

# HEALTH AND STRESS

## *The Newsletter of The American Institute of Stress*

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## HOW CAN YOU DETERMINE WHAT DIET IS THE VERY BEST FOR YOU?

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There have always been differing views about what constitutes the best diet to follow but such debates seem to have become more frequent and fervent over the past year or two. There is considerable controversy over official recommendations to strictly limit fat consumption. Governmental guidelines that have emphasized this were based on the mistaken belief that reducing fat intake would lower cholesterol levels and therefore risk of heart attack.

Eating fat was also thought to facilitate weight gain and obesity, but if you eliminate fat, then calories must come from proteins and/or carbohydrates. Since red meat and other sources of protein are often rich in saturated fat, considered to be a real killer, carbohydrates seemed the best bet. **For the past three decades, Americans**

**have been urged to eat 6-11 servings a day of bread, pasta, rice, etc. Many believe that this advice has boomeranged and may have contributed to the current epidemics of obesity and type 2 "adult onset" diabetes.**

Others claim that the major cause of these problems is that Americans are eating more. Food portions and soft drink sizes have gotten progressively larger, particularly those promoted by competitive fast food chains and the body doesn't care where calories come from. If you take in more than you expend you will gain weight. In that regard, we have also become more sedentary, which is why some proposed new food pyramids not only include regular physical activity, but have it as their base.

Critics complain that official recommendations, food pyramids and other cookie cutter approaches that purportedly apply to everyone are preposterous. We all have different requirements based on age, gender, medical problems, medications, exercise habits and other factors. In addition, healthy people may respond to the same foods differently because of allergies, sensitivities and genetic influences that are poorly understood. The "one size fits all" is also objected to by others who believe that one man's meat can literally be another's poison.

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Various techniques have been devised to identify foods that are most likely to be healthy or harmful for different individuals. Some believe that blood type or "metabolic profiling" provides useful information while others test how exposure to foods or additives affects muscle strength and heart rate. Although all these approaches offer glowing testimonials, some seem to have a more scientific basis than others do.

### **A Diet Based On Your Blood Type?**

It might sound pretty far-fetched but there have been several popular books based on this theory promulgated by Peter D'Adamo. Around 100 years ago, it was discovered that the red blood cells of some people had a certain protein on their surface (type A), some had a different protein (type B), while others had neither protein (type O) and a few had both (type AB). This information was important to know since an A could not tolerate a transfusion from a B and vice versa. If you had O blood it could be given to anyone but you could only receive O blood. If you were an AB your blood could only be given to another AB but you could receive blood from anyone.

D'Adamo believes that proteins on the surface of certain foods called lectins can also cause various molecules and red cells to stick together if given to the wrong blood type. Eventually, this can result in serious disruptions throughout the body, including cirrhosis and kidney failure. Since numerous other proteins or antigens on red cells have now been identified that can cause adverse reactions to blood transfusions (Rh) or are associated with certain diseases (Kell), it is not unreasonable to propose that lectins or other food proteins might also have similar effects.

Most people are type O, believed to date back to Cro-Magnon hunters over 40,000 years ago. Type O's require animal protein as well as vegetable and fruits to maintain good health but do not tolerate carbohydrates well and are often gluten sensitive. The next most common type is A, which evolved between 25,000 and 15,000 B.C. when hunter/meat eaters became farmers and grain gatherers. They have fragile digestive systems, do not react well to meat, are usually lactose intolerant and

do better if they stick to fruits, vegetables and carbohydrates. Type B is thought to date back around 10,000 years and these individuals can generally eat whatever they want (dairy, meat, fish, grains, fruits, vegetables). Wheat products should be restricted since they may tend to cause low blood sugar and weight gain. Type AB is rare and only about 1000 years old. Most AB's do better as vegetarians with occasional dairy and meat since foods that are bad for A's and B's are usually not well tolerated.

That's only a thumb nail sketch. In *Eat Right For Your Type*, D'Adamo goes into great detail explaining why certain foods will cause weight gain or weight loss for different blood types, specific foods to avoid, whether dairy products, seafood, specific vegetables, fruits, cereals, grains, beans, pastas, oils, nuts, condiments, tea are good, bad or stressful for you and what kinds of diseases and disorders you are most likely to develop.

