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Alzheimer's Disease Can Be Safely Prevented and Treated Now

"Ronnie's long journey has finally taken him to a distant place where I can no longer reach him," Nancy Reagan despairingly said about her husband's failing mind. "Because of this, I'm determined to do whatever I can to save other families from this pain. I just don't see how we can turn our backs on this." She was referring to the controversial stem cell research for treating Alzheimer's disease (AD), but she should have been asking the public to learn about practical steps that are already known to stop this disease – specifically, a healthful diet and avoidance of the consumption of the toxic metal, aluminum. However, as you have witnessed, even with diseases that are well-established to be caused by diet, like heart disease, obesity, type-2 diabetes, and many common cancers, controversy abounds – not because data from scientific research fail to provide safe and effective behaviors for us to follow, but because money and politics rule, and just as important, people defend their own dinner plates.

AD is a progressive disease that destroys the mind with forgetfulness in early stages,



American Diet Devastates Reagan Family:
 Ronald Reagan: Colon Cancer and AD
 Nancy Reagan: Breast Cancer

followed by the inability to communicate and provide self-care. On average, patients die within 8 years of the onset of the first symptoms, but the disease can linger as long as 20 years. The five drugs currently approved by the Food and Drug Administration (FDA) for the treatment of AD patients (tacrine, donepezil, rivastigmine, galantamine, and memantine), at most, improve symptoms, and none has been shown to slow the progression of AD. Therefore, it is imperative that no obstacle stand in the way of utilizing the knowledge we presently have to spare others the kind of suffering inflicted upon the Reagan family.

While research into genetic causes and stem-cell treatments may be intriguing, they are currently, at best, in the distant realm of science fiction, and of no practical use for us here and now. Our attention should be focused on practical matters, such as our diet and avoidance of toxic substances, because this translates immediately into cost-free, highly-effective, non-toxic approaches for prevention and treatment of any disease.

Plaques and Tangles – The Pathology of AD

AD is characterized by the death of brain cells. The diagnosis is firmly established by seeing on microscopic examination two characteristic changes that follow years of repeated injury – and the resulting chronic inflammation. The main feature of AD is clumps of protein, called beta-amyloid deposits, which are commonly referred to as *senile plaques*. These deposits are found in the spaces between the brain cells. The senile plaques are so important for the diagnosis of AD that they are often referred to as *pathognomonic* lesions¹ – this word means, if you see the pathology, then you can name the disease – in other words, finding a significant numbers of these senile plaques on microscopic examination establishes that the patient had AD.

Neurofibrillary Tangle



Senile Plaque

Injury results in damage within the brain cells, too. Tiny (micro) tubules make up the structure of the inside of the brain cells, and serve to transport substances into and out of the cells – when damaged they clump together forming filamentous snarls, known as *neurofibrillary tangles*. Thus, our focus of attention needs to be upon the scientific research that identifies the sources of injury that result in these two characteristic lesions of AD (*senile plaques* and *neurofibrillary tangles*).

The Meat of the (Brain) Matter

Chronic injury to arteries results in atherosclerosis which is characterized by lesions also called plaques. Many of the tissue changes found on examination are similar to both AD and athero-

sclerosis.^{2,3} In the case of atherosclerosis, which leads to coronary heart disease (CHD), scientists have firmly established that the rich American diet – high in cholesterol and fat, and lacking in healthful ingredients found naturally in plant foods – plays a pivotal, causal role.

Specific Evidence on Cholesterol and Alzheimer's Disease

Extensive evidence points to the rich Western diet as the fundamental cause of Alzheimer's disease:

1) Worldwide, the incidence of AD is more common among people who follow meat- and dairy-centered diets, than among those people who eat a more plant-based diet. Estimates are 45% to 55% of cases of mental deterioration (dementia) in the elderly in developed countries (like the USA) are due to AD; whereas in developing countries (like those in Asia and Africa), only 3% of cases of dementia are due to AD.² Specific examples include:

*People living in Asia where diets are centered on rice and vegetables have much less AD than people in Europe who eat fewer plant and more animal based foods.⁴

*Prevalence of Alzheimer's disease in older Japanese-American men living in Hawaii is higher than in men of similar ages living in Japan – men eating a healthier diet of mostly rice and vegetables.⁵

*AD is 2 to 3 times more common in African-Americans than in native Africans where people eat a lower-fat, more plant-food based diet.⁶

2) Multiple studies comparing populations within a single country have found those people following diets higher in fat, saturated fats, and cholesterol have at least double the risk of developing (AD), compared to those following diets lower in these ingredients.⁷⁻¹⁰

3) Higher levels of cholesterol in a person's blood are associated with an increased risk of AD.¹¹⁻¹⁴ A high-fat, high-cholesterol diet not only increases cholesterol in the blood, but also increases the entry of cholesterol into the brain.

4) People with advanced atherosclerosis have a much higher risk of having AD.¹⁵

5) There is a decreased risk of AD among patients using cholesterol-lowering medications called "statins" (like Mevacor and Lipitor).^{16,17} In one study, statins reduced the risk of AD by as much as 73%.¹⁷

6) Animals fed cholesterol develop senile plaques typical of the ones found in people with AD. The more cholesterol fed to the animals the more plaques they develop; furthermore, drugs that inhibit cholesterol synthesis (like statins) reduce the amount of protein in the senile plaques and reduce the formation of new senile plaques.^{18,19}

7) Phytochemicals found in plant-foods; including antioxidants, vitamins, and "good fats," reduce your risk of developing AD. Supplements (pills) do not show this same benefit.^{20,21}

Toxic Damage of Brain Tissues by Aluminum

Aluminum is a recognized neurotoxin that is believed to be at the root cause of AD. Aluminum becomes more toxic when combined with a high-cholesterol diet – they work together by means that have yet to be fully determined to create the senile plaques and ultimately the mental deterioration known as AD.²² However, there are at least two recognized synergistic ways that these factors contribute to brain damage:

First, an acid-forming diet – one high in meat, poultry, eggs, and cheese – leads to increased serum and brain concentrations of aluminum.²³

Second, aluminum enhances inflammation. The immune enhancing properties of aluminum were discovered after immunization with diphtheria and tetanus vaccines in studies performed in the 1930s, 1940s and 1950s, and aluminum is used today to enhance the effectiveness the inflammatory response of most vaccines given to adults and children. In the brain, aluminum enhances the inflammation that may result from the formation of senile plaques driven by cholesterol build up. Just as important, aluminum may also be a source of initial injury – this metal is a known toxin to the nervous system – that starts the disease processes, leading to brain cell death, senile plaques, and neurofibrillary tangles.²⁴

The Evidence That Aluminum Causes AD Is Compelling²⁵

Aluminum was found to be toxic to the nervous system of animals over 100 years ago. Injecting aluminum into the brains of sheep was reported in 1965 to result in changes in the brain that showed a “striking resemblance” to AD in people. In 1973, brains of AD patients were found to contain more aluminum than people dying without this disease. About the same time, kidney patients on dialysis were found to suffer, sometimes fatal, brain damage (encephalopathy) from aluminum in their antacids (these antacids are used to bind phosphates in their intestines). More than 100 toxic actions of aluminum have been identified and many are damaging to the human brain.

Specific Evidence on Aluminum and Alzheimer's Disease

- 1) Aluminum is found in higher concentrations in the entire brains of patients with AD, compared to people who die from other (non-AD) causes.²⁶
- 2) In people, aluminum is found within the characteristic lesions of AD called senile plaques and also associated with neurofibrillary tangles.²⁷ They are so closely tied that without the aluminum you do not have the senile plaques, and without these pathognomonic lesions (senile plaques) you do not have AD.
- 3) Exposure of experimental animals to aluminum produces findings similar to AD.^{28,29} To be more specific, aluminum causes the formation of the two characteristic lesions of AD, senile plaques and neurofibrillary tangles.^{30,31}
- 4) Nine of 13 published studies on aluminum in drinking water and AD show statistically positive relationships. Aluminum in drinking water is more bioavailable – in other words, in water this toxic metal gains access to the inside of the body and brain more easily than aluminum from other sources.³² (The aluminum is added to drinking water for purification, to remove turbidity.)
- 5) The absorption rate of aluminum through the intestinal wall and through the blood-brain barrier increases with age and so does the accumulation of aluminum in the brain and the incidence of AD.^{28,33}
- 6) The uptake of aluminum by the intestine is 64% greater in patients with AD than people without this disease.³⁴
- 7) People who have consumed more foods with aluminum additives in the past have a higher risk of AD.³⁵
- 8) The aluminum chelator, desferrioxamine, can reduce the pathological concentrations of the metal aluminum in the brain of AD patients to normal.³⁰ A chelator is a substance which binds and removes (chelates) metals from the body. The process is known as chelation.
- 9) This same aluminum chelator, desferrioxamine, has been used successfully to treat patients with Alzheimer's disease. Desferrioxamine grabs hold of and removes aluminum and other metals, like iron, from the body. (Iron may also play a role in plaque formation in the brain and the arteries.) Over a 2-year period of observation, the rate of mental deterioration was more than twice as rapid for untreated patients with AD compared to those treated with desferrioxamine.^{36,37}

How to Minimize Aluminum Exposure:

Aluminum Is in Our Foods³⁸

Aluminum is the most abundant metal in the earth's crust and the third most abundant element, behind oxygen and silicon. Aluminum is present in our water, foods, medications, and air. The healthy human body has effective barriers, such as the skin, lungs, and gastrointestinal tract, against aluminum. Aluminum is not a nutrient – in other words, the body has no need for this metal – and avoidance has no negative consequences.

All foods naturally contain aluminum, but some, such as tea, are particularly high in this metal. Fortunately, most of the

aluminum in natural plant foods is bound with other substances, such as silicon, which prevents absorption of the aluminum into the body. The harmful (unbound, more easily absorbable) forms of aluminum enter our foods as additives, such as a leavening agent, emulsifier, acidifying agent, anti-caking agent, or coloring. Cooking, packaging and handling foods in aluminum containers increase the amount of this toxic metal in foods.

