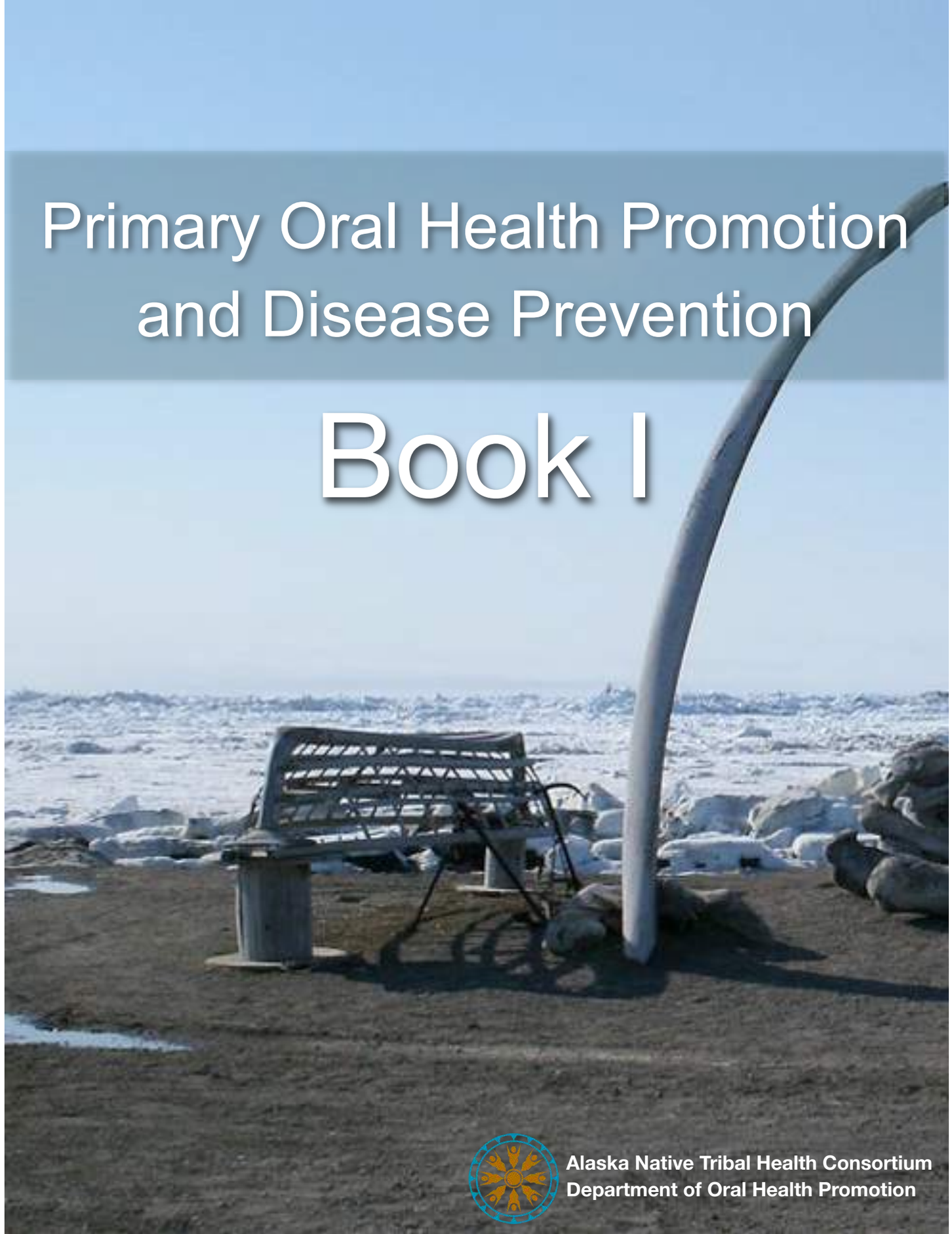
Primary Oral Health Promotion and Disease Prevention

