

GRADE 6

TEACHER BACKGROUND INFORMATION

DENTAL HEALTH

DENTAL DECAY

The strange thing about dental decay is that it is so prevalent when so much is known about its causes and prevention.

There is no doubt that dental decay is a bacterial disease and is specifically related to the activity of dental or bacterial plaque which forms on teeth. If the teeth are thoroughly cleaned, this bacterial film or plaque will reform within 24-36 hours. The plaque progressively thickens if left undisturbed for several days, and in some areas of the mouth may become covered by food debris. Much of this food debris can be removed by rigorous mouth rinsing with water, but the plaque itself is only removed by brushing and flossing. The particularly damaging property of dental plaque is the ability of the bacteria to thrive on dietary sugar and to rapidly produce acids which can dissolve the tooth material.

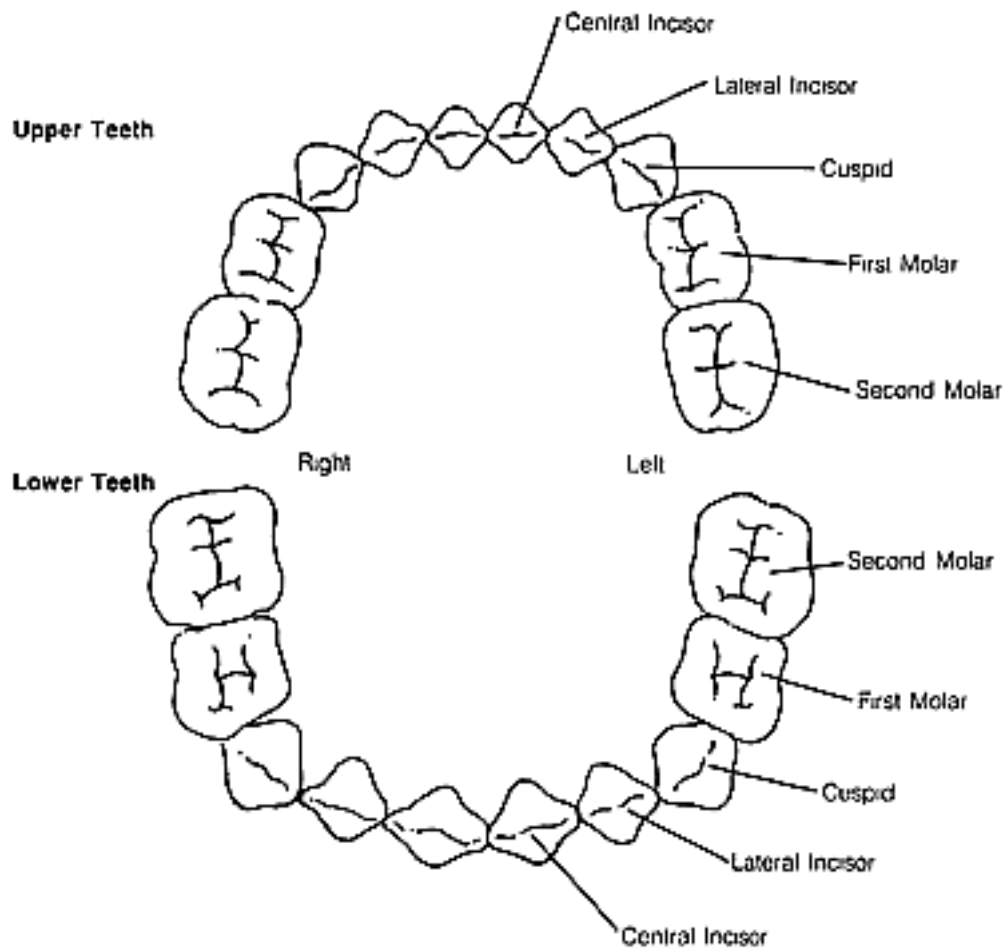
It is apparent that diet is an important factor in decay. The typical Canadian diet is high in refined carbohydrates, and is highly conducive to dental decay. Sticky candies or confections which adhere to the teeth or hard candies which are kept in the mouth for long periods of time are particularly damaging since they provide sugar to the plaque, and hence destructive acids, for a prolonged period of time. It is the food remaining in the mouth that is important to plaque activity. Hence, regular and thorough removal of food and plaque could theoretically eliminate the decay producing activity of the diet. In reality, it would be dangerous to rely completely on oral hygiene for the prevention of dental decay.

The role of heredity in dental disease is not well understood. Despite seemingly inherited bad gums or proneness to decay, personal neglect and poor quality dentistry are leading causes of poor teeth. Experience does indicate that some mouths are more prone to decay than others, but not because of so-called soft teeth. People who believe they have soft teeth often despair of their chances to keep their teeth. This despair is often associated with poor oral hygiene, dental neglect, faulty nutrition, or experience with poor-quality dentistry. With good home care, regular dental visits and the conscientious application of the principles of modern dentistry, most people should be able to enjoy a healthy mouth and retain their teeth for their lifetime.

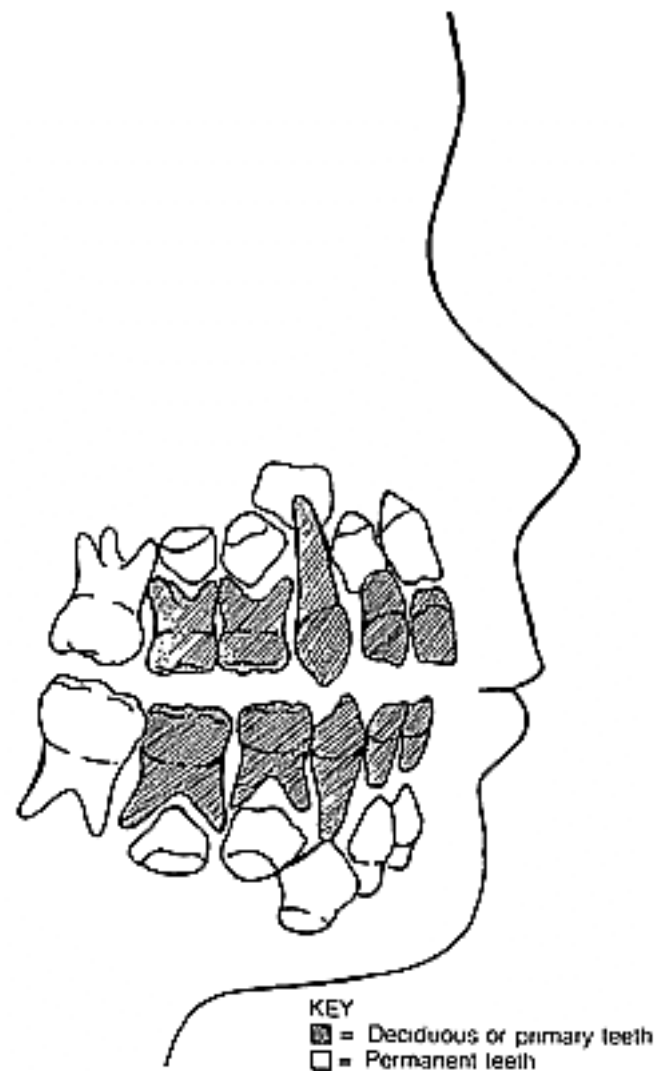
Good oral hygiene (proper brushing after each meal and brushing and flossing prior to going to bed) is difficult enough for adults to establish, for children, it is doubly difficult. Not only do young children lack the dexterity to brush and floss their teeth properly, but the benefits of such skills would be considerably reduced in the typical young "continuous eater". Parents should not only assist their young children in the brushing technique and floss their children's teeth up to about age 8, but should strive to keep the snack habit to the minimum, particularly of foods and drinks containing sugar. In lunches or at snack time children should not be given hard or sticky treats such as lollipops or toffee having sugar that remains in the saliva for a long time.