Concentration of Aluminum in Foods before and after Cooking in Aluminum and Stainless Steel Cookware³⁸

Aluminum Concentration	mg / 100g of food
Cream	13.90
Processed Cheese	29.70
Pancake Mix	6.90
Blueberry Muffins (Mix)	12.80
Corn Bread	40.00
Baking Powder	2300.00
Tea (bound/poorly absorbed)	128.00

A Comparison of Low Aluminum Foods:

Banana	.04
Green Beans	.34

The cans used for carbonated and non-carbonated beverages, like colas and fruit drinks, leak significant amounts of aluminum into the beverage.³⁹ Most canned-food containers, however, are made of steel, not aluminum. The use of aluminum skillets, pressure cookers, pans, pots, coffee makers, dinner trays, wraps and foils all add aluminum to foods. Long cooking in an acidic environment, and using new pots and pans, further increases aluminum leaching into the food. For example, tomato products provide an acidic environment during cooking – using an aluminum pot to simmer tomato sauce increases the aluminum concentration by 570 times.³⁸

Concentration of Aluminum in Foods before and after Cooking in Aluminum and Stainless Steel Cookware³⁸

Food	Uncooked	Aluminum Pot	Stainless Pot
Applesauce	0.13	7.10	1.12
Beef	1.19	8.85	0.16
Cabbage	0.13	3.60	0.20
Tomato Sauce	1.10	57.10	0.16

Avoid Medications Containing Aluminum

Look at the labels of your over-the-counter medications. You will find aluminum as an active ingredient in many antacids. People may be consuming 840 to 5000 mg of aluminum a day from this source.³⁸ Pain killers (analgesics) often

have aluminum as an inactive ingredient (130 to 730 mg/day can be consumed).³⁸ Some calcium supplements contain small amounts of aluminum. Also look up your prescription medications on the Internet or in a PDR (Physician's Desk Reference), and you will often find aluminum used as an inactive ingredient.

Taking Citracal[®] (calcium citrate antacids) increases aluminum absorption into the body by 8 to 11 times over the absorption that would occur when aluminum is present in the intestine without citrate.⁴⁰⁻⁴² Many liquid and wafer antacids do not contain citrate, such as TUMS with calcium carbonate.

In the United States, aluminum potassium sulfate is the only approved substance used to enhance the immune response and approved for use in vaccines. Some researchers consider this a serious matter and suspect that the amounts given during routine vaccination can cause an ongoing inflammatory response in the brain.⁴³

Aluminum from the Air

In AD there has been a tendency for some of the greatest accumulation of plaques and neurofibrillary tangles to occur in the olfactory lobes of the brain.⁴⁴ This is the only portion of the brain that has direct exposure to the outside environment, through the nose. Here the smell-sensitive nervous tissues have the capacity to pick up and transmit substances like aluminum directly into the brain.^{44,45} In the past, most of the airborne aluminum came from industrial sources.

There is now a new and common source of airborne aluminum and that is from antiperspirants. Every morning people are spraying past their armpits right into their faces with these products. One study found a 60% greater risk of AD with use of antiperspirants, and a trend toward a higher risk with increasing frequency of use.⁴⁶ All antiperspirants contain *aluminum chloride* – which stops the sweating. Plain deodorants do not contain this aluminum ingredient.

McDougall's Recommendations for the Prevention and Treatment of Alzheimer's Disease

Fortunately, the recommendations for AD are the same ones that I would offer for the prevention and treatment for most of the other common diseases which plague people who follow the rich Western diet: Consume a low-fat, no-cholesterol, plant-based diet and avoid toxic substances -- the focus in this case is aluminum, but iron may also be important. There is absolutely no reason to delay following this advice – the benefits are documented for many diseases and for health in general.

Your goals should be similar to the ones you already know for heart disease. For example, you should strive for a blood total cholesterol level below 150 mg/dl. You accomplish this, first and foremost, by following a no-cholesterol, low-fat diet based on plant foods (The McDougall Diet). Depending upon the degree of impending risk for future trouble (for example heart disease, stroke, or AD) you may decide to add cholesterol-lowering medications in order to accomplish this goal. (See my September 2002 Newsletter article, "Cholesterol - When and How to Treat.")

Someone suffering with AD should be even more aggressive with treating cholesterol and removing toxic aluminum

from the body. In this case I would be more inclined to prescribe statin medications, with a goal of achieving a cholesterol level below 150 mg/dl. (See my June 2003 Newsletter article, "Cleaning out Your Arteries," for a relevant discussion on treating artery disease and a guide to AD treatment.) There is an argument that the kind of medication matters – statins which do not easily cross the blood-brain barrier (like Lipitor does not easily cross) should be used.⁴⁷ Next, for someone with AD I would administer desferrioxamine, 125 mg intramuscularly twice daily for 5 days per week for months and maybe years, in order to remove aluminum and iron from the body.^{36,37} Although daily injections may seem painful, they do not approach the suffering from the progressive loss of mental function of AD. (By the way, desferrioxamine is a low-profit drug that cannot be patented and this is the reason you have not heard about this treatment. This all may change for drug treatments for AD when high profit statins are recommended, and advertised to patients and doctors.)

So you see you are no more helpless with AD then you are with CHD (coronary heart disease). Your options are mostly limited by what you know. Since money drives information, too few people know about these simple, scientifically-based steps I have outlined to avoid the suffering of AD and other common diseases.

Statistics on AD:

- * Currently, AD affects approximately 4–5 million Americans and soon 14 million Americans and 50–60 million individuals worldwide, mostly in developed countries, will have AD.
- * It has been predicted, that by 2050 approximately 25% of people alive will be over the age of 65 years and one-third of them will suffer from AD.⁴⁸
- * Data suggest that 7.1% of all deaths in the United States in 1995 are attributable to AD, placing it on a par with cerebrovascular diseases (strokes) as the third leading cause of death.⁴⁹
- * AD is more common in men than women.⁵⁰
- * AD is greater for the white population than for the black population.⁵⁰
- * There was an average 13-fold increase in number of deaths from AD between 1979 and 1987.⁵¹
- * About 5% to 10% of cases have a family association, suggesting involvement of genetics or education – mother teaches son and daughter to cook; the remainder are sporadic cases with no family tendencies.
- * Annually, an estimated \$80 to \$100 billion dollars are spent on health care expenses or lost in wages for the persons with Alzheimer's disease or their care givers.

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THE SKINNY ON ATKINS

By Michael Greger, M.D.*

(Part I)

Reprinted from the June 2004 issue of Dr. Greger's Nutrition Newsletter. To subscribe, send a blank e-mail to drgre-gersnewsletter-subscribe@lists.riseup.net

WHAT THE EXPERTS THINK OF ATKINS

Atkins "Nightmare" Diet

When Dr. Atkins Diet Revolution was first published, the President of the American College of Nutrition said, "Of all the bizarre diets that have been proposed in the last 50 years, this is the most dangerous to the public if followed for any length of time."¹

When the chief health officer for the State of Maryland,² was asked "What's wrong with the Atkins Diet?" He replied "What's wrong with... taking an overdose of sleeping pills? You are placing your body in jeopardy." He continued "Although you can lose weight on these nutritionally unsound diets, you do so at the risk of your health and even your life."³

The Chair of Harvard's nutrition department went on record before a 1973 U.S. Senate Select Committee investigating fad diets: "The Atkins Diet is nonsense... Any book that recommends unlimited amounts of meat, butter, and eggs, as this one does, in my opinion is dangerous. The author who makes the suggestion is guilty of malpractice."⁴

The Chair of the American Medical Association's Council on Food and Nutrition testified before the Senate Subcommittee why the AMA felt they had to formally publish an official condemnation of the Atkins Diet: "A careful scientific appraisal was carried out by several council and staff members, aided by outside consultants. It became apparent that the [Atkins] diet as recommended poses a serious threat to health."⁵

The warnings from medical authorities continue to this day. "People need to wake up to the reality," former U.S. Surgeon General C. Everett Koop writes, that the Atkins Diet is "unhealthy and can be dangerous."⁶

The world's largest organization of food and nutrition professionals,⁷ calls the Atkins Diet "a nightmare of a diet."⁸ The official spokesperson of the American Dietetic Association elaborated: "The Atkins Diet and its ilk—any eating regimen that encourages gorging on bacon, cream and butter while shunning apples, all in the name of weight loss—are a dietitian's nightmare."⁹ The ADA has been warning Americans about the potential hazards of the Atkins Diet for almost 30 years now.¹⁰ Atkins dismissed such criticism as "dietitian talk".¹¹ "My English sheepdog," Atkins once said, "will figure out nutrition before the dieticians do."¹²

The problem for Atkins (and his sheepdog), though, is that the National Academy of Sciences, the most prestigious sci-

entific body in the United States, agrees with the AMA and the ADA in opposing the Atkins Diet.¹³ So does the American Cancer Society;¹⁴ and the American Heart Association;¹⁵ and the Cleveland Clinic;¹⁶ and Johns Hopkins'¹⁷ and the American Kidney Fund;¹⁸ and the American College of Sports Medicine;¹⁹ and the National Institutes of Health.²⁰ In fact there does not seem to be a single major governmental or nonprofit medical, nutrition, or science-based organization in the world that supports the Atkins Diet.²¹ As a 2004 medical journal review concluded, the Atkins Diet "runs counter to all the current evidence-based dietary recommendations."²²

A 2003 review of Atkins "theories" in the Journal of the American College of Nutrition concluded: "When properly evaluated, the theories and arguments of popular low carbohydrate diet books... rely on poorly controlled, non-peer-reviewed studies, anecdotes and non-science rhetoric. This review illustrates the complexity of nutrition misinformation perpetrated by some popular press diet books. A closer look at the science behind the claims made for [these books] reveals nothing more than a modern twist on an antique food fad."²³

Dr. Atkins Had a Dream

There is nothing new or revolutionary about Dr. Atkins New Diet Revolution. Various high-fat diet fads like Atkins have been masquerading under different names for over a hundred years, starting in 1864 when an English undertaker and coffin maker by the name of William Banting wrote a book called Letter on Corpulence.²⁴ Based on what we know now about these diets, Banting's book may very well have added to Banting's business.

