Image Awareness Wellness Institute

Searching for Nutrition (Part 3)

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Things to Avoid

The book of Leviticus in the Old Testament made the distinction between clean and unclean foods. The unclean foods were to be avoided. One begins to gain a sound understanding of nutrition when one realizes that it is just as important to exclude certain substances from the diet as it is to include others. Many societies have had lists of forbidden foods, especially for the mother to be.

The worst offenders in the modern diet include unhealthy fats, refined sugars, plastics, pesticides, and herbicides.

Unhealthy Fats

The fats in the diet are used for both production of energy and also as building materials. The wrong kind of dietary fats can inhibit energy production in the mitochondria because they do not burn well. The problem can become even more severe if faulty fats become incorporated into the structure of cell membranes, weakening them and altering normal cell membrane function.

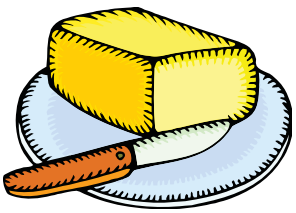
Ancel Keys was the father of the "diet-heart hypothesis." He developed the military K-ration and named it after himself (no modesty here!). Keys proposed that where people ate more animal fat there were more deaths from heart disease. He was attacked for his sloppy statistical work, but Keys could not admit he was wrong.

Keys found a ready ally in the American Heart Association which depends on large donations from the vegetable oil industry. The organization accepted Keys work and promoted the idea that saturated fat from meats and dairy products was the cause of heart disease, while vegetable oil products and margarine reduced the risk of heart disease.

Keys conducted human and animal experiments demonstrating that fat caused heart disease. The only problem was that Keys did not use animal fat in his laboratory experiments. He used margarine made from partially hydrogenated vegetable oil. The margarine Keys used did contain saturated fat, but it was 48% trans fat. The work Keys did led to a whole industry focused on selling products low in fat and cholesterol.

Only much later did it become evident that partially hydrogenated oils contain abnormal fats called *trans* fats. Trans fats are present not only in margarine, but also in most heavily processed vegetable oils.

Keys' work resulted in a five-fold increase in vegetable oil consumption and a reduction of butter consumption to one quarter of what is was when Keys did his work. Heart disease has gone from being a rarity to being the leading cause of death in the United States.



Margarine was originally developed in France as a cheap substitute for butter. Chemists in America made it even cheaper by using the cheapest sources of plant oil and combining them with hydrogen using a nickel catalyst.

Vegetable oils are normally very fluid. The fats are normally bent and very flexible. Hydrogenation removes the open spaces in these fats and flattens them out. They become much stiffer which is a great benefit for food processors. It keeps processed foods from being oily and makes possible a really inexpensive substitute for butter.

The problem with any abnormal or oxidized fat is that it can become incorporated into healthy tissues altering both structure and function. Trans fats readily incorporate themselves into cell membranes. The cell membranes then cease to function properly. Utilization of nutrients and elimination of waste products is easily compromised. The consequence is that cells are more prone to oxidative damage and more susceptible to disease.

Americans have been led to believe that cholesterol is terribly un-

healthy. Cholesterol is actually an essential nutrient. All the early studies implicating cholesterol in heart disease were conducted with oxidized or rancid cholesterol. A reevaluation of cholesterol in 1979 found that oxidized cholesterol is 500 times more atherogenic or damaging to the blood vessels than is nonoxidized cholesterol. Foods containing large quantities of oxidized cholesterol include anything with powdered egg and milk, dried whey, aged cheeses, lard used in deep frying, smoked meats, Indian Ghee, and evaporated whole milk.

Fat is a key building block of body tissues. Brain and nerve tissues are particular rich in their fat content. Ingestion of poor quality fat is one of America's major health problems. These fats provide inferior building materials for construction of healthy bodies.

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SUGARS

Carbohydrates are the body's primary source of energy. The body is well adapted to unprocessed complex carbohydrates. Complex carbohydrates are composed of long strings of sugar molecules which are broken down very slowly to sugars in the digestive tract.

Sugar poses a number of problems for maintaining optimal health. Refined sugar provides empty calories without the nutrients needed to metabolize them. In this sense sugar is a nutritional antagonist.