Adapted from 'Dental Health A Teacher's Guide K-12,' Health and Welfare Canada

PRIMARY (BABY) TEETH

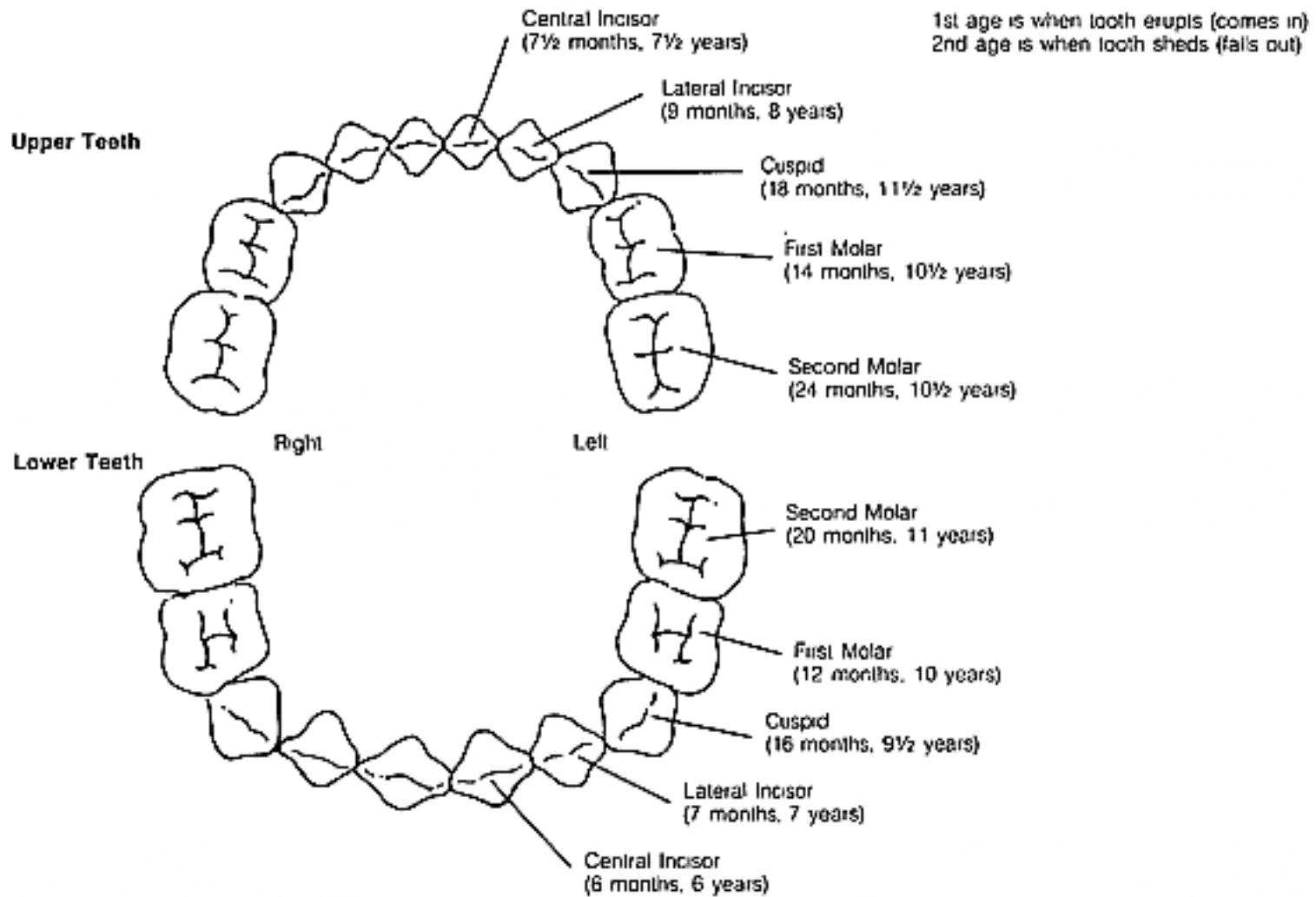


LOCATION OF TEETH AT 6 YEARS OF AGE



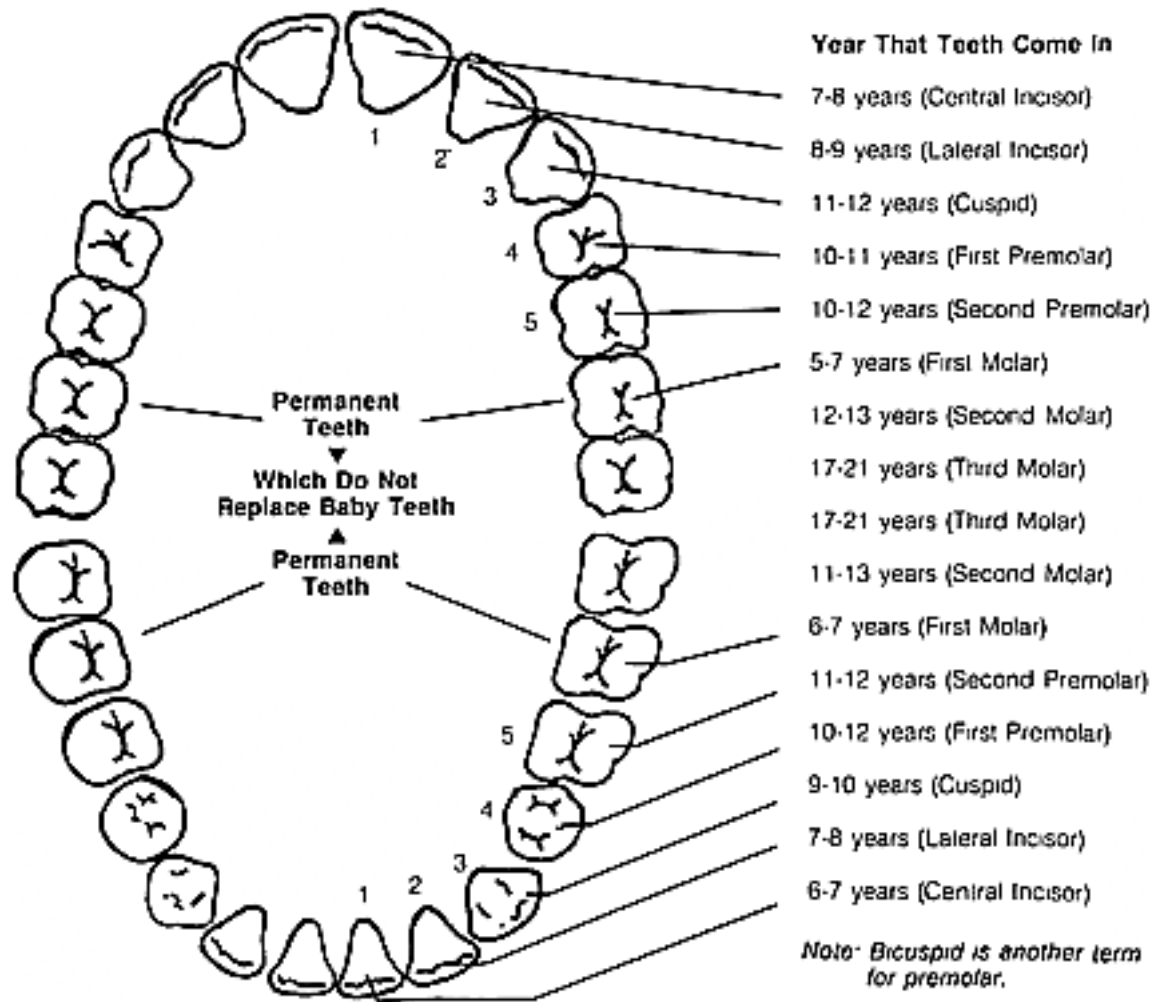
AGE SCHEDULE FOR PRIMARY TEETH

PRIMARY (BABY) TEETH



AGE SCHEDULE FOR PERMANENT TEETH

(Teeth numbered 1 to 5 replace baby teeth)



DENTALLY SAFE FOOD

and

DENTALLY UNSAFE FOOD



unsweetened fruit juice
unsweetened vegetable juice
raw vegetables and salads
raw fruits
nuts, seeds
cheese
plain milk
plain yogurt
enriched, whole wheat bread
and bannock
whole grain cereals
crackers
bran muffin
pizza
popcorn
meats



raisins, dried fruits
ice cream, milkshakes
sweetened juice and canned fruits
flavoured yogurt
chocolate milk
puddings
popsicles/fudgsicles/revelos
sugar lumps
cake
candy
jam
chocolate bars
cookies
jelly, jam, honey
soft drinks (sweetened)
fruit drinks
sweetened powdered drink mixes
gum
lozenges

