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### *In This Issue*

- **Meat in the Human Diet**  
(page 1)
- **New Trans-Fat Labels for 2006 –too little, too late** (page 1)
- **How Do I Gain Weight on the McDougall Diet? I'm Not Joking!**  
(page 10 )
- **Featured Recipes**  
(page 18 )

## **Meat in the Human Diet**

Human beings have been consuming meat as part of their diet for most of their existence and will likely continue this behavior until the last living animal is gone from the earth. However, public awareness of meat-associated health hazards, such as heart attacks, colon cancer, and fatal E. coli bacterial infections, has caused great concern and shifts in many people's eating habits. The number of vegetarians has been growing worldwide, especially among better-educated and younger people. An astonishing contradiction to this trend is today's most popular weight loss diet – the Atkins Diet – almost entirely meat. Obviously, there is still much disagreement and confusion. There is no more important question to be answered for mankind than, "What is the proper diet for human beings?" What is the diet that allows us to look, feel, and function at our best? Not just to survive or lose weight. Is it vegetarian? Does it contain meat? How much meat? There must be a correct answer. Just like there is one diet best for horses, one for cats, one for dogs, and one for each kind of bird – there must be one diet best for people.

Why have we not discovered this diet? It is certainly not because of lack of interest. Russell Henry Chittenden, the father of American biochemistry and professor of physiological chemistry at Yale Medical School, wrote, a century ago (1904), "We hear on all sides widely divergent views regarding the needs of the body, as to the extent and character of food requirements, contradictory statements as to the see page 2

## **New Trans-Fat Labels for 2006 – too little, too late**

The federal government formally announced that food labels will be required to disclose the amount of unhealthy trans-fatty acids they contain by January 1, 2006. This means another 60,000 Americans will be at increased risk of dying prematurely before this information is available.<sup>1</sup> You don't have to be one of these victims of ignorance – trans-fats are very easy to avoid. Trans-fats are present in small amounts in meat and dairy products. However, the largest doses of these unhealthy fats come to your dinner plate by way of vegetable oils chemically changed by manufacturers to improve their shelf life and customer appeal. Margarines and shortenings see page 13

continued from page 2 relative merits of animal and vegetable foods; indeed, there is a great lack of agreement regarding many of the fundamental questions that constantly arise in any consideration of the nutrition of the human body.” You would think that after so many years of investigation using the latest scientific methods and employing modern technology that this matter of such grave importance would have been settled beyond a doubt. Coexistence today of enthusiastic advocates of “all meat” and “no meat” diets, and everything in between, proves this matter is far from settled.

### **I Believe, the Less Meat, the Better**

Over my past 25 years of medical practice I have taken the position that meat at most should be considered a delicacy, reserved for consumption on special occasions by healthy people. The consequence of this belief is my patients lose excess weight and become healthy – and stay this way for a long lifetime. Regardless of how much others may argue the merits of their opinions on the best diet (supported, of course, by all the latest “facts”), they do not have the same glowing outcomes with their patients – I’ve seen the consequences. For me, as a practicing doctor, the bottom line is *patient results*. Fortunately, there is an overwhelming amount of undeniable scientific data and observations clearly supporting my conclusions. I will share this information with you.

*Meat is defined as: the flesh of animals used as food. Flesh is commonly considered the muscular tissue. This definition, therefore, includes the muscles of cows, pigs, lambs, chickens, turkeys, fish and shellfish, as well as other animals. Within the muscle tissues are fat, nerves, lymphatics, blood vessels, and sometimes bones. Meat can also mean “organ meat,” which would be the flesh of the liver (foie gras), kidneys, thymus and pancreas (sweetbreads), testicles (fries or rocky mountain oysters), and intestine (tripe, chitterlings, and menudo). There are also “specialty meats,” like brains, cheeks, tongues, tails, heart, lungs, and the bone marrow of animals. In Britain they call “specialty meats” offal, which is pronounced “awful.”*

### **Should We Follow Our Ancestors’ Diets?**

Many scientists use the diet of our ancestors as the justification for what we should eat today. That may be a useful approach, but which ancestors are we to follow? Differences of opinion arise because throughout human history people have consumed a wide variety of foods. The early ancestors of modern humans, from at least 4 million years ago, followed diets almost exclusively of plant-foods. Beginning at least 250,000 years ago, many of the hunter-gatherer societies consumed meat as a large part of their diet.<sup>1</sup> However, more recently, over the past 12,000 years of agricultural development, people’s diets have been mostly based upon starches, like rice in Asia, corn in North America, potatoes in western parts of South America, wheat in Europe and Northern Africa. In terms of the time line of evolution, 12,000 years, and even 250,000 years, is only a brief moment.

### **Out of the Garden of Eden**

The Bible story of Adam and Eve’s eviction from the Garden of Eden is closely analogous to the actual shift from early plant-eating humans to hunter-gatherers.<sup>2</sup> While in the Garden God said, “I give you every seed-bearing plant on the face of the whole earth and every tree that has fruit with seed in it. They will be yours for food.” Upon expulsion humans were instructed by God, “By the sweat of your brow you will eat your food.”