Sugar is an Appetite Stimulant

High fructose corn syrup (HFCS) has been suggested as a major contributor to the epidemic of obesity in the United States. Intake of HFCS increased 1000% between 1970 and 1990. It is the primary sweetener in soft drinks in the United States. The body does not register intake of calories from sugar accurately when consumed in liquid form.

Johnson writes that fructose "does a poor job of satisfying hunger. For some reason, your body's appetite-control system ignores fructose, which makes it a kind of phantom food ingredient. As a result, when you eat a high-fructose food, your appetite does not become satisified, so you may keep eating. Perhaps worse, emerging research from studies conducted by my group and other investigators indicate that a high-fructose diet can actually interfere with important signaling systems in the brain that control your appetite for *all* foods."

One of the reasons sugar may promote weight gain is its addictive properties. Johnson reports on research conducted at Princeton University, "laboratory rats that had grown accustomed to consuming sugar-laced water and chow became anxious and developed withdrawal-like symptoms—such as chattering teeth and tremors —when deprived of sweets for an extended period. When these foods were returned to the rats' diets, they ate and drank nonstop, greedily filling themselves."

Dr. Elliott Blass demonstrated that sugar somehow acted as an opiod drug in the mid-1980's. Sugar blocked the perception of pain by mice increasing the time it took them to take their paw off a hot plate from 10 seconds to 20 seconds. Administration of an opiate antagonist, naltrexone, negated the effect.

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Bray, George A., et al., Consumption of high-fructose corn syrup in beverages may play a role in the epidemic of obesity 1'2, *Am J Clin Nutr*, April 2004; 79(4):537-543.

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DesMaisons, Kathleen, *Potatoes not Prozac*, New York: Simon and Schuster, 1998, 101-103.

Glycation

Glycation is the bonding of sugar with either protein or fat. This can take place inside or outside the body. When cereal grains are toasted as in the manufacture of common breakfast cereals the color of the cereal becomes brown. The brown color is a glycation reaction (called the browning effect or Maillard reaction). The byproducts of glycation are called AGE's (advanced glycation end products). They do age us.

Foods which have been browned are not desirable due to their AGE's. This is why I generally recommend cereals like muslei and oatmeal rather than boxed cereals which are heavily glycated. AGE's present in foods can be absorbed and do damage within the body.

High intake of sugars in the diet can also result in glycation of tissues within the body. Diabetics experience damage to the circulatory system, eyes and kidneys as a result of glycation due to their high blood sugars.

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Cell Shock

Processing of large quantities of sugar is very difficult for cells and can leave them exhausted and sick. Johnson writes, "We have exposed human cells to fructose in laboratory studies, and the effect is stunning —literally. Activity in the cells shuts down, as though they had lost their blood supply."

Processing fructose can deplete ATP, the energy currency of the cell. This results in inflammation and generation of free radicals. Repeated challenges with fructose can trigger fat deposition and insulin resistance.

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PESTICIDES

The Sonora Study

Dr. Elizabeth Guillete conducted pesticide studies among the Yaqui in Sonora Mexico. The study compared the health and development of 4-5 year old Yaqui children. The study was conducted in this area because diet and genetic background are similar for all the children in the area.

The major difference between the two groups of children was exposure to pesticides. Children in the agricultural area of the valley have been exposed to pesticides since the 1940's.

In 1990 high levels of multiple pesticides were found in the umbilical chord of newborns and also in breast milk of occupants of the agricultural area. These children were compared to children living in the foothill area nearby where pesticide use is avoided, with the exception of the use of DDT to control mosquitoes.

The authors of the study summarized the results, "Functionally, the (pesticide) exposed children demonstrated decreases in stamina, gross and fine eye-hand coordination, 30-minute memory, and the ability to draw a person."

Mothers from the agricultural area reported difficulty conceiving, birth defects, and stillbirths. None of these problems were reported among the foothill mothers. Valley mothers also reported an increased incidence of premature births, spontaneous abortions, and problem pregnancies.

Testing of blood and milk revealed that the valley mothers were carrying a considerable load of eleven pesticides including lindane, heptachlor, aldrin, dieldrin, and endrin.