*** Teeth should always be brushed after eating sticky food.**

TOOTHBRUSHING - REMOVAL OF PLAQUE

How to Brush

Toothbrushing disrupts and removes plaque from the inner, outer and top surfaces of the teeth.

Place the toothbrush inside the mouth with the bristles along the upper last two teeth pointing at a 45° angle toward the gum line. This ensures that the bristles cover both teeth and gum surfaces

Vibrate the brush in a slight back and forth or circular motion directing gentle pressure towards the gums. This movement keeps the brush alongside the same two teeth and allows some of the bristles to clean the surfaces under the edge of the gums. Do not scrub.

Count to ten and then, move to the next group of teeth.

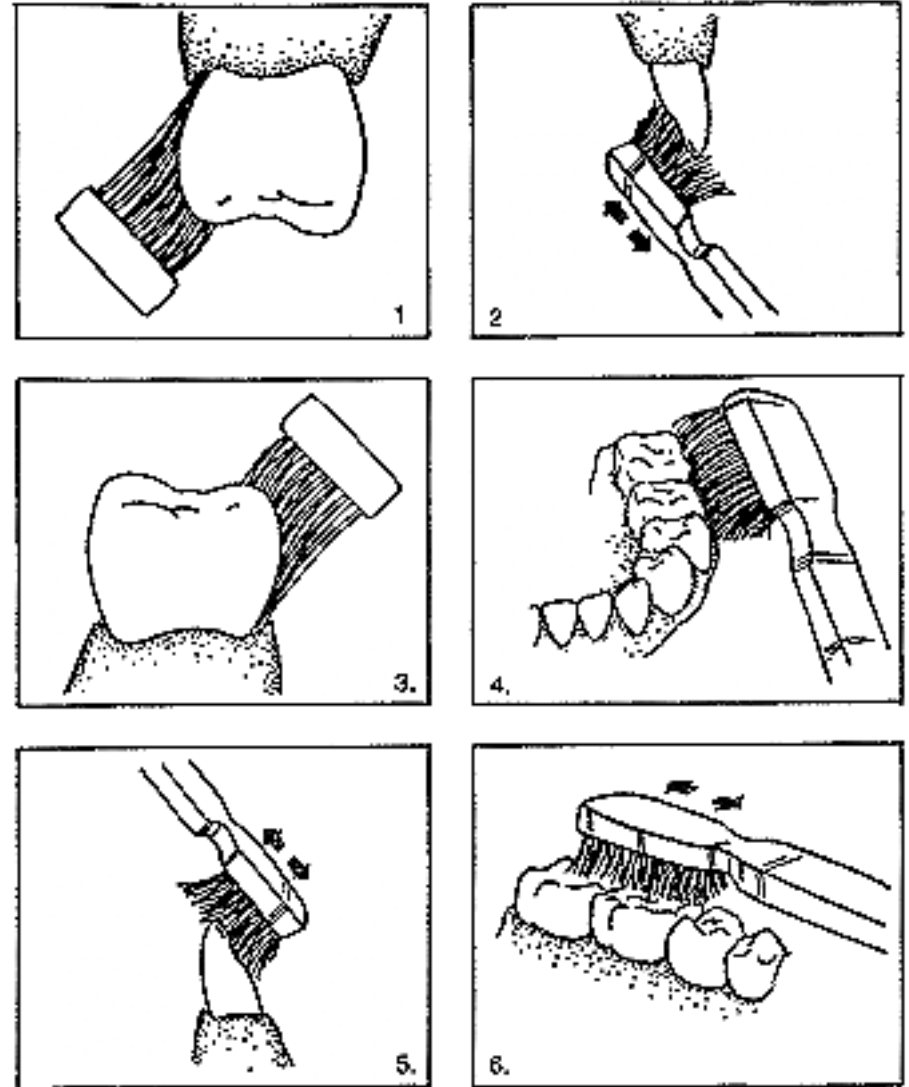
All inside and outside surfaces of teeth are cleaned in this way. The top surfaces of the back teeth are cleaned with a back and forth motion the bristles directly on top of the teeth.