But it doesn't stop there since your blood type also determines your personality. O's are decisive, positive and natural leaders with great energy and strong survival instincts although they are often selfish and arrogant. A's are sensitive and considerate, and while they adapt well to changing situations they tend to hold in stress. AB types are usually restless souls who may be brilliant, wild and passionate but are prone to fight with others. **Your blood type also determines such traits as romantic potential, loyalty and inner strength. Dating services in Japan already use aspects of this "science", known as ketsu-eki-gata, to evaluate the compatibility of their clients.** Unfortunately, there are no scientific studies to back up any of these speculations, some of which strain the imagination.

### **Iridology, Kinesiology And Pulse Testing**

Being a naturopath, D'Adamo uses approaches such as iris diagnosis, and testing the response of muscles and heart rate to different foods to support his theories and conclusions. Iridologists believe that the eyes are not only the windows of the soul but also the window to your state of health. The iris of the eye is like a map of the body and changes in certain organs are reflected in specific parts of the iris. Things like the

foods you eat, your occupation, even your mental and emotional state also record themselves in the iris. Different colors and their placement in the iris reflect changes in the body like inflammation, pain, and acid buildup and where the problem lies. In healthy people, the iris is composed of densely structured fine, straight lines that radiate from the pupil to the outer rim. During illness, these lines become separated and distorted, forming various patterns called markings. White markings suggest that sedating, anti-inflammatory treatment of the affected organ is required, while gray or brown patterns show a need for strengthening and stimulation.

Kinesiologists use tests of muscle strength to determine whether foods are harmful or healthy. These are based on Oriental beliefs that disturbances of the body's vital energy (Qi) are responsible for symptoms as well as diseases. If energy channels (meridians) are blocked, the flow of Qi is disrupted and this will affect a muscle located along that meridian. Testing procedures vary. A standing subject's arm may be extended forward with the thumb pointing down and pressure exerted on the top of the wrist to press it downwards to see how well this can be resisted. The food or substance to be tested is then chewed and left under the tongue for 15 seconds and the procedure is repeated. If a food is not well tolerated then strength to resist pressure will be markedly reduced. Alternatively, a sample of the food may be held near the navel to test energy blockage in other meridians.

Pulse testing involves holding 2-4 drops of liquefied food under the tongue for as long as possible. Heart rate is measured before the test and ten minutes later. An increase of 5 beats/minute indicates a food problem.

### **Get The Right Diet By Metabolic Typing**

The basic premise here is that one man's food may be another's poison and that no single diet is healthy for everyone. Whether a food is "good" or "bad" depends largely on your metabolic type and there are three basic categories: protein, carbohydrate and mixed. You can determine your type by evaluating responses to 65 multiple choice

questions ranging from how much nose moisture you have to how you feel about potatoes. This will provide a rough guide as to how much protein, carbohydrate and fat you should have in your daily diet. Further fine tuning using other techniques that are provided let you zero in on the precise foods and combinations of foods that can optimize your ability to achieve your ideal weight and improve digestion, circulation, energy, mood and immune system function.

All of this is explained in William Wolcott's *The Metabolic Typing Diet*, which proposes that each of us has different inherited strengths or weaknesses in the four key systems that determine metabolic type: the autonomic nervous system, endocrine system, carbo-oxidative system and lipo-oxidative system. These determine such things as whether you are a fast, slow or mixed oxidizer. Fast oxidizers require a high-protein, high-fat, low carbohydrate diet, slow oxidizers need low-fat, low protein, high carbohydrate diets, while mixed oxidizers do best on relatively equal amounts of all three. If you are a fast oxidizer and don't have enough protein intake your food will not be adequately converted to energy and winds up being stored as fat. You will also be likely to feel hungry and tired after meals, suffer from indigestion, irritability and lack of stamina and resistance to infection. It's not excess calories that make you fat but rather the inability to convert them to energy from protein, fat and carbohydrates, depending on your specific metabolic type.