For the most part hunter-gatherers (i.e., exiles from the Garden) had a subsistence standard of living, eating foods that extended from one extreme to the other in proportions of plant vs. animal foods – from the raw flesh see page 3

continued from page 2 and fat of marine mammals – the Arctic Eskimos – to diets composed largely of wild plants of the Western Desert – Australian Aborigines.<sup>3</sup> Hunter-gatherers took advantage of any dependable sources of food from their wild local environments. Because of the ease and dependability (compared to obtaining animals), gathering fruits and vegetables was a primary source of food for most hunter-gatherer societies – the emphasis on hunting increased in higher latitudes because of plant scarcity.<sup>4</sup>

Undoubtedly, all of these diets were adequate to support growth and life to an age of successful reproduction. To bear and raise offspring you only need to live for 20 to 30 years, and fortuitously, the average life expectancy for these people was just that. The few populations of hunter-gatherers surviving into the 21<sup>st</sup> Century are confined to the most remote regions of our planet – like the Arctic and the jungles of South America and Africa – some of the most challenging places to manage to survive. Their life expectancy is also limited to 25 to 30 years and infant mortality is 40% to 50%.<sup>5</sup> Hunter-gatherer societies fortunately did survive, but considering their arduous struggle and short lifespan, I would not rank them among successful societies.

### **The Importance of Meat**

So why has meat been an important part of the diet of so many of these hunter-gatherer societies?<sup>6</sup> Throughout human history, especially before the development of agriculture-based living, acquiring food for survival was a full time job – food scarcity, even starvation, plagued most of these people, at least some of the time. Meat represented a gold mine of concentrated calories and nutrients whenever it was obtained. For those societies who found a plentiful supply, survival on a meat-based diet simply attests to the resilience and adaptability of the human frame.

Because many hunter-gatherer societies obtained most of their calories from the fat of meat does not mean meat is the ideal diet for modern people. Almost every scientist readily admits that the composition of wild game available to our ancestors was far different from the grain-fed domesticated high-fat meat people eat these days. Furthermore, even if humans have been eating meat for centuries, it has not been with the ease that wealthy Westerners acquire it today. Without refrigeration and other means of preserving meat in a near fresh state, consumption was limited to within a few days of the kill – until the meat spoiled. (With the advent of fire people learned to preserve meat by smoking it.)

During difficult times meat provided more benefits than harms, but in a society where food is plentiful and life is physically easy, meat can become a serious health hazard. A traditional Arctic Eskimo, living in a subfreezing climate, could expend 6000 calories and more a day just to keep warm and hunt for food. The high-fat animal food sources – fish, walrus, whale, and seal – from his local environment were the most practical means of meeting the demands of those rigorous surroundings. Modern Eskimos living in heated houses and driving around in their climate-controlled SUVs, still consuming a high-meat diet, have become some of the fattest and sickest people on earth. Of course, they now use a “green lure” (a \$10 bill) to catch their fish (sandwich).

### **Our Anatomy and Physiology Provide the Undeniable Evidence<sup>3,4,8,9-13</sup>**

Evolution in the animal kingdom dates back hundreds of millions of years and the evolution of see page 4

continued from page 3 humans began over 4 million years ago. The ancestors of modern humans were believed to live primarily on plant foods, eating wild fruits, leaves, roots, and other high quality plant parts with a few animal foods in their daily diet. These pre-humans ate like our nearest primate relatives, the apes of today.<sup>3</sup> Now, biologists at Wayne State University School of Medicine in Detroit, Michigan, provide new genetic evidence that lineages of chimpanzees and humans diverged so recently that chimps should be reclassified as members of our genus *Homo*, along with Neanderthals, and all other human-like fossil species.<sup>7</sup> “We humans appear as only slightly remodeled chimpanzee-like apes,” says the study.

Most apes living today eat essentially as vegetarians – consuming a diet composed of the fruits, leaves, flowers, and bark, with sporadic consumption of very small amounts of insect material (like termites) and less commonly, small animals.<sup>8</sup> These meat-eating activities may be purely social in nature and unrelated to any real nutritional needs. Behavior can be changed overnight, but our anatomy and physiology only evolve from selective pressures of the environment over millions of years. Food is the strongest contact with our environment. Therefore, the present state of the human body accurately reflects how our kind has eaten during most of our human and pre-human existence. These indisputable anatomical and physiological characteristics clearly identify the best diet for people today.

### ***We Have the Mouth of a Plant-Eater***

“Johnny, eat your beef, you have to get your protein.” Worried about her growing child, my mother said this to me at almost every dinnertime. “But Mother, I can’t chew it,” I tried to explain. To make her happy I mashed the bite-size piece of roast beef with my teeth into a leathery lump, still too big to comfortably swallow. Eventually, jaw tired, wanting to be excused from the table, I slipped the remains under the edge of my plate. All this distress could have easily been avoided if my mother had known enough truth about good nutrition to simply say “Of course you can’t chew that meat – you have the wrong kind of teeth, Johnny – give it to the dog.”

Our dentition evolved for processing starches, fruits, and vegetables, not tearing and masticating flesh. Our oft-cited “canine” teeth are not at all comparable to the sharp teeth of true carnivores. I lecture to over 10,000 dentists, dental hygienists, and oral specialists every year, and I always ask them to show me the “canine” teeth in a person’s mouth – those that resemble a cat’s or dog’s teeth – I am still waiting to be shown the first example of a sharply pointed canine tooth.

If you have any doubt of the truth of this observation then go look in the mirror right now – you may have learned to call your 4 corner front teeth, “canine teeth” – but in no way do they resemble the sharp, jagged, blades of a true carnivore – your corner teeth are short, blunted, and flat on top (or slightly rounded at most). Nor do they ever function in the manner of true canine teeth. Have you ever observed someone purposely favoring these teeth while tearing off a piece of steak or chewing it? Nor have I. The lower jaw of a meat-eating animal has very little side-to-side motion – it is fixed to open and close, which adds strength and stability to its powerful bite. Like other plant-eating animals our jaw can move forwards and backwards, and side-to-side, as well as open and close, for biting off pieces of plant matter, and then grinding them into smaller pieces with our flat molars.

