, etc
  - c. Produced in the liver
  - d. Transported by lipoproteins (fat/protein molecules)
    - i. LDL low density lipoproteins
      - 1. Low in protein/high in fat
    - ii. HDL high density lipoproteins
      - 1. High in protein/low in fat
  - e. Dietary cholesterol has less an effect on blood cholesterol levels, whereas saturated fats DEFINITELY elevate blood cholesterol levels.
- 3. Elevated triglycerides
  - a. Normal is 150 mg/dl again, without medication
  - b. Fat carried in the blood by VLDL (very low density lipoprotein)
  - c. Whereas cholesterol is used to build cells and hormones triglycerides are used for energy.
    - i. What the body does not use for energy is stored in fat cells.
- 4. Elevated fasting blood glucose
  - a. Normal 90 mg/dl (normal daily fluctuation = 82-140)
  - b. Rises after meals
  - c. Primary source of energy for body's cells
  - d. Excess sugar is eventually stored as fat
  - e. High blood glucose levels are toxic and damaging, hence inflammatory.
- 5. High C-Reactive protein levels
  - a. Normal Should be below 1 mg/dl
  - b. An acute phase reactant in response to inflammation
  - c. Binds to foreign and damaged cells, aiding the immune system in cleaning up the debris from inflammation.

**Basically what I am saying is:** 

Foods that our bodies are not genetically congruent with, foods that we did not consume while our genes were developing, foods that our genes are not dependent upon, are foods that aggravate our cells immediately, contribute to a strain on our immune systems, and lead to the development of chronic illness and disease.

> Genetically Congruent foods are Sufficient and Pure

> > Any other food is Insufficient and Toxic

# FACTS on FATS

# THE GOOD

Unsaturated Fats Monounsaturated Polyunsaturated Essential Fatty Acids (Omega 3 Fatty Acids)

# **Effects on the Body**

Builds cell membranes
Aids brain function
Prevent heart disease
Prevent stroke
Strengthen immune system
Transport of hormones

#### Sources Unsaturated Fats · Olive oil · Nuts · Avocados Omega 3 Fatty Acids · Wild caught fish/seafood (salmon, halibut, snapper, scallops) · Nuts & Seeds (walnuts!) · Flaxseed

Grass fed beef!

Supplementation of Omega 3 Fatty Acids in the form of **Fish Oil** is highly recommended due to our western diet being highly deficient in this essential nutrient.

# THE BAD

#### **Saturated Fats**

(Certified organic Coconut oil is the exception)

# Effects on the Body

Clogs arteries and will directly raise total and LDL (bad) cholesterol levels
Inflammation
Heart Disease
Stroke
Obesity

#### Sources

- Cream Butter
- · Cheese
- · Grain fed meats

## **The Best Foods**

- ·Fruits
- · Vegetables
- Grass fed beef
- Free range chicken
- · Wild caught fish/seafood

# THE UGLY

#### Trans Fats Hydrogenated Fats

# **Effects on the Body**

- Clogs arteries and will directly raise total and LDL (bad) cholesterol levels
- · Inflammation
- · Heart Disease
- ·Stroke
- ·Obesity

#### Sources

Processed foods
Cookies
Cakes
French Fries
Potato Chips
T.V. Dinners
Etc

**Read the label** - if it says trans, hydrogenated or partially hydrogenated put it back on the shelf. These fats are so toxic that the Canadian government is trying to make them illegal.

# Carbohydrates

(Obesity, cardiovascular disease, metabolic syndrome, diabetes) Average person consumes 150 lbs. of sugar per year

Before we move on I'd like to examine carbohydrates a little more in depth. It is thought by many of my wellness colleagues that insulin is at the root of all chronic illness. Not the presence of insulin, because that is vital; but the abuse to our system from too many refined carbohydrates that result in spikes in insulin production, the damage these spikes render to the body, and the insulin resistance and chronic stress response that results. Symptoms can include:

Physical fatigue, drowsiness after meals, mental fatigue and inability to focus, loss of creativity, mood swings, depression, abdominal and thigh weight gain, high triglyceride levels, high blood pressure.

**Carbohydrates** come in three varieties, **sugar**, **fiber**, **and starches**. The basic building block of every carbohydrate is a sugar molecule, a simple union of carbon, hydrogen, and oxygen. The body breaks down carbohydrates to the **basic sugar molecule** and utilizes the sugar for energy.

The body **does not**, however, **break down fiber** but moves it through the body **undigested**. The fiber aids in transporting and pushing food through the digestive system, promoting regularity and preventing constipation. Fiber also helps eliminate low density lipoproteins (LDLs), the "bad" cholesterol.

The digestible carbohydrates are broken down to simple sugar and converted to glucose (blood sugar). Glucose is a universal energy source.

When glucose enters the blood stream the pancreas secretes insulin into the blood to aid the absorption of glucose into the body's cells for energy, and for storage in the liver, muscle and fat cells. When blood sugar gets low from the effect of insulin secretion the pancreas secretes another hormone (glucagon) that tells the liver to release its stored sugar, thus keeping a rather consistent low grade amount of glucose in the blood stream available for delivery of energy. Pretty cool how the body balances itself! eh? It needs to because too much or too little glucose in the blood (hyper or hypoglycemia) is toxic.

