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EC1016 How to Build and Maintain Good Teeth

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"HOW TO BUILD AND MAINTAIN GOOD TEETH"

PREPARED BY THE DIRECTOR OF DENTAL HYGIENE
DIVISION OF MATERNAL AND CHILD HEALTH
NEBRASKA (STATE) DEPARTMENT OF HEALTH
A dental survey, conducted in Nebraska during 1934 in which the American Dental Association and the United States Public Health Service cooperated, gave evidence of a serious condition existing in the mouths of our grade school children. It indicated that more than 90% of them were in need of dental treatment. A state department of health is interested in the prevention of dental disease because: first, there is a very close relationship between teeth and health; second, teeth will not decay in the mouth of a perfectly healthy individual; and third, dental decay in the great majority of children can be controlled and teeth maintained in a healthy condition. In the discussion of preventive dentistry, we should learn the structure of teeth, how they grow and develop. It will help us to understand why the three essentials for the building and maintaining of good healthy teeth are important; namely, early and regular dental care, adequate nutrition and mouth hygiene for the child.

That are teeth like?

![Diagram of teeth structure]

The part of the tooth extending above the gum is called the crown of the tooth. It is covered with enamel which is a very hard substance, very much harder than bone. It protects the tooth from outward injury during the biting and grinding of food and it also protects the inner portion of the tooth against germs that cause decay.

The substance beneath the enamel is known as dentin. It is much softer and less dense than enamel. That is why decay spreads more rapidly when the dentin is reached under the enamel.
The root is the part of the tooth below the gum line. Some teeth have only one root, others have two or three. The root is covered with a thin layer of bone-like substance known as cementum. At the end of the root there are one or more openings through which the blood vessels and nerves enter the tooth. Both the blood vessels and nerves are surrounded by a soft, spongy substance, which together with the blood vessels and nerves, is called the pulp.

The space in the center of the crown occupied by the pulp is called the pulp chamber. The tooth gets its nourishment through the blood vessels in the pulp.

The roots of the teeth are not attached directly to the bone. Between the root of the tooth and the bone there is a layer of tissue which holds the tooth in place and also acts as a cushion or pad which lessens the shock as the jaws come together. This layer of tissue is known as the peridental membrane.

Shapes, functions and names of the teeth

Teeth are shaped differently because of their type of work. The four front teeth above and below have cutting edges. They are used for cutting food and are called incisors. The teeth at the corners of the mouth are used for holding and tearing food. They have one cusp and are called cuspids. Just behind the cuspid teeth in the primary set of teeth are the primary molars. They are larger teeth with three or four cusps and are used for grinding and chewing.
Just behind the cuspid teeth in the permanent set of teeth are the bicuspids. They are the teeth which take the place of the primary molars at about ten or eleven years of age. They have two cusps which are separated by a deep groove.

The large teeth behind the bicuspids in the permanent set of teeth are the molars. They have large broad surfaces with four or five cusps separated by grooves and fissures. The molars and bicuspids are used for grinding. The finer they grind the food the more easily it may be mixed with the stomach juices and digested.

Two Sets of Teeth

The first set of teeth are called primary teeth. There are twenty in number. The second set of teeth are called permanent teeth and there are thirty-two in number.
Spaces Between Teeth

As a child reaches the age of about four years, spaces begin to develop between the primary teeth due to the fact that the permanent teeth are developing in the jaws. The jaws are getting larger and as they get larger, spaces develop between the primary teeth. That is a normal condition.

Six-year Molar

At six years of age the first permanent tooth makes its appearance. It does not replace any of the primary teeth, but comes in the mouth immediately behind the second primary molar and is called the first permanent molar. If any one tooth in the mouth is more important than another, it is this particular tooth. The second permanent teeth that come in are the two lower central incisors and they do replace the lower front primary incisors at about six to seven years of age.

Between the ages of six and thirteen years, all of the primary teeth will be replaced with permanent teeth. The primary molars will be replaced with permanent bicuspids but all the other primary tooth will be replaced by the same type of tooth. At about twelve years of age the second permanent molar appears directly behind the first permanent molar. The third molar or wisdom teeth appear behind the second molars some time after the seventeenth year. When they are erupted, all of the permanent tooth will be in the jaws. There will be thirty-two tooth, sixteen in each jaw.