In a failed attempt to chew and swallow pieces of food, usually meat, approximately 4,000 people die see page 5

continued from page 4 each year in the U.S.<sup>14</sup> They choke on inadequately masticated chunks that become stuck in their throats. The Heimlich maneuver was specifically designed to save the lives of people dying from these “café coronaries.”<sup>14</sup>

### ***Our Digestive System Assimilates Plant Foods***<sup>4,8</sup>

From our lips to our anus our digestive system has evolved to efficiently process plant foods. Digestion begins in the mouth with a salivary enzyme, called alpha-amylase (ptyalin), whose sole purpose is to help digest complex carbohydrates found in plant foods into simple sugars. There are no carbohydrates in meats of any kind (except for a smidgen of glycogen), so a true carnivore has no need for this enzyme – their salivary glands do not synthesize alpha amylase. The stomach juices of a meat-eating animal are very concentrated in acid. The purpose of this acid is to efficiently break down the muscle and bone materials swallowed in large quantities into the stomachs of meat-eaters. Digestion of starches, vegetables and fruits is accomplished efficiently with the much lower concentrations of stomach acid found in the stomachs of people, and other plant-eaters.

The human intestine is long and coiled, much like that of apes, cows, and horses. This configuration makes digestion slow, allowing time to break down and absorb the nutrients from plant food sources. The intestine of a carnivore, like a cat, is short, straight, and tubular. This allows for very rapid digestion of flesh and excretion of the remnants quickly before they putrefy (rot). There are also marked sacculations (many sac-like enlargements that bulge out along our large intestine), like those found in all apes, which strongly supports the view that we are primarily plant-eating animals. Overall, the intestines of meat-eaters are noticeably simpler than ours.

### ***Cholesterol Overwhelms a Plant-eater's Liver***<sup>15</sup>

Cholesterol is only found in animal foods – no plant contains cholesterol. The liver and biliary system of a meat-eating animal has an unlimited capacity to process and excrete cholesterol from its body – it goes out, in the bile, passing through the bile ducts and gallbladder, into the intestine, and finally, out with the stool. For example, you can feed a dog or cat pure egg yolks all day long and they will easily get rid of all of it and never suffer from a backup of cholesterol. Humans, like other plant-eating animals, have livers with very limited capacities for cholesterol removal – they can remove only a little more than they make for themselves for their own bodies – and as a result, most people have great difficulty eliminating the extra cholesterol they take in from eating animal products. This apparent “inefficiency” is because humans have evolved on a diet of mostly plant foods (containing no cholesterol), and therefore, they never required a highly efficient cholesterol-eliminating biliary system. The resulting cholesterol buildup, when people eat meat, causes deposits in the arteries (atherosclerosis), in the skin under the eyes (xanthelasma), and in the tendons. Bile supersaturated with cholesterol forms gallstones (over 90% of gallstones are made of cholesterol). About half of all middle-aged women who live on the Western diet have cholesterol gallstones. (See my April and May 2002 Newsletters.)

### ***Our Requirements are for Plant Nutrients***<sup>4,8</sup>

To believe we require the body parts of other animals in our diet for good health supposes the human see page 6

continued from page 5    body evolved over many millions of years on a diet predominantly of meat – and deficient in plants. This is not what is seen when the nutritional requirements of people are examined.

When plants have been for eons a plentiful and reliable part of the diet, an animal can become dependent upon specific nutrients found in these foods. For example, ascorbic acid – found preformed and ready to use in plant foods – is called vitamin C in the diet of people. Insufficient amounts of this vitamin cause scurvy. Vitamins are essential micronutrients that cannot be synthesized by the body; and therefore, must be in the food. Because ascorbic acid has not been reliably available to them, meat-eating animals have retained the ability to synthesize ascorbic acid from basic raw materials found in their meat diet – therefore, it is not a vitamin for them. (In other words it is not “vital” or essential to be preformed in their food supply.)

Because humans have lived throughout most of their evolution on diets with very little animal matter, they have had to develop or retain the ability to synthesize some substances they need that are abundantly found in meat. For example, humans, and other plant-eating animals, have the ability to make vitamin A from a precursor found in large quantities in plants, called beta-carotene. Carnivores cannot utilize beta-carotene as a precursor of vitamin A. They have no need to; throughout their evolution they have always had a plentiful supply of preformed vitamin A (Retinol) found in the meat. Carnivores have also lost the ability to synthesize Niacin, which is plentiful in meat. Remember, efficiency is necessary for survival of a species and it is inefficient to keep manufacturing processes in the body that are useless.

### ***Our Instincts Are for Plants***

For most enlightened people in modern Western nations, the idea of chasing down and killing an animal is revolting; and the thought of consuming that freshly killed flesh is repulsive. (And to eat decaying flesh, as a vulture does, would be next to impossible.) Even when meat is cooked, most people are disgusted by the thought of eating a slice of horse, kangaroo, rat, or cat. Cows, chickens and pigs are acceptable to most Westerners only because we have eaten them all of our lives. Yet even then, to make meat palatable, its true nature must be covered up with a strong flavored sauce made with salt, sugar, and/or spices – like sweet and sour, marinara, barbecue, or steak sauce. Few people enjoy boiled beef or chicken.