Now, foods that have a **high glycemic index** - that is, foods that cause a rapid spike of blood glucose - naturally will cause a rapid increase in insulin production. As the insulin delivers the glucose there is a quick low (a crash) in blood sugar before the liver can release more glucose into the blood stream. This results in fatigue and causes the body to want food to replace the lost blood glucose, thus a CRAVING for sugar occurs. Craving leads to hunger for quick sugar release type foods... and the vicious cycle is in motion!

As we eat more and more carbs that have a high glycemic index the body is forced to secrete more insulin. But the liver and muscle cells can only take so much glucose with the rest stored in fat cells. Obesity! Also along the way cells become sensitive to the toxic overproduction of insulin and begin to reject the insulin which results in the glucose remaining in the blood stream – **insulin resistance**. The cells become resistant to insulin and reject the glucose it is carrying.

What occurs then is an overabundance of blood glucose (type 2 diabetes). The pancreas secretes more insulin as it simply responds to the increased blood sugar (glucose). Increased blood glucose (hyperglycemia) and too much insulin (hyperinsulinemia) is very toxic as it affects brain and kidney function. It also can lead to osteoporosis and induces the body's stress response that we will learn much more about later.

Fat cells release triglycerides into the blood stream. Triglycerides are fats that normally provide energy when there is no glucose available. The fat cells are confused thinking the body needs energy since they are not storing glucose due to the insulin resistance. Now you have free fatty acids circulating in the blood. This leads to heart and artery disease. The increase in insulin in the blood also causes the kidneys to retain sodium which results in high blood pressure.

Storage of sugar in the form of fat was necessary for our hunter-gatherer ancestors who were not always guaranteed a steady food source. Our supermarkets have solved that problem for us.

The best sources of carbohydrates are slow release / high fiber carbs found in fruits and vegetables.

And now on to some practical information!!

# **Glycemic Index Values**

Low GI = 55 or less Moderate GI = 56 - 69 High Glycemic = 70 or higher

# Fruits

Vegetabl

# Vegetables Beans & Peas

Apple	38
Apricots, dried	30
Apricots, fresh	57
Banana	52
Cantaloupe	65
Cherries	22
Dates	103
Figs, dried	61
Grapefruit	25
Grapes	46
Kiwi	53
Mango	57
Orange	<b>48</b>
Papaya	59
Peach	42
Pear	43
Pineapple, fresh	66
Prunes	29
Raisins	64
Strawberries	40
Watermelon	72

Arugula	0
Beets	64
Broccoli	0
Cabbage	0
Carrots, cooked	49
Carrots, raw	47
Corn, fresh	60
Green peas	48
Lettuce	0
Mushrooms	0
Parsnips	97
Peppers, any color	0
Pumpkin	75
-	

Baked beans	<b>48</b>
Black beans	49
<b>Blackeyed peas</b>	42
Chickpeas, canned	42
Chickpeas, dried	28
Kidney beans, can	52
Kidney beans, cook	23
Lentils	29
Lima Beans, frozen	32
Yellow split peas	32



# Dairy

Ice cream, 16% fat	38
Ice cream, low fat	50
Skim milk	32
Whole milk	31
Yogurt, sweetener	14
Yogurt, fruit/sugar	33
Greek yogurt	12



# **Potatoes**

Baked	86
Canned	65
<b>French Fries</b>	75
Mashed, instant	86
Mashed, whole	70
New	62
Red, skinned/boil	88
Sweet	44
Yam	37



Continued glycemic index values...

## Rice, Grains, Pasta

25
<b>58</b>
50
25
<b>68</b>
65
<b>98</b>
61
53
<b>87</b>
45
32
46
47
<b>58</b>
38
37
43
38

#### **Breads**

Bagel	72
Croissant	67
English muffin	77
Hamburger bun	61
Kaiser roll	73
Multi 9-grain	43
Pita, whole wheat	57
Pumpernickel	41
Taco shell	68
Rye	58
Sourdough	53
Stone ground wheat	53
White, Wonder	80

#### **Breakfast Cereals**

All Bran with Fiber	38
Bran Chex	<b>58</b>
Bran Flakes	74
Cheerios	75
Corn Chex	83
Corn Flakes	92
<b>Cream of Wheat</b>	66
Cream of Wheat, instant	74
Grapenuts	75
Muesli	43
Oat Bran	66
Oatmeal	<b>49</b>
Pancakes	67
Puffed Wheat	67
Quick Oats	66
Raisin Bran	61
<b>Rice Krispies</b>	82
Shredded Wheat	75
Special K	67
Waffles	76

#### **Low Glycemic Vegetables**

Asparagus, green beans, Bok choy, Broccoli, Brussels sprouts, Cabbage, Cauliflower, Capers, Celery, Collars, Cucumber, Eggplant, Endive, Hearts of Palm, Kale, Leeks, Lettuce, Mushrooms, Okra, Onions, Peppers, Radish, Sauerkraut, Snow pod peas, Spinach, Sprouts, Sugar snap peas, Swiss chard, Tomatoes, Water chestnuts,

#### **Moderate Glycemic Vegetables**

Artichokes, Beets, Carrots, Dried beans, Sweet Potatoes, Squash, Spaghetti squash, Winter squash, Fresh yams.