Primary Teeth are Important

Many parents say, "Why repair the primary tooth? They will be lost anyway." That idea is wrong. Many children and adults have underdeveloped jaws and crowded, irregular teeth because their primary tooth were allowed to decay and had to be removed too soon. Let us discuss briefly the importance of these primary teeth.
They are the teeth that are going to chew the food for digestion and assimilation during the period of life when the greatest amount of growth is taking place physically and mentally. A child needs good teeth to chew his food well and get the most benefit from it. The habit of bolting food is formed many times by children because the primary teeth were too sore for chewing due to decay and infection.

Primary teeth act as pathfinders for guiding the permanent teeth into the proper place. They help the permanent teeth come into the jaws where they properly belong so that the permanent teeth of one jaw will fit with the teeth in the opposing jaw. Decayed and neglected primary teeth can and often do damage the permanent teeth next to them.

Primary teeth are pathfinders. The roots of the primary teeth act as guides for the permanent teeth that form beneath them. This picture shows some of the permanent teeth partly formed and growing in the jaw beneath the primary teeth.

As the crowns of the permanent teeth gradually grow larger in the jaw bone, they normally press against the roots of the primary teeth. By the time the permanent teeth are ready to come through the gums the roots of the primary teeth are gradually resorbed and only the crowns of the teeth remain. At this stage primary teeth are easy to remove. Many times they fall out while the child is eating or biting on something hard.
If the roots of primary teeth do not dissolve properly, the permanent teeth may come inside or outside the proper line. If this happens, the primary teeth should be removed by the dentist at once. The longer the delay, the more difficult it is to get the permanent teeth into their proper place.

The Most Important Teeth

The first permanent molars commonly called the six-year molars, which come in at six years of age back of the second primary molars, are the most important teeth. They are the teeth that keep the jaws the right distance apart at the age of ten or eleven when the primary molars are lost and the permanent bicuspids are coming in place. They have a great deal to do with the alignment of the permanent teeth that come in the jaws in front of them. They come in about four years before the primary molars are lost, and if the primary molars are maintained in a healthy condition, the first permanent molars will be compelled to come in where they properly belong. If, due to neglect, it is necessary to remove the primary molars too early, the first permanent molars may drift forward and occupy some or all of the space once occupied by the primary molars and the arch of the jaw will be too small. Naturally, there will not be room for all the permanent teeth that are supposed to come in the jaw. The tooth will be crowded and irregular, out of line, and in some cases, prevented from coming in at all. X-ray pictures show them locked down in the jaw. We speak of them as impacted teeth.
The first permanent molars should be examined as soon as they come in because many of them are not perfectly formed and come through the gums with flaws already in them. They should be repaired at once. Remember the most important teeth of all, the first permanent molars, come in at six years of age behind the second primary molars.

In order that teeth may develop properly they must be nourished and fed. The crowns of all the primary teeth are formed before a child is born, therefore, the mother is responsible for the quality of the primary teeth. In order that the teeth of her baby shall be healthy, strong teeth, she should be advised by her physician regarding diet which will meet the needs for building healthy teeth and bones for her baby. All of the time from about six weeks of fetal life until about twenty years of age the process of developing and building bones and teeth is constantly going on, and during that period foods rich in tooth-building materials are important.

Calcium (lime), phosphorus and vitamin D are important elements in the building of teeth. Vitamin D is important for it enables the baby to take up the calcium (lime) and phosphorus and deposit them in the teeth and bones.

Vitamin D is obtained in cod liver oil and sunshine. During the winter months when it is impossible to expose very much of the body to sunlight, it becomes necessary to get our vitamin D from cod liver oil. Sunlight that is filtered through fog, soot, or glass loses much or all of its value.

Foods which supply the largest amount of calcium (lime) are milk and the dairy products, vegetables (especially green leafy vegetables), and fruits of all kinds, both raw and canned.

Nature takes two or three years to build the crown of a permanent tooth and yet dental decay can destroy it in a few weeks.
In building a tooth each point or cusp is built separately and each cusp grows larger as new material is supplied from the food that is eaten. Finally these cusps join together and form the crown of the tooth leaving grooves in the center of the tooth on the biting surface. When a child is deprived of the necessary amount of calcium (lime), phosphorus and vitamin D, the enamel is often faulty in the groove where the cusps have joined, leaving a crack or tiny hole in the enamel covering. This area is very difficult to keep clean and a cavity may develop.

Growing boys and girls need more calcium (lime) each day than an adult. Their daily intake of food should be richer in tooth and bone-building elements. Proper foods not only build strong teeth but also protect them after they are formed.

