



## LESSON 4

## FOOD FOR THE PRESCHOOLER

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## NUTRITION AND DENTAL HEALTH

## Carbohydrate in the Diet

Did you know that dental caries (cavities) has been identified as the most common nutritional disease of childhood, that the average five-year-old has three cavities, and that by 15 years of age, the average child has 11 decayed or missing teeth? Decay and loss of teeth can result in serious problems for the child. Some of these could have long-term effects. The most common problems include pain and discomfort, a lisp in the speech, malformation of the permanent teeth, and impaired chewing function. A loss of appetite due to the fact that cold, hot, or hard foods are difficult or even painful to eat could result in a decrease in the intake of certain essential nutrients.

But there is good news. Tooth decay can be prevented. In fact, by establishing good dietary and dental hygiene routines early in your child's life, you can establish a pattern that will promote healthy teeth, and normal growth and development throughout life.

Several factors are involved in the development of cavities. The tooth must be susceptible to decay. Certain bacteria plus fermentable carbohydrate must be present in the mouth. Fermentable carbohydrates are found in many foods containing simple sugars and starches. The sugars contained in such foods mix with plaque (the thin, sticky, colorless film of bacteria that constantly forms in the mouth) to form acid which attacks tooth enamel

and decay begins. Each time sugar is eaten, acid will attack the teeth, if the teeth are not cleaned immediately.

## WHAT SHOULD YOUR CHILD EAT AND WHEN?

Although we know that sugars are cariogenic (i.e., help produce cavities), we also know that the total amount of sugar consumed by the child is not by itself the basic problem. The form of sugar that is eaten, the time of day that it is eaten, and the frequency with which it is eaten are more important than just how much is eaten.

Form. If your child eats a candy bar which contains sugar in a very solid, sticky form, the sugar in the candy bar will stick on and between the teeth. If, on the other hand, your child drinks a soda, the sugar is in liquid form and will pass by the teeth, causing less damage.

Time of day. If your child eats food containing sugar between meals and does not brush or rinse afterward, the sugar will be retained on the teeth and will create an environment favorable to tooth decay. If the food containing sugar is eaten at mealtime, the saliva in the mouth, the other foods being eaten, the liquids consumed with the meal, and the oral hygiene measures used after the meal will remove most of the sugar from the mouth.

Frequency. If your child eats a candy bar at one sitting, there will be approximately a 15- to

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20-minute period of bacterial acid formation following ingestion of that candy bar. During this period of acid formation, tooth decay can begin to take place. If your child eats that same candy bar (the same amount of sugar), having one little bite now, another bite an hour from now, and still another bite 2 hours from now, the teeth will be exposed to three 15- to 20-minute periods of potential tooth destruction. That means that the child will have the same amount of candy, but three times as much time during which his or her teeth are subject to decay.

There are no simple answers to caring for your child's teeth. Children will continue to eat candy and other high carbohydrate foods. They will not always brush after every meal or snack. However, you can give your child's teeth the best chance for good health by putting some of the following suggestions into practice.

Eating between meals or "snacking" can be beneficial, especially for young children. Done wisely, it provides added calories and nutrients. Minimize the consumption of high carbohydrate snacks by your child. Help your child understand the importance of brushing his or her teeth after all snacks, as well as meals. The same Four Food Group guide used to plan meals is useful for planning snacks. For good dental health, it is important to avoid habits that frequently expose the teeth to fermentable carbohydrates.

Do not try to eliminate all carbohydrate foods from the diet. Carbohydrate foods include fruits, vegetables, and breads and cereals and are an important source of energy and nutrients. A well-balanced diet will include carbohydrates.

#### NURSING BOTTLE SYNDROME

Extreme dental decay in the very young child may occur when the habit of frequent night bottle

feeding is continued beyond a reasonable age. Nursing bottle syndrome, as it is called, is one of the most crippling conditions involving the teeth of young children. It results in the decay of most of the upper teeth and sometimes the decay of the lower back teeth. The lower front teeth are rarely involved. The condition is caused by the direct contact of sugar with the teeth. Sweetened liquids whether water, milk, fruit juice, or soft drink fed from the nursing bottle are the problem. The sweetener can be sugar which occurs naturally in the food or be added sugar, honey, or syrup. As long as there is an active sucking motion, the increased flow of saliva washes the sugar and other ingredients from the mouth. But when sleep comes and the sucking ceases, the saliva flow decreases and the sugar solution accumulates around the teeth. Bacterial action on the sugar then produces acids that attack the tooth enamel. The tongue seems to protect the lower front teeth from the pooling of sugar. This problem can be prevented by refraining from using the bottle as a pacifier or by filling it with water rather than a sweet beverage. Pacifiers dipped in honey can also result in nursing bottle syndrome.

#### SUGAR

Sugar has been getting a bad press in recent years. It has been blamed for most everything that could possibly be attributed to food. There is general agreement that sugar can contribute to tooth decay and that sugar, like other foods, has calories which can lead to a weight problem. Research does not support the claims that excessive sugar intake causes behavior problems in children, heart disease, cancer, or diabetes.

