

## The Crazy Makers

By Carol Simontacchi

Reviewed by Carolyn Wooley, VMD March 2009

The Crazy Makers is a book written by Carol Simontacchi, a certified clinical nutritionist. The premise of the book: The food industry has evolved in such a way that what is marketed today as food is in fact so highly processed and additive laced, it should be considered "antifood". Instead of eating food when we are physically hungry, food is now consumed to satisfy artificial cravings generated by a brain that isn't working correctly, and whose receptor sites now beg for synthetic stimulation from chemicals. We eat, but we are never satisfied. We're full, but we aren't contented.

Historically, in 1958, the Delaney Clause was passed, which initially forbade sale of food containing a substance shown in any quantity to produce cancer in lab animals or humans. It was amended thirty years later to be less rigorous. Never was there any protection against neurotoxins. The safety of our food supply must be called into question.

In the quest for convenience, agriculture gradually became industrialized. First, there was the rolling mill, which was used to remove the outer covering of wheat and produce white flour. Using white flour made soft, fluffy bread. The bread was more expensive while at the same time being less nutritious. Another change was in the consumption of sugar. In 1821, the average person consumed 10 lbs of sugar per year. In 1993 that amount had risen to 147 lbs per year. Added to this is the consumption of 50 lbs per person of non-caloric sweeteners. If you don't think that these changes are affecting our neurotransmitters, consider that Prozac is the fifth most common drug prescribed. We spend seven billion dollars per year on antidepressants. All body tissues, including the brain, need nutrients for optimum performance.

The diet of the mother will certainly affect her fetus. Long ago, diets were rich in essential fatty acids (Omega 3's and 6's) found in wild game, seafood, nuts, seeds, and vegetables. They were high in fats. They were nutrient rich in proteins, essential fats, unrefined carbohydrate (vegetables, fruits, and grain) and micronutrients (vitamins, minerals, and enzymes). Today's diets are deficient in fatty acids, certain minerals, especially calcium, zinc, potassium and magnesium. There is an imbalance between proteins and carbohydrates.

For babies, the problem began with the shift from breast to bottle-feeding. While she mentions the big shift in women's work habits during the 1930's and 40's as an impetus for bottle-feeding, in fact commercial baby formula has been available since 1870. Initially, doctors independently started "milk banks" so that women who were nursing and had excessive milk would donate the milk to these communal milk banks. Women who worked could then wean their babies to bottled mother's milk. The obvious deficiency in this model was variability in supply, as there was no way to store the milk for extended periods. After the 1920's, commercial formula became affordable to the masses, with mass marketing completing the shift. By 1967 only 25% of babies leaving U.S. hospital were breastfed. As the birthrate in the U.S. began to fall, the baby formula companies took their marketing strategies overseas, assuring a steady supply of little brains to starve.

Mother's milk changes from hour to hour and day to day, to reflect the varying needs of the child. Mother's milk contains enzymes to facilitate its digestion. It contains Omega 3 and Omega 6 fatty acids. The book outlines the deficiencies in commercial formula, and compares various commercial brands to mother's milk. All formula is deficient in essential fatty acids, friendly bacteria, and enzymes, which destroy unfriendly bacteria and aid in digestion. There is the wrong balance of sugars. Overall, formula is higher in protein, but deficient in certain essential amino acids such as tryptophan (which is converted to niacin and serotonin). She also has a lengthy discussion of soy-based formula. Soy naturally contains high levels of isoflavins, which the body converts into estrogen. There have been

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minimal studies on the effects of excessive estrogen on humans. Rodent studies have linked excessive estrogen exposure during the fetal period to aggression, problem behaviors, hyperactivity, precocious puberty, and increased rates of cancer. Soy also contains phytic acid, which prevents the absorption of calcium, zinc, and magnesium. Since all minerals in the body need to be in balance, having low zinc leads to elevated copper. High levels of copper have been associated with mood swings, depression, and hyperactivity.

From baby formula she moves on to baby foods, and what they contain besides food.

Baby foods contain neurotoxic pesticides, especially organophosphates and carbamates. These pesticides are a residue, left on fruits and vegetables treated in the field. These pesticides are toxic to the neurological and endocrine systems. They inhibit the nervous system enzyme Acetyl cholinesterase. While the use of pesticides continues to increase yearly, safety studies have never been done on children.