# Breakfast - Healthy Choices

#### **Fresh Whole Fruit (healthy carbohydrates)**

- Cantaloupe
- Banana - Strawberries
- ApplesOranges
- Oranges - Pears
  - \_
    - Blueberries - Honeydew melon

- Pineapple

- NectarineTangerine
- Pomegranate
- Mixed berries
- Dates
- Plums - Cherries
- Kiwi
- Peaches
- etc.

#### Free Range Eggs (protein)

- Hard boiled

Grapes

- 1

- Poached
- Omelet (using canola or olive oil) with choice of vegetables
- Scrambled (lightly in canola or olive oil) with choice of vegetables
- Fried (lightly in canola or olive oil)

#### Fish (healthy fats and protein)

- Salmon
- Mackerel
- Halibut
- Bluefish

#### Lean Meats (protein)

- Leftovers from night before.
- Steak
- Pork (lean)
- Chicken
- Venison
- Avoid processed meats (bacon, meat slices)

#### Quinoa (pronounced "keen wah") (Protein) (I love this stuff!!)

- High protein grain-like seed (cooks like oatmeal)
- Use rice milk and raisins instead of milk and sugar

#### Oatmeal

- Tolerable even though it's a grain
  - It may be impossible to eliminate all grains, so oatmeal, brown rice and wild rice are acceptable.
- Also use rice milk instead of cow's milk
- Sweeten with raisins
- Add bananas or even some almonds or walnuts

#### **Herbal Teas**

- Weaning from coffee may be very difficult
- Coffee rushes digestion, herbal teas aid in digestion!!

It may seem odd to have fish or meat for breakfast, but our modern breakfast is loaded with refined carbohydrates that, we will see later, not only adds pounds but makes us hungry again in a short while. Protein and healthy fats on the other hand last throughout the morning.

# **Breakfast** - Unhealthy Choices

#### **Bread** (carbohydrates)

- Toast
- Scones
- Bagel
- English muffins
- Cinnamon rolls

#### **Other Flour based items**

- Muffins
- Pastries
- Pancakes
- Waffles
- Donuts
- Pop Tarts

#### From the grill

- Cheesy omelets
- Fried eggs w/ too much unhealthy oil
- Bacon
- Sausage
- Any processed meats
- Hash browns

#### Cereals

- Sugar Pops, Cocoa Puffs, Special K, Raisin Bran
- Sugar cereals especially
- Even whole grain cereals
- Instant oatmeal (instant anything!)

#### Dairy

- Butter
- Butter substitutes
- Margarine
- Milk or Cream
- Cheese
- Yogurt (Debatable because of the healthy bacteria provided)

#### Coffee

- Coffee is acidic, and acidic ph is quite inflammatory
- At first just brew coffee, smell it, then drink the tea
  - o I know this sounds weird, but I've done that, and it is satisfying!
  - Ask me about my shoulders!













Belie

# Discussion

Well, it looks like we may need to have a little talk right about now! I realize that after reading the lists above you may be facing your **first serious road block** in the **Health Care Self Care journey.** Am I right? Well, do not fear. Change is not expected to happen overnight. And it will only happen by you CHOOSING it to happen, not by anyone making you change.

The goal is better health, keep that in mind. Good food won't kill you... and, when you think about it, bad food will!

I grew up eating Sugar Pops and Lucky Charms sprinkled with spoonfuls of additional sugar, white Wonder bread toast, and highly sweetened jellies and jams. Thanks to a highly athletic childhood I burned all that sugar before it settled in my cells.

But those were foods that the television commercials were encouraging me to eat. Couldn't I trust my t.v., which gave me Popeye, Bugs Bunny, the three Stooges and the Beav?! And couldn't I trust my teachers, and the government whose food pyramid encouraged me to eat more bread than fruits and vegetables? The answer is NO!

It's not that there was a conspiracy, it's just that with heart disease and other lifestyle related illnesses on the rise the government could only react with the information that was available at the time.

Since the Industrial Revolution in the late 1800s advancement in human technology has advanced at a dizzying pace. "Quick and easy", "Bigger and better", "So you won't have to", are slogans that at first glance seem appealing. And, in fact, most new technology has improved society's quality of life. But clearly, food processing was not one of them!

The combination of introducing foods that are not compatible with our genetics (agriculture), coupled with encouraging filler foods (bread), then altering our food to make it "quick and easy", and finally adding ingredients that addict us (sugar) has produced a destructive onslaught to our physiology that we can no longer tolerate.

And if it was up to the corporate advertisers, those who could care strictly about bottom line profits, ALL food would be loaded with sugar, salt and fat. Why? Certainly not because it "tastes better" and "is good for you." NO! Because that is what SELLS!

Of course it's not better for you, and even the "tastes better" claim is a ruse!!! Whole foods, cooked properly, with the right combinations and the right healthy herbs and spices are far more sophisticated in flavor. They are just not as quick to prepare. And that is the crux of the matter. We've created quickness of food delivery at a cost of becoming literally addicted to sugar, salt and fat. And now we are witnessing the devastating affects in heart disease, diabetes, cancer and the rest.

# Joe's Morning Routine and Breakfast

I wake at 5:20 AM, hit the sleep button a couple times, shave, shower and get dressed. I do an abbreviated stretch routine and head to the kitchen where I let the dogs out of their crate and feed them.