This is influenced by heredity and ancestral diets. For example, Bantu African tribes eat a low-fat diet and have no coronary disease. Scottish, Irish and related cultures have always had a diet high in fatty fish that protects them from heart attacks. **Therefore, a low-fat diet excluding fish might cause coronary disease in people of Scotch and Irish descent.**

### **Elimination And Rotational Diets**

There is little doubt that some individuals have adverse reactions to certain substances or foods that most others enjoy. People quickly learn from experience that red wine or products containing sulphite as a preservative cause migraine, foods rich in purines can precipitate gout, or that

chocolate, MSG or some seasoning or spice produces a headache. Other adverse responses to food or food additives may be more difficult to detect because they are not consistent or take time to develop. Some sensitivities depend upon the amount of the product ingested and whether other offending agents are consumed at the same time. In contrast, food allergies to things like peanuts are consistent and may require only minuscule amounts to elicit a violent reaction.

Food allergies and sensitivities are best detected by trial and error using some type of elimination diet procedure. These often start out by eliminating foods that appear suspect based on past experience or are not compatible with your blood type or metabolic profile, if you believe in these theories. This is not as effective as progressively eliminating food groups that have been found to produce adverse side effects for many people, such as:

1. Milk and all other dairy products including cheeses, yogurt, butter, etc. Some believe it is advisable to also exclude beef as well during this testing period.
2. Wheat and all other cereals except rice.
3. Tea, coffee, cocoa and chocolate.
4. All citrus, including orange and lemon.
5. Artificial colorings.
6. Yeast, which is present not only in bread but also other foods and beer.
7. Eggs.

Strict elimination diets may begin with two or more days of fasting to get rid of any possible food allergens. Dairy and wheat food groups are usually omitted during the first week since these are the most common offenders, especially for those unaware of gluten or lactose intolerance. Alternatively, the diet starts with hypoallergenic foods (cod, trout, pears, peaches, celery, zucchini, carrots) that are considered to be "safe", for seven to ten days.

If everything seems to be going smoothly, favorite foods are returned to the diet one-at-a-time. If a food appears to be associated with some suspected reaction on two occasions it should be eliminated for three months before introducing it again. Patients taking cortisone-like drugs should try to discontinue them during testing since they can mask side effects. It is important to

keep a diary of what foods you have eaten as well as any unusual symptoms they might have caused, such as migraine or tension headaches, watery eyes, stuffy nose, sneezing, night sweats, fatigue, a metallic taste, difficulty concentrating, increased tension, arthritis, gastrointestinal and skin complaints. The results can occasionally be quite dramatic.

The *British Medical Journal* reported the case of a woman who had suffered from severe arthritis for 25 years when she tried eliminating corn products from her diet. After a week she felt better than she had in years and she continued to improve until her joint pains returned with a vengeance six weeks later. There was no apparent explanation until it was discovered that coincident with this recurrence, the cook who prepared her food had begun using cornstarch as a thickening agent. When this was eliminated her pain disappeared permanently. Others have reported similar relief of arthritis by eliminating tomatoes and other nightshade vegetables like eggplant, bell pepper, and potatoes. One arthritis diet forbids all additives, preservatives, fruits, red meats, herbs, alcohol and dairy products.

In rotational diets, no food is repeated until the fifth day in a four-day rotation plan, foods from the same botanical family may only be used every other day, and no food ingredient such as wheat may be used twice in one day. **According to one report, an elimination/rotation diet used in over 5,000 patients with irritable bowel syndrome resulted in 99.9% relief of all symptoms. In ulcerative colitis and Crohn's disease, 80% to 90% improved.** Similar results were claimed for anxiety and depression. Elimination diets are also touted for urticaria and other skin diseases as well as attention deficit disorder. There is little scientific support and many question these figures.

### **Pharmacogenomics And Nutrigenomics**

A drug that usually benefits many patients may have little effect on others and in some instances can be harmful or even lethal. Possible explanations include differences in absorption and/or metabolism and increased or decreased "sensitivity" due

to individual idiosyncrasies. There is no way to accurately predict how any patient will respond to certain medications but this may soon change due to advances in genome research.

