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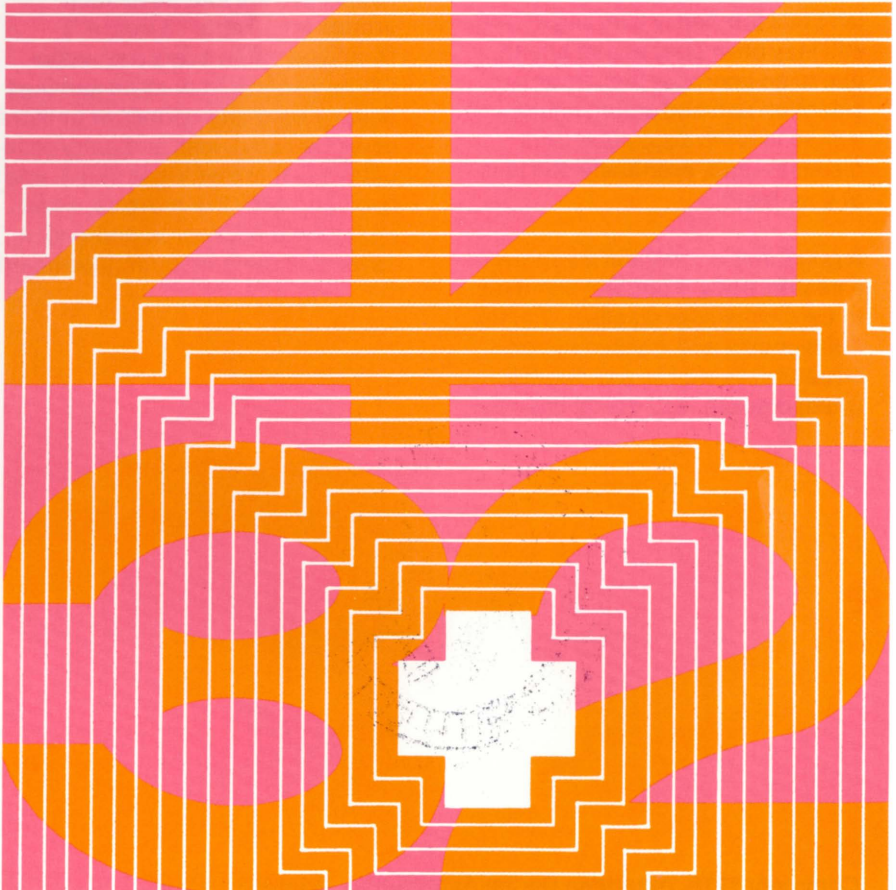
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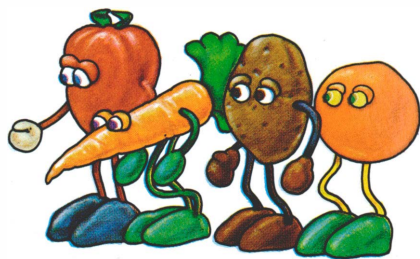
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DIET AND DENTAL HEALTH



DIET AND DENTAL HEALTH



Are you a “sugarholic”? A sweet roll for breakfast and a candy bar for a mid-morning snack? Sugared soft drinks with lunch and dinner, and perhaps throughout the afternoon to quench your thirst? Breath mints, chocolates, after dinner mints, sweet desserts, sugared TV snacks for the evening? And then just one more slice of cake before bed? If this sounds like you, you may be one of the many compulsive sweet eaters who are ruining their dental health with food. Even if your diet isn't this top-heavy with sugar, you still may be in poor dental health due to an improper diet. Poor food selection and bad eating habits contribute to tooth decay and gum disease—and, eventually, the loss of your teeth.

A good diet is essential if you want a healthy body. Poor diet can lead to cardiovascular disease, vitamin deficiencies and weakened bone structure, as well as periodontal (gum) disease, and dental cavities.

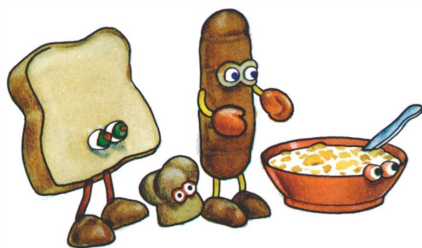
4-4-3-2

Four-four-three-and-two is not a quarterback's call—it's a good game plan for a nutritionally sound diet. Items from the four basic food groups (see Table “3 from 4”) should be eaten every day: vegetables and fruit (4 or more servings daily), bread and cereals (4 or more servings daily), milk and dairy products (3 or more servings daily), and meat and fish (2 or more servings daily). Four-four-three-and-two: a formula to remember for good health.