After failing to produce the promised sustained weight loss, the high-fat fad melted away only to re-emerged in the 1920's with a doctor advocating a minimum of three porterhouse steaks a day and stating that the only two perfect foods were probably "fresh fat meat and water."²⁵ It then disappeared until the 1940's with a book extolling the virtues of eating whale blubber. Then it was recycled again in the 1960's with Dr. Herman Taller's bestseller "Calories Don't Count" that discouraged people from exercising. "By whatever name," one nutrition textbook reads, "the diet is to be avoided."²⁶ Taller's "Calories Don't Count" diet empire collapsed when he was found guilty of six counts of mail fraud for using the book to promote a particular brand of safflower capsules, which the court called a "worthless scheme foisted on a gullible public."²⁷

That same year, Dr. Irwin Stillman wrote the "Doctor's Quick Weight Loss Diet," allowing his patients to eat only meat, eggs, and cheese. Stillman himself died of a heart attack, but not before misleading 20 million people onto his diet.²⁸ One might wonder why, if this kind of diet was such a "foolproof"²⁹ "ultimate"³⁰ path to "permanent joyful weight loss" that "WORKS 100% OF THE TIME!" (emphasis in original),³¹ they seemed to always quickly fade into obscurity, only to be resurrected shortly after by publishers guaranteed a new bestseller by America's short attention span. This brings us to 1972, and the publication of Dr. Atkins Diet Revolution.³²

Atkins' diet was centered on fried pork rinds, heavy cream, cheese, and meat. For Atkins, bacon and butter were health foods and bread and bananas were what he called "poison."³³

Drawing on his experience as a salesman and resort entertainer, Atkins proved a natural at self-promotion. He was fea-

tured in Vogue magazine (and hence the Atkins Diet was actually first known as the "Vogue Diet") and soon after appeared on the Tonight Show³⁴ and Merv Griffin.³⁵ In 1973, the publisher boasted that it became the "fastest selling book in publishing history."³⁶

The final chapter of Dr. Atkins Diet Revolution was entitled "Why We Need a Revolution...." It detailed his proposal to have some carbs literally banned. "Our laws must be changed to provide a proper way of eating for everyone." He urged everyone to start lobbying their legislators. "Political action and protest on your part," he wrote, "can help revolutionize the food industry, by forcing it to decarbohydratize many foods ... with a federal law to back this change!"³⁷ "Martin Luther King had a dream," Dr. Atkins wrote, "I, too, have one."³⁸

"The Diet Fad of the 21st Century"

Allowing a good 20 years for dieters to forget Dr. Atkins past failure, the book was reissued as Dr. Atkins New Diet Revolution (though there was not much new about it) in 1992.³⁹ Along with other retro 70's fashions, and this time backed by an aggressive marketing campaign, it became the best-selling fad-diet book in history.⁴⁰

What may have truly made it "The Diet Fad of the 21st Century" (as an editor of the Journal of the American Dietetics Association coined it)⁴¹ came a decade later with the publication of the infamous pro-Atkins New York Times Magazine article "What If It's All Been a Big Fat Lie."⁴² Atkins quickly wrote an editorial for his Web site claiming the article "validated" his work. Gushingly favorable follow-up stories appeared on NBC's Dateline, CBS' 48 Hours, and ABC'S 20/20. The Atkins corporation claimed literally billions of media hits.⁴³ By the time the article's many flaws were exposed weeks later, the book had already catapulted to #1 on a New York Times bestseller list and Atkins' net worth zoomed to \$100 million.⁴⁴

The piece was written by freelance writer and Atkins advocate⁴⁵ Gary Taubes (who reportedly scored a book deal from it—and a \$700,000 advance).⁴⁶ The Washington Post investigated his pro-Atkins article and found that Taubes simply ignored all the research that didn't agree with his conclusions.

Taubes evidently interviewed a number of prominent obesity researchers and then twisted their words. "What frightens me," said one, "is that he picks and chooses his facts.... If the facts don't fit in with his yarn, he ignores them."⁴⁷

The article seemed to claim that experts recommended the diet. "I was greatly offended at how Gary Taubes tricked us all into coming across as supporters of the Atkins Diet," said John Farquhar, a Professor Emeritus of Medicine at Stanford,. The Director of the Center for Human Nutrition at the Washington University School of Medicine was asked to comment of one of Taubes' claims. He replied, "It's preposterous."⁴⁸

"He took this weird little idea and blew it up," said Farquhar, "What a disaster."⁴⁹

"The article was written in bad faith," said another quoted expert. "It was irresponsible."⁵⁰ "I think he's a dangerous man. I'm sorry I ever talked to him." Referring to the book deal, "Taubes sold out."⁵¹

What the researchers stressed was how dangerous saturated fat and meat consumption could be, but Taubes seemed to have conveniently left it all out. "The article was incredibly misleading," said the pioneering Stanford University endocrinologist Gerald Reaven who actually coined the term Syndrome X. "I tried to be helpful and a good citizen," Reaven said, agreeing to do the interview, "and I ended up being embarrassed as hell. He sort of set me up... I was horrified."⁵²

The South Beach Diet

The majority of the best-selling diet titles in history have been sold during just the last 5 years.⁵³ One of the latest steak oil salesmen is Dr. Agatston, whose South Beach Diet appeared a year after Atkins' latest and sold its first million copies in just 2 months.⁵⁴ Currently, subscriptions to his website alone bring in a million dollars a week.⁵⁵

The Tufts University Health and Nutrition Letter weighed in on the South Beach Diet in their May 2004 issue:

"Disappointingly, the South Beach Diet is simply yet another version of a fad wrapped within a gimmick." They concluded that it was "based on fallacies... replete with faulty science, glaring nutritional inaccuracies, contradictions, and claims of scientific evidence minus the actual evidence."⁵⁶

The article notes, "The faulty and confusing science is compounded by The South Beach Diet's own internal inconsistencies."⁵⁷ Up front, for example, the author says that his diet doesn't depend on exercise, but then goes on to tell people to get 20 minutes a day.⁵⁸ He tells readers to avoid bananas in "phase 2"; then goes on to recommend: bananas dipped in chocolate sauce. He says up front that the diet is "distinguished by the absence of calorie counting or even rules about portion size" and that one shouldn't "even think about limiting the amount you eat." He then, of course, proceeds to count calories and measure out servings every step of the way, even to the point of specifying "I recommend counting out 15 almonds or cashews."⁵⁹ That sounded like a rule about portion size to the reviewers.

Tufts lists a few of the "out-and-out food and nutrition inaccuracies" in The South Beach Diet.⁶⁰ Agatston says that whole-wheat bread is not whole grain, but cous cous is (actually the reverse is true). He claims watermelon is full of sugar but cantaloupe is not (they have the same amount). For a cardiologist who claims, "I feel nearly as comfortable in the world of nutrition as I do among cardiologists,"⁶¹ Dr. Agatston "sprinkled an awful lot of nutrition gaffes throughout his book."⁶² He claims eggs have minimal saturated fat—wrong. Each egg can have as much as 2 grams,⁶³ giving some of his recipes over third of one's daily limit.⁶⁴

To be fair, though, he does frown on lard, although the Atkins corporation is quick to point out that the South Beach menus do not have significantly less saturated fat than Atkins.⁶⁵ Just as Atkins himself claimed he followed his diet for decades yet, according to his own cardiologist, was overweight,⁶⁶ Agatston revealed that he needs to take medication to lower his cholesterol.⁶⁷ Agatston, at least, doesn't call fruit "poison."⁶⁸

FAULTY SCIENCE

Phony Baloney

One of Dr. Atkins' dreams probably came true—he likely became a billionaire before he died. The Atkins corporation is now estimated to be worth billions of dollars.⁶⁹ In *Family Practice News*, one doctor writes, "Unfortunately, Dr. Robert C. Atkins, who made a lot of money playing on the ignorance of Americans, knew about as much about nutrition as an Arkansas hog knows about astronomy."⁷⁰

Of course, pigs—in Arkansas and elsewhere—have presumably little use for astronomy. It doesn't seem like too much to ask, however, that cardiologists like Dr. Atkins know something about nutrition.

The entire theoretical framework of low carb diets, like Atkins and The Zone, hang upon the notion that insulin is the root of all evil and so to limit insulin release one needs to limit carbohydrate intake. Dr. Atkins, for example, has a chapter entitled "Insulin—the Hormone That Makes You Fat,"⁷¹ *Protein Power* calls it the "monster hormone,"⁷² and the author of the Zone Diet calls insulin "the single most significant determinant of your weight."⁷³

What they overlook is that "protein- and fat-rich foods may induce substantial insulin secretion" as well.⁷⁴ For example, a quarter pound of beef raises insulin levels in diabetics as much as a quarter pound of straight sugar.⁷⁵

Atkins featured foods like cheese and beef elevated insulin levels higher than "dreaded" high-carbohydrate foods like pasta. A single burger's worth of beef, or three slices of cheddar, boosts insulin levels more than almost 2 cups of cooked pasta.⁷⁶ In fact a study in the *American Journal of Clinical Nutrition* found that meat, compared to the amount of blood sugar it releases, seems to cause the most insulin secretion of any food tested.⁷⁷

Low carb advocates like Atkins seem to completely ignore these facts. Recent medical reviews have called Atkins' feel-good theories "factually flawed"⁷⁸ and "at best half-truths."⁷⁹ "In the scientific world, books like the Zone Diet are generally regarded as fiction," one reviewer wrote in the *Journal of the American College of Nutrition*. "The scientific literature is in opposition..."⁸⁰ In a medical journal article entitled "Food Fads and Fallacies," the Atkins Diet is referred to as a "'New wives' tale" with a "sprinkling of fallacies."⁸¹

According to a 2003 article in the *Journal of the American Medical Association*, "Dr. Atkins and his colleagues selectively recite the literature" to support their claims.⁸² When researchers take the time to actually measure insulin levels, for instance, instead of just talking about them like Atkins does, they often find the opposite of what Atkins asserted.