Next I put water on to boil for tea, have a small glass of all-natural locally made apple cider, and pack an apple, a handful of grapes and an orange. Sometimes that will include cantaloupe or pineapple.

I will also drink a medium glass of water to "chase" the apple juice. I'm always glad if I boiled eggs the day before and pack one of them also.

I use two teabags, one peppermint and one "tension tamer" in a large mug.

I head to the office by 6:30 where I eat my fruit and egg and sip the tea while I read the Leader and an article from the Washington Post and wait for my first patient at 7 AM.

On the weekends I will either include a bowl of quinoa with rice milk and raisins or will have fried eggs over rice bread with all natural preserves for a heftier breakfast.

Either will last me through the morning as the fruit provides ample fiber, carbohydrates and vitamins and minerals, along with protein from the egg(s), and easily lasting me until lunch.



**Weekday Breakfast** Fruit, egg, juice, water herbal tea



**Saturday Breakfast** Add quinoa/rice milk/raisins



**Sunday Breakfast** Eggs over rice toast, jam jam, fruit, juice, water herbal tea

#### Plan a Day of Purity & Sufficiency

# I realize it's a bit early in the program to expect a complete change in habits, but I thought I would outline a good day that you can try after being in the program a month.

Purity requires not only nutrition, but also exercise, intellectual stimulation, emotional awareness and spiritual expression. Below are suggestions as to foods to be consumed and activities you can involve yourself in to accomplish a complete day of pure and sufficient living.

**Wake up early** – take a moment, pause, and just give thanks for another opportunity to express yourself as a human being. Reflect for a moment on the things that give you joy. Positive and happy thoughts decrease the body's stress response while optimism improves concentration.

**Stretch** – Take 10 minutes and perform some basic stretches to get the circulation moving and improve your flexibility. My stretch DVD is a great resource to choose from.

**Brief walk** – Now just walk outside. Simply go down to the end of the block and return home. Enjoy the quiet of the morning and visualize your day.

Breakfast – Choose a simple, healthy breakfast that you certainly are familiar with by now.

**Go to work,** or not, but whatever you decide to do make sure you greet everyone with a smile and positive attitude. You do not need to be overly outgoing, just realize that smiles and positive attitudes are contagious. Avoid the obvious bad energy and for today just focus on positive accomplishment. Put a reminder note somewhere you will see it often to remind you that today is a day of purity and sufficiency and that you will act accordingly. Have water available throughout the day.

Lunch – Have a salad (mixed greens) with as many vegetables you can pile on (carrots, raw beets, red peppers, green peppers, tomatoes, celery, avocado, cucumber, broccoli, cauliflower, etc. You can add chicken strips or fish for protein. Add oil and vinegar lightly for dressing.

**Snacks** – Mix some nuts and seeds or snack on raw vegetables. Raisins are great to add with almonds, walnuts, cashews, pumpkin seeds, unsalted sunflower seeds, etc. (Do not add m&ms!) Mix seltzer water with 100% fruit juice over ice for a fizzy soda substitute.

Exercise - At least a 30 minute brisk walk, or up to a full aerobic/strength workout.

**Supper** – Wild caught salmon, grass fed beef, or free range chicken with two lightly steamed vegetables and wild or brown rice. Avoid bread and pasta. Drink water, and avoid alcohol. Treat yourself with a piece of dark chocolate for dessert.

**Evening reading** – Take one hour and sit with a cup of herbal tea and read something for fun.

**Go to bed early**, and dwell what a successful day you have just spent. Be thankful to be alive, and congratulate yourself on spending a whole day of mindful living. Goodnight.

### Protein

Proteins are basically "what it's all about". In other words it is protein that not only gives us our physical structure but also carries out the physiological processes within a cell that produces energy, repairs tissue, digests our food, cleanses our system, and fights disease. Proteins are involved in nearly all functions of life.

As a matter of fact, genes within our DNA are merely recipes telling the cells how to make proteins. *More on that phenomenon in another course*.

Proteins are long chains of amino acids. There are twenty total amino acids that produce the 100,000 or so total proteins that regulate body activity. Of the 20 total amino acids there are 9 that are "essential" that we ingest from our food. Our body produces the others. Along with fat and carbohydrates, protein is a "macronutrient", as our bodies need large amounts of them. The "micronutrients", vitamins and minerals, are needed in small amounts. But unlike fats and carbohydrates, the body does not store protein.

Animal sources of protein contain all of the amino acids needed to produce a complete protein. Vegetable sources of protein are incomplete in their amino acid makeup and require a combination of vegetable sources, such as rice and beans, to provide a "complete protein".

**Animal sources of protein** - Fish, lean meats, chicken, eggs **Vegetable sources of protein** - Beans, lentils, soy products, quinoa and other whole grains, nuts and seeds, and many vegetables.

# Water

It has been estimated that 75% of Americans suffer from chronic dehydration. Amazing when you realize clean water is available in everyone's home.

Two thirds of our weight is made up of water, including 95% of our brains, 82% of our blood and 90% of our lungs. We eventually shrink mainly because the water content of our discs diminishes with age.

Short term memory loss, basic cognition, and concentration are all affected by a 2% drop in our bodies water supply.