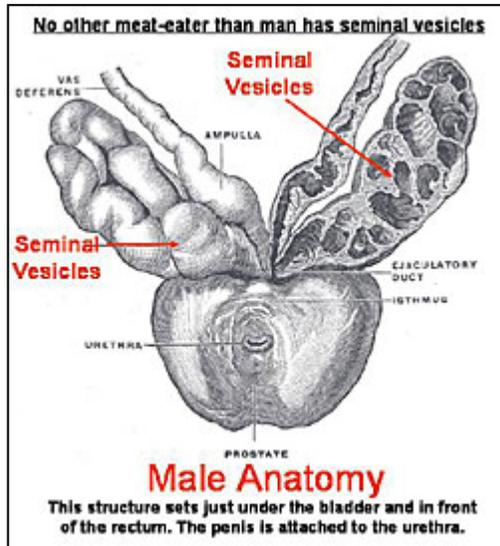
People do not have a negative reaction to unfamiliar fruits and vegetables. Consider, I could ask you to try an unfamiliar “star fruit” from the tropics for the first time and you would eat and enjoy it without hesitation. Why? Because your natural instincts are to eat fruits and vegetables.

### ***You Should Eat Like You Act***

So many human characteristics clearly say we evolved to be primarily plant-eaters. Do you want to read more? Our hands are made for gathering plants, not ripping flesh. We cool ourselves by sweating, like most other plant-eating animals. Carnivores cool their bodies by panting. We drink our beverages by sipping, not lapping like a dog or cat. The exhaustive factual comparisons of our body traits with that of other animals prove we have        see page 7 con-

tinued from page 6 evolved over eons in an environment of plant-based foods – the only real contradiction is our behavior. The results of our aberrant behavior can be catastrophic – let me begin to explain that harm with one example about macho men.

### A Man's Behavior Contradicts His Anatomy



Men traditionally have been the hunters who carry back the slain animals to feed the village – you know, “they bring home the bacon.” Scientific research confirms meat is viewed as a superior masculine food.<sup>16</sup> The acts of killing, butchering and eating animals are associated with power, aggression, virility, strength, and passion – attributes desired by most men – and eating meat has long been associated with aggressive behaviors and violent personalities. Men say they need more, and they do eat more meat, especially more red meat, than women. However, based on male anatomy, real men should be vegetarians.

Human males have seminal vesicles – no other meat-eating animal has these important collecting-pouches as part of their reproductive anatomy.<sup>17</sup> The seminal vesicles are paired sacculated pouches connected to the prostate, located at the base of the bladder. They collect fluids made by the prostate that nourish and transport the sperm. Ejaculation occurs when the seminal vesicles and prostate empty into the urethra of the penis. In many ways ejaculation is the ultimate act of male performance – seminal vesicles are essential organs for proper male function and therefore, they should tell us much about his true nature.

### His Aberrant Behavior Ruins His Potency

Eating meat diminishes sexual performance and masculinity. The male hormone testosterone that determines sexual development and interest has been found to be 13 % higher in vegans (a strict plant diet – no animal products of any kind) than in meat-eaters.<sup>18</sup> Meat-eaters are likely to become impotent because of damage caused to the artery system that supplies their penis with the blood that causes an erection.<sup>19</sup> Erectile dysfunction is more often seen in men with elevated cholesterol levels<sup>20</sup> and high levels of LDL “bad” cholesterol<sup>21</sup> – both conditions related to habitual meat-eating.

The greatest threat to a man's virility is from the high levels of environmental chemicals concentrated in modern meats of all kinds. These chemicals interfere with the actions of testosterone. Decreased ejaculate volume, low sperm count, shortened sperm life, poor sperm motility, genetic damage, and infertility result from eating meat with estrogen-like environmental chemicals.<sup>22</sup> These chemicals in the meat, eaten by his mother, influence the development of the male fetus, increasing the risk that the baby boy will be born with a smaller penis and testicles, as well as deformity of the penis (hypospadias) and an undescended testicle (cryptorchidism). Estimates are 89% to 99% of the chemical intake into our body is from our food, and most of this is from foods high on the food

see page 8

continued from page 7 chain – meat, poultry, fish, and dairy products.<sup>23,24</sup>

### A Deviant Diet Causes Deadly Diseases

The enlightened diet for humans today is centered around starchy plant foods with the addition of fruits and vegetables – the use of clean meat is limited to special occasions – like Thanksgiving and Christmas – and consumed only by healthy people.<sup>25</sup> **If your diet deviates too far from that which you evolved on over eons of time then you will likely suffer serious consequences – these are the chronic diseases affecting people living on the Western diet.** Next month I will continue this discussion of the health problems produced when we attempt to live with meat as a significant part of our diet.

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see page 9

Continued from page 8

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## How Do I Gain Weight on the McDougall Diet? I'm Not Joking!

(Please do the opposite of the advice below to lose weight faster)

One common question I get from people who seriously follow my instructions is, "How do I stop losing weight?" For example, this e-mail letter from a woman says, "I was a 100% raw foodist for almost 2 years and this past 10 days I came off that diet and went on your plan. My question is this: your plan is definitely the ONE; however, I was only 105 pounds as a raw foodist (usually high in fat with nuts, seeds, avocados, etc. and sugars from fruits and juices) and since eating your cooked low-fat plan, I am losing weight and only weigh 100 pounds now. How do I increase my body weight?"

### Maybe the Problem is One of Perception?

You and your friends are used to looking at you at one size and now the change is difficult to adjust to and uncomfortable for many. Fortunately, people when they first meet folks who follow a healthy diet will likely think how exceptional they look – they are not burdened by past perceptions. There is also the problem of envy from those who wish they could lose weight so easily and were as thin. They may say, "You look so thin. Have you been ill?"