Stamina was measured by jumping in place. The valley child jumping the longest jumped 110 seconds while the record for the foothill children was 336 seconds. The mean was 52 seconds for valley children and almost 87 seconds for foothill children.

Valley children had decreased ability to catch a ball. Fine eye-hand coordination was measured by the ability to drop a raisin into a bottle cap. Once again the foothill children were better able to accomplish the task.

Memory recall after 30 minutes was superior in foothill children. Only 27% of valley children could remember the gift of a balloon and its color while 59% of foothill children could.

The most striking difference was the ability to draw a person. Valley children drew an average of 1.6 body parts while foothill children drew 4.4 body parts. The differences in these pictures were dramatic.

The researchers also noted that creative group play was common in the foothills while the valley children tended to be loners. Some valley children were observed hitting their siblings when they passed by. These children became angry or upset when given minor correction by a parent. These aggressive behaviors were not seen in the foothills.

This writer believes that the psychological effects of exposure to pesticides are profound and rarely recognized and researched. The tendency is to place an individual with depression, anxiety or irritability on a psychiatric medication rather than to identify the actual physiological cause of the problem.

Avoiding Toxins

Pesticides are poisons. Some are fat loving and accumulate in our body fat. Others are intended to destroy nerve function and can damage not only insects but also people. Studies have shown that consuming organically grown foods can significantly reduce blood levels of organophosphorus pesticides in children within as little as one day.

Another study found that organophosphorus pesticide levels in children consuming conventional diets were six times higher than those in children consuming organic diets.

Children are more sensitive to pesticide exposure than are adults. An attempt should be made to minimize exposure to pesticides by both adults and children.

The Environmental Working Group creates a list of the most contaminated and least contaminated foods on a yearly basis. The results for 2012 follow:

The Dirty Dozen Plus

Peaches, apples, sweet bell pep-

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pers, celery, nectarines, strawberries, cherries, pears, grapes (imported), spinach, lettuce, potatoes, kale/greens, and green beans.

The Clean Fifteen

Asparagus, avocado, cabbage, cantalope, corn, eggplant, grapefruit, kiwi, mangoes, mushrooms, onions, pineapples, sweet peas, sweet potatoes, and watermelon

Produce often has a little sticker with a number on it telling the checker how to ring it up. An organic item will have a 9 in front of it. Thus a commercial apple might be 4455 and an organic 94455.

Consumption of organic produce is better for the environment since it reduces use of pesticides and herbicides. It decreases the risk of epigenetic damage to the fetus in the womb and young children who are more susceptible to damage from pesticides than adults. Organic meat and dairy products have a better balance of omega-3 and omega-6 fatty acids and lower pesticide exposure in their feed. Conventionally produced meats are also often exposed to antibiotics which can result in the proliferation of antibiotic resistant bacteria.

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Guillette, Elizabeth A., et al., An anthropologial approach to the evaluation of preschool children exposed to pesticides in Mexico, *Environmental Health Perspectives*, June 1998; 106(6), 347-353.

http://www.ewg.org/news/dirty-dozen-produce

Lu, Chensheng, et al., Organic diets significantly lower children's dietary exposure to organophosphorus pesticides, *Environ Health Perspect*, February 2006; 114(2):260-263.

Curl, Cynthia L., et al., Organophosphorus pesticide exposure of urban and suburban preschool children with organic and conventiional diets, *Environ Health Perspect* 2003; 111:377-382.

PLASTICS

Packaging of food can also be a problem. BPA and polycarbonate used in the manufacture of many plastics have negative health effects including contributing to heart disease and obesity. Plastic containers with recycling labels No. 1, 2, 4 and 5 have less risk of containing these harmful compounds than do plastic containers with recycling No. 3 or 7.

Many canned goods are lined with BPA to prevent metals from leaching into the contents. A 2001 Harvard University study found that people who consumed canned soup five days in a row experienced a 1,221% increase in BPA in their urine of that of individuals consuming fresh soup. BPA is particularly harmful for pregnant and nursing women and young infants.

http://readersupportednews.org/news-section2/312-16/8597-bisphenol-a-spikes-1200-after-eating-canned-soup

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