For example, variations in cytochrome P450 genes determine whether or not you make the enzyme that breaks down selective serotonin reuptake inhibitors like Prozac, Zoloft and other drugs. This information could indicate the likelihood that such antidepressants would be effective or whether a standard dose might prove harmful. Similarly, tiny variations in the beta 2AR gene can predict how asthma patients will respond to albuterol and other bronchodilators. **One company recently discovered 29 genetic variations that can affect how you will respond to statin drugs.** These medications are taken by millions but can have significant side effects that are not well known. Such information might prove useful to identify good responders or patients at particular risk in a new discipline called "pharmacogenomics".

If genes and DNA variations can dictate how we respond to different drugs it seems reasonable to suspect that they might also influence how we react to certain foods or specific compounds they contain. A few people who follow a low-fat diet are rewarded by a fall in lipid levels but most see no improvement, even if they follow stricter regimens for longer periods. Others who consistently eat fatty foods have normal cholesterols and are not overweight despite their apparently excessive caloric intake.

The explanation may lie in studies showing that mice lacking a gene called SCD-1 never become obese or diabetic despite being fed very high fat diets. Humans have similar genes and further investigations could confirm that these are also lacking or are inactivated in those people who can eat all the fat they want without suffering any ill effects.

One example is the Apo E gene that influences lipid metabolism and has several variations or alleles. Apo E2 is the most efficient at breaking down cholesterol, Apo E3 is next and Apo E4, the least effective, is associated with the highest risk of cardiovascular disease. If you inherit two copies of Apo E4 genes, one from each parent, your risk of heart disease is

increased 30 to 50 percent. However, an Apo E4 who follows a low-fat, low-cholesterol diet will have no increased risk of coronary heart disease based on abnormal lipid levels despite the "bad" gene. It is only when Apo E4 gene people eat increased amounts of fat that their serum cholesterol shoots up. However, when Apo E2s and Apo E3s go on a low-fat diet or become vegans there is no drop in their blood lipids so things tend to even out.

The study of how genes influence the way we react to foods or nutrients is called nutrigenomics and has great potential. For example, the first thing anyone with high blood pressure is told is to eliminate salt and follow a low sodium diet. It is now clear that only about 15% of hypertensives benefit from this. The vast majority doesn't need to restrict salt or sodium rich dairy foods and this could backfire. Some hypertensive patients improve with calcium supplementation but not salt restriction and since dairy products are a major source of calcium, a low sodium diet would be harmful to these individuals. Nutrigenomic profiling could sort out these differences.

Postmenopausal women are advised to take supplemental calcium to prevent osteoporosis and fractures. However, the gene for the vitamin D receptor that is responsible for calcium absorption has multiple variations, some of which don't respond well to increased dietary calcium. It may be possible to use this information to tailor therapy to the patient and such tests may be available in the near future. One company has amassed information on how 300 genes influence reactions to certain foods and plans to offer nutrigenomic profiling that will predict how you will respond to different diets. The projected cost of \$1000 is likely to come down as this type of testing becomes more widespread and competitors enter the market.

### **Fats: The Good, The Bad And The Ugly**

A *New York Times Magazine* cover story last August by Gary Taubes criticized governmental guidelines that continue to emphasize restricting fat intake. According

to the award-winning medical writer, a high fat diet does not cause heart attacks or weight gain and the present epidemic of obesity and Type 2 diabetes is due to increased carbohydrate consumption. Taubes backed up his views by citing supportive scientific studies and quotes from respected researchers. All of this was seen as providing strong support for the Atkins Diet, which soared in popularity after extensive TV and print media coverage of the controversial article. *Dr. Atkins' New Diet Revolution*, with 11 million copies already in print, went from No. 5 to the top spot on the *New York Times* paperback bestseller list and shot up from No. 178 to No. 5 in Amazon's rankings. Taubes also got a hefty \$700,000 advance for a book designed to expand on his article.

Not everyone jumped on the bandwagon. Critics claimed that Taubes had distorted the facts by deliberately omitting solid research studies that opposed his position, excluding interviews with experts with contrary views, and twisting or taking out of context the quotes he did include from others. The first salvo was fired by *Washington Post* columnist Sally Squires, who cited unpublished correspondence from the NHLBI Director and the president of the American Heart Association asking the *New York Times* "to correct several scientific misperceptions" the story had "created". She interviewed numerous nutritional experts, including those that Taubes had cited and spent several hours talking with him about his views and exactly what they were based on.