A participant in one of our recent live-in programs in Santa Rosa asked me, "Don't you think Mary (McDougall) is a little too thin?" My reply was, "Have you noticed our dietitian, Jill, our psychologist, Doug, and our administrator, Heather (McDougall)?" "Yes, they're thin, too," she replied. My response was clear, "Our staff members are trim, vigorous, and young looking for a simple reason; they follow the McDougall diet and exercise program. You should be so lucky." (By the way, no one ever accuse me of being too thin – possibly because I have no hesitation in eating large amounts of food and strenuously exercising while windsurfing on the water off Northern California.)

### The Kempner Rice Diet Program Knows about Trim Weight

I have used a chart from the Kempner Foundation for more than 20 years to help people who think they are becoming too thin to realize that their new weight may actually be an ideal weight when it comes to good health. Walter Kempner, MD, established the Rice Diet Program in the 1940s at Duke University and until very recently this program was an important part of Duke's medical department. The Rice Diet begins with mostly rice and fruit and then expands to other foods as people become healthier and thinner.

Again, the purpose of showing these figures is to help reassure you that you are not becoming too thin on the McDougall Diet – you should **not** look at these as goal weights.

This chart records what Kempner considered to be reasonable adult weight in proportion to height. He also recommended that people with diabetes, heart, kidney, or blood vessel diseases should weigh 10-15% see page 11

continued from page 10 less than the optimum figures presented in this chart.

Women		Men	
Height	Wt. Should Be Below* lbs.	Height	Wt. Should Be Below* lbs.
4ft 11in	91	5ft 2in	110
5ft	94	5ft 3in	115
5ft 1in	97	5ft 4in	120
5ft 2in	100	5ft 5in	125
5ft 3in	104	5ft 6in	130
5ft 4in	108	5ft 7in	135
5ft 5in	112	5ft 8in	140
5ft 6in	117	5ft 9in	145
5ft 7in	122	5ft 10in	150
5ft 8in	127	5ft 11in	155
5ft 9in	132	6ft	160
5ft 10in	137	6ft 1in	165
5ft 11in	142	6ft 2in	170
6ft	147	6ft 3in	175
		6ft 4in	180
		6ft 5in	185
<b>*Fully Dressed</b>		<b>*Fully Dressed</b>	

Even though you will not look at these figures as your goal weight, if you follow a starch centered meal plan, as I recommend, and exercise, you could easily end up at a weight close to Dr. Kempner's figures. So be reassured you are not too thin.

### How Do You Tell If You're the Right Weight?

Take off all of your clothes and stand in front of the mirror. Do you like what you see? All the weight charts in the world pale in importance to your own perceptions.

*One Important Precaution.* If you are too thin and have any concern that this might be a health issue then please check with your doctor. Illnesses, like cancer, infectious diseases (AIDS), liver and thyroid disease can also cause excessive weight loss. So can some serious psychological problems, like anorexia and depression.

### How to Gain Weight in a Healthful Manner

I have known people who stop eating our diet with the excuse that they became too thin. This see page 12

continued from page 11 was almost always just an excuse to go back to burgers and fries – an excuse like inconvenience, difficulty, pressure from a spouse, longing for cake and cookies, etc. – to stop my recommendations. Never use too much weight loss as a reason to stop a healthy diet and exercise program.

Many times people become “too thin” on our diet because they don’t like the food – and that is simply because they don’t take the time to make interesting dishes. A plain baked potato and three stalks of broccoli will not make a successful long-term diet for many people. If you want this for a lifestyle then you must take the effort to find 4 to 8 dishes that you like to eat and are willing to find the time to prepare. For example, oatmeal for breakfast, a soup and bread for lunch, and bean burritos or spaghetti for dinner.

Another common mistake is to think that our food plan is a diet of green and yellow vegetables. These foods – like broccoli, cauliflower, pea pods, and sprouts – are too low in calories to get you through the day. You would have to eat bushel baskets full to get your 2000 to 3000 calories. Our diet is centered on delicious higher calorie vegetable foods commonly referred to as starches – foods like rice, corn, potatoes, beans, pastas, and breads, are also called “comfort foods” because of the way they make us feel. To this higher calorie centerpiece are added green and yellow vegetable dishes and fruits. When I say “higher calorie” this is relative to the low calorie concentration found in green and yellow vegetables. (Higher calorie does not mean these choices will make you fat – becoming fat would be very difficult to accomplish on a starch-based diet – consider there are billions of people, like rural Chinese, who live on a starch-based diet (rice) and no one is fat – until they change to the Western diet. There are a few people running around swearing they follow the McDougall Diet and they look to be 50 to a hundred pounds overweight. The truth is they are following their interpretation of my recommendations – you can learn about unhealthy, overweight vegans – people eating no animal products – in my October 2002 Newsletter).

Gaining weight is usually a matter of **more calories in than calories out** of your body. Fats are the most easily stored of all three kinds of calories (protein, carbohydrates and fats). Any change in diet that raises insulin levels will make weight gain easier – insulin is the hormone that pushes fat into fat cells and prevents the release of fat.