A study done at Tufts, for example, presented at the 2003 American Heart Association convention, compared four popular diets for a year. They compared Weight Watchers, The Zone Diet, the Atkins Diet (almost no carbs), and the Ornish Diet (almost all carbs) for a year. The insulin levels of those instructed to go on the Ornish diet dropped 27%. Out of the four diets that were compared that year, Ornish's vegetarian diet was the only one to significantly lower the "Monster" "Hormone That Makes You Fat," even though that's supposedly what Atkins and The Zone diets were designed to do.⁸³ In another study researchers took over a hundred pairs of identical twins and found that the more fat they ate, the higher their resting insulin levels were. Even with the same genes, the study "showed a consistent pattern of higher fasting insulin levels with intake of high-fat, low carbohydrate diets."⁸⁴

Other studies show that a high (70-85%) carbohydrate diet (combined with walking an average of 15-30 minutes a day) not only can result in significant reductions in body weight, blood pressure, cholesterol and triglycerides, but significant drops in baseline insulin levels as well, exactly opposite of what low carb pushers would predict. In just three weeks on a high (unrefined) carb vegetarian diet and a few minutes of daily walking, diabetics reduced the amount of insulin they needed and most of the pre-diabetics seemed cured of their insulin resistance.⁸⁵ In general vegetarians may have half the insulin levels of nonvegetarians even at the same weight.⁸⁶

In an article entitled "Americans Love Hogwash," Edward H. Rynearson, Emeritus Professor of Medicine at the Mayo Clinic, singled out Dr. Atkins for dispensing hogwash he defines as "worthless, false or ridiculous speech or writings" and praised the AMA for "condemning this diet for its dangers."⁸⁷ The "evidence" cited by Atkins has been called "nearly all anecdotal and misleading."⁸⁸ "Carbophobia is a form of nutritional misinformation," a 2003 review in the Journal of the American College of Medicine noted, "infused into the American psyche through... advertising... infomercials... and best-selling diet books."⁸⁹

We know that the Atkins Diet is successful—at making money. What about for weight loss? We know that cutting down on carbs will help people lose variety and nutrition in their diet,⁹⁰ and if they buy his supplements, their wallet may get slimmer, but what about their waistline?

Who cares if the American Medical Association calls Atkins's theory "naive," "biochemically incorrect," "inaccurate," and "without scientific merit?" Who cares if it "doesn't make physiological sense?"⁹¹ The question is, does it work?

Losing (Water) Weight

Carbohydrates burn cleanly. In fact the name carbohydrate basically means "carbon (dioxide) and water," which is what plants make carbs out of, and which is all the waste product one is left with when one's body uses them as fuel. During the first few weeks of the Atkins Diet, the so-called "induction" phase, a person is forced to live off so much grease that, lacking the preferred fuel—carbohydrates—their body goes into starvation mode.

In biochemistry class, doctors learn that fat "burns in the flame of carbohydrate." When one is eating enough carbohydrates, fat can be completely broken down as well. But when one's body runs out of carb fuel to burn, its only choice is to burn fat inefficiently using a pathway that produces toxic byproducts like acetone and other so-called "ketones." The acetone escapes through the lungs—giving Atkins followers what one weight-loss expert calls "rotten-apple breath"⁹²—and the other ketones have to be excreted by the kidneys. We burn fat all the time; it's only when we are carbohydrate deficient and have to burn fat ineffectively that we go into what's called a state of ketosis, defined as having so much acetone in our blood it noticeably spills out into our lungs or so many other ketones they spill out into our urine.

To wash these toxic waste products out of our system our body uses a lot of water. The diuretic effect of low carb diets can result in people losing a gallon of water in pounds the first week.⁹³ This precipitous early weight loss encourages dieters to continue the diet even though they have lost mostly water weight⁹⁴ and the state of ketosis may be making them nauseous or worse.⁹⁵ If one wanted to try to lose water weight, sweating it away in a sauna may be a more healthful way.

The Director of Yale University's Center for Eating and Weight Disorders explains the miracle formula used by diet books to become bestsellers for over a century now: "easy, rapid weight loss; the opportunity to eat your favorite foods and some scientific 'breakthrough' that usually doesn't exist."⁹⁶ The rapid loss of initial water weight seen particularly on low carb diets has an additional sales benefit. By the time people gain back the weight, they may have already told all their friends to buy the book, and the cycle continues. This has been used to explain why low carb diets have been such "cash cows" for publishers over the last 140 years.⁹⁷ As one weight loss expert notes, "Rapid water loss is the \$33-billion diet gimmick."⁹⁸

Calories Count

When people do lose weight on the Atkins Diet after the first few weeks, it's almost certainly because they are eating fewer calories.⁹⁹ People lose weight on the Atkins Diet the same way they lost weight on the 1941 Grapefruit Diet, the 1963 Hot Dog Diet, the 2002 Ice Cream diet and every other fad diet promising a quick fix—by restricting calories. In 2001, the medical journal *Obesity Research* published "Popular Diets: A Scientific Review." Claiming to have reviewed every study ever done on low carb diets, they concluded, "In all cases, individuals on high-fat, low carbohydrate diets lose weight because they consume fewer calories."¹⁰⁰ Calories count—every time, all the time. "No magic ingredients, strange food combinations or pseudoscientific formulas will alter this metabolic fact."¹⁰¹

Dr. Atkins disagreed. In fact, he accused his critics of having "subnormal intellects" for even holding such a view.¹⁰² For three decades he peddled his claim that people could eat more calories and still lose weight. Decrying what he called the "calorie hoax," Atkins had a chapter entitled "How to Stay Fat—Keep Counting Calories." Atkins even subtitled his book "The High Calorie Way to Stay Thin Forever." The Zone Diet made a similar claim on its back cover: "You can burn more fat by watching TV than by exercising."¹⁰³ (As one commentator exclaimed, "Goodness, what channel does he watch!")¹⁰⁴

Atkins claimed people could lose 85 pounds, without exercising, eating an incredible 5,500 calories a day.¹⁰⁵ The only problem, critics claimed, was that this ran counter to the First Law of Thermodynamics, considered to be the most fundamental law in the universe. No wonder the AMA scolded Atkins publishers for promoting "bizarre concepts of nutrition and dieting."¹⁰⁶

"Metabolic Advantage" Advantageous Only In Selling Books

Atkins claimed that the key to the so-called "calorie fallacy" was that the missing calories were explained by the excretion of ketones. Dieters in ketosis, he argued, urinate and breathe out so many calories in the form of ketones that "weight will be lost even when the calories taken in far exceed the calories expended." He claimed dieters could "sneak" calories out of the body unused.¹⁰⁷

The "Atkins Physician Council" also claims that one's body expends more energy burning fat and thus "You wouldn't have to increase your exercise at all because your body would be working harder, so that you could literally sit in your armchair and lose weight."¹⁰⁸ As the Secretary of the AMA's Council on Food and Nutrition tried to make clear, "The whole [Atkins] diet is so replete with errors woven together that it makes the regimen sound mysterious and magical."¹⁰⁹ These claims sounded so far fetched that as part of an investigative documentary, the BBC paid obesity researchers to design an experiment to test it. So researchers took two identical twins and put one on the Atkins Diet for a while, the other on a high carbohydrate diet and locked them both in sealed chambers to measure exactly where the calories were going. Did the twin on the Atkins Diet have any sort of metabolic "advantage" by burning fat and protein as his source of fuel? Was he literally flushing more calories down the toilet? Of course not. "We found no difference whatsoever," the researcher said.¹¹⁰

As the evidently "subnormal intellects" at the AMA concluded, "No scientific evidence exists to suggest that the low carbohydrate ketogenic diet has a metabolic advantage over more conventional diets for weight reduction."¹¹¹ The only comprehensive systematic review ever done of low carb diets found that the carbohydrate content of the diet seemed in no way correlated with weight loss.¹¹² The truth seems to be that nothing matters more than calories when it comes to weight loss.¹¹³

But what about all the scientific studies Dr. Atkins cited in his book to back up his claims? Although his first book had essentially no citations, by the final edition he listed over 300.¹¹⁴ Reviewing all of the studies on low carb diets, researchers concluded, "The studies by Atkins to support his contentions were of limited duration, conducted on a small number of people, lacked adequate controls and used ill-defined diets."¹¹⁵ Most importantly, though, some of the very studies he cites actually refute exactly what he's claiming. And he accused the AMA of being "intellectually dishonest."¹¹⁶

Of the few studies that did back up his claims, some had seriously questionable validity¹¹⁷ and researchers could not replicate the findings of the rest.^{118,119,120,121,122,123,124,125,126,127,128,129,130,131,132,133,134,135} One review of studies that have defended Atkins claims concluded, "It turns out that when these data are critically analyzed they are often found to be in error, and it's therefore impossible to accept the validity of the conclusions derived by the authors from such erroneous data."¹³⁶

People lost weight on low carb diets the way everybody loses weight on any diet—by eating fewer calories.¹³⁷

Low Calorie Diet in Disguise

The Atkins Diet restricts calories by restricting choices. If all one did was eat Twinkies, one could lose weight (unless one were able to consistently force oneself to eat more than a dozen a day). But would one's overall health be better or worse for it? In essence, the Atkins Diet is not much different than the Twinkie Diet.

Americans get half of their energy from carbohydrates,¹³⁸ so if people cut out half the food they eat, what they are left with is calorie restriction. Yes, one can eat unlimited amounts of fat on the Atkins Diet, but people typically can't stomach

an extra two sticks of butter's worth a day to make up for the calorie deficit. Since so many foods are taboo, people end up eating less out of sheer boredom and lack of variety. As one obesity researcher put it, "If you're only allowed to shop in two aisles of the grocery store, does it matter which two they are?"¹³⁹

Yes, all the butter one can eat but no bread to put it on. All the cream cheese, but no bagels. Sour cream, but no baked potato. Sandwich lunchmeat, but, of course, no sandwiches. All the pepperoni one can eat, but no pizza crust. Cheese, but no mac.

In later phases of the diet, with less carb restriction, Atkins throws in a thin wedge of cantaloupe—wrapped in ham, of course.¹⁴⁰ Having all the mayonnaise one can eat only goes so far.