Squires' subsequent lengthy column denounced Taubes for distorting the facts. As might be expected, it included supportive statements from establishment figures whose reputations (and in some cases fortunes) had been built on advocating fat restriction to avoid high cholesterol and heart attacks. Taubes responded with a letter that convincingly addressed each disputed point, leaving readers confused as to who was correct about what.

A six-month Atkins funded study published several months later supported

Taubes by showing that restricting only carbohydrates did result in weight loss and improved lipid profiles regardless of fat intake. Critics complained that it did not evaluate possible long-term adverse effects and that any weight loss was simply the result of an overall reduced caloric intake. The American College of Preventive Medicine subsequently described the Atkins diet as "potentially dangerous and ultimately ineffective".

Some authorities that were cited by Taubes as supporting the Atkins diet claimed they had been misquoted. Stanford cardiologist John Farquhar said "I was greatly offended by how Gary Taubes tricked us all into coming across as supporters of the Atkins diet. I think he's a dangerous man. I'm sorry I ever talked to him." Gerald Reaven, who first described metabolic "Syndrome X", called the Taubes article "outrageous". While admitting he had said those quotes attributed to him, they were placed in a context that seemed to support the Atkins diet, which Reaven does not.

All this is hard to understand since Taubes has excellent credentials. His first article on dietary fat two years ago was featured in *Science*, America's leading scientific journal and he has received numerous awards for his achievements over the past two decades. Although this controversy is not likely to be settled soon, almost everyone now seems to generally agree with the following views:

- Σ The marked increase in obesity and diabetes over the past three decades is related to increased caloric intake due to larger portion sizes and particularly consumption of highly refined carbohydrates like those present in soft drinks and table sugar.
- Σ There is no good evidence that dietary fat per se causes obesity or heart attacks.
- Σ Fats should constitute 20-35% of caloric intake rather than the current recommendation to use "sparingly".
- Σ The healthiest fats are found in fish, nuts, avocados, seeds, olive oil and fresh butter.
- Σ The most harmful fats are "trans-fats"; hydrogenated oils found in margarine and packaged foods to preserve shelf life.

## Killer Carbs And Good Guy Grains

Many authorities now also agree that the steady increase in obesity and diabetes over the past few decades may be due to increased consumption of carbohydrates rather than fats. All carbohydrates are not created equal and most of the blame has been placed on sugar, especially for children and teen-agers. Few people are aware of the huge amounts of sugar present in packaged foods and soft drinks. **A 12-ounce can of soda that is mostly water and fructose contains the same number of calories as 10 teaspoons of sugar.** Although it's not unusual for kids to have more than one can in a half-hour, most parents would be alarmed to see a child eating 10-20 teaspoons of sugar within 30 minutes. Consider the following:

- Σ Sugar and sweeteners now represent almost 40% of the U.S. per capita consumption of carbohydrates.
- Σ Annual per capita consumption of sweeteners rose 22% from 1970 to 1995, representing an increase of 28 pounds.
- Σ U.S. sweetener consumption increased to 22 million tons in 1999 compared to 14.2 million in 1980.
- Σ High fructose corn syrup production was 7.8 million tons in 1994. By 1999, it was 11.4 million tons, an increase of almost 70% in five years.
- Σ High fructose corn syrup consumption quadrupled to 9.2 million tons annually from 1980 to 1999.

What's so bad about the high fructose corn syrup used to sweeten soft drinks, candy and other packaged products that say "sugar added"? **Corn syrup was described by one obesity expert as a "ticking time bomb" because it is more readily converted to fat than glucose or sucrose.** Unlike beet and cane sugars, fructose milled from corn does not trigger the release of insulin that would normally lower blood levels and send a satiety signal to the brain. Increased amounts of sugar that are not used up for immediate energy purposes are stored as fat to be used for future physical activity that seldom occurs. Corn syrup currently contributes a third or more of total caloric intake for some people.

Foods composed of refined grains have also contributed to the obesity epidemic because they are primarily starches made up of long chains of glucose molecules. These foods are rapidly digested and absorbed producing a sharp rise in blood glucose that stimulates the release of insulin and a drop in blood sugar. Subsequent hunger symptoms often cause snacking on sugar rich foods and set up a vicious cycle that repeats itself.