### **Make the Following Changes in this Order to Regain Weight in a Healthful Manner**

- 1) Eat more whole grain flour products like breads and bagels. Flour is more fattening than the whole grain because the change in physical properties that comes with milling causes faster and more complete absorption of the calories and a great rise in insulin response.
- 2) Eat more simple sugars in the form of fruits, dried fruits and fruit juices. This will cause a greater rise in insulin in your body.
- 3) Eat more high-fat plant foods, like nuts (and nut butters), seeds (and seed spreads), avocados, and olives. Fats are concentrated calories.
- 4) Add high-fat soy milks and tofu products. These are higher in fats.
- 5) Eat more high-fat soy foods. However, in general, these fake foods (like burgers, hot dogs, lunch meats, and cheeses) should be kept to a minimum because they are not very nutritious.
- 6) Eat more food – this is often difficult because most people already eat to the full satisfaction see page 17

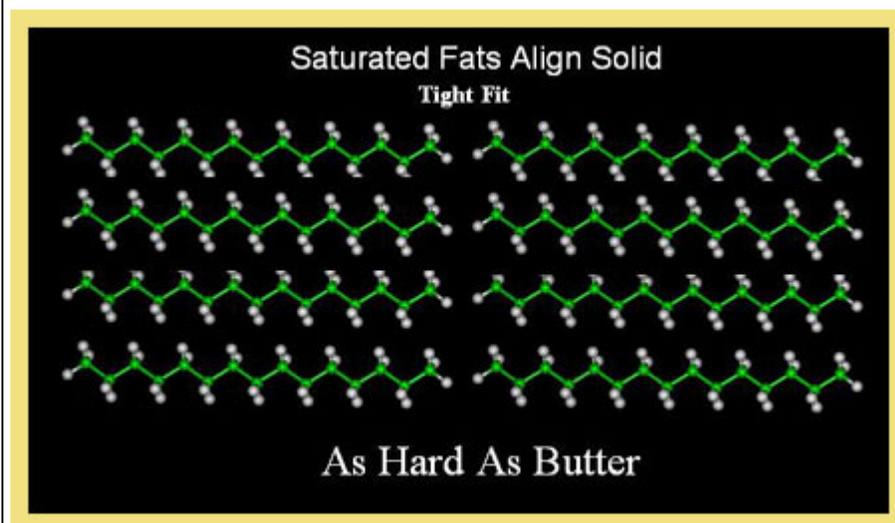
continued from page 1 (Crisco) are the predominant sources of these fats – contributing 80% to 90% of the trans-fats in the American diet. These synthetic fats are then used in a great variety of common products such as cookies, crackers, potato and tortilla chips, donuts, crackers, cakes and frostings, baked goods, potpies, non-dairy creamers, pizzas, fish sticks, and French fries. In Britain fish oils are commonly made into trans-fat products.

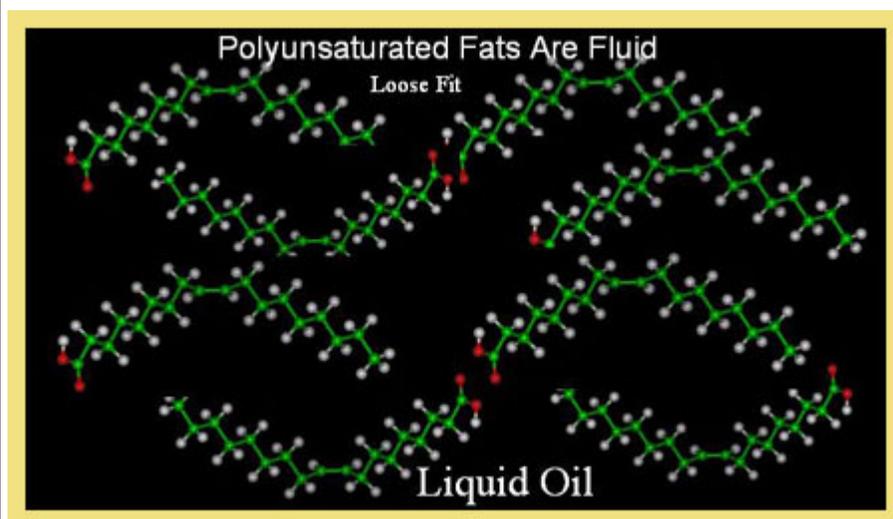
Unless it is clearly stated to the contrary, assume all boxed, canned and packaged foods that list added fat as an ingredient contain trans-fat. Deceptive labeling saying a product is “Low in Saturated Fat” or “Low in Cholesterol” or “Cooked in Vegetable Oil” will tell you nothing about the kinds of fats, and in fact, products with such labels may be the worst offenders.<sup>2</sup> These products may contain up to 35% of their calories as trans-fat. One clue that trans-fats are present is the words “partially hydrogenated oils” found in the ingredient area of the label.

Even with the new labeling laws you still won't know about the trans-fat foods that are served when you eat in restaurants and fast foods places. These eateries use packaged ingredients containing trans-fats and also deep fry many of their menu items in oils loaded with trans-fats.

### What Are Trans-Fats?

Fats and oils differ in that fats are solid at room temperature and oils are liquid. The reason has to do with their chemical structure. All kinds of fats are made of carbon atoms attached together in long chains. When the chains are flat (more linear) and more rigid – they fit together tightly making the final products solid. When the chains are bent, then they are more flexible and loosely fitted together – as a result the product is a liquid.