To ensure all surfaces are brushed, the same circuit is followed every time.

This is where toothbrushing should begin.

1. Position of brush for brushing upper inside back teeth
2. Position of brush for brushing outside upper front teeth.
3. Position of brush for brushing lower inside back teeth
4. Position of brush for brushing lower outside middle teeth
5. Position of brush showing brushing of lower outside front teeth.
6. Position of brush showing brushing of top surface of back teeth.

From: CDA, "Do It Yourself Oral Hygiene", 1981



A BASIC TECHNIQUE FOR DAILY PLAQUE REMOVAL

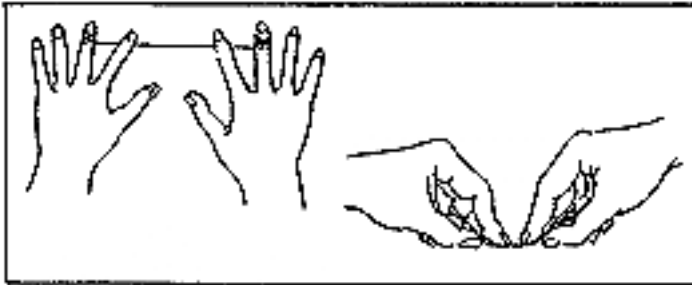
Flossing - Removal of Plaque

How to Floss

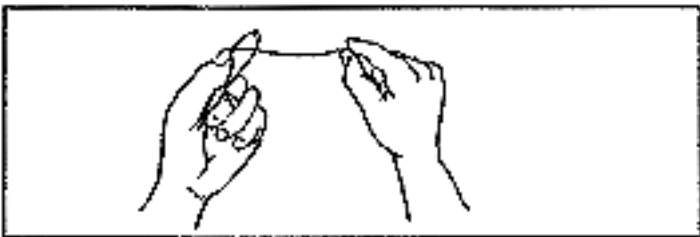
Flossing disrupts and removes plaque between the teeth and under the edges of the gums

To floss properly, use about 46 cm of dental floss. Wind most of the floss around the middle finger of one hand and the rest around the middle finger of the other hand. This leaves about 8 cm free

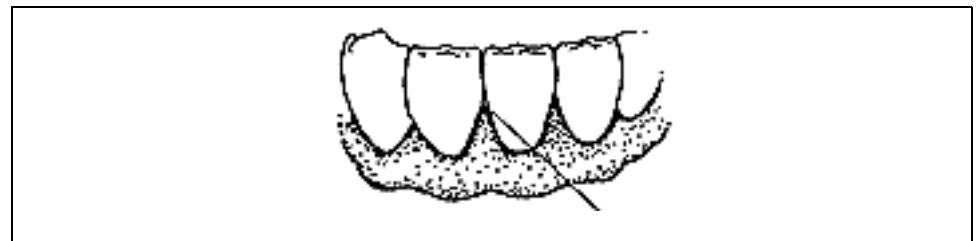
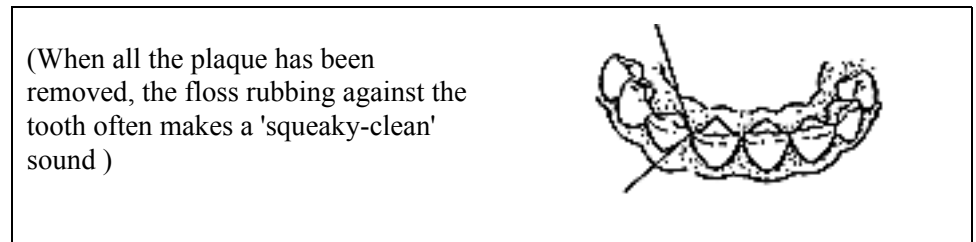
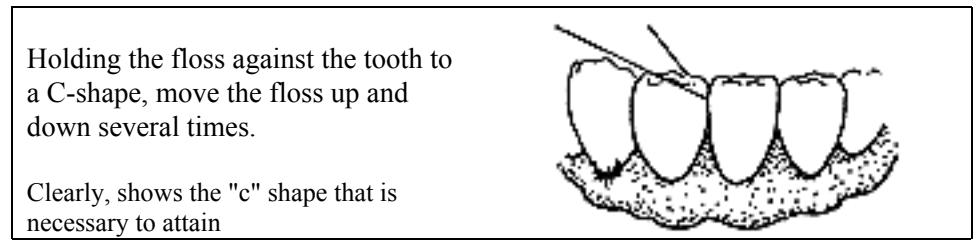
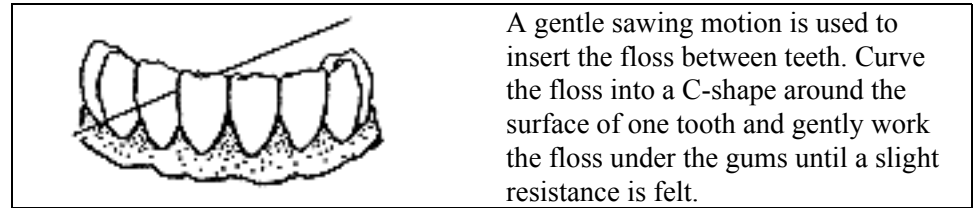
The free part of the floss is grasped with the thumbs and 1st fingers of each hand leaving about 2.5 cm as the 'working portion' of the floss



When flossing lower teeth the floss is guided mainly by the 1st finger of each hand



For upper teeth exert pressure with the thumb of one hand and the forefinger of the other hand.