What we gain in providing ample amounts of water is what I want to emphasize. Water provides a lubricant, helps regulate both metabolism and body temperature, is essential in digestion, and helps fight disease.

#### **How Much?**

We should be drinking half our body weight in ounces. In other words, if you weigh 150 lbs. you should be drinking 75 fluid ounces of water per day. Now you can see how so many Americans may be chronically dehydrated!



Water is essential for ALL LIFE



# **Respect the Cell** You Will Respect Yourself

So, we've been talking a lot about cells. By now you should know I am emphasizing the fact that our lives function at the cellular level.

You may have thought that cells were simply the building blocks of tissues in your body, like bricks of a wall. But they are much more than that!



#### Our Five Senses: Sight, smell, hearing, taste, & touch



Thanks to the cells of the eyes, ears, nose, tongue and skin you are able to **PERCEIVE THE WORLD**.





**The cells** of your brain register this information allowing us to both *consciously* understand the realities of life, and *subconsciously* adjust our physiology (cell action) to react to that perception in order to keep our bodies in a state of balance.

**EVERYTHING** about you is due to individual cell function and expression.

While cells may have different shapes they actually are quite similar



Liver Cell





Bone Cell



Connective tissue cell



Muscle cell 23

# So, now let's learn about cells!

#### We may as well start from the beginning; YOUR BEGINNING.

#### Do you ever think how you began as ONE CELL?

Yes, **you**! One cell. Pretty limiting, eh? Think amoeba. An amoeba can't even read. What a dunce!

But an amoeba is gloriously complete as one cell. It doesn't need to read to express itself completely as an amoeba. It is "whole" at one cell. But you, on the other hand, have just begun. Eventually you will become trillions of cells before you are complete.

The male sperm and the female egg are called **gametes**. They carry **half** of the genetic material of the respective parent. If/when they fuse "<u>they</u>" become "<u>a</u>" **zygote**, a **one cell human embryo**.





A one celled zygote showing the nucleus from the female egg fusing with the nucleus from the male sperm to form one nucleus.

The one cell zygote now possesses a complete set of *gene-containingchromosomes*: 23 chromosomes from mom plus 23 chromosomes from dad making 23 "pairs" of chromosomes and a brand-spankin' new one-celled unique individual the likes of which the world has NEVER before seen!

> How cool is that! Say Amen, somebody!

#### That ONE CELL soon divides into TWO CELLS.

Cell division does not "halve" the amount of genes like the sperm and egg, but REPLICATE, with each cell containing an exact copy of the SAME GENES!

As these cells divide they take with them an exact copy of the genes of the original one celled zygote.



What happens next as these cells continue to divide/replicate they soon begin to DIFFERENTIATE and SPECIALIZE. Cells destined for the *digestive process* begin to look and act like *stomach* and *intestinal* cells!

DIFFERENTIATION occurs when only certain sets of genes (instructions) are "activated".

These identical cells are now instructed to BEHAVE DIFFERENTLY!



"Ok, today we will develop the nerve system. Gene, Jean and Gene, we need you to sing, You bone Genes and bladder Jeans, and the rest of you Gene and Jeans have to keep quiet!"

Bone cells become bone cells because ONLY those genes that pertain to bone growth are activated.















All cells of these structures possess the same genes! What is different? Eventually trillions of specialized cells form a human organism, complete with all the systems of the body discussed earlier.



Now let's examine a typical cell.



# Cells are like miniature humans!

They create their own structure. They generate their own energy. They regulate their own physiology. They expel waste (or recycle their own waste!) And they reproduce.

And it is proteins, carbohydrates and fats that fuel the action!!

# Cell Structure:

# The Membrane, Nucleus & Organelles

All the harmony of keeping us alive is due to the stability of the cell.



The Cell Membrane – Thin, yet highly sophisticated boundary of the cell. Composed of phosphate (water friendly) outside and inside layers and a lipid (fat) (water phobic) middle layer. Separates the cell's contents from its surroundings and selectively controls movement of molecules in and out of the cell.



**The Nucleus** – Houses the chromosomes/DNA/genes that direct protein synthesis (more on that later) which controls construction/repair of the cell and its actual function. Also directs enzymes to regulate the rate of metabolism in the cell. Basically the nucleus is the control center of the cell.





**Chromosomes / DNA / Genes** – A chromosome is a single piece of coiled DNA. A gene is a section along the length of the DNA. The gene is what holds the instruction for what type of protein will be produced to direct a cell "function". 23 pairs in each human cell.



**Endoplasmic Reticulum** – Protein-manufacturing factory. **Ribosomes** – Associated with Endoplasmic Reticulum and also free within the cell's fluid (cytoplasm). The workbench of protein synthesis where amino acids are collected and sorted to form proteins.



**Lysosome** – Contains powerful enzymes that digest and recycle cell debris. Allows re-use of waste material for new production of cell structure and repair.



**Golgi** Complex – Helps modify, package and distribute proteins out of the cell.



**Mitochondria** – Power plants of the cells. This is where energy (ATP) is produced from the nutrients in the food we consume. Cells require this energy to function. Carbohydrates intimately involved.



**Protein receptors** – These receptors located throughout the cell membrane aid in nutrient transport in and out of the cell.