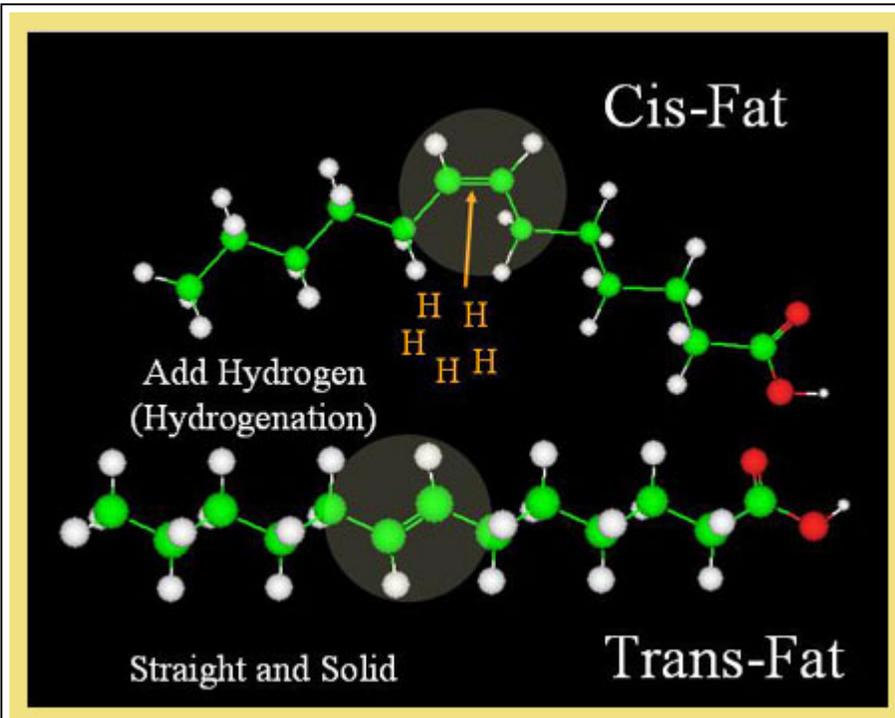




In some foods solid fats are more desired by the consumer than liquid fats – the best examples are solid shortenings and margarines that spread like butter. They also have a prolonged shelf life over the natural oil, are lower in cost, and are more suitable for commercial frying. Bombarding a liquid vegetable oil with hydrogen turns it into a more solid product by straightening its carbon chains.

(The discussion in the next paragraph may be difficult for some people to understand, but try to take the trouble to follow it)

Naturally occurring fats contain some double bonds – these are connections with two arms (bonds) holding one carbon atom to the next in the long chain of carbons (see the picture below) – each carbon on each side of the double bond also has one hydrogen atom attached to it. In most cases the two hydrogen atoms attached to these two carbons involved in the double bond are located on the same (cis) side of the double bond (causing a bend in the chain). Bombarding the chains of carbon with hydrogen (in manufacturing) will rearrange the molecules so that now the two hydrogen atoms attached to the two carbons involved in the double bond are located on opposite (trans) sides of each other. The end result is now the chain of carbons making up the fat are straightened out – they now fit more tightly together and are more solid (see the pictures above).



Cis fats are also converted to trans-fats by bacteria living in the rumen of animals like cows and sheep.<sup>3</sup> As a result, trans-fats are found in significant amounts in dairy products and meats.

### What are the Health Consequences?

It is estimated that in Western countries 2% to 4% of the calorie intake is from trans-fats. More specifically, in the USA 2% of the calories consumed daily is estimated to be from trans-fats. These fats raise total cholesterol, LDL “bad” cholesterol, and lower “good” HDL cholesterol. The end result is an increase in your risk of clogged arteries and in your risk of death from strokes and heart attacks. One comprehensive analysis of the data showed a 2% increase in calorie intake from trans-fat was associated with a 25% increase in the risk of coronary heart disease.<sup>4</sup>

Trans-fats may also be more cancer-promoting than other fats. They may contribute to cancer by disruption of the natural cell membranes in our bodies. Incorporation of these structurally deformed fats into the cell walls can leave gaping holes which allow the passage of cancer causing-chemicals into the inside of our cells where these chemicals can damage the cell nucleus and thus cause cancer.<sup>5</sup> They may also increase our risk of cancer by affecting our immune and hormonal (prostaglandin) systems.<sup>5</sup> An increase in the risk of colon cancer has been specifically found with increasing consumption of trans fats.<sup>6</sup>

Like all fats, they are easily stored in your own body fat (adipose tissues), thus contributing to obesity.<sup>7</sup> Along with obesity comes a whole variety of associated health problems like type II diabetes, hypertension, and arthritis.

### A Simple Solution

Trans-fats are very easy to avoid by eating a starch-based diet with the addition of fruits and vegetables (The McDougall Diet). In the plant kingdom double bonds are naturally made with a cis configuration. All plants (with a see page 16

continued from page 15 few rare exceptions) contain these natural healthy fats – you know them as Omega-3 and Omega-6 fats – in ideal proportions in perfectly designed packages that have evolved over hundreds of millions of years. Simply stay clear of most packaged foods, and meat and dairy products – health hazards you have already learned to avoid for many other sensible reasons.

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continued from page 12 of their appetite. Making more delicious meals and taking more time to eat may help accomplish this.

- 7) Eat a greater variety of foods – new kinds of foods stimulate interest, which increases food intake.
- 8) Add salt, sugar and favorite spices to the surface of your foods. If they taste better to you then you will eat more. Plus sugar adds calories (empty calories).
- 9) Use salad dressing, barbecue and steak sauces (made without oils and animal products) over your dishes to make them taste better so you eat more. Many sauces also contain simple sugars that provide calories and raise insulin levels.
- 10) Exercise less. We all know people who are exercise fanatics and they burn 3000 to 5000 extra calories a day – making it very difficult for them to eat enough food to fully replenish the expenditure. One simple way to gain more weight, and in some ways improve your overall health, may be to exercise more moderately.