3 FROM 4

Suggestions for 3 meals from the 4 food groups	
Vegetables and fruit	Dark green or yellow fruits and vegetables rich in vitamin A: apricots, broccoli, cantaloupe, carrots, chard, collards, cress, kale, mango, persimmon, pumpkin, spinach, sweet potatoes, turnip greens, winter squash . . .
Bread and cereal	Citrus fruits or other fruits or vegetables rich in vitamin C: grapefruit, orange, cantaloupe, guave, mango, raw strawberries, broccoli, brussel sprouts, green pepper, sweet red pepper, lemon, tangerine, asparagus tips, raw cabbage, potatoes and sweet potatoes (cooked in jackets), tomatoes . . .
Milk and dairy products	Other fruits and vegetables
Meat and fish	Whole grain, enriched, or restored cereal and flour products: cornmeal, crackers, flour, grits, macaroni and spaghetti, noodles, rice, rolled oats . . .
	Milk: whole, skim, 2%, evaporated or powdered Cheese: cottage, cream, cheddar, swiss . . . Ice cream or ice milk Yogurt
	Beef, veal, lamb, pork, liver, heart, kidney, poultry, eggs fish and shellfish: shrimp, clams, crab . . .
	Alternate sources of protein: dry beans, dry peas, lentils, nuts, peanut butter

* This is based on requirements for children. Teenagers should have 4 and adults 2 servings per day.



However, if you are like most people, you eat more than these minimum daily requirements. The selection of these extra foods often leads to health problems. Rather than choosing foods with high nutrient density (foods high in protein, vitamins, and minerals), we eat too many sugar-rich foods. These carbohydrates are broken down quickly in the mouth, producing acids which then begin the process of tooth decay.

THE PLAQUE ATTACK

Eating excessive amounts of carbohydrates, especially sugar, is an invitation to dental disease.

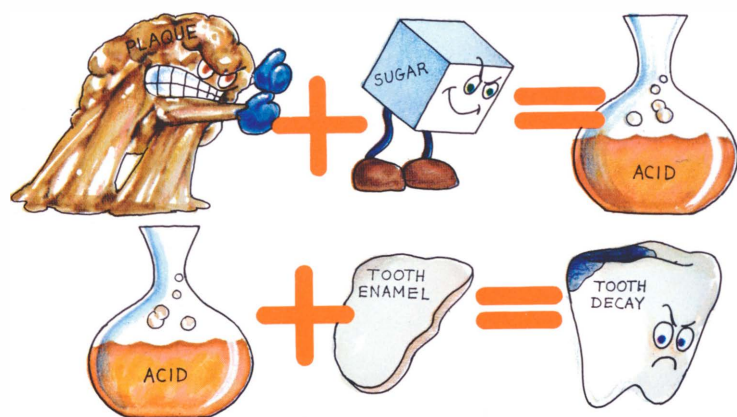
The **decay process** begins with colonies of bacteria (called dental plaque) that stick to your teeth. When you eat, the bacteria break down your food and change the sugar to acid. The sticky bacterial plaque then holds the acid to the tooth surface, allowing it to attack the enamel on your teeth.

Whether or not this will destroy the enamel depends on:

- 1 the hardness of your tooth enamel,
- 2 the strength of the acids and
- 3 the length of time the acids are on your teeth.

The greatest damage is done within the first twenty minutes after eating sweet foods. After repeated acid attacks, the enamel is broken down. Once this happens the bacteria gain access to the body of the tooth and cavities result.

Thus, a cavity is not just a hole in your tooth. It is a bacterial infection. To control the spread of the infection, your dentist must clean out the decayed area and fill the cavity. To prevent the decay from reoccurring, you must control the plaque with diet and proper oral hygiene.



Poor diet also has a two pronged effect that can result in **periodontal (gum) disease**:

- 1 Systemically, an inadequate diet can weaken the gums and bones leaving them more susceptible to disease. In order to develop resistance, a good diet is essential.