On the Atkins Diet one can eat steak, but no potatoes—and watch the gravy (it may have corn starch in it). All the shortening one can eat, just no making cookies with it. Eat all the burgers one wants; you just can't put them on buns, no fries—and "beware of ketchup."¹⁴¹

Atkins described how to make cheeseburgers without the bun: "I put all the meat on the outside... put the cheese on the inside... The cheese melts on the inside and never gets out."¹⁴²

Although his recipe for "hamburger fondue,"¹⁴³ combining burger meat, blue cheese, and butter, might top the cheeseburger recipe for heart disease risk, the prize would probably go his recipe for "Swiss Snack,"¹⁴⁴ which consists of wrapping bacon strips around cubes of Swiss cheese and deep frying them in hot oil. The recipe, which supposedly serves one, calls for four strips of bacon and a quarter-pound of cheese.

Atkins rivals the creativity of the raw-food chefs of today in his uses for pork rinds. Pork rinds are chunks of pigs' skin that are deep-fried, salted and artificially flavored. He recommends people use them to dip caviar. Or, perhaps if for those who can't afford caviar, one can use fried pork rinds as a "substitute for toast, dinner rolls... You can use them as a pie crust... or even matzo ball soup (see our recipe on p. 190)."¹⁴⁵ Matzo balls made out of pork rinds?—now that is a diet revolution!

The Real Big Fat Lie

In Taubes' article in the New York Times Magazine, he reiterated a myth common among Atkins and other greasy diet proponents.¹⁴⁶ "At the very moment that the government started telling Americans to eat less fat, we got fatter," wrote Taubes.¹⁴⁷ He argues that since the percentage of calories from fat in the American diet has been decreasing, and the percentage from carbohydrates increasing, carbs are to blame for the obesity epidemic.¹⁴⁸

Of course a quick trot across the globe shows that some of the thinnest populations in the world, like those in rural Asia, center their entire diets on carbs. They eat 50% more carbs than we do, yet have a fraction of our obesity rates.¹⁴⁹ Taubes also left out that the amount of added fat and total fat Americans eat has also been increasing—we're eating more of everything now, fat and carbohydrates. Grease and protein peddlers blame our obesity epidemic on a low-fat

diet that our nation never ate.

Thirty years ago, the average woman ate about 1500 calories per day, now it's closer to 2000.150 Men also significantly bumped up their calorie consumption. With that many extra calories, we'd have to walk about two extra hours a day to keep from gaining weight. As analyzed in the May 2004 USDA report on obesity, with more calories, yet the same sedentary lifestyle, of course we gained weight.151

The reason we're fat is not because of bread and fruit. Much of the obesity crisis has been blamed on eating out more (Americans spend almost twice as much time per week eating out as exercising),152 soft drinks, snacking, bigger portion sizes and "the enormous amount of very clever and very effective advertising of junk food/fast food."153 Our children, for example, are subjected to 10,000 ads for processed food every year.154 There's no way parents can compete. As one medical journal pointed out, our children "will never see a slick high-budget (or even low-budget) ad for apples or broccoli."

Twenty years ago, a typical US bagel was 3 inches; now it's twice that and contains a whopping 350 calories.155 Outback Steakhouse now has an appetizer of cheese fries, which breaks the scale at over 3000 calories, an appetizer containing more calories than most people eat all day. One would have to walk about 35 miles to burn that kind of thing off.156

The standard coke bottle used to be around 6 ounces. Then came the 12 ounce can. Now we have the 20 ounce bottles, or, of course, the 64-ounce "Double Gulp," containing about 50 spoonfuls of sugar. In fact, the Double Gulp is selling so well that 7-Eleven considered an even larger size, which a company spokesperson described only as a "wading-pool-sized drink."157

The National Soft Drink Association boasts on their website that "Soft drinks have emerged as America's favorite refreshment. Indeed, one of every four beverages consumed in America today is a carbonated soft drink, averaging out to about 53 gallons of soft drinks per year for every man, woman and child."158 Interestingly, the introduction of high fructose corn syrup around 1970 seems to exactly parallel the sudden rapid rise in obesity in this country.159 Thanks in part to the American food corporations, becoming overweight, as one prominent obesity researcher pointed out, "is now the normal response to the American environment."160

There is no mystery why we are the fattest country on Earth. "We're overfed, over-advertised, and under-exercised," says Stanford obesity expert John Farquhar. "It's the enormous portion sizes and sitting in front of the TV and computer all day" that are to blame. "It's so god'darn obvious—how can anyone ignore it?"161

SHORT-TERM SIDE EFFECTS

"Extraordinarily Irresponsible"—Atkins and Pregnancy

So fine, maybe calories, not carbohydrates, are to blame for our obesity epidemic, and maybe Atkins' claims, as described by one of the world's leading obesity researchers, are "the most unutterable nonsense I ever saw in my life."162

So what if it's just a low calorie diet in disguise? It's still a low calorie diet where one can eat all the (albeit bunless) bacon cheeseburgers you want. So what's the problem?

The immediate concern centers on the state of ketosis. Pregnant women are the most at risk. Based on detailed data from 55,000 pregnancies, 163 acetone and other ketones may cause brain damage in the fetus, which may result in the baby being born mentally retarded.¹⁶⁴ The fact that ketones seemed to cause "significant neurological impairment" and an average loss of about 10 IQ points was well known and aroused "considerable concern" years before Atkins published his first book.¹⁶⁵ Atkins nonetheless wrote. "I recommend this diet to all my pregnant patients."¹⁶⁶

After enough pressure from the AMA, Atkins finally relented. "There's one other point I'm very sorry about," Atkins finally admitted, "I now understand that ketosis during pregnancy could result in fetal damage. My pregnant patients have never had this problem, but I realize I didn't study enough cases to validate my recommendation. If anyone wants a retraction, I'll be glad to give one."¹⁶⁷

Subsequently at the congressional hearing on fad diets, however, when asked by Senator George McGovern if he had made a public retraction of his reckless recommendation, Atkins replied, "No; I will stand by the statement I made in the book... I have recommended it for use by the pregnant woman with the observation of the managing obstetrician or physician..."¹⁶⁸ After the Senate Select Committee hearings, the publisher added a small print disclaimer on the copyright page in the front of the book.¹⁶⁹

Highlighting Atkins' recommendation of his diet even during pregnancy, one nutrition textbook reads "Proponents of the low carbohydrate diet have been extraordinarily irresponsible in ignoring these hazards."¹⁷⁰ "The woman who goes on a ketogenic diet [like Atkins] for six months of pregnancy," noted one fetal specialist, "is playing Russian roulette."¹⁷¹

More to Lose Than Weight

Although pregnant and breastfeeding women may be at most risk, "The [Atkins] diet is potentially dangerous to everyone," warned the Chair of the Medical Society of New York County's Public Health Committee.¹⁷² In all of the editions of his Diet Revolution, Atkins cited the "pioneering" work of "brilliant" researcher Gaston Pawan.¹⁷³ When Atkins was brought before the Senate investigation on fad diets, the Chair of the Senate Subcommittee read a statement submitted by Dr. Pawan himself who supported the AMA's condemnation of the Atkins diet and explained that he used very high fat diets only for "specific experimental purposes" (emphasis in original.) in hospital settings and would never "recommend a very high fat diet indiscriminately to obese subjects for obvious reasons."¹⁷⁴

The symptoms of ketosis include general tiredness, abrupt or gradually increasing weakness, dizziness, headaches, confusion, abdominal pain, irritability, nausea and vomiting, sleep problems and bad breath.¹⁷⁵ One study found that all those subjected to carb-free diets complained of fatigue after just two days. "[T]his complaint was characterized by a feeling of physical lack of energy... The subjects all felt that they did not have sufficient energy to continue normal activity after the third day. This fatigue promptly disappeared after the addition of carbohydrates to the diet."¹⁷⁶ From a review published in a German medical journal, "[lightheadedness], fatigue, and nausea are frequent, despite what Dr. At-

kins claims."¹⁷⁷

In World War II, the Canadian Army had an illuminating experience with ketogenic diets. For emergency rations, infantry troops had pemmican, which is basically a carbohydrate-free mixture of beef jerky and suet (animal fat). The performance of the infantrymen forced to live off pemmican deteriorated so rapidly that they were incapacitated in a matter of days. As reported in the journal *War Medicine* in 1945, "On the morning of the fourth day of the diet, physical examination revealed a group of listless, dehydrated men with drawn faces and sunken eyeballs, whose breath smelled strongly of acetone."¹⁷⁸ A ketogenic diet, concluded one medical review, "can be associated with significant toxicity."¹⁷⁹

In a study funded by Atkins himself, most of the people who could stick with the diet reported headaches and halitosis (bad breath). Ten percent suffered hair loss. While most people lost weight—at least in the short-term—70% of the patients in the study also lost the ability to have a normal bowel movement.

Constipation

Authorities recommend Americans start roughing it with "at least 30-35 grams"¹⁸⁰ of fiber a day "from foods, not from supplements."¹⁸¹ The initial phase of the Atkins Diet, which dieters may have to repeatedly return to, has about 2 grams of fiber per day.¹⁸²

Atkins can't help but concede the health benefits associated with fiber found in, as he describes, "vegetables, nuts and seeds, fruits, beans and whole unrefined grains;" but then asks "How can you get the benefits of fiber without the carbs contained in these foods? The answer is supplementation." He then goes on to basically recommend that all his followers start taking sugar-free Metamucil. What must Mother Nature have been thinking, putting all the fiber into such "poison" foods?

The May 2004 *Annals of Internal Medicine* study which was misleadingly¹⁸³ much lauded in the press with headlines like "Scientists Give Thumbs Up to Atkins Diet," showed once again that most of the Atkins Dieters suffered from headaches and constipation. They also had significantly more diarrhea, general weakness, rashes and muscle cramps—despite taking the 65 supplements prescribed by Atkins. One subject was so constipated he had to seek medical attention. Another developed chest pain on the diet and was subsequently diagnosed with coronary heart disease.¹⁸⁴ No wonder Consumer Guide gave the Atkins Diet zero out of four stars for being "outright dangerous"¹⁸⁵ and the editor of the *Healthy Weight Journal* gave Atkins the dubious Slim Chance Award for "Worst Diet."¹⁸⁶

"Disease of Kings"

Because of the Henry VIII-style meat load, essentially every single study on low carb diets that measured uric acid levels showed that uric acid levels rose.¹⁸⁷ In virtually every instance it's been studied over the last 50 years, uric acid itself has been tied to cardiovascular disease risk, and may be an independent risk factor by increasing free radical damage or making the blood more susceptible to clotting.¹⁸⁸

There is also concern that uric acid levels on a meat-centered diet might be forced so high that it could start crystallizing

in one's joints, triggering gout, an excruciating arthritic condition. A March 2004 article published in the New England Journal of Medicine documented the effect of meat intake on gout risk.