Baby foods are enhanced with MSG, which is an excitoin. Excitoin causes brain cells to become overexcited and fire uncontrollably. MSG destroys nerve cells, especially in the hypothalamus. The hypothalamus regulates the autonomic nervous system, and is not protected by the blood – brain barrier. This area of the brain controls aggression, regulates food intake and thirst, and maintains wake and sleep patterns. MSG has been banned from baby food since the 1960's. In its place, manufacturers started adding hydrolyzed vegetable protein and other products such as autolyzed yeast and caseinate, which contain glutamate. Glutamate is one of the active constituents of MSG, and is not banned. A food label can read: no added MSG and still contain large amounts of excitoin in the form of glutamic acid. MSG is considered a natural substance. Food processing companies do not have to state that MSG is in a product unless it is 99.5% pure MSG.

In normal brain development, more neurons, axons, and dendrites are produced than are needed. A single, sudden burst of naturally produced glutamate helps to weed out excess dendrites. Once finished, glutamate levels are supposed to drop and the pruning is complete. If the brain continues to receive excessive glutamate during this period, there is excessive thinning of dendrites, with loss of synaptic connections. There is abnormal migration of brain cells. On top of all this, inadequate levels of fatty acids make a child's brain more susceptible to the effects of glutamate.

She then discusses the diet of normal American children. These diets are high in sugar and low in nutrition. When a child eats a sugary breakfast, the pancreas dumps insulin into the blood stream. The sugar goes to all of the body cells, and the excess goes to the liver. When the liver is full, the excess is stored as fat. The excess sugar causes excess insulin, so soon the child is hypoglycemic. His sugar is too low, and he gets cranky and irritable. If his adrenal gland reacts by producing cortisol, he becomes hyperactive. He tries to compensate for his hypoglycemia by eating more sugary foods. The cycle continues, all day long. B-complex vitamins are required to metabolize sugars. Brain enzymes also require B vitamins. When there aren't enough to go around, the body has to take care of the most immediate needs (sugar metabolism) first. The brain suffers.

Packaged entrees are deficient in nutrients, while full of synthetic flavorings, colors, and preservatives. They are high in sodium, low in potassium, magnesium, and zinc. They are low in everything nutritious. Kids that are deficient in zinc will crave sugary foods and shun protein-containing foods. Zinc helps balance blood sugar, so when zinc is in short supply, sugar levels are not well controlled. Zinc activates enzymes for protein digestion. If the body can't digest protein, it will reject it. When you hear a child say, "I hate meat", be concerned about zinc deficiency.

Food marketed today is full of Food additives. The FDA definition: Food additives are substances which may by their intended use become components of food, either directly or indirectly, or which may otherwise affect the characteristics of the food. The term specifically includes any substance intended for use in producing, manufacturing, packing, processing, preparing, treating, packaging, transporting, or holding the food, and any source of radiation intended for such use. It does not include:

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1. Substances generally recognized as safe (GRAS)
2. Substances used in accordance with a prior approval.
3. Pesticide chemicals
4. Color additives
5. New animal drugs

The substances and chemicals added to food are tested for carcinogenic potential. They are not tested for potential neurological or endocrine problems. The amounts of additives in a food are not listed on the label.

Our food is a causing problem with allergies and intolerance. The most allergenic foods in the western diet are wheat, corn, and dairy. The next most allergic are chocolate, peanuts, soy, and shellfish. An allergy is an immune-system response, where exposure to the antigen causes the body to produce specific antibodies. Intolerance does not involve the immune system, but can cause negative symptoms. For instance, if you lack the enzymes to digest a food or a substance in the food, you might have diarrhea, constipation, or gas.

Diagnosis of an allergy or intolerance is difficult, since reactions can take up to 72 hours to develop. To defend it, the body often sets up a craving for the allergic food, and eating the food temporarily relieves symptoms of the allergy. A viscous cycle is created, broken only by suffering through a withdrawal. Symptoms of withdrawal can include fatigue, headaches, nervousness, trembling, apathy, and anger.

"We're either going to spend money on better quality food or we'll spend it on higher school taxes to pay for the extra services to cope with kids whose brains are deteriorating faster than we can fix them."

Parents need to take responsibility for what their children eat. Once in school, children are exposed to peer pressure. They try to copy what they see on TV. They will try to get parents to compromise their position. They will trade and barter at school.