Book I



Alaska Native Tribal Health Consortium
Department of Oral Health Promotion

Preface Version 1.0

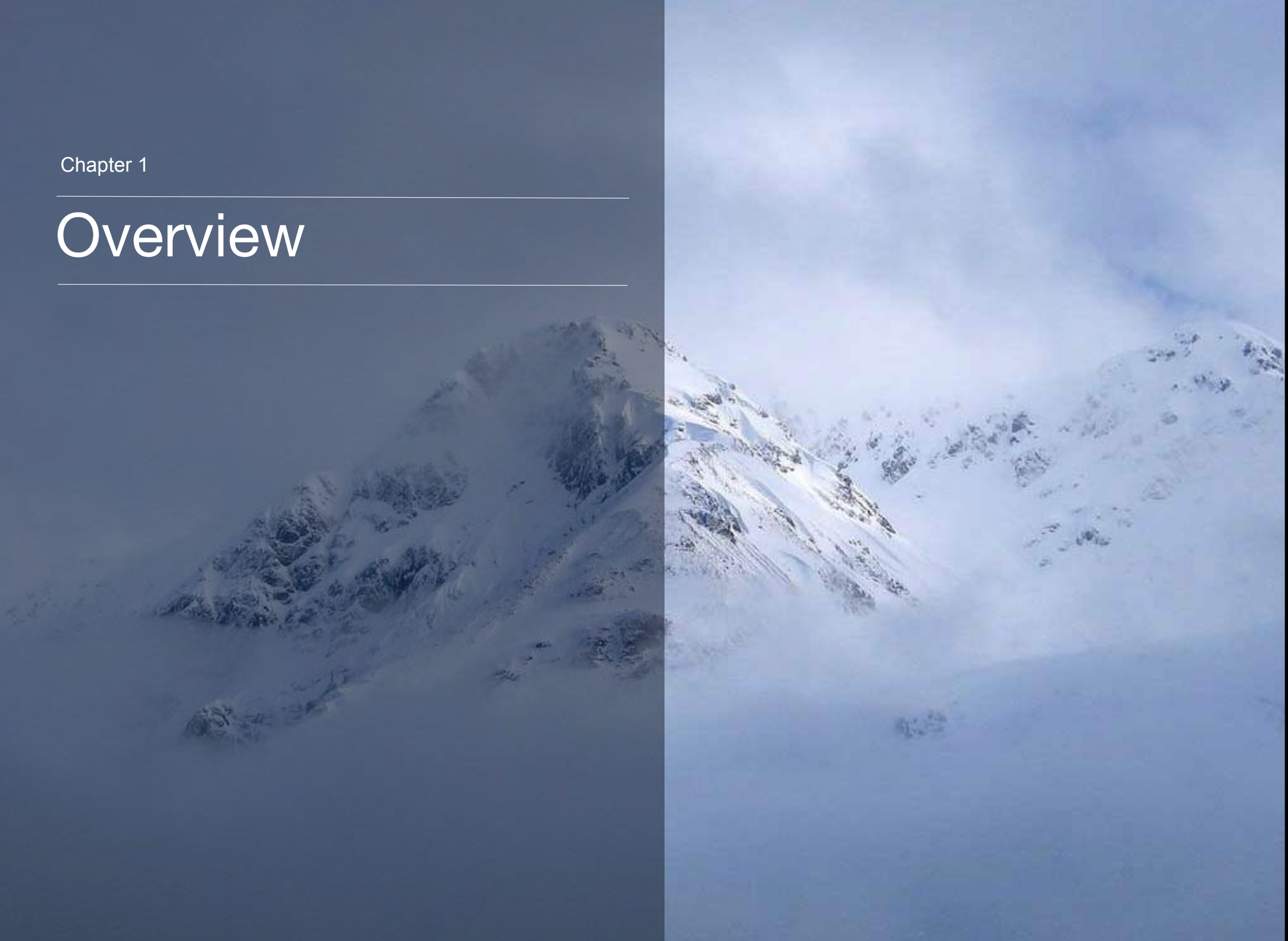
Primary Oral Health Promotion and Disease Prevention I

To prepare the Alaska Dental Health Aide to promote oral health and prevent dental disease, the following topics are included in Part I:

- Overview
- Introduction to Periodontal Disease
- Introduction to Caries Disease Process
- Fluoride

Chapter 1

Overview



Overview

Oral Health Promotion and Disease

Notes

Learning Objectives

- Describe the relationship of oral health to general health
- Identify two main oral diseases
- Describe the process and prevention of periodontal disease
- Describe the process and prevention of dental caries

The major message of the Oral Health in America: A Report of the Surgeon General is that oral health means much more than healthy teeth. Oral health is important to general health and well being at every stage of life. A healthy mouth provides nutrition of the physical body, enhances social interaction, and promotes self-esteem and positive feelings.