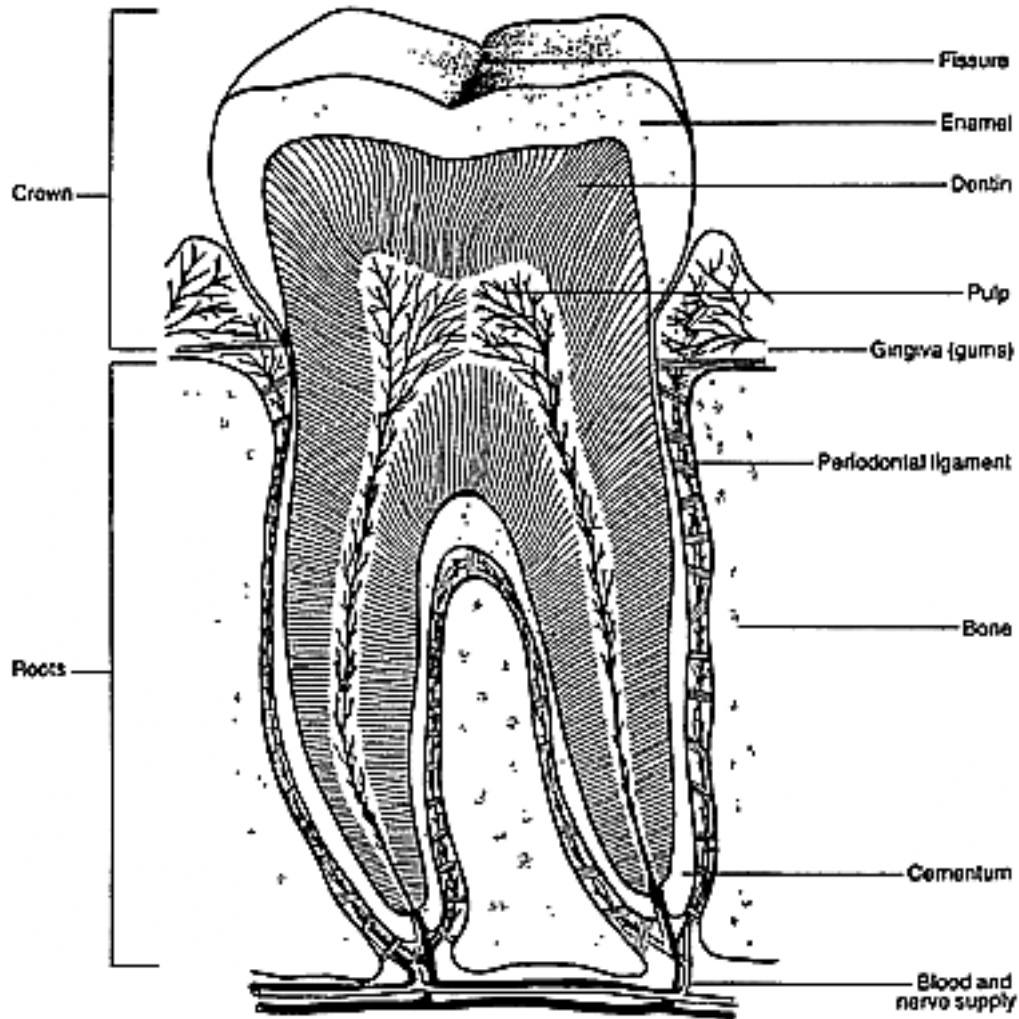


Repeat the procedure on the adjacent tooth surface at the same site.

This method is repeated on the remaining teeth starting on the upper right teeth and ending on the lower left teeth.

From CDA, "Do It Yourself Oral Hygiene", 1981

THE STRUCTURE OF A TOOTH



A tooth consists of two anatomical parts

Crown: usually appears above the gums and shows in the mouth

Root: anchors the tooth in the bony socket of the jawbone and is ordinarily not visible

Structures of the crown:

Enamel: the hard, glistening substance that forms the outer layer of the crown

Dentin: an ivory-like substance under the enamel, which forms the body of the tooth

Pulp Cavity: the hollow space in the centre of the tooth which contains nerves and blood vessels

Structures of the root:

Cementum: a thin layer of bone-like tissue covering the root.

Dentin: an ivory-like substance located under the cementum

Pulp canal: an inner cavity containing nerves and blood vessels, an extension of the pulp cavity to the tip of the root

Surrounding tissues:

Periodontal ligament: fastens the root of the tooth to the jawbone. It acts as a shock absorber as the teeth come together in the chewing process

Gingiva (gums): soft tissue that immediately surrounds the teeth and the bone.

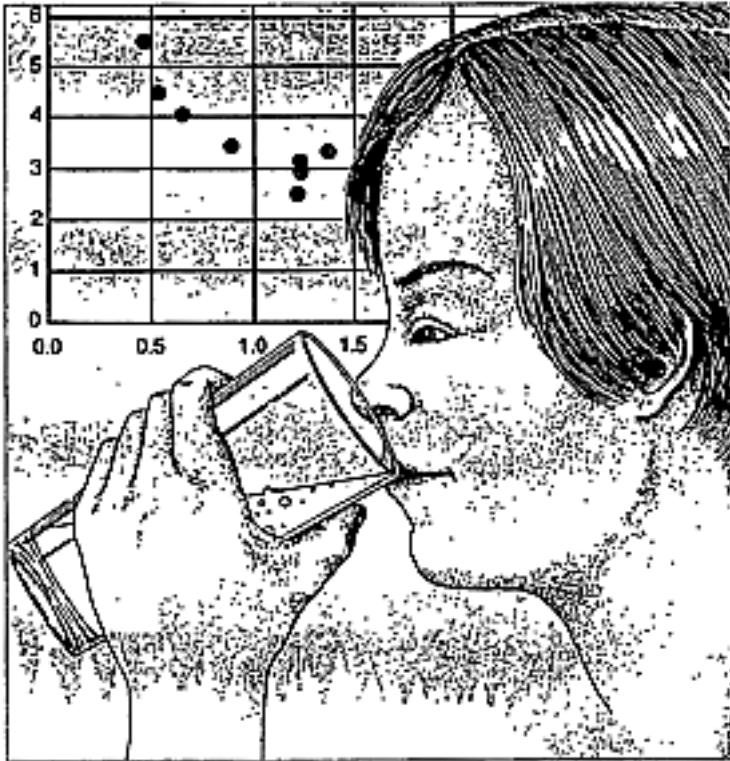
Jawbone: the bone surrounding and supporting the roots of the teeth

WATER FLUORIDATION IN THE NORTHWEST TERRITORIES

Many residents of the Northwest Territories suffer from tooth decay. The rate of tooth decay in the N.W.T is almost four times greater than in southern Canada.

Tooth decay is unusually high among native people, particularly children. The high rate of tooth decay results, in part, from the change of a high protein traditional diet to processed food and a high carbohydrate diet.

Water fluoridation, along with good nutrition, proper dental care and good dental hygiene practices, is an excellent way of reducing tooth decay.



What is fluoride?

Fluoride is a natural chemical which is produced by combining the natural element fluorine with other elements.

Low levels of fluoride are found naturally in most community water supplies. It also is found in some foods including spinach, fish and other seafoods. Tea also contains high levels of fluoride.

What does it do?

Fluoride prevents tooth decay by strengthening enamel during tooth formation and fighting tooth decay in formed teeth.

Studies conducted in North American cities over the past 20 years show that children raised in communities where fluoride has been added to the water, have 40% - 60% fewer cavities than children raised elsewhere.

Fluoride helps children grow stronger teeth. Adults who consume fluoride tend to keep their own teeth longer. It also strengthens bones and reduces bone fragility disease in elderly people.