Sugar's role in dental caries and its calorie content are sufficient reasons for limiting sugar intake, but there's no need to

eliminate it. We are quite aware of the sugar we add to foods, but it is more difficult to know if sugar has been added--and if so, how much--to prepared foods we buy.

The crystalline stuff we use in cooking or at the table is sugar to most of us. Sucrose, the chemical name for table sugar, is actually a combination of two sugars--glucose (sometimes called dextrose) and fructose (sometimes called levulose). Fructose is also the sweetener in honey and in various fruits. Lactose is the sugar occurring in milk; maltose is the sugar found in grains. Note that the names of all sugars end in "ose."

Most labels for food products must have a listing of ingredients. The amounts are not given but the listing is in descending order by weight. The first ingredient listed is present in the largest amount. Look at that listing for sugar or words ending in "ose." Other words that indicate the presence of sugar are sirup, molasses, and honey. Some foods will have several sweeteners listed. In interpreting label information, remember that sugar is heavier than many ingredients so there may not be more sugar by volume; just by weight.

The sugar content of cereals may be of concern to parents of young children. USDA scientists who analyzed cereals for sugar content found a few varieties that had over 50% sugar content. The name of a cereal gives some indication of its sugar content--sugar, frosted, cookie, cocoa, and fruity--usually mean the presence of added sugar or of a dried fruit which adds its own natural sugar. Cereal labels are beginning to show the amount of sucrose and other sugars in a separate table.

Soft drinks are a major source of sugar for many children; cutting down consumption of these products would be an obvious way of limiting sugar intake. Switching to "diet"

drinks sweetened with saccharin or aspartame (Nutrasweet) would reduce sugar intake, but there are scientists who question the safety of these products, particularly if used for several years.

## SNACK TIME

Fruits and vegetables are good choices for snack foods. They are colorful, tasty, nutritious, and most are low in calories.

Some suggestions:

- Apple wedges
- Banana slices
- Cabbage wedges
- Carrot sticks
- Cauliflowerets
- Celery sticks
- Fresh pear wedges
- Grapefruit section
- Green pepper sticks
- Melon balls
- Orange sections
- Raisins
- Tomato wedges
- Turnip sticks

Canned and frozen fruits are also appropriate. Choose those packed in juice or a light syrup or rinse before serving if you are trying to limit sugar intake. Fruit and vegetable juices are also good choices. One caution about dried fruits. They are a sticky sweet and may contribute to tooth decay just as candy does. It is not the amount eaten that is the problem; it is the frequency. It is better to eat the whole box of raisins at once than to nibble on them all day. Older children can be taught to rinse the mouth with water or brush the teeth to remove the sugar and bacteria.

### CARROT-RAISIN SALAD

- 2 cups shredded carrots
- 1/2 cup raisins
- 2 Tbsp. mayonnaise, salad dressing, or sour cream

Shred carrots. There's no need to scrape carrots before shredding

but do wash them thoroughly. Mix carrots and raisins together. Stir in enough mayonnaise, salad dressing, or sour cream to hold the mixture together. Makes 4 servings.

The number of calories per serving will be determined by the binder used. The carrot-raisin mixture has about 300 calories or 75 per serving. The two tablespoons of mayonnaise would add 200 calories; of salad dressing (mayonnaise type) 130 calories; and of sour cream 50 calories.

## KIDS IN THE KITCHEN

### Peeling

Children under four years of age can begin by shucking corn. An adult will need to help remove the silk.

Peeling is a skill for the four-year-old because finger dexterity is needed for this task. Peeling oranges, shrimp, and hard-cooked eggs are examples of activities. When the child has peeled the foods, plan a simple salad so the child can use mixing and/or spreading skills too.

### Rolling

How does a child learn to roll round balls in food preparation? The first instinct is to flatten the food mixture on the work surface. Show the child how to hold the mixture on the bottom hand, and roll the food with the top hand. With practice the child can learn to move both hands to get the job done.

IDEAS: cheese balls, or meat balls,  
Honey Milk Balls, cookie or yeast  
dough

## MEALTIME MANNERS

Messiness is part of learning to eat. Expect it and make plans to minimize its impact.

Messiness can result from poor coordination--it takes coordination to get food on a spoon or fork from a bowl or plate, carry it through the air, and deposit it in a little-bitty mouth which one can't even see.

Messiness may occur when the child is examining a new food to find if it's soft, hard, bouncy, or squishy.

Messiness may be an indication that the child is tired--maybe too tired to feed himself or maybe just tired of being at the table. If the former, help him to finish out the meal. If the latter, excuse him from the table or remove the food.

Messiness also results when the child is distracted. Cut down on distractions as much as possible.

## FAMILY ACTIVITIES

Many food ads are on television. Children are very impressionable so they may want to buy everything that is advertised. Take time to watch television with your children so you know what they are watching and what they are learning. Help preschoolers to use the information by asking questions.

1. Why do children in commercials always look happy?
2. Is advertising always right?
3. Is the advertised food the best to buy? How can you tell? Does it taste sweet? salty?
4. What other choices could we make?
5. How can we decide what to buy?