This does not occur with whole grain foods since their outer layer of fibrous bran and inner germ protein and fat content delay digestion and absorption and reduce rapid changes in blood sugar. These components also contain a concoction of vitamins, healthful nutrients, antioxidants and disease fighting phytochemicals. All of these are removed along with the bran and germ when grains are refined to make white flour or white rice. Official recommendations urge us to consume at least three servings of whole grains daily but Americans average half a serving and less than one in eight have at least one serving a day. Only about 5 percent of grain foods in the U.S. diet are true whole grain products. Some of the more popular sources include whole wheat and oat cereals (Wheaties, Cheerios, Whole Grain Total, Oatmeal Crisp, etc.), whole wheat breads and pastas, brown or wild rice, barley, whole kernel corn and low-fat popcorn.

Numerous studies confirm that whole grain eaters live longer and have much less heart disease and cancer. This has been attributed to a lowering of cholesterol as well as a combination of antioxidants, phytic acid, lectins, phenolic and other cardioprotective compounds. Malignancies may be reduced by phytochemicals that block DNA damage and protect against hormonally mediated breast and prostate cancers. The fiber in whole grains also increases fecal bulk and speeds its transit time, decreasing the opportunity for mutagens to damage cells and cause cancer in the gut.

Because whole grain products produce only small rises in glucose and insulin, those who eat them regularly are much less likely to develop diabetes due to insulin resistance or obesity and few are overweight.

## **All Obesity Is Not Created Equal – Stress, Belly Fat And Insulin Resistance**

Obesity is associated with a number of health problems and the more overweight you are the more likely you will be to develop them. However, where those extra pounds of fat are located may be even more important than how many of them you are carrying around. People with apple-shaped figures due to increased amounts of deep abdominal fat are at greater risk for diabetes, heart disease, hypertension, stroke and certain cancers compared to those just as overweight because of fatty hips and buttocks. Deep belly or visceral fat differs from fat deposited elsewhere in the body in several ways. One of the most intriguing is that it can be caused by increased cortisol levels; especially those associated with chronic stress. Cortisol levels are elevated in Cushing's syndrome, which is also characterized by abdominal obesity and a tendency to diabetes and hypertension. When the cause of the problem is eradicated and cortisol levels return to normal, the abdominal fat diminishes or disappears. In chronically stressed primates, those with the highest cortisol elevations also had the most abdominal fat. Similarly, a study of stressed out Swedish men showed that those with the highest cortisol levels had the biggest beer bellies.

Abdominal obesity is particularly associated with an increased risk of diabetes, insulin resistance and cardiovascular disease. One explanation may be that abdominal fat releases large amounts of free fatty acids that quickly find their way directly to the liver and stimulate it to produce glucose. Insulin is

secreted in increasing amounts but often fails to restore normalcy as insulin resistance develops. Visceral fat also secretes large amounts of inflammatory molecules called cytokines that contribute to diabetes, insulin resistance and heart attacks. A high level of C-reactive protein (CRP), a marker of inflammation, has been shown to be a better predictor of future coronary events than elevated cholesterol. A clear correlation has also been demonstrated between high levels of CRP and increased abdominal fat as well as insulin resistance. As the fat piles up and insulin levels rise, cytokines multiply and become more activated and stimulate the liver to release more stored fat and sugar into the bloodstream. This causes additional body fat to form further aggravating insulin resistance and setting up a vicious repetitive cycle.

Even people who are not obviously overweight may still have too much visceral fat and excess cytokine secretion that puts them at increased risk for insulin resistance, diabetes and cardiovascular disease. Most people don't know how much hidden belly fat they have because the only accurate way to measure it is with costly imaging procedures. In general, men with waists wider than 40 inches and women whose waists are more than 35 inches are at greatest risk. The odds go up if triglycerides are high and HDL is low since this strongly suggests hyperinsulinism, especially when there is some elevation of blood sugar and/or blood pressure. The best remedy is to significantly increase daily exercise habits and cut down on calories, particularly from sugars.

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