The effects of fluorides can however be overwhelmed by the frequent consumption of foods and drinks containing sugar especially soft, sticky types of foods. Regular brushing of the teeth with a fluoride-containing toothpaste has the potential to reduce the incidence of dental decay.

What is water fluoridation?

Water fluoridation is the process of adding fluoride to water supplies. Fluoride does not change the taste of water.

Adding fluoride to drinking water usually does not cause health problems. However, high doses of fluoride taken while teeth are forming can permanently change the colour and texture of the teeth. The addition of fluoride to drinking water is controlled so high doses are not added. (The range of effective water fluoridation is between 7 and 12 parts per million.)

The method of adding fluoride to water supplies is determined by water supply and distribution systems. It is easier to add fluoride to water in treatment plants that serve piped water distribution systems. This method

is used in the Yellowknife, Inuvik, Iqaluit and Fort Smith water treatment plants.

It is more difficult to safely fluoridate community water supplies in communities served by trucked water distribution systems. Safe and properly controlled fluoridation is possible only where reservoirs designed for year round storage are used. Skilled personnel can add fluoride while the reservoir is being filled.

Water fluoridation generally is not recommended in communities with small water storage facilities or communities with no storage facilities as proper mixing and dilution of the fluoride may not be consistently achieved.

Fluorides have the effect of rendering the teeth less soluble (but not insoluble) in the acids derived from the action of certain oral bacteria on sugar. Teeth which have been completely formed under the influence of an adequate amount of fluoride are much more resistant to the initiation of dental decay and to its rate of progress.

Other alternatives

To be effective against dental decay, fluoride must be provided on a daily basis over the entire period of tooth formation - from birth to about age 14.

Fluoride added to milk has produced modest reductions in tooth decay. However, its effectiveness is limited because.

- there are wide variations in the amount of milk people drink
- some families may not be able to afford a lot of milk
- teenagers often do not drink much milk

Fluoride tablets and drops are effective when used on a daily basis for the first 14 or more years of life. However, when such programs have been instituted in Canada and the United States, users tended to "get lazy" after a year or two and stop taking the tablets or drops.

Fluoride treatment of teeth by a dental health worker, and the daily use of fluoride toothpaste or mouthwash combined with proper brushing and flossing are recommended for individuals who live in communities which do not have fluoridated water supplies.

For more information on fluorides and fluoridated water systems, contact:

Community Works and Capital Planning
Municipal and Community Affairs
Government of the Northwest Territories
Yellowknife, N W T
X 1 A 2L9
Telephone (403) 873-7644

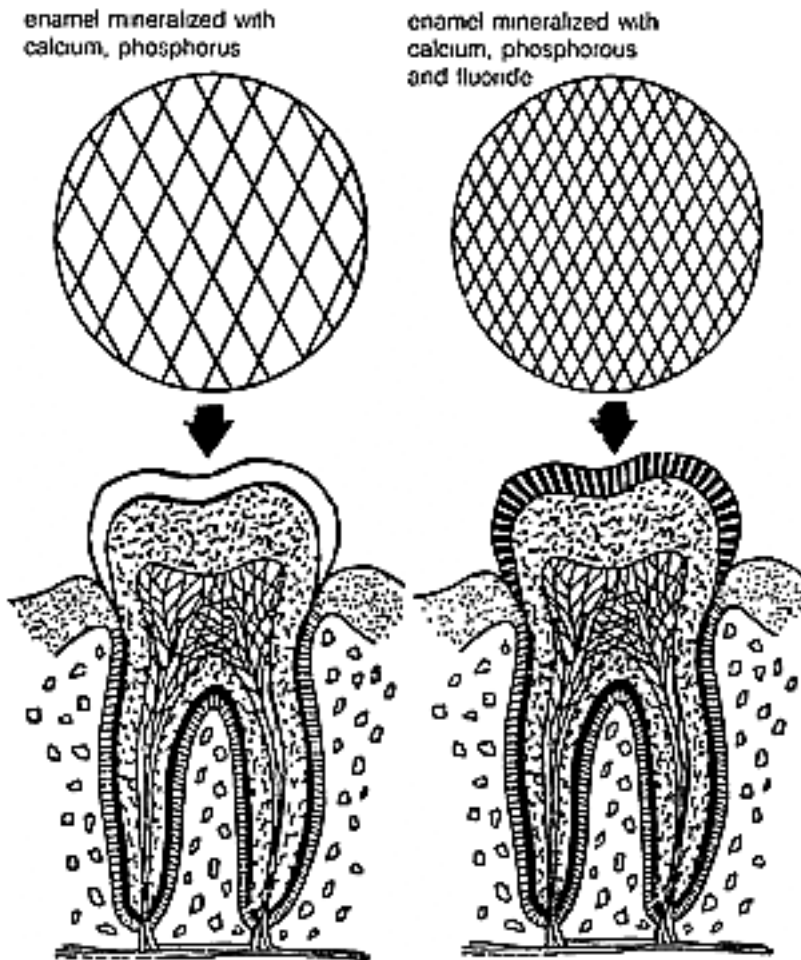
Fluorides in the form of water fluoridation, a good diet with sugar consumption kept to a minimum, especially for between-meal snacks, brushing and flossing thoroughly each day and brushing after meals if possible (fluoride toothpaste) will prevent most dental decay and gum disease. These four preventive measures constitute a dental health program that can be carried out by the individual at a very low cost. Prevention of dental disease is relatively inexpensive but neglect is costly.

Reprinted from 'Water Fluoridation in the Northwest Territories', N. W. T. Municipal and Corporate Affairs, May 1988, and Fact Favour Fluoridation, Canadian Dental Association, 1979.

ROLES OF FLUORIDES

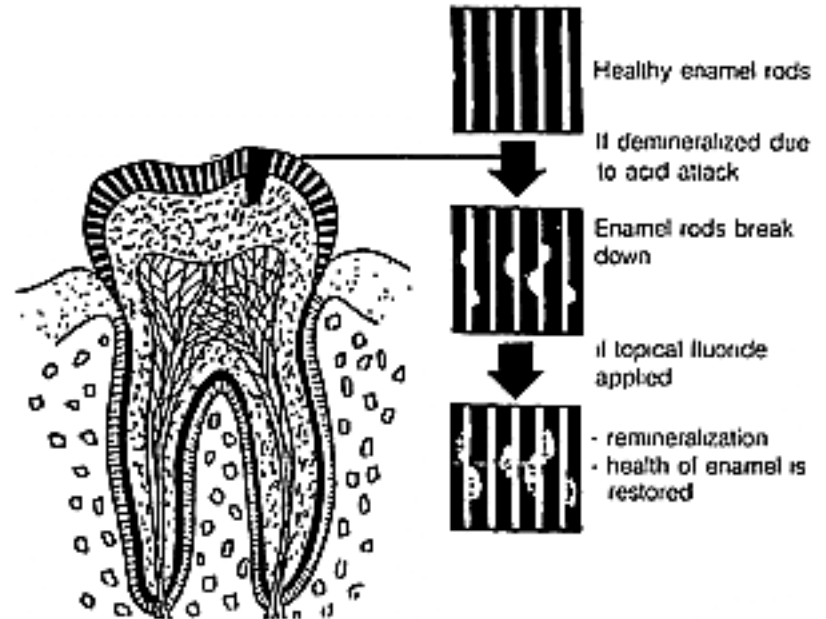
Systemic Fluoride

- ingested fluoride is deposited into developing teeth
- makes the enamel and dentin crystals harder and more densely packed
- leads to more decay resistant tissue
- most beneficial means of preventing tooth decay