# Life's Function is Cell Function

#### **Respiration – Regulation – Reproduction – Synthesis Growth – Excretion – Transport - Nutrition**

#### Proteins

**Nutrient transport** – The membrane's middle layer, a lipid (fat) barrier, restricts foreign objects from entering the cell. But the cell needs nutrients. Protein receptors, imbedded in the membrane, are able to sense which nutrients are needed, grabs them from the blood stream, and transorts them through the lipid barrier into the cell.

**Cell structure** – Proteins provide the "beams and girders" forming the cell's "skeleton". **Intercellular Communication** – Proteins receptors are able to communicate between cells, forming a literal community.

**Transport** – Proteins act as vehicles for other substances, as in hemoglobin, the protein that transports oxygen to every part of the body.

**Regulators** – Proteins turn processes on and off in the cell allowing balance.

**Enzymes** – Proteins that act as catalysts in the production of more proteins.

**100,000 proteins** – There are over 100,000 different proteins playing a role in every cell function. Each protein is produced via instructions from a gene in our DNA. Prior to the

#### Carbohydrates

**Energy Storage** – Synthesized in the mitochondria and produces ATP. Released to aid in immune function,

**Metabolism** – All cell functions, whether creating proteins, neutralizing wastes, dividing or contracting the cell needs energy to function.

**RNA & DNA** – Provides the backbone of RNA and DNA's structure.

#### FAts

Structural – Main component of every cell membrane

**Hormones** – Provide backbone for hormones

**Storage of energy** – glycogen formed from blood glucose is stored in fat cells for future energy use and to help regulate body temperature.

Nucleic Acids (DNA/RNA)

**Regulation** – Instructs cell as to which proteins to produce. The body's blueprint/ **Reproduction** – Guides cell division

#### Vitamins & Minerals

Additional essentials for healthy cell function which will be discussed later in length.

# So, there you are!

From one cell to a multi-trillion-celled mature human organism; an organism able to sense itself from head to toe through the cooperative function of those cells.





And not just able to SENSE itself, but an organism with the ability to REACT to environmental stressors in order to maintain a healthy and balanced state (homeostasis).

All the body asks (requires) is a little **RESPECT and COOPERATION** from you.





**COOPERATION through the consumption** of the unadulterated food nature itself has provided. (Nature's bounty!)

COOPERATION by challenging the body physically, strengthening its self-healing properties.





And COOPERATION by viewing the glass as half-full instead of half-empty, providing cell-strengthening-hope instead of cell-destroying-despair.

# Your choices make the difference!!

# Lunch

## **Problems:**

- Most people eat lunch away from home.
- Sandwiches (bread) often come to mind when we think of lunch.
- The working world is not conducive to proper lunch habits.
- Fast food is so readily available.
- Poverty complex with packing a lunch.
- Eating lunch while still working, either at desk or in car.
- No lunch results in need to grab unhealthy snacks throughout day.
- Co-workers' "treats" are usually quite unhealthy.
- High carb lunch spikes blood sugar and insulin leading to acute low blood sugar and residual fatigue and mid afternoon slump!

## **Solutions:**

- Knowledge that good food really matters!
- Viewing lunchtime as an opportunity to recharge your energy, both physically and mentally, for the afternoon's responsibilities.
- Leftovers; last night's healthy meal often tastes even better the next day.
- Pack your lunch. Lunch pails need to come back in vogue!
- Encourage your favorite restaurants to offer more healthy choices.
- Salad & soup bars at supermarkets offer healthy choices.
- Vegetables, vegetables, vegetables!
  - Chopping vegetables the night before saves time in a.m.
  - Mixed greens/spinach rather than iceberg lettuce for salad.
  - Order an extra vegetable when eating out, instead of a starch.
- Soup!
  - Prepare large pot of soup on Sunday, enough for at least two lunches during the week.
    - Purchase a thermos to keep hot and for easy transport.
- Protein
  - Add an egg, piece of chicken, fish, or lean beef to your salad.
  - Chicken, fish or beef for entre.
    - Avoid processed sandwich meat!

# **Chicken Vegetable Soup**

- Boil whole chicken cut up, with stalk of celery and ¼ chopped onion in enough water to cover chicken.
- De-bone cooked chicken and strain broth.
- Return strained broth to pot.
- Add chicken pieces.
- Add 8 oz. can stewed tomatoes.
- Add chopped vegetables (as much of each as you'd like) -



carrots, celery, onion, mushrooms, turnips, peas, and any other vegetables you'd like. This is a vegetable free-for-all.

- Add cilantro, thyme, parsley, pepper, sea salt to taste. Or add your favorite herbs.
- Simmer 30 minutes until vegetables are soft.
- Add chopped kale or collard greens for final 10 minutes.



# Vegetable Soup with Coconut Milk

• Chop Vegetables - carrots, broccoli, peppers (red and yellow), 1 sweet potato, mushrooms, onion, celery – these are the veggies shown, however you can use any other you'd like.

• Add pepper, cilantro, parsley, basil to taste. Add any other preferred herb.

• Add Bragg brand Liquid Aminos All Purpose Seasoning to taste. This is vegetable protein from soy (optional).

• Simmer vegetables in enough water

to cover the vegetables until soft. You may need to add more water as vegetables cook.

- Add chopped kale or collard greens for final 10 minutes.
- Remove from heat, add one 13.5 oz. can unsweetened organic coconut milk.
- Stir and serve.