- 2 A sugar-rich diet contributes to the formation of plaque. This too can lead to gum disease. Plaque contains bacterial irritants which cause the gums to bleed. In addition, if the plaque is not removed daily it can harden by mixing with the salts in saliva. The hardened plaque (calculus) collects on the teeth below the gumline and irritates the inside skin. This creates a pocket where more infection can occur. If left unchecked, the infection can destroy the supporting bone and the tooth can be lost.

But how do you control bacteria? Some bacteria are always in your mouth and you really can't stop eating everything that might give them energy. However, there are steps you can take:

- 1 floss and brush daily (to disrupt plaque and keep it from organizing into colonies)
- 2 reduce sugar consumption (to starve the bacteria)

- 3 eat a balanced diet (to enable the gums to resist bacteria) and

- 4 use fluorides daily (to physically strengthen the tooth enamel).

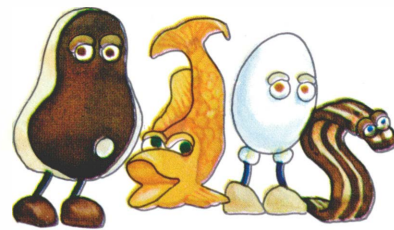
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ACID ATTACK

Of all the fermentable carbohydrates we eat, sucrose (table sugar) is the most readily used by bacteria for acid production, and the most consistently damaging to the teeth. Americans consume ten times as much sugar as they did 100 years ago (approximately 100 pounds per person each year).

The problem is not simply the **amount** of sugar eaten, however. The **frequency** of eating sugar-rich foods, the **length of time** the sugar stays in the mouth, and the **physical form of the food** (such as sticky sweets) are of equal importance in producing cavities.

The more often you eat foods containing sugar, the more often acids are formed on your teeth. These acids act on the tooth enamel for at least twenty minutes after eating. With a mid-morning and afternoon sugary snack, and a candy bar before bed, along with three regular meals, the amount of acid time increases rapidly:



3 meals x 20 minute acid attack = 60 min.
3 snacks x 20 minute acid attack = 60 min.
 (or 2 hours of acid)

A partial solution to all this decay-producing acid is to limit the number of times you eat sugar each day. If you must snack, **avoid sweet snacks** (see snacking guide). Or select foods containing artificial sweeteners. Particular items to avoid include COUGH DROPS, BREATH MINTS, and CANDIES which remain in the mouth for a long time, feeding the bacteria and prolonging the acid attack.

A SNACKING GUIDE MORE OR LESS:

	MORE OF THESE*	LESS OF THESE
DAIRY GROUP	milk, cheese (Swiss, Cheddar, cream, cottage), plain yogurt	chocolate milk, ice cream, ice milk, milk shake, fruited yogurt
MEAT GROUP	lunch meats and hot dogs (without added sugar), nuts, eggs (esp. hard boiled), chicken, ham & egg salads, peanut butter	meats with sugared glazes, peanut butter (with added sugar), lunch meats & hot dogs (with added sugar)
FRUIT AND VEGETABLE GROUP	<p>Fruits: (fresh and/or packed in water or juice) oranges, grapefruits, tangerines, apricots, plums, apples, pears, peaches, nectarines, cherries, strawberries, grapes, melons, avocados, pineapples, olives</p> <p>Vegetables: salad greens, cauliflower, cucumbers, green peppers, tomatoes, radishes, carrots, celery</p> <p>Fruit & Vegetable Juices: (unsweetened) orange, apple, grape, grapefruit, tomato</p>	<p>dried fruits (figs, raisins, prunes), fruits packed in syrups, jam, jelly, fruit preserves</p> <p>candied sweet potatoes, glazed carrots</p> <p>sweetened fruit drinks</p>
BREAD & CEREAL GROUP	popcorn, soda crackers, toast, hard rolls, pretzels, potato chips, corn chips, pizza	cookies, sweet rolls, pie, cake (esp. with frosting)
OTHER	sugarless gum, sugar free soft drinks, coffee or tea (without added sugar)	coffee & tea with added sugar, soft drinks with added sugar, candy, fudge, caramels, honey, sugars and syrups

* Food considered safe for oral health are not necessarily nutritious.

The physical form of food is also important. Solid foods remain on the teeth longer than liquids. Soft and sticky sweets are especially difficult to clean from the teeth, and if not removed quickly, encourage both tooth decay and gum disease. Dried fruits (such as raisins with their concentrated sticky sugar), mints, toffees, and caramelized desserts are especially dangerous to your oral health.