Here are some shopping guidelines:

1. Buy organic
2. Do not purchase soft drinks, candy cookies, or cake
3. Bake your own cookies, and reduce the sugar
4. Snack on fresh fruit, raw nuts, carrot sticks, homemade popcorn
5. Do not purchase prepared lunch or dinner entrees that contain artificial ingredients
6. Serve at least one family meal every day
7. Plan your week's menu in advance, and shop accordingly
8. Eat a healthy breakfast, limiting sugar to 3 grams or less
9. Take a vitamin and mineral supplement, and Omega 3's at breakfast.

During adolescence, the body grows, and the endocrine system revs up. The brain is still lying down myelin and needs fatty acids and amino acids. 30% of their diet needs to be protein. They continue to need vitamins and minerals to activate enzymes. Teenagers' eating habits are even worse than children's. The average teen eats half of their meals away from home. Teen eating behavior is still more highly influenced by their parents than by friends, parents just need to make the effort.

We are fighting a difficult battle, as school vending machines are stocked with soda, coffee, fruit juices, candy, chips, pretzels, cookies, and French fries. School food service is a huge industry, with a captive audience. Box Tops for Education is a sly way for General Mills to entice you to buy their product in exchange for a few cents reward to your school.

A teen's diet can be very deficient in nutrients, and have various affects. Teens deficient in iron will be anemic, manifested as fatigue, apathy, and difficulty paying attention, lack of coordination. Iron deficiency aggravates signs of fatty acid deficiency, decreases production of prostaglandin, and lowers production of neurotransmitters. This manifests as depression or other mood disorders.

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Kids deficient in Magnesium are often overly sensitive, and thrown into emotional states. If they consume too much calcium and insufficient magnesium, the symptoms will be even more pronounced. Zinc is needed for neurotransmission. Copper opposes zinc, and there is too much copper in our diets.

Calcium and sodium are stimulants, while magnesium and potassium are calming. In natural foods, potassium levels are 2.5 times higher than sodium. Magnesium is just slightly lower than calcium. There is eight times more zinc than copper. A teen's diet has an unnatural balance, stimulating minerals are elevated, and calming minerals are deficient.

The smaller issues seen with these imbalances are lower grades, defiance, pessimism, and PMS. The larger issues include illegal behaviors, anorexia, bulimia, suicide, obsessive-compulsive behavior, self-mutilation, drug abuse, alcohol abuse, and promiscuity. "Take a child and deprive his brain of adequate nutrition through his entire life, dump him into a hostile, unstable social scene (schools, peers), and pull away the pillars of his support network (family-teens pull away). Then load his food with stimulants while robbing him of the nutrients needed to process the stimulants. Add toxic chemicals, which target the endocrine system and prevent his natural hormones from locking into place. Inject other toxins into his nervous system that prevent neurotransmitters from relaying messages back and forth. This is a recipe guaranteed to make him or her crazy."

Adolescents are deficient in many vitamins, minerals, and fatty acids. One result is depression. Depressed adolescents engage in destructive behaviors – alcohol and drug abuse, sexual promiscuity, self-mutilation, and violence. Doing "something bad" temporarily relieves the psychic pressure that has built up. Eating junk food and drinking soft drinks may be a form of self-medication. Researchers don't study the link of fast food to anger because food-processing companies would never fund that type of research. We need to rely on our own knowledge of the body and our knowledge of food trends to fit the pieces together.

She then offers a Step-by-Step Guide to establish good eating habits in teenagers. She recommends doing each step for two weeks before moving on to the next.

1. Give a vitamin, mineral, and fatty acid supplement morning and night.
2. Have 15 – 20 grams of protein for breakfast. Either as a protein shake, or make a breakfast with protein, carbohydrates, and fat.
3. Have them get a sports bottle, and drink two containers full daily.
4. Make a salad at least once per day. Use several bright colored, raw vegetables. Add a source of protein like tuna or chicken. Use an olive oil based dressing.
5. Reduce soft drink consumption by ½ (or eliminate completely).
6. Stop buying all junk snacks. Substitute fruit, nuts, carrot sticks, and healthy snacks, home made cookies with reduced sugar.
7. Eliminate all products containing aspartame, MSG, or other artificial ingredients.
8. Cook meals at home rather than eating out.

She then discusses the Adult Brain. "We are digging our graves with our forks". Our bodies were designed to deal with short term, physical stress. We now have to deal with psychological and social stress, which can go on year after year. This causes a chronic elevation of the stress hormone cortisol. Cortisol influences learning and memory, makes us vulnerable to depression, causes us to eat inappropriately, and increases our aggression. Cortisol damages the hippocampus (memory stores).