# Vitamins

Unlike carbohydrates, fats, or proteins, vitamins themselves do not provide energy or serve as building materials for tissues. Vitamins are necessary as co-factors or catalysts for many functions of the cells. For example, Vitamin D is involved in the intestines' ability to absorb calcium and phosphorus, and B1 aids carbohydrate metabolism.

For now what you need to know is that Vitamins are micro nutrients that assist growth, repair and the maintenance of homeostasis.



This rower's speed and direction is in direct proportion to the design of the paddles. She may make it to the finish line using only her hands, however the paddles offer uncompromising assistance. The paddles are like vitamins and minerals, as they assist in many of our cells functions.

Most vitamins cannot be manufactured by the body and must be included in your diet. No single food contains all the needed vitamins so it is necessary to eat a variety of fruits and vegetables and other foods rich in vitamins.









Vitamins are divided into two principal groups: water soluble and fat soluble. What this means is that water soluble vitamins (B vitamins and C) are dissolvable in water, as opposed to fat soluble vitamins (A, D, E, and K) that do not dissolve in water, but only dissolve in fats. Remember that oil and water don't

Oil & Water

substances that dissolve in water do not dissolve in fats, and vice versa.

mix? Therefore, those

These two types of vitamins are important: So the metabolism that requires fat and the metabolism that requires water both have the needed assistance that vitamins provide.



Cell Membrane – The cell membrane's inner and outer walls are water soluble and the middle layer is a lipid (fat soluble). Protein receptors and channels allow movement in and out of the cell.

Fat soluble vitamins can be stored in body, mostly in the liver. Water soluble vitamins, on the other hand, are not stored in the body so a consistent dietary supply of them is required.

#### **Free Radicals and Antioxidants**

Besides their other functions, three vitamins, C, E and A are termed antioxidant vitamins because they inactivate oxygen free radicals. Free radicals are highly reactive particles that damage cell membranes, DNA, and other cellular structures. They also contribute to plaque buildup within



arteries (arteriosclerosis). Free radicals derive from environmental hazards such as tobacco smoke and radiation. So these vitamins play a role in protecting against some cancers, reducing artery plaque, delaying effects of aging, and decreasing cataracts.

# **The Principal Vitamins**

Vitamin	Source	Function	Deficiency Syndrome
Α	Organ meats (liver), carrots,	Maintains health and vigor of	Increased ear, sinus,
(from beta-	sweet potato (w/ peel),	epitnelial cells (linings of cavities	respiratory, digestive and
(in one soon	broccoli egg cantaloune	health antioxidant healthy	blindness Faulty hone
carotene)	broccon, egg, cantaloupe	bone/teeth growth	and teeth development
	Synthesized by the body in	Absorption of calcium and	(soft bones) Rickets in
D	response to exposure to	phosphorus from intestines.	child and osteomalacia in
D	sunlight.	Helps maintain calcium balance.	adults.
	Oily fish, liver, egg yolk		
	Nuts, seed oils, green leafy	Cell membrane health!! Helps	Oxidation of fats that
R	vegetables.	form DNA, RNA and red blood	leads to damage to cell
		cells. Protects liver from toxins.	membrane, mitochondria
		and function of nerve system	cell
	Produced by intestinal	Aids in the synthesis of blood	Delayed clotting time
	bacteria!	clotting factors.	results in excessive
K	Also in spinach, cauliflower,		bleeding.
	cabbage, liver.		
	Eggs, pork, nuts, liver, yeast,	Aids carbohydrate metabolism.	Insufficient energy
<b>R1</b>	whole grains.	Aids in synthesis of acetylcholine	production (carbs).
(thismins)		(a major neuro-transmitter)	Beriberi, Polyneurtitis
(unannie)	Liver boof year lamb ages	Aids in motobolism of carbs and	Durrad vision actornate
	whole grains asparagus peas	proteins especially in cells of	Cracking of skin lesions
<b>B2</b>	beets	eve skin intestine and blood	in intestines and anemia
(riboflavin)			
	From amino acid tryptophan.	Antioxidant reactions.	Pellagra – dermatitis,
Niacin	Meats, liver, fish, whole	Inhibits production of cholesterol.	diarrhea, psychological
	grains, peas, beans, nuts.	Assists triglyceride breakdown.	disturbances.
	Produced by intestinal	Aids amino acid metabolism .	Dermatits of eyes, nose,
<b>B6</b>	bacteria. Also salmon,	Aids production of antibodies	mouth. Nausea.
(pyridoxine)	grains liver vogurt		
	Only B vitamin not found in	Aids red blood cell formation	Pernicious anemia loss
DIA	vegetables.	Aids formation of choline. Aids	of coordination, memory,
<b>B12</b>	Liver, kidney, meats, fish.	amino acids in energy	weakness, mood
		production.	changes, abnormal
		<b>TT 1 1 1 1 · · · 1</b>	sensations.
Dontothonia	Some synthesized from	Helps breakdown amino acids	Fatigue, muscle spasms,
Pantotnemic	Liver kidney green veggies	form cholesterol and hormones	degeneration insufficient
Acid	Liver, Kluney, green veggies.	form enoresteror and normones.	hormone production.
Folic	Synthesized from intestinal	Aids in DNA/RNA production.	Too large red blood cells
A aid	bacteria.	Aids in red and white blood cell	(anemia). Infant defects
Aciu	Green leafy veggies, liver	production.	(neural tube).
Diction	Synthesized from GI bacteria.	Synthesis of energy production.	Depression, muscle pain,
BIOTIN	Liver, egg york, kidneys.	Synthesis of fatty acids.	dermatitus, iatigue.
	tomatoes, broccali, ball	Promotes protein metabolism	Scurvy, anemia, poor
C	nenners kale cauliflower	healing inactivates poisons	Fragile arteries
	green veggies.	neuring, muenvales persons.	