Harvard researchers followed almost 50,000 men for 12 years and found that "each additional daily serving of meat was associated with a 21 percent increase in the risk of gout."¹⁸⁹ In fact, the Atkins Diet has been blamed directly for the rising incidence of this so-called "disease of kings."¹⁹⁰ Well, Atkins did claim his diet is "fit for a prince or princess."¹⁹¹

Prescription for Muscle Cramps

The presence of muscle cramps, Atkins explained, "means you are losing too many electrolytes." Along with the ketones, one's kidneys may also flush out critical electrolytes like calcium, magnesium and potassium, which may result in muscle cramps or worse.¹⁹²

Atkins realized this potential danger and recommended his followers take potassium supplements. In fact, some people lose so much potassium they may need professional help. According to Atkins himself, sales of potassium supplements "of anywhere near the proper amount of potassium you may need are illegal over the counter; therefore you may need a doctor to write you the proper prescription."¹⁹³ Even Barry Sears, the author of the flawed¹⁹⁴ Zone Diet, recognizes the danger the Atkins Diet might present: "Any meal that you have to take potassium supplements, there's something wrong with that."¹⁹⁵

Cognitive Impairment

Experts have voiced a longstanding concern that ketosis might fog up people's thinking, but wasn't formally tested until 1995. As reported in the International Journal of Obesity article "Cognitive Effects of Ketogenic Weight-Reducing Diets," researchers randomized people to either a ketogenic or a nonketogenic weight loss diet. Although both groups lost the same amount of weight, those on the ketogenic diet suffered a significant drop in cognitive performance.¹⁹⁶

After one week in ketosis, higher order mental processing and mental flexibility significantly worsened into what the researcher called a "modest neuropsychological impairment."¹⁹⁷

"Emotional Zombie"

Not only may the Atkins' Diet impair mental functioning, it may impair emotional functioning as well. Researchers at MIT are afraid the Atkins Diet is likely to make many people—especially women—irritable and depressed.¹⁹⁸

The Director of MIT's distinguished Clinical Research Center measured the serotonin levels in the brains of 100 volunteers eating different diets.¹⁹⁹ Serotonin is a chemical messenger in the human brain that regulates mood. In fact, the way antidepressants like Prozac are purported to work is by increasing brain levels of this neurotransmitter.

The MIT researchers found that the brain only made serotonin after a person ate carbohydrates. Carbohydrates seemed to naturally stimulate serotonin.²⁰⁰ By starving the brain of this essential mood elevator, the researchers fear that the Atkins Diet may make people restless, irritable or depressed. They noted that women, people under stress, and those taking anti-depressants might be most at risk.²⁰¹

When one follower of low carb guru Herman Tarnower's 1978 "Scarsdale Diet," wrote to him, "When I diet, I get cranky, and my husband says, 'I like you better fat than cranky'; have you any suggestions?" Dr. Tarnower responded, "You should be able to diet without getting cranky. Your husband, I am sure, would like to have you attractive, lean, and pleasant." His paternalistic prescription may make one sympathize, as one journalist wrote, "with his lover Jean Harris, the former school headmistress who later did prison time for his murder."²⁰²

Based on the MIT serotonin research, Judith Wurtman, Director of the Women's Health Program at the MIT Research Center, warns that filling up on fatty foods like bacon or cheese may make people tired, lethargic and apathetic. Eating a lot of fat, she stated, may "make you an emotional zombie."²⁰³

"Sunshine and Sex"

Atkins' remedy to counteract or cover-up the toxic effects of his diet is a list of prescriptions. Constipation? No problem, he says, take a laxative.²⁰⁴

Leg cramps? They are "probably due to a calcium deficiency," Atkins explained, "I treat it with calcium supplements and Vitamins E and C. Sometimes magnesium and potassium have to be added."²⁰⁵

What if uric acid goes up? Not an obstacle for Atkins, who wrote: "this rarely poses a problem because I routinely prescribe a drug to prevent uric acid formation... if it goes above the normal range after being on the diet."²⁰⁶ He fails to mention, however, that this drug can cause irreversible liver damage, life-threatening anemia, and, in rare cases, even death.²⁰⁷

Bad breath? Great—that means it's "working at full efficiency."²⁰⁸ Just "carry around... one of those purse-sized aerosol mouth fresheners, and you can have sweet breath..."²⁰⁹

Despite the side effects of ketosis, Atkins' books encourage people to repeatedly test their urine for ketones to ensure they remain in this unhealthy state. Atkins almost fetishized ketosis, describing it being "as delightful as sunshine and sex."²¹⁰ Atkins did, after all, start his career off as a stand-up comic.²¹¹ One dieter replied, "I don't think Dr Atkins had much sex if he thinks that ketosis is better than sex. It's certainly not."²¹²

In fact, thanks to its side effects, those who go on the Atkins Diet in an attempt to attract others may find it counterproductive when a potential mate gets too close and finds a constipated, cognitively impaired "zombie" with bad breath.

ALL LONG-TERM STUDIES ON ATKINS A WASH

Atkins Comes In Last For Long-Term Weight Maintenance

Even if people can handle the side effects of the diet, there are no data to show that the initial rapid weight loss on the Atkins Diet can be maintained long term. Many of the studies on the Atkins Diet have lasted only a few days;²¹³ the longest the Atkins Diet has ever been formally studied is one year.

There have been 3 such yearlong studies and not a single one showed significantly more weight lost at the end of the year on the Atkins Diet than on the control diets.^{214,215,216} In the yearlong comparison of the Atkins Diet to Ornish's diet, Weight Watchers, and The Zone Diet, the Atkins Diet came in dead last in terms of weight lost at the end of the year. Ornish's vegetarian diet seemed to show the most weight loss.²¹⁷ The Atkins website has no comment.²¹⁸ Noting that by the end of the year, half of the Atkins group had dropped out, and those who remained ended up an unimpressive 4% lighter, *Fat of The Land* author Michael Fumento commented, "do you really think any of them could sell a single book copy, much less as many as 15 million (for Atkins), by admitting to a 50 percent drop-out rate in one year with a mere five percent of weight loss among those left?"²¹⁹

Ornish's vegetarian (near-vegan) diet has been formally tested for years.²²⁰ Even though the diet was not even designed for weight loss, after five years most of the Ornish adherents were able to maintain much of the 24 pounds they lost during the first year "even though they were eating more food, more frequently, than before without hunger or deprivation."²²¹ This is consistent with what research we have on vegans themselves. Vegans are vegetarians that also exclude dairy and eggs from their diet.

The biggest study on vegans to date compared over a thousand vegans in Europe to tens of thousands of meat eaters and vegetarians. The meat eaters, on average, were significantly heavier than the vegetarians, who were significantly heavier than the vegans. Even after controlling for exercise and smoking and other nondietary factors, vegans came out slimmest in every age group. Less than 2% of vegans were obese.²²²

In a snapshot of the diets of 10,000 Americans, those eating vegetarian had the slimmest BMI's whereas those eating the fewest carbs in the sample weighed the most. Those eating less carbs were on average overweight; those eating vegetarian were not.²²³

Vegetarians may have a higher resting metabolic rate, which researchers chalk up to them eating more carbs than meat eaters (or possibly due to enhanced adrenal function).²²⁴ At the same weight, one study showed that vegetarians seem to burn more calories per minute just by sitting around or sleeping than meat eaters—almost 200 extra calories a day. Although earlier studies didn't find such an effect,²²⁵ if confirmed, that amounts to the equivalent to an extra pound of fat a month burned off by choosing to eat vegetarian.²²⁶

The only other two formal yearlong studies found that although the initial drop in weight on Atkins was more rapid, weight loss on the Atkins diet reversed or stalled after 6 months. The longer people stay on the Atkins Diet, the worse they seemed to do.^{227,228} None of the three longest studies on the Atkins Diet showed a significant advantage over just the

type of high carbohydrate diets Atkins blamed for making American fat.

Anyone can lose weight on a diet; the critical question is whether the weight loss can be maintained and at what cost. If low carb diets really did cure obesity, the original in 1864 would have eliminated the problem and no more diet revolutions would be necessary. Short-term weight loss is not the same thing as lifelong weight maintenance.

Long-Term Weight Loss Secrets

Permanent weight control is difficult to achieve. Up to around 95% of repeat dieters fail, regaining the weight that they initially lost. What about those 5%, though? Has anyone studied them and found out their secret? In her book *Eating Thin for Life*, award winning²²⁹ journalist and dietician Anne Fletcher delved into the habits of a few hundred folks who had not only lost an average of 64 pounds but also maintained that loss for an average of 11 years. What did she find? "[B]asically, they're eating the opposite of a high-protein, low carbohydrate diet," Fletcher reported. When she asked them to describe their eating habits, the top responses were "low-fat" followed by "eating less meat."