Topical Fluoride

- applied fluoride provides benefits to the surface layer of enamel
- strengthens enamel rods (remineralization)



FLUORIDE PRODUCTS

There are many ways to ensure adequate levels of fluoride necessary to strengthen teeth and "fight cavities" Products containing fluoride are approved by the Canadian Dental Association and bear the C.D.A. Seal.

Systemic Fluoride Treatments

- drinking fluoridated water
- fluoride tablets (e.g. Peditabs)
- fluoride drops (e.g. Pedidrops)
- baby vitamins with fluoride (e.g. Fluor-vi-sol)

Residents of communities with fluoridated drinking water do not need other systemic fluoride treatments.

Topical Fluoride Treatments

- a) professional treatments by a dental health worker
- b) self treatments
 - fluoride rinses (e.g. Fluorinse by Oral B)
 - mouthwashes with fluoride (e.g. Listermint)
 - fluoride gels

DENTAL HYGIENE AIDS

There are many products designed to clean the surfaces of the teeth as well as the area between the teeth and under the gum lines In addition to the toothbrush these include

Dental floss

- unwaxed
- waxed
- flavoured

Dental tape

- used to clean spaces between widely spaced teeth

Super floss

- a special floss designed to clean under bridgework

Stimudents

- an interdental cleaner, similar to a toothpick

Proxabrush

- a small brush used to clean between widely spaced teeth

Water pik

- an irrigation device which can remove debris from around the teeth, gums, braces and other dental appliances

Most dental health products other than a soft bristle toothbrush, fluoridated toothpaste and dental floss, should only be used following recommendation and instruction from a dental health professional

EFFECTS OF TOBACCO

The tar in tobacco stains the teeth with an unattractive dark brown to black stain Meticulous cleaning will help to keep accumulations to a minimum Nevertheless, it may be necessary to have the stains removed regularly at a dental office A distinctive unpleasant mouth odour and taste develop with heavy smoking

The use of tobacco also causes a reduction in the sense of taste.

Prevention of Cancer of the Mouth

Tumours and other growths occur in both the soft and hard parts of the mouth more frequently than is generally recognized Not all of them are malignant, many of them are benign Nevertheless, these conditions should be of concern until diagnosed otherwise

Cancer of the mouth and pharynx (back of the throat) accounted for 591 of the 21,008 male cancer deaths in 1978 Among females 206 of the 16,490 cancer deaths were caused by cancer of the mouth and pharynx The higher male risk is obvious

Dentists and other dental health workers look for tumours and growths when they are examining the mouth. Other conditions in the head and neck region may also be found during the dental examination. Early detection of such abnormalities can save lives.

Although cancer is more frequent in those of mature years, no age group is immune. Cancer occurs in many forms in the mouth, with differing degrees of malignancy. The lips, mainly the lower lip, the tongue, gums, cheeks and bones of both upper and lower jaws may all develop cancerous growths.

Pain is not usually an early symptom. The following abnormalities of either the soft or the hard parts of the mouth should be examined by a dentist or physician at once.

- any swelling or hardness, however small, recently found, which is increasing in size.
- any sore spot, roughening or whitish discolourization which does not heal within two weeks.

It is better to take steps to prevent cancer from occurring than to rely on discovery and treatment after it appears. Probably the most important lesson about mouth cancer that young people can learn is that persons who drink heavily or smoke are at a greater risk of acquiring the condition. It appears also that smoking and alcohol use interact. The risk of mouth cancer among persons who both drink and smoke is greater than can be attributed to the independent effects of smoking and alcohol use. A similar relationship between smoking and drinking alcohol is found for cancers of the larynx (voice-box) and esophagus (gullet). It seems, therefore, that all tissues lining the upper respiratory and digestive systems, which can be most readily exposed to tobacco and alcohol, are susceptible to their effects.

Pipe, cigar and cigarette smoking are of similar importance in the development of cancers of these tissues. This is somewhat different from the situation for the lungs where cigarette smoking is a greater risk than pipe and cigar smoking. Use of chewing tobacco has also been found to be associated with mouth cancer. As would be expected, the risk of developing mouth cancer increases with the amount used.

Chronic irritation due to dental neglect, resulting in badly decayed, broken-down teeth and in open root abscesses and infections of the gums, may also be important.

Periodic dental examinations and regular dental care will reduce the risk of oral cancer by eliminating or reducing sources of chronic irritations of the mouth tissues. In addition to the possible saving of lives, the early treatment of tumours of either soft or hard parts of the mouth will reduce the possibility of disfigurement.

The potential for preventing mouth and other cancers is of paramount importance. The most effective preventive method is the avoidance of tobacco products, including second hand smoke.

DENTAL HEALTH WORKERS

Dental Assistant

The Dental Assistant aids the Dentist in providing care for the patient.

Duties of the Dental Assistant vary with the dental practice and may include:

- preparing the patients for dental treatment, - taking x-rays;
- assisting the Dentist at chairside;
- simple cleaning of teeth in small children;
- clerical and receptionist duties, such as making appointments for patients, filing charts, etc.

Location

Most Dentists in practice employ a Dental Assistant.

Education

There are two programs offered at some community colleges: (Both suggest grade 12 education.)

1. One year program at the college
2. 18 month Independent Correspondence Course for those having experience as a Dental Assistant .

Dental Assistants may be trained to a dental office but must sit examinations to be registered. Registration is not compulsory in most provinces and territories but is a great asset.

Dental Hygienist

The Dental Hygienist is primarily concerned with prevention of dental problems through education. The Hygienist's duties include:

- examining and charting the condition of mouth and teeth;
- taking x-rays of teeth;
- cleaning teeth;
- applying materials to teeth to prevent cavities;
- teaching adults and children how to take care of teeth and the importance of eating healthy food.

Location

In the north, the Dental Hygienist works in Dentists' offices. In some areas the Hygienist works for health centres or hospitals.

Education

Grade 12, Senior Matriculation with chemistry. Two year course at a university leading to a diploma in Dental Hygiene. Certain community/ vocational colleges offer programs in Dental Hygiene.