Mouth Hygiene

Another important factor in the prevention of decay is clean teeth. A child's mouth is small hence the brush should be small having no more than five or six rows of bristles set widely apart so they can easily be kept clean. Bristles should not be too stiff, neither should they be so soft that they will not remove the food particles or massage the gums. The proper treatment of a toothbrush will add to its efficiency and service. Before a brush is used, it should be soaked in a solution of salt water (1 teaspoonful of common table salt to $\frac{1}{2}$ glass of water). This will set and clean the bristles and make them more pliable. Wash a brush thoroughly in clean cold water before and after using it. Place it under the faucet and allow the water to run with plenty of force. Never use hot water on a brush as it quickly softens the bristles and makes it unfit for use. Shake the brush and put it in a clean light place to dry. When it is possible, put it in the sunlight to dry and kill the germs. Do not shut it up in a box as it will not dry between brushings, the bristles will remain soft and germs will thrive. Keep the brush where dirt and dust cannot reach it.
Hang it without the bristles touching other brushes. If you keep it in a glass, place the bristles end up. One person only should use the glass. A child should have two brushes using one brush one day and the other the next. This will allow them to dry, get back their stiffness and also gives time for air and light to kill the germs.

A paste or powder used for cleaning teeth should not be too coarse and it should not contain strong medicines which may irritate the gums. Most all tooth pastes and powders on the market can be used safely. A good powder for cleaning teeth can be made by mixing one teaspoonful common table salt with five teaspoonfuls baking soda.

Children should be taught when very young to brush their teeth. By the time the child is four years old he should know how to brush his own teeth. Teeth should be brushed twice a day, after the morning meal and at bedtime.

Many mothers find it easier to get the child in the habit by setting the example of carefully brushing his teeth twice each day. Appeal to his pride. Compliment him each time he makes the effort to brush his teeth and remark about the beauty of clean teeth.

Time and patience will add toothbrushing habits to other health habits. When the habit is formed, they will carry it through life.

When a child is sleeping, decay can work without being disturbed. The germs that cause decay grow and multiply very rapidly in the mouth because it is the ideal incubator for germ growth but they must have food. Therefore, less decay will develop if the child goes to bed with a clean mouth.

There are many methods used in cleaning teeth. Some are good and others are harmful. Some fail to clean the teeth properly, and others injure the gum tissue causing sensitive areas just above the gum line later in life. This may be avoided by proper habits of brushing.
Children's teeth should be brushed in the direction in which they grow; namely, the upper teeth should be brushed from the gums down and the lower teeth should be brushed from the gums up. This will enable the bristles of the brush to reach the spaces between the teeth and is less likely to injure gum tissue at the necks of the teeth. The method may seem a little difficult at first, but with practice it becomes just as easy and more efficient than the old method of brushing back and forth with the bristles of the brush jumping from one tooth to the other omitting the areas between.

Dental floss is a silk thread covered with wax and is used to clean surfaces of the teeth which may not be reached with the toothbrush. Children under ten years of age seldom need it but older children may need it occasionally. The wax covering makes it easier to pass between teeth and helps protect the gums from being injured from its sharpness. Ordinary cotton and silk thread should never be used for it is likely to bruise and cut the gum and injure the tissues that hold the teeth in place. Even dental floss should be used very gently, holding it firmly between the thumb and finger, pass it through the spaces between the teeth. Pull it back and forth in an effort to clean the surfaces between the teeth which cannot be reached with the toothbrush. Again, dental floss should be used very carefully if you are to avoid injury to the gum tissues.

After cleaning the teeth, rinse the mouth well with water. Holding the water in the mouth with the teeth and lips, it should be forced around in the mouth with the cheeks and lips.

No other disease is as common among children as dental decay. Everywhere the percentage of children needing dental treatment runs from 80 to 95%. Many children have cavities in several teeth. Two main reasons why primary teeth decay are: either they are not perfectly formed or they are not kept clean. (In many instances both factors play an important part.)
When the enamel covering of a grinding tooth is imperfectly formed, there are flaws in the enamel on the chewing surface. Decay will start easily and spread to the inside of the tooth.

Decay often begins in flaws in the enamel. Diets of expectant mothers and children that are lacking in calcium (lime) and phosphorus prevent formation of perfectly formed teeth. Most all flaws develop into cavities. Children's teeth should be examined at least twice each year and all the flaws and cavities repaired.