I have never seen any otherwise healthy person “starve to death” when there were adequate amounts of nutritious foods available to them. Your hunger drive is there to guarantee your personal survival by making sure you consume sufficient calories and nutrients. It works just fine when the correct foods are present – unprocessed starches, vegetables and fruits. With the wrong foods – meats, dairy products and refined and packaged foods – all bets are off and you are struggling for survival in this artificial world. The McDougall Program is the easiest and surest method of achieving trim body weight, and much better than fighting your hunger drive and losing the “lifelong battle of the bulge” – it works because the qualities of food match the size of the stomach, the strengths of the hunger drive, and the needs of the body – how could it not be this way in a perfectly created world that works so well for all other matters?

## Recipes

### BANANA PANCAKES

These are a new favorite breakfast in our home. They are easy to make, and everyone loves them! These are wonderful served with a little maple syrup or applesauce. I even like them plain!

Preparation Time: 10 minutes

Cooking Time: 10 minutes

Servings: makes 10-12 pancakes

$\frac{3}{4}$  cup whole wheat pastry flour

$\frac{3}{4}$  cup unbleached white flour

2 teaspoons baking powder

1 cup mashed ripe bananas

1 tablespoon egg replacer mixed in  $\frac{1}{4}$  cup cold water

1 tablespoon Wonderslim fat replacer

1 cup soy or rice milk

Mix the flours and baking powder together in a bowl. Place the bananas in another bowl and mash well. (This is about 2  $\frac{1}{2}$  bananas.) Mix the egg replacer and water and beat until frothy. Add to bananas and mix well. Stir in the Wonder-slim fat replacer and the soy or rice milk and mix again. Pour into the dry ingredients and stir to mix. Do not over-beat. Heat a non-stick griddle over medium heat. Pour mixture by  $\frac{1}{4}$  cup measure onto the dry, heated griddle and flatten with the bottom of your measuring cup. Flip and turn over when the first bubbles start to appear. Cook until brown on both sides. Repeat until all mixture has been used.

Hint: This makes a delicious, light pancake that rises as it cooks. For a slightly thinner pancake, (or if you let your batter sit too long before using) thin batter with a little more soy milk, stirring to mix well before ladling onto the griddle. This may also be made with all whole wheat flour. It will be slightly heavier in texture. These may be refrigerated and heated in the microwave or oven at a later time. They may also be frozen and heated in a toaster.

### BANANA BREAD

This is our favorite banana bread. I make it in a red SiliconeZone loaf pan. It comes out clean every time!

Preparation Time: 25 minutes

Cooking Time: 60 minutes

Servings: makes 1 loaf

$\frac{3}{4}$  cup soy milk

1 tablespoon lemon juice

1  $\frac{1}{4}$  cups whole wheat pastry flour

1 cup unbleached white flour

1 teaspoon baking powder

1 teaspoon baking soda

1 teaspoon cinnamon

$\frac{1}{8}$  teaspoon salt

$\frac{1}{4}$  cup walnut pieces

$\frac{1}{3}$  cup Wonderslim fat replacer

1 cup mashed ripe bananas

$\frac{3}{4}$  cup sugar or Sucanat

1 tablespoon egg replacer mixed in  $\frac{1}{4}$  cup cold water

1 teaspoon vanilla

Preheat oven to 350 degrees.

Place the soy milk in a cup. Add the lemon juice and mix well. Set aside. This will thicken as it rests.

Mix the flours, baking powder, baking soda, cinnamon and salt in a large bowl. Stir in the walnut pieces and set aside.

Mix the fat replacer, bananas and sugar or Sucanat in another bowl. Combine the egg replacer and water and mix until frothy. Stir into the banana mixture along with the vanilla. Add the milk mixture and mix again. See page 19

continued from page 18 Pour into the dry ingredients and stir until combined. Do not over-beat. Pour into a non-stick 9x5 inch loaf pan. Bake for 60 minutes.

Hint: Regular whole wheat flour may be used instead of the pastry flour. It will be slightly heavier. If you make this in a conventional non-stick pan, loosen it from the sides with a dull knife after it cools slightly. Then invert to remove. If you make this in a flexible silicone pan, you will just need to flex the sides several times before inverting to remove.

### **FROZEN FRUIT SMOOTHIES**

Whenever I have extra, ripe bananas, I always peel and freeze them. Just peel the bananas, cut off any brown areas, break into 2 or 3 chunks, and drop them into a plastic zip-lock bag. Put them in the freezer and use for a quick smoothie anytime.

Preparation Time: 5 minutes

Servings: 2

1 cup frozen banana chunks

¼ to ½ cup frozen fruit (strawberries, blueberries, mango, papaya, etc.)

1 to 1 ½ cups liquid (fruit juice or soy or rice milk)

Place all ingredients in a blender jar and process until smooth.

Hint: This is easy to vary according to what you have on hand or what you like best. This may also be made with fresh fruit instead of frozen fruit, although the frozen bananas add a very creamy consistency to the drink. Bananas and soy milk, either plain, vanilla flavored or chocolate make a delicious and simple smoothie.

### **CREAMY CEASAR SALAD DRESSING**

Preparation Time: 5 minutes

Servings: makes 2 cups

1 12.5 ounce box Lite Silken tofu

2 teaspoons minced fresh garlic

3 tablespoons Dijon mustard

3 tablespoons soy parmesan cheese

3 tablespoons lemon juice

2 tablespoons soy sauce

¼ cup water (approximately)

1 tablespoon drained capers (optional)

Place all ingredients, except the capers, in a food processor. Process until very smooth. Add additional water if you want a thinner salad dressing. Add the capers and pulse briefly, until they are chopped but not pureed.

Hint: This will keep in the refrigerator for about a week. If you don't have any capers, or don't like them, they may easily be omitted.