Dental Therapist

Dental Therapy, an exciting new career, provides dental care to those living in remote areas of Canada, particularly in the Canadian North, and native people on reserves. Dental therapists follow treatment prescribed by a supervisor dentist who visits the therapist regularly. The dentist examines patients and writes treatment plans which outline the specific work procedures to be completed after the dentist has gone.

This work includes:

- giving local anaesthetics;
- preparing teeth for and placing routine fillings in teeth;
- performing uncomplicated extractions of deciduous (baby) and permanent teeth;
- scaling (cleaning) teeth;
- taking and developing x-rays;

- conducting preventive dental health programs which include
 - supervised brushing,
 - topical fluoride application,
 - classroom teaching

Location

Dental therapists are employed by the Regional Health Boards of the N.W.T. to work in communities in the Northwest Territories. The work usually involves travel to many communities on a regular basis.

Education

Grade 12 with biology, or mature students who can demonstrate equivalent training may also be considered. Reading comprehension, writing and speaking skills are important. Two year Dental Therapy course at the School of Dental Therapy.

Dentist

The primary concern of the Dentist is to help people keep healthy teeth. They do this through treating problems of the teeth and mouth, and emphasizing prevention of dental problems. A healthy mouth and teeth are essential factors in achieving good general health.

Some of the duties of the Dentist include:

- filling, cleaning, extracting and replacing teeth,
- treatment of the gums and roots of the teeth,
- surgery of the mouth,
- straightening teeth,
- care of children's teeth;
- promoting dental health through education

Location

In the north, Dentists work in private practice or work for the Government travelling to certain parts of the N.W.T.

Education

Senior Matriculation with B standing or better. Several years university study with specific science courses such as chemistry, physics and biology. Four year university program to obtain the Doctor of Dental Surgery or Doctor of Dental Medicine.

COMMON PROBLEM CONDITIONS OF TEETH AND MOUTH OF CHILDREN AND YOUTH

Problem	Signals	Causes	Consequences	Treatment	Prevention
dental decay	<ul style="list-style-type: none"> - plaque build up - brown spots in grooves on surfaces or between teeth - bad breath - bad taste - some pain when hot, cold, sweet substances are eaten 	<ul style="list-style-type: none"> - improper brushing and flossing - lack of brushing and flossing - frequent eating of sweet sticky foods - dental neglect 	<p style="text-align: center;">plaque + sugar = acid tooth = tooth decay</p>	<ul style="list-style-type: none"> - drilling to remove disease - filling - crowns - root canal 	<ul style="list-style-type: none"> - fluorides - proper daily brushing and flossing - plaque control - careful selection of foods - sealants - health education - regular dental check-ups
gum disease -gingivitis, periodontitis	<ul style="list-style-type: none"> - soft, swollen, tender gums when brushed or flossed - loose permanent teeth - persistent bad breath or taste in mouth - a feeling of pressure between teeth after eating - gums shrink from teeth 	<ul style="list-style-type: none"> - bacteria in plaque irritates gums - plaque hardens and irritates gums - infection 	<ul style="list-style-type: none"> - bleeding gums - pockets of pus between gums and tooth - gums, ligaments, bones that support tooth are damaged - teeth loosen and fall out 	<ul style="list-style-type: none"> - removal of plaque and calculus - treatment of infection - Surgical removal of tooth 	<ul style="list-style-type: none"> - plaque control - proper daily brushing and flossing - health education - regular dental checkups
orthodontal	<ul style="list-style-type: none"> - crooked or poorly aligned permanent teeth - grinding of teeth - improper spacing of teeth 	<ul style="list-style-type: none"> - premature loss of primary teeth - late loss of primary teeth - thumb sucking beyond 5 years 	<ul style="list-style-type: none"> - plaque control problems - appearance problems - biting, chewing, speaking problems - grinding of teeth 	<ul style="list-style-type: none"> - space maintainers - exercises or appliances to move teeth to correct locations - prevention of thumb sucking 	<ul style="list-style-type: none"> - regular dental check-ups - health education

Problem	Signals	Causes	Consequences	Treatment	Prevention
		<ul style="list-style-type: none"> - teeth too large or too small for jaw - cleft palate 	<ul style="list-style-type: none"> - uneven wear of teeth - periodontal disease 	<ul style="list-style-type: none"> - prevention of grinding of teeth 	
nursing bottle mouth	<ul style="list-style-type: none"> - new teeth are decayed 	<ul style="list-style-type: none"> - frequent exposure of a child's teeth for long periods of time to liquids containing sugars e.g., milk, formula, fruit juice, pop, sweetened water or tea - usually caused when baby is allowed to sleep with the bottle in the mouth - teeth are bathed in liquid. 	<ul style="list-style-type: none"> - bacteria + sugar = acid - acid + tooth = decay 	<ul style="list-style-type: none"> - fillings - tooth removal - caps 	<ul style="list-style-type: none"> - teach parents/ caregivers proper feeding techniques - babies should not be put down to sleep with a bottle, or bottle should contain only water - give bottle when baby is awake in a sitting position to stimulate natural swallowing and tongue positioning - don't let baby or young child fall asleep with sweet liquids in mouth - don't "prop" bottle

DENTAL EMERGENCY PROCEDURES

Knocked-out Tooth

Rinse the tooth. Do not scrub. Place the tooth in a glass of water or milk, or wrap in a wet towel or cloth. Go to the dental health worker immediately with the tooth.



Bitten Tongue or Lip

Apply direct pressure to bleeding area with a clean cloth. If swelling occurs, apply cold compresses. If bleeding persists, go to the hospital or nursing station.



Possible Fractured Jaw

Immobilize the jaw using a handkerchief, scarf or towel. If swelling persists, apply a cold compress. Call the dental health worker immediately and go to the hospital or nursing station.



Broken Tooth

Gently rinse the area with warm water. If swelling occurs, place cool compresses on outside of cheek. Go to the dental health worker immediately.



Orthodontic Problems

If a wire is causing irritation, cover the end of the wire with wax or cotton. Go to the dental health worker immediately. If a wire is embedded in the cheek, tongue or gums, do not attempt to remove. Go to the dental health worker immediately. If an appliance becomes loose or breaks, take the appliance to the dental health worker immediately.



Toothache

Remove any debris around tooth by rinsing with warm water and flossing on either side of the tooth. If swelling is present, place cool compresses on the outside of the cheek. Do not use heat. See the dental health worker as soon as possible.



Object Wedged Between Teeth

Try to remove objects with dental floss. Do not snap the floss in between the teeth. If flossing does not remove the object, go to the dental health worker. Do not try to remove the object with sharp or pointed instruments.



Adapted from: Health Education, Dental Health Teaching Supports, Grade 5, Manitoba Education, 1986.