The cost of dental service for a child in keeping his teeth in a healthy condition is much less than it is to restore it to a healthy condition after a few years of neglect. Many times the results caused from neglect can never be remedied regardless of cost. If a tooth is neglected until it becomes infected and the removal is necessary before the proper time, the cost of the extraction is often as much as the cost of a filling had it been placed when the cavity was small. In one instance the child would still have the tooth in a healthy condition, and in the other instance, the tooth is lost. If the space from which the tooth has been extracted is not maintained for the permanent tooth and allowance made for normal growth and development of the jaw, often it is necessary for the dentist to place a space maintainer with an additional cost.

We advise that children should start going to their dentists at 2½ years of age and as often as the dentist thinks he needs to see the individual child in order that they may keep primary teeth in a normal healthy condition until time to lose them. There are many children at 3 years of age with teeth badly decayed.
The importance of the primary teeth in relation to normal growth and development of the jaws and for proper mastication of foods during the growing period in a child's life cannot be overstressed. Because of the fact that the nerve or pulp of a primary tooth occupies such a large portion of the crown of the tooth, it is necessary that teeth be examined often so that the dentist will be able to find beginning cavities if the teeth are to be repaired by simple fillings. When a cavity in a primary tooth reaches the size that it may be seen by simply looking in the mouth, an exposed nerve would be the result in many cases after all the decay was removed.

If a child is taken to the dentist at 2½ years of age, there may not be very much done on the first visit except getting acquainted. An examination may be made on the second visit. The dentist can perhaps clean the teeth on the third visit. During these visits the child and the dentist are becoming the best of friends. If a little decay develops, he will be able to find the cavity when it is very small and the child will have no fear in having it remedied. A small cavity may be repaired by very simple dentistry that leaves the small patient happy with no fear of future visits to the dentist as he grows older.

Many times the child's first contact is the day following an all night of toothache. He is brought to the dentist's office nervous from pain and loss of sleep. The tooth is sore and perhaps past the stage where it can be saved and the loss of the tooth may be necessary. Whether the child is hurt or not in getting relief, he will always associate pain with the dental office. Early and regular visits to the dentist will prevent this. This is the right thing to do from both a health and an economic standpoint.
Through no fault of the dentist, many times fillings come out because of the fact that primary teeth are so small, and when weakened by decay, easily break down especially when biting some hard substance. This is less likely to happen when children are seen frequently so that cavities can be detected when very small and the fillings needed are very small. The filling will have more tooth structure to hold it and there is less danger of having to fill too closely to the nerve pulp.

The early loss of primary molars due to neglect is a serious thing in the life of a child. Many times it is responsible for the permanent teeth coming in crooked and irregular, causing faces and mouths to be deformed because the teeth are not in their proper place.

Decay, if neglected, often causes abscesses at the end of roots. Abscesses contain pus. Sometimes the pus will force its way through the jaw bone and form a gum boil. When this condition exists, see that the infected tooth is cared for by the dentist before the poison is carried by the blood stream to other parts of the body. Sometimes abscesses form rapidly causing a great deal of pain and swelling. Others cause little pain and swelling. The slow painless abscess is more dangerous because often it goes unnoticed for a long time and the blood stream may pick up germs from an abscess or the poisons given off by the germs and carry them to other parts of the body.

Many poisons that drain from abscesses have been known to cause heart disease, kidney disease, rheumatism and other diseases. Do not think that decayed teeth are unimportant. Many diseases can result from them. Sometimes x-ray pictures are necessary to show whether teeth are abscessed or not.

Early and regular examinations and care of primary teeth are the best means of preventing decay from extending to the place where nerves or pulps become infected and abscesses occur.
We have tried in this short discussion to bring to you the importance of the primary teeth. We have called your attention to some of the fundamentals in prevention of dental decay; namely, early and regular dental care, adequate nutrition and mouth hygiene. We know that if the primary teeth are kept in a healthy condition until it is time for them to be lost, the permanent set of teeth have a much better chance of coming into the mouth in proper alignment. Less decay is the result.

Enamel has no power to reproduce itself when once the tooth has made its appearance in the mouth. The only way the normal shape and function of a tooth may be restored is by dental fillings or restorations. Remember that what a mother eats before the baby is born often determines the quality of the enamel on the crowns of the primary tooth, and that what the growing child eats after he is born plays an important part in the quality of the permanent tooth. Teeth that are well formed offer greater resistance to decay than do teeth that come into the mouth poorly formed.