FOOD ADDITIVES

1. Factory-made foods have made additives a very important part of our diet.
2. Salt and sugar aren't broadly used additives and they don't represent any real danger.
3. Additives are used to improve the foods.
4. Antioxidants make reaction of oxygen in the air with fats easy.
5. Emulsifiers are used to separate water from oil.
6. Flavour enhancers make natural flavour of foods stronger.
7. Preservatives disable the growth of microorganisms.
8. Food is made thicker by certain carbohydrates, which absorb some of the water that is present in the food.
9. Artificial colourings are made from natural ingredients.

Shopping was easy when most food came from farms. Now, factory-made foods have made chemical additives a significant part of our diet. Most people may not be able to pronounce the names of these chemicals, but they still want to know what the chemicals do and which ones are safe and which are poorly tested or possibly dangerous. A simple general rule about additives is to avoid sodium nitrite, saccharin, caffeine, olestra, acesulfame K, and artificial colourings. Not only are they among the most questionable additives, but they are used primarily in foods of low nutritional value. Also, don't forget the two most familiar additives: sugar and salt. They may pose the greatest risk because we consume so much of them.

WHY are the additives used???

Additives are added to foods to improve their quality and safety, to lengthen the shelf life, to change the taste, smell/odour, solidity and appearance of the foods, or to substitute certain ingredients (to lower the caloric value of foods).
ANTIOXIDANTS retard the oxidation of fats/oils, colourings, and flavourings. Oxidation leads to rancidity, flavour changes, and loss of colour. Oxidation is caused by reaction of oxygen in the air with fats.

EMULSIFIERS keep oil and water mixed together. THICKENING AGENTS are natural or chemical carbohydrates that absorb some of the water in food - make the food thicker and stabilize foods by keeping the mixtures of oils, water, acids, and solids well mixed.

ARTIFICIAL COLORINGS are synthetic chemicals. They are used to improve the colour of food. The use of colouring usually indicates that fruit or other natural ingredient has not been used.

ARTIFICIAL SWEETENERS like saccharin and acesulfame-K give sweet taste to the foods, but contain less calories.

FLAVOR ENHANCERS have no flavour of their own, but accentuate the natural flavour or smell of foods.

PRESERVATIVES prolong the shelf life of foods, prevent the growth of microorganisms like bacteria, mould and yeast.
Most common additives:

**SODIUM NITRITE, SODIUM NITRATE**

Preservative, colouring, flavouring: Bacon, ham, meats, smoked fish

Meat processors love sodium nitrite because it stabilizes the red colour in cured meat (without nitrite, hot dogs and bacon would look grey) and gives a characteristic flavour. Sodium nitrate is used in dry cured meat, because it slowly breaks down into nitrite. Adding nitrite to food can lead to the formation of small amounts of potent cancer-causing chemicals (nitrosamines), particularly in fried bacon.

The meat industry justifies its use of nitrite and nitrate by claiming that it prevents the growth of bacteria that cause botulism poisoning. That’s true, but freezing and refrigeration could also do that.

Because nitrite is used primarily in fatty, salty foods, consumers have important nutritional reasons for avoiding nitrite-preserved foods.

Answer the questions:

1. What are sodium nitrite & nitrate used for?
2. Why is it better to avoid these additives?
3. What other methods have been used instead of using these additives to preserve the meat?

**SACCHARIN; ARTIFICIAL SWEETENER:** "Diet" products, soft drinks (especially fountain drinks at restaurants).

Saccharin is 350 times sweeter than sugar and is used in dietetic foods or as a tabletop sugar substitute.

In 1977, it was proposed that saccharin be banned, because of studies that it causes cancer in animals. However, it is still permitted to be used, provided that foods bear a warning notice. In 1997, the diet-food industry began pressuring the U.S. and Canadian governments and the World Health Organization to take saccharin off their lists of cancer-causing chemicals. In 2000, the U.S. Department of Health and Human Services removed saccharin from its list of cancer-causing chemicals. Later that year, Congress passed a law removing the warning notice that likely will result in increased use in soft drinks and other foods and in a slightly greater incidence of cancer.

Answer the questions:

1. What is saccharin used for?
2. Under what condition was saccharin allowed to be used in the past?
3. What about nowadays?
**STIMULANT:** Naturally occurring in coffee, tea, cocoa, coffee-flavoured yogurt and frozen desserts. Additive in soft drinks, gum, and waters.  

**Caffeine** is the only drug that is present naturally or added to widely consumed foods (quinine is the other drug used in foods). It is mildly addictive, one possible reason that makers of soft drinks add it to their products. Many coffee drinkers experience withdrawal symptoms, such as headaches, irritability, sleepiness, and lethargy, when they stop drinking coffee. Because caffeine increases the risk of miscarriages (and possibly birth defects) and inhibits fetal growth, it should be avoided by women who are pregnant or considering becoming pregnant. It also may make it harder to get pregnant (but don’t use it as a birth-control pill!). Caffeine also keeps many people from sleeping and affects calcium metabolism. The caffeine in a cup or two of coffee is harmless to most people.

- **Answer the questions:**
  1. **Caffeine is mildly addictive** - what symptoms may occur if you stop consuming it?
  2. Is caffeine an artificial additive?

*(Olean) ... FAT SUBSTITUTE: Chips, crackers.*

Olestra is synthetic fat that is not absorbed by the body, but runs right through. It is suggested that replacing regular fat with olestra will help people lose weight and lower the risk of heart disease.

Olestra reduces the body’s ability to absorb fat-soluble carotenoids (such as alpha and beta-carotene...) from fruits and vegetables. Those nutrients are thought by many experts to reduce the risk of cancer and heart disease. Olestra enables manufacturers to offer greasy-feeling low-fat snacks, but consumers would be much better off with baked snacks, which are perfectly safe and just as low in calories. Products made with olestra should not be called "fat free," because they contain substantial amounts of indigestible fat.

- **Answer the questions:**
  1. What is the advantage of replacing regular fat with olestra?
  2. What is the main disadvantage of replacing regular fat with olestra?
  3. Why is it misleading to label products made with olestra "fat free"?