These dieters with long-term success also told her they ate "more fruits and vegetables." Research seems to support this notion. One research study showed, for example, that significant weight loss could be triggered in people just feeding them extra fruit—3 added apples or pears a day.²³⁰ Harvard studied 75,000 women for a decade and the results suggest that the more fruits and vegetables women eat the less likely they will become obese.²³¹ A 2004 review of the available research suggests that in general "increasing fruit and vegetable intake may be an important strategy for weight loss."²³²

Researchers at the National Cancer Institute followed over 75,000 people for ten years to find out which behaviors were most associated with weight loss and which with weight gain. They wrapped tape measures around people's waists for a decade and found that the one dietary behavior most associated with an expanding waistline was high meat consumption and the dietary behavior most strongly associated with a loss of abdominal fat was high vegetable consumption.²³³ Even after controlling for other factors, men and women who ate over a serving of meat a day seemed to be 50% more likely to suffer an increase in abdominal obesity than those who ate meat just a few times a week. The researchers conclude: "Our analysis has identified several easily described behaviors [such as reducing meat intake to less than three servings per week and jogging a few hours every week] that, if widely adopted, might help reverse recent increases in adult overweight... Increases in vegetable consumption might reduce abdominal obesity even further."²³⁴

The sad thing, according to the Director of Nutrition for the Center for Science in the Public Interest, is that "people keep believing that the magic bullet is just around the corner . . . if they only eliminate food 'x' or combine foods 'a' and 'b,' or twirl around three times before each meal."²³⁵ The reality is that most ordinary people lose weight without the gimmicks. Americans spend \$30 billion²³⁶ a year on.²³⁷

In the largest survey ever undertaken on the long-term maintenance of weight loss, Consumer Reports found that the vast majority of the most successful dieters said they lost weight entirely on their own, without enrolling in some expensive program, or buying special foods or supplements or following the regimen of some diet guru.²³⁸ The most popular

fad diet right now may be Atkins, but it's not the most popular diet, and not the one that seems to work the best.

Atkins Missing in Action

The most formal study of lasting weight loss, though, is the highly respected National Weight Control Registry, funded by the National Institutes of Health. For over 10 years, the Registry has tracked the habits of thousands of successful dieters. They now have 5000 Americans confirmed to have lost an average of 70 pounds and were able to prove they have kept it off for an average of 6 years.²³⁹ After a decade of rigorously tracking those who most successfully lost weight—and kept it off—one of the chief investigators revealed what they found: "Almost nobody's on a low carbohydrate diet."²⁴⁰

These researchers, led by a team at Brown and the University of Colorado, found that the people most successful in losing and maintaining their weight were eating high carbohydrate diets—five times as many carbs as Atkins proscribed in the "weight loss" phase of his diet.²⁴¹ Out of the thousands of people in the National Weight Control Registry, less than 1 percent follow a diet similar to the Atkins program. "We can't find more than a handful of people who follow the Atkins program in the registry," said one chief investigator, "and, believe me, we've tried."²⁴²

Fifteen million Atkins books sold; and investigators can only find a "handful" of followers who could qualify for the Registry? To qualify, all dieters have to do is prove they lost just 30 pounds and kept it off for at least one year. Twenty-six million Americans²⁴³ supposedly on "hard-core" low carb diets and "almost nobody" on Atkins has even qualified? Maybe for some reason only dieters eating lots of carbohydrates hear about the Registry? No, the National Weight Control Registry has been plugged in Dr. Atkins' own book for years and is promoted on the official Atkins website.²⁴⁴ The reason why anecdotes of Atkins Dieters maintaining their weight loss crop up in Atkins books and websites but seemingly nowhere else, may be because there isn't much oversight when posting information to the web, whereas the Registry demands proof.²⁴⁵

* Michael Greger, MD, is a graduate of the Cornell University School of Agriculture and the Tufts University School of Medicine. Dr. Greger has been publicly speaking about mad cow disease since 1993. In 1997 he was invited as an expert witness to defend Oprah Winfrey in the infamous meat defamation trial. He has contributed to many books and articles on the subject and continues to lecture extensively. Dr. Greger can be contacted at 857-928-2778, or mhg1@cornell.edu.

Part II will continue in next month's, July 2004, McDougall Newsletter.

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My Favorite Five Articles Found in Recent Medical Journals

Eat Healthier for Better Sex

Effect of lifestyle changes on erectile dysfunction in obese men: a randomized controlled trial by Katherine Esposito in the June 23/30, 2004 issue of the *Journal of the American Medical Association* reported on obese men aged 35 to 55 years with erectile dysfunction. One group of 55 men was assigned to a healthier diet (lower in fats and higher in complex carbohydrates) and another group of 55 men did not change their diets. The first group also reduced its (calorie) intake and increased physical activity. After losing about 10% or more of their total body weight (on average 15 Kg = 32 pounds) about one third of obese men showed improvement in sexual function. Not much else changed, e.g., cholesterol, triglycerides or glucose. Their blood pressure decreased a little from the diet, exercise and weight loss.

Comment:

My first experience with sexual function and diet came from my formative years as a doctor on a sugar plantation in Hawaii in the early 1970s. Anyone familiar with the lives of people on the rural sugar plantations knows the truth of my story. A common practice was for an elderly Filipino gentleman to retire after years of hard work and saving his money – and then travel to the Philippines to marry a young bride. Every day there came into my medical office a family consisting of a man in his 70s, with a woman in her 20s, with several small children. I was impressed by his ability to father these children (since many men I personally knew were having erectile dysfunction (ED) in their 40s and 50s), and by his optimism – in thinking that he would live long enough to see these children grow into adulthood. You may have guessed the secret to his sustained abilities was a diet based upon vegetables and rice.

Multiple studies have shown that the rich American diet is at the root of erectile dysfunction. The blood vessels to the penis close, just as those to the heart close, from a diet high in fat and cholesterol. Nerve damage to those nerves that regulate blood flow to the penis that control an erection also occurs from unhealthy eating practices. In addition, because of all that poor health, many men are on blood pressure and other medications that are “erection destroying.”

So the solution, just like with other diseases of over-nutrition, is to change to a healthy diet and exercise. Of course, there is Viagra for those too stubborn to change – but Viagra does nothing for the unattractive pot belly that is also sexually inhibiting. Better to go for the all-encompassing cure – a plant-food-based diet and exercise.

Esposito K, Giugliano F, Di Palo C, Giugliano G, Marfella R, D'Andrea F, D'Armiento M, Giugliano D. Effect of lifestyle changes on erectile dysfunction in obese men: a randomized controlled trial. *JAMA*. 2004 Jun 23;291(24):2978-84.

Can't Suck off the Fat for Better Health

Absence of an effect of liposuction on insulin action and risk factors for coronary heart disease by Samuel Klein in the June 17, 2004 issue of the *New England Journal of Medicine* found abdominal liposuction does not improve the metabolic complications related to obesity. After sucking off more than 20 pounds (10Kg) of fat, on average, from each

person, these investigators found no improvement in many of the risk factors (like insulin resistance) that predict a person's chance of having a heart attack.

Comment:

Overweight and obesity are associated with poor health because the same foods and lifestyle practices cause both conditions. In other words, the accumulation of the excess abdominal fat is **not** the cause of heart disease, but just one more result from gorging on high-fat, high-calorie, usually high-cholesterol foods, like NY sizzling steaks, fried chicken, and slices of Parmesan cheese. So reducing the body fat will do little, if anything, to bring about better health – unless this is accomplished by addressing the root of the problem. Weight loss accomplished by changing to a healthy diet and exercise is associated with improved insulin sensitivity, lower blood pressure, and reduced blood sugar, triglycerides, and cholesterol. But most importantly, people are healthier and feel and look better.

This lesson can also be valuable when evaluating other unconventional means of losing weight, like low-carb (Atkins-type) diets. Because the weight loss is accomplished by means other than by correcting the cause (people are made sick by the bizarre makeup of the components of the food – too much fat and protein and too little carbohydrate), followers may become thinner, but not healthier – and trimmer, sick people with lethargy, nausea, headaches, bad breath, and constipation are what you see with those following this form of weight loss (See my May 2004 newsletter article: The Atkins Scientific Research – Deceit and Disappointment).

Obviously, to get the health and appearance you deserve you must go to the common denominator of the problem: consumption of too much rich food. The solution is to eat a diet based on starches, vegetables and fruits and exercise (See my November 2002 Newsletter article: Successful Weight Loss Tips.)

Klein S, Fontana L, Young VL, Coggan AR, Kilo C, Patterson BW, Mohammed BS. Absence of an effect of liposuction on insulin action and risk factors for coronary heart disease. *N Engl J Med.* 2004 Jun 17;350(25):2549-57.

Bubbly Mineral Water Reduces Heart Attack Risks

A sodium-rich carbonated mineral water reduces cardiovascular risk in postmenopausal women by Stephanie Schoppen in the May 2004 issue of the *Journal of Nutrition* found that the consumption of carbonated mineral water decreases total cholesterol (6.8%) and “bad” LDL-cholesterol (14.8%), and increases “good” HDL-cholesterol (8.7%). Moreover, there were signs of improvement in the health of the blood vessels (less endothelial dysfunction). Blood sugar levels also improved, and no adverse effects were seen on blood pressure, even with the additional sodium from the water.

The water consumed was supplied by Vichy Catalan and contained significant amounts of bicarbonate, sodium, chloride, and some potassium. Subjects drank one liter (a quart) a day for the 2 months of the study.

Even though sodium has been condemned because of effects on elevating blood pressure, there is also evidence that says sodium in the diet helps lower cholesterol – ingestion of carbonated mineral water may enhance the conversion of

cholesterol in the liver into bile salts, which are then removed from the body with bowel waste. Additionally, the bicarbonate form of sodium may be less detrimental to blood pressure, than is the chloride form (table salt).

Comment:

Water is seldom discussed in terms of health, yet people often consume one to five liters a day and our body masses are made up of 70% to 75% water. Just in terms of volume, water has the potential to have a great influence upon our health.

My recommendations are: First, your water source must be clean – free of environmental contaminants. Clean water may be obtained from many sources (tap, bottled, distilled, filtered, etc.). Sometimes laboratory testing is needed to assure purity. Second, you should drink sufficient amounts to satisfy your thirst drive. I do not have a rule that forces people to drink 8 glasses a day – I assume their highly efficient thirst drive will meet their needs.

I really like this article because I have a habit of drinking one to three liters of carbonated bottled water a day – and I love to hear good news about my habits. One additional advantage of carbonated water is that it may be good for your bones, not just because it is loaded with minerals, including calcium, but, most importantly, because it is alkaline in nature (See my January 2003 Newsletter article: *The Right Diet Will Save Your Bones*).