Overview

Notes

The mouth serves as a “window” to the rest of the body, providing signals of general health disorders:

- Mouth lesions may be the first signs of HIV infection.
- Aphthous ulcers are occasionally a manifestation of Crohn’s disease.
- Pale and bleeding gums can be a sign for blood disorders.
- Bone loss in the lower jaw can be an early indicator of skeletal osteoporosis.
- Changes in tooth appearance can indicate bulimia or anorexia.
- Systemic conditions and their treatment are also known to impact on oral health resulting in reduced saliva flow.

Overview

Notes

Additionally, oral conditions have an impact on overall health and disease. Bacteria from the mouth can cause infection in other parts of the body when the immune system has been compromised by disease or medical treatments. Periodontal disease can increase blood sugar, contributing to increased periods of time when the body functions with a high blood sugar. This puts people with diabetes at increased risk for diabetic complications.

The two main diseases that affect oral health include:

- Periodontal disease - inflammatory responses to plaque resulting in damage to gingival tissues and bone that surround and anchor teeth.
- Dental caries - bacterial processes that demineralize tooth surfaces resulting in a breakdown of the enamel.

Periodontal Disease Overview

Notes

Periodontal Disease

Periodontal or gum disease is an inflammatory condition of the gum and bone support surrounding the teeth. The two most common periodontal diseases are:

- Gingivitis – redness, swelling and bleeding gums.
- Periodontitis – gingivitis plus the formation of pockets (spaces between teeth and gums) affecting the bone and tissues of the teeth.

Periodontal Disease Overview

Notes

Prevention of Periodontal Disease

Plaque control is the most important method of limiting periodontal disease and maintaining gingival health. Oral hygiene skills should be taught to individuals of all ages. Regular dental cleanings and recommending the use of antiplaque toothpaste and antimicrobial mouth rinse are also beneficial.

Caries Overview

Notes

Dental Caries

Dental caries (tooth decay) is a major oral health problem in most industrialized countries, affecting 60–90% of schoolchildren and the vast majority of adults.An early sign of the caries process is demineralization. The destruction spreads, forms a cavity, and the tooth is progressively destroyed. Caries can also attack the roots of teeth if they become exposed by gum recession. This is more common in older adults.

Dental caries is caused by the action of acids on the enamel. The acid is produced when sugars in foods or drinks react with bacteria present in the dental plaque on the tooth surface. The acid produced leads to a loss of calcium and phosphate from the enamel. This process is called demineralization. Saliva acts to dilute and neutralize the acid, which causes demineralization. It is an important natural defense against caries. Additionally, saliva provides minerals to remineralize and “heal” the enamel once the acids have been neutralized. The enamel demineralizes and remineralizes many times during the course of a day. It is when this balance is upset and demineralization exceeds remineralization that caries progress. Cavities, even in children who do not yet have their permanent teeth, can have serious and lasting complications such as pain, tooth abscess, tooth loss, broken teeth, chewing problems and serious infection.

Caries Overview

Notes

Prevention of Dental Caries

When developing a strategy for the control of dental caries for an individual patient or for a community, it is strongly recommended that a *combination* of these preventive measures be implemented:

- Use of fluoride
- Reduce frequent consumption of sugar
- Pit and fissure sealants

Caries Overview

Fluorides

Notes

Fluoride works mainly by strengthening teeth and slowing down the process of demineralization when the enamel is exposed to acid following ingestion of food and drinks that contain sugars. It also helps to “heal” (remineralize) surfaces that show early signs of calcium or phosphate loss. Most benefit is obtained