# **Minerals**

Unlike vitamins, which are organic molecules (basically those that contain carbon), minerals are inorganic substances.

Similar to vitamins, however, minerals act as catalysts (helpers) and are necessary for many of the cells' physiological functions (making proteins, creating energy, disposing of cell waste, etc).



Biochemistry can be a bit complicated and cannot be reduced to simply the manufacturing of tissue and energy using available carbohydrates, proteins, and fats. Life's processes rely on vitamins and minerals to help many of these functions occur at the right time, to an efficient degree, and in the correct amount.

Minerals may combine, as in sodium and chloride to make salt, but they do not form long chains like protein, so they cannot build tissue material by themselves.

However, they often are a necessary part of many tissues of the body. For example, calcium and phosphorus combine to give stability to bone.

#### Na + Cl = NaCl

Sodium plus Clorine will produce sodium chloride, or table salt.

# 4% of your total body weight consists of minerals.(6 lbs. of minerals for a 150 lb. individual).

## **Minerals Essential for Life**

Mineral	Source	Discussion
Calcium	Egg yolk, shell fish, green leafy vegetables.	Most abundant mineral. 99% stored in bone. Formation of bone and teeth. Necessary for normal nerve function, intracellular motility as when chromosomes move prior to cell division.
Phosphorus	Meat, fish, poultry, nuts.	More functions than any other mineral! Helps form bone and teeth along with calcium. Muscle contraction, nerve activity, enzyme function, formation of DNA and RNA all depend on phosphorus.
Iron	Meat, liver, shellfish, egg yolk, beans, dried fruits, nuts.	Carries oxygen within the blood (hemoglobin). Too much stored iron can increase risk for cancer.
Iodine	Seafood, vegetables groin in iodine-rich soils.	Helps synthesize thyroid hormones, necessary for regulation of general body metabolism.
Copper	Eggs, beans, beets, liver, fish, spinach, asparagus.	Helps for hemoglobin. Necessary for many enzyme activities.
Sodium	A balanced diet of meat and vegetables provides enough sodium that table salt is unnecessary.	Affects distribution of water through osmosis. Functions in nerve conduction and muscle contraction.
Chlorine	Like sodium, natural sources from meat and vegetables provides sufficient amount.	Plays role in acid-base balance of blood, in cellular and extra-cellular water balance, and in the formation of stomach acids.
Potassium	A balanced diet provides necessary amounts.	Nerve cell and nerve conduction activity.
Magnesium	Green leafy vegetables, seafood, whole grains.	Necessary for muscle and nerve function. Many co- enzyme activities.
Sulfur	Beef, liver, lamb, fish, poultry, eggs, beans.	Component of hormones and vitamins. Various enzyme and energy producing activities.
Zinc	Meats, many other foods.	Carbon dioxide metabolism, wound healing, protein digestion, among other functions.

Other essential minerals: Flourine, Manganese, Cobalt, Chromium and Selenium.

Remember, calorie for calorie, grains cannot compare to lean meats, fruits and vegetables as rich sources of vitamins and minerals. Grains also contain "anti-nutrients" that restrict the absorption of B vitamins, iron and zinc.

Restore the hunter-gatherer foods to your diet and avoid agriculture's "new foods" and you will find greater success in feeling great, losing weight, and avoiding the pandemic of lifestyle diseases so prevalent today!

# Vitamin & Mineral Supplements

Even though Health Care Self Care type of healthy eating provides substantially more nutrients than the current "western diet" of high salt, high saturated fats, high sugar, and high unhealthy carbs, I still take supplements to ensure I am getting the required amount of nutrients.

My goal in taking supplements is not to take a certain nutrient for a certain condition, but to take supplements for general health only. I take a whole food multi-vitamin, a probiotic, and fish oil.

#### Innate Choice Whole Food Multi-Vitamin

These vitamins from Innate Choice contain nothing other than 100% Certified Organic ingredients from whole foods; Organic from farming, drying and packaging. These vitamins also contain the phytochemicals and cofactors found only in whole food vitamins and not in synthetic products.

# ORGADIC SUFFICIENCETLow CERTIFIED ORGANICWeb Cond Multiple Vitamin/MineralWeb Cond Multip



#### Fish Oil – Omega Sufficiency

The western diet is dangerously deficient in Omega 3 fatty acids, a causal factor in many preventable diseases. Remember, the cell membrane has an inner fat layer, and there are trillions of cells in our body. We need healthy fats and this supplement provides what I need.

#### **Probiotics**

Probiotic bacteria are essential for wellness and prevention. Our body contains micro-organisms and only 10% human cells. Dietary sufficiency of healthy micro-organisms (probiotics) is necessary for the proper function of the digestive and immune systems.