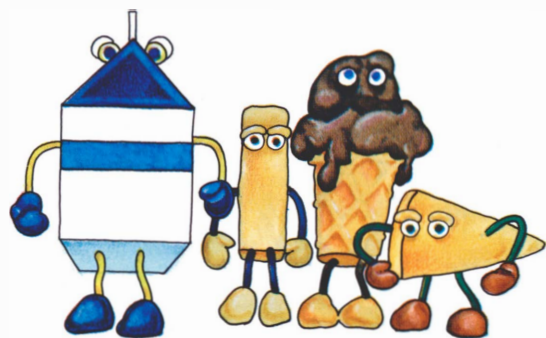
FLUORIDE PROTECTION

Fluoride is an essential part of your diet that strengthens the tooth enamel and supporting bones. The most important ways you can protect your teeth with fluoride are:

- 1 water fluoridation (adjustment of the fluoride level in a community water supply to one part per million).
- 2 dietary supplements (tablets or liquids may be prescribed for use at home).
- 3 professional fluoride application (gels, liquids or pastes may be applied in the dental office).
- 4 toothpastes and mouthrinses (effective fluoride toothpastes and the newly developed fluoride mouthrinses may be used daily).

HIDDEN SUGAR - BEYOND THE SUGAR BOWL

You may not realize it, but even if you avoid the sugar bowl, your diet may contain too many fermentable carbohydrates. Processed foods such as catsup, canned meats, soups, and potato chips often contain a considerable amount of sugar. Peanut butter, hot dogs, fruit juices and canned fruit are all available with and without sugar. You can check the contents by **reading the label**. The major ingredients are listed first. If sugar (or sucrose, dextrose, fructose, or corn syrup) is listed first, you know that the food contains a large percentage of highly fermentable carbohydrates. Avoid it if you can. Remember that an inexpensive food is no bargain if it encourages tooth decay.



Look for the nutrition chart on the label. It shows the percentage of the Recommended Daily Allowance (U.S. RDA) of some important vitamins and minerals contained in that food item. By checking everything you buy you can know in advance which nutritional needs you are meeting. You can then control your own family's nutritional health.

NURSING BOTTLE MOUTH

Sugared drinks should not be given to infants at bedtime or naptime. Your child's teeth can suffer serious damage if you put him to bed with a bottle filled with sugar-containing liquids (such as fruit juice, formula and soft drinks). The longer you continue this practice, the greater the chance of "nursing bottle mouth," a condition of wide-spread decay affecting almost all of the baby's teeth. If the decay is not treated early, the dentist may have no choice but to remove the damaged teeth.

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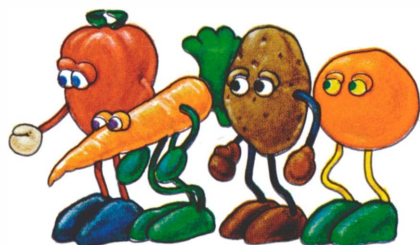
KEEPING A FOOD DIARY

Your actions can mean the difference between keeping your teeth all your life or losing them to dental disease.

An important first step is to become aware of your eating habits by keeping a five day food diary. Every time you eat or drink, record the item, its physical form (such as sticky doughnut) and the time. Don't leave anything out — including snacks. Then, go through your diary and circle in red everything that has sugar in it. Multiply the number of times you ate sugar by twenty minutes and find out how long decay-producing acid was working on your teeth.

Bring your food diary to your dentist for evaluation. Through nutrition counseling your dentist will be able to improve your diet to best suit your needs.

With good food selection, correct eating habits and regular professional and home dental care you can reduce or even eliminate dental disease. By your own actions you should be able to keep your natural teeth and gums free of disease all your life.



CONSUMER TIPS

- 4432: EAT THE RIGHT AMOUNT FROM THE 4 FOOD GROUPS
- AVOID SWEET SNACKS
- BEWARE OF COUGH DROPS
- USE ARTIFICIAL SWEETENERS INSTEAD OF SUGAR
- READ THE PACKAGE LABELS
- BUY FOODS THAT HAVE LITTLE OR NO SUGAR IN THEM
- LOOK FOR FOODS THAT CAN BE PURCHASED WITHOUT SUGAR



P12

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