

# Smart Teaching Tips

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## *Avoiding Harm to the Brain*



### Agents that Can Harm the Brain (partial list)

1. **MSG and hydrolyzed vegetable protein**
2. **Aspartame (artificial sweetener)**
3. **Trans-fatty acids**
4. **Sugar in excess**
5. **Selected medicines and pain-killers**

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In recent years, researchers have discovered that many food additives and other common agents in our environment can do serious harm to the brain. Consider the sample items listed in this graphic to the left. The future good health of youngsters in our schools depends partially on whether or not educators in K-12 programs help youngsters to learn and act on what researchers have discovered. Too many school health and nutrition programs still have not incorporated the latest information in basic instructional programs. Let us look at some sample information for you and your students.

1. **MSG and hydrolyzed vegetable proteins** which contains MSG (monosodium glutamate) can be very harmful. Food suppliers add this agent as flavoring that can be somewhat addictive. The problem is that MSG is an excitotoxin, a substance that raises the blood level of glutamate to the destructive high level that actually “over excites” and leads to the death of some brain cells. Consider the added facts that - -
  - a. Humans, especially very young children, are very sensitive to MSG.
  - b. Federal law allows food suppliers to “hide” MSG content under other names in an ingredient list if the MSG is less than 99% pure. It is often called by names like vegetable protein, carrageenan, natural flavoring, or spices!
  - c. MSG is found in many processed foods such as soups, frozen dinners, and chips.
  - d. The toxic effects on brain development can lead to abnormal learning, addiction, obesity, behavioral problems, and generation of harmful free radicals throughout the body.
2. **Aspartame** is an artificial sweetener in many diet drinks. The body metabolizes aspartame into aspartate, an excitotoxin. If you eat snacks or a meal containing MSG and then add a diet drink containing aspartame, your excitotoxin level could increase by a multiple of 40 times. So MSG and aspartame are severe dangers to our brain health.
3. **Trans-fatty acids** are synthetic fats created by chemical modification to preserve foods or to make them easier to use in baking. They are found in processed baked goods and foods fried in polyunsaturated oils. Unless the ingredient lists for such foods state “no trans-fatty acids,” you can assume their presence. These bad fats move into your cell membranes and harden them. The

**Continued.**

hardened membranes lower communication between brain cells and interfere with cell nutrition. Thus the brain cells will age faster and become less efficient. Other cells in the body are also affected. Everyone should decrease their intake of trans-fatty acids and expect food suppliers to replace them with the good fats our bodies need.

4. **Excess use of sugar** increases the risk of elevated blood sugar. In turn, elevated blood sugar can lead to memory problems and the risk of developing other neurological diseases. Eating too many sweet deserts and drinking sugar-laden soda can be a serious problem for many young people. This is especially true if eating sweets replaces eating pesticide-free fruits and vegetables that provide antioxidants which protect the brain against damaging free radicals.
5. **Unnecessary use of some medicines and painkillers** can also harm the brain. For example - -
  - a. The coenzyme Co-Q10 is especially important as an energizing antioxidant for brain cells. However, many antidepressants and blood pressure medicines and cholesterol-lowering drugs decrease the volume of Co-Q10 produced by the body. This deprives your brain cells of needed energy and antioxidant protection. This can be especially serious as you age because your body's production of Co-Q10 decreases with age. Careful nutrition and use of natural supplement alternates should be tried before moving to prescription medicines in these areas. If these medicines are used, Co-Q10 supplements need to be considered by adults.
  - b. Homocysteine, an amino acid produced in the body, can lead to lowered mental performances if present in excess. B vitamins protect against that excess. However, these medicines can deplete B vitamins in your body: aspirin, antacids, some asthma drugs, ibuprofen, and naproxen. You might need to supplement with B vitamins if you take such medicines regularly.
6. **Other agents** such as pesticides, alcohol, smoking and radiation from cell phone use can potentially harm your brain. While this newsletter cannot cover all of these areas, a solid school health program should provide comprehensive information on care of the brain. Here is a basic reference book for such a program - - **THE BETTER BRAIN BOOK** by David Perlmutter, M.D. and Carol Colman; Published by Riverhead Trade; August, 2005; Paperback edition, 325 pages, available from Amazon for \$10.88.

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