Schoppen S, Perez-Granados AM, Carbajal A, Oubina P, Sanchez-Muniz FJ, Gomez-Gerique JA, Vaquero MP. A sodium-rich carbonated mineral water reduces cardiovascular risk in postmenopausal women. *J Nutr*. 2004 May;134(5):1058-63.

Save Your Eyes with a Healthy Diet – Glaucoma

Statins and other cholesterol-lowering medications and the presence of glaucoma by Gerald McGwin in the June 2004 issue of the *Archives of Ophthalmology* found long term use of oral cholesterol-lowering medications (statins) may reduce the risk of developing the most common form of glaucoma (open-angle) in Western societies, especially for people with a history of high cholesterol and/or heart disease. The benefits may be from improvement in blood flow to the eyes and the flow of fluids within the eye.

Comment:

In the United States, approximately 2.2 million people age 40 and older have glaucoma, and of these, as many as 120,000 are blind due to the disease. In glaucoma, fluid builds up, increasing the pressure inside the eye to a level that may damage the optic nerve. When the optic nerve is damaged from increased pressure, open-angle glaucoma and vision loss may result.

I have had personal communication with an ophthalmologist friend concerning her experiences with eye pressure and diet. She has found that, like blood pressure, eye pressure is reduced with a healthier diet (low-fat, plant-based) and an exercise program. These findings are yet to be published and confirmed, but this report from the *Archives* suggesting protective effects from statins is encouraging and hopefully will cause researchers to look at a healthy diet as a means to

both prevent and treat glaucoma. In the meantime, if you have glaucoma and have changed your diet you should have your eye pressure monitored closely. If you have a doctor who is willing to work with you, then there is a good chance you can reduce the use of eye-pressure-lowering drops by monitoring your eye-pressure and making appropriate adjustments in your medications with your doctor's supervision.

McGwin G Jr, McNeal S, Owsley C, Girkin C, Epstein D, Lee PP. Statins and Other Cholesterol-Lowering Medications and the Presence of Glaucoma. *Arch Ophthalmol.* 2004 Jun;122(6):822-826.

PSA for Early Prostate Cancer Detection Fails Again

Prevalence of prostate cancer among men with a prostate-specific antigen level < or =4.0 ng per milliliter by Ian Thompson in the May 27, 2004 issue of the *New England Journal of Medicine* found men with "normal" PSA levels (below 4 ng/ml) often have prostate cancer and thus this test should give little reassurance to men that they do not have this disease.¹ In this study of almost 3000 healthy participants (age 62 to 91 years), 15 percent of the men with a "normal" PSA actually had prostate cancer based on the needle biopsy results.

Comment:

Prostate cancer is common among middle-aged and older men, with a 16 percent chance of being diagnosed with this disease in a man's lifetime, but only a 3 percent chance of dying of this disease. (Which means 13% of men who have a prostate cancer diagnosis may have been better off not knowing about it.) PSA (prostate specific antigen) testing has increased the number of men diagnosed with the disease without reducing the risk of suffering or dying from it. In fact, a case can be convincingly made that the test has increased suffering because many more men must live their lives knowing they have cancer and suffering with the side effects of treatment, such as urinary incontinence and impotency (with no increase in years from all these expensive and painful treatments).

Being diagnosed with cancer changes people in three profound ways:²

- 1) Once the diagnosis is made the label of "cancer victim" sticks for life. Regular reminders come from doctor's visits, friends and stories in the media about cancer.
- 2) Cancer causes people to lose trust in their bodies. "The body becomes a house of suspicion." "I don't get the flu anymore, I get recurrent lung cancer."
- 3) Survivors feel a separation from the ones they love because of this profound experience – no one else really knows the effects this disease has had on the person with cancer.

Therefore, before someone is asked to take a test that could negatively change his life forever, then the doctor had best be sure that the benefits will far outweigh the harms – and to date there is no convincing evidence that the use of PSA testing reduces the risk of dying from prostate cancer.¹ (For a thorough discussion of this topic see my February and March 2003 lead Newsletter articles.)

Thompson IM, Pauler DK, Goodman PJ, Tangen CM, Lucia MS, Parnes HL, Minasian LM, Ford LG, Lippman SM, Crawford ED, Crowley JJ, Coltman CA Jr. Prevalence of prostate cancer among men with a prostate-specific antigen level \leq 4.0 ng per milliliter. *N Engl J Med*. 2004 May 27;350(22):2239-46.

Little M. Chronic illness and the experience of surviving cancer. *Intern Med J*. 2004 Apr;34(4):201-2.

Recipes

MACARONI SALAD

This is a delicious summertime salad. Make this a day before you plan to serve it to allow flavors to blend.

Preparation Time: 30 minutes

Chilling Time: 4 hours or more

Servings: 6-8

6 cups cooked elbow macaroni

1 cup tofu mayonnaise (recipe page 255 Quick & Easy Cookbook)

1 teaspoon prepared mustard

2 tablespoons chopped fresh parsley

½ teaspoon dill weed

dash salt

freshly ground pepper to taste

1 cup chopped celery

1 cup chopped red bell pepper

1 cup chopped green bell pepper

¼ cup chopped green onions

¼ cup shredded carrots

Cook macaroni according to package directions. Drain & set aside.

Meanwhile, combine the tofu mayo and mustard and mix well. Add the seasonings and stir to combine. Set aside.

Add the chopped vegetables to the cooked macaroni, mix and add the mayo mixture. Toss gently to combine. Refrigerate before serving.

Hints: Use other vegetables as desired in this salad. Small broccoli florets are a nice addition. Nasoya makes a fat free mayonnaise that may also be used in this recipe. It can be found in most natural food stores.

BAJA VEGETABLE WRAPS

This keeps well in the refrigerator and reheats well, so it makes a fast meal for lunch later in the week.

Preparation Time: 20 minutes

Cooking Time: 20 minutes

Servings: 6-8

1 onion, chopped

1 green bell pepper, chopped
1 carrot, cut in half lengthwise, then sliced
½ teaspoon minced garlic
½ cup vegetable broth
1 bunch green onions, cut into 1 inch pieces
1 ½ cups sliced Napa cabbage
1 tablespoon soy sauce
1 teaspoon chili powder
1 teaspoon leaf oregano
2 cups chopped fresh tomatoes
2 cups chopped fresh spinach (packed)
2 15 ounce cans black beans, drained and rinsed
½ cup salsa
1-2 tablespoons chopped fresh cilantro
Tabasco or other hot sauce to taste

Place the onion, bell pepper, carrot, and garlic in a large pot with the vegetable broth. Cook, stirring occasionally, for about 4-5 minutes. Add green onions, Napa cabbage, soy sauce, chili powder and oregano. Continue to cook, stirring occasionally, for about 10 more minutes. Add the tomatoes, spinach, beans and salsa. Cook an additional 5 minutes. Remove from heat, stir in the cilantro and hot sauce to taste. Roll up in a warm tortilla and eat.

Hints: This may also be served over baked potatoes or whole grains.

GRILLED VEGETABLES

In the summer I like to use a variety of fresh garden vegetables on my outdoor grill. Sometimes I thread the vegetables on a skewer, other times I toss them together in a sloped vegetable basket made especially for grills. I also vary the marinade used depending on what sounds good to me on a particular day, so feel free to experiment with a variety of delicious choices this summer.

Preparation Time: 20-30 minutes

Marinating Time: 30 minutes

Grilling Time: 10-15 minutes

Servings: 6-8

1 ½ pounds mushrooms, trimmed & left whole
1 long eggplant, cut in ¾ inch pieces
1 bell pepper, cut in 1 inch pieces
1 sweet onion, cut in wedges
1-2 zucchini, cut in ¾ inch pieces
1 pint cherry tomatoes

1-1 ½ cups fat free marinade or dressing

Prepare the vegetables and place in a large bowl. Pour the marinade or dressing over the vegetables and toss well to mix. Let rest for about 30 minutes, tossing occasionally to make sure vegetables are well coated with the mixture. Heat grill to medium.

Thread the vegetables on skewers or place in a grilling basket. Grill for 10-15 minutes until vegetables are tender, but not burned.

Serve with potatoes, rice or pasta.

Hints: If you use portobello mushrooms, remove the stems and chop into chunks before using. They are delicious and meaty tasting when they are grilled. If you prefer to use whole pearl onions instead of onion wedges, drop the onions into boiling water for about 30 seconds before peeling to make the skins easy to remove. When shopping for marinades, look for ones that are bottled without oil. There are many varieties available in supermarkets and natural food stores. If you have the time, it is also easy to make your own fat free dressing or marinade.

BROWNIES

These are served the first night of The McDougall Program for dessert, with Vanilla Soy Ice Cream. People line up for seconds! Remember, these are a rich treat for a special occasion.

Servings: makes one square pan

Preparation Time: 15 minutes

Cooking Time: 30 minutes

Dry Ingredients:

1 cup unbleached white flour

2/3 cup reduced fat cocoa powder

1 teaspoon baking powder

1 teaspoon baking soda

¼ teaspoon salt

¼ cup chopped cashews or walnuts (optional)

Wet Ingredients:

1 cup Wonderslim Fat Replacer

1 cup organic cane sugar

1 teaspoon vanilla

2 tablespoons Egg Replacer mixed in ½ cup water

Preheat oven to 350 degrees.

Combine dry ingredients in a bowl. Set aside.

Mix Wonderslim Fat Replacer and organic sugar together in a separate bowl. Stir in vanilla.

Mix Egg Replacer and water together and whisk until very frothy. Add to sugar mixture and stir to combine. Add wet ingredients to dry ingredients and stir until mixed. DO NOT OVERMIX. Spoon into a non-stick 8 inch square baking dish and flatten. Bake for 30 minutes.

Hints: Wonderslim Fat Replacer is sold in jars in most natural food stores. It is made from plums and apples and is an excellent fat replacer in baked goods. Wonderslim also makes the reduced fat and caffeine free cocoa powder. Organic cane sugar is made by Wholesome Sweeteners. (Regular granulated sugar may be used instead, if desired.) Egg Replacer is made by EnerG Foods. It is sold in boxes in the natural food store. It is used to replace eggs in baking. All of these products should be available in your natural food store.