Our adrenal gland is at first overactive, but then becomes exhausted and hypoactive. This causes chronic exhaustion, weight gain, a feeling of being overwhelmed. We try to compensate by working more, eating more, drinking alcohol, doing drugs.

"Meal planning and preparation becomes just another stressor. Instead of planning our foods carefully and enjoying the process of meal preparation, instead of savoring a meal with people we love, we see good nutrition as yet another impossible task to squeeze into an overcrowded schedule."

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There are various ways to deal with stress, one of them being coffee. Coffee contains over 300 chemicals. There are 75 milligrams of caffeine per cup. Caffeine pulls minerals out of storage in bone tissue and hastens its excretion from the body. It enhances the effects of dopamine. It increases energy metabolism throughout the brain, while reducing its blood flow. It increases the stimulating neurohormone noradrenaline, and decreases the calming neurotransmitter serotonin. It increases blood pressure. It lowers seizure threshold. Coffee is well marketed, we have become convinced that self-medicating with an addictive substance is the answer to our own energy crisis.

Another big problem in our diets is aspartame (Nutrasweet, Equal). It was discovered in 1965, and granted FDA approval in 1974. Aspartame is composed of two amino acids, aspartic acid and phenylalanine. It is 200 times sweeter than sugar, and contains no calories. It was declared safe by the FDA because they cannot find a consistent pattern of symptoms, which can be attributed to its use. The symptoms are just too diverse.

Phenylalanine is used in the production of neurotransmitters and is found naturally in tuna, soybeans, red meat, dairy products, and poultry. Elevated levels of phenylalanine reduce serotonin (the calming neurotransmitter), so the adverse effects may be due to the lowered levels of Serotonin. Side effects reported to the FDA include depression, fatigue, irritability, insomnia, vision problems, hearing loss, anxiety, slurred speech, tinnitus, and memory loss.

Aspartic acid is an excitatory transmitter. Aspartame is digested into methanol, especially when heated (think Jell-o). Methanol toxicity causes headaches, ear buzzing, dizziness, nausea, GI disturbance, weakness, vertigo, chills, numbness, neuritis, and blurred vision. There is some thought that Gulf War Syndrome could be related to diet cokes heating up in the desert.

Aspartame worsens the blood sugar cycle. When sugar enters the blood stream, the pancreas releases insulin, which moves sugar into body cells. We need to keep our blood sugar levels within a narrow range. When large amounts of sugars are consumed over a lifetime, carbohydrate sensitivity occurs, and the pancreas overreacts to the presence of sugar. Too much insulin is released, which causes hypoglycemia. We try to correct this by eating more sugar, and hence, another viscous circle. The low blood sugar will also cause the adrenal gland to release cortisol. Cortisol then pulls sugar out of the liver. Excess amounts of cortisol can lead to headache, panic attacks, irritability, anxiety, depression, poor concentration, and poor memory. When your body wants sugar, but you consume aspartame instead, this can lead to worsened hypoglycemia and ever-higher levels of cortisol.

Another problem with our eating habits is the low fat diet. When high cholesterol levels were linked to heart disease, the conclusion drawn was that if cholesterol were removed from the diet, it would remove itself from the bloodstream. Fat became the enemy. Low fat diets were shown to reduce the risk of heart disease, certain cancers, and diabetes. Unfortunately, the food industry seized this as a marketing opportunity, creating low fat hot dogs, cookies, yogurt, etc. The problem is that there are bad fats, and there are good fats. Some nutrients are fat soluble, and fat is needed for their absorption. The low fat revolution occurred in a culture already consuming sugary food stripped of its natural, nutritional value. We need fats to produce hormones and accelerate neurotransmission.

Think of your brain as a factory. By age 20, the factory is built. The nerve tissues are the walls, windows, doors, plumbing and electric. The workers are the enzymes. But workers quit, get fired, get sick, retire, and die. They need to be replaced. The tools are the nutrients. The raw materials are stimuli received from the sensing organs (eyes, ears, taste buds, nose and skin). The finished products are thoughts and feelings, which translate into

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words and deeds. Even though the factory building will remain for several decades, repairs are constantly needed.

Our society relies on Home Meal Replacement – Packaged Foods.

There are many problems with convenience foods, including:

1. Meal preparation is an important social event in the family.
2. They are deficient in essential fats. So called “healthier” entrees are reduced in fats, then sugar is added to make up for taste
3. They are deficient in vitamins and minerals.
4. They are overloaded with sodium and insufficient in potassium.

We have the power to alter our diets and make a huge difference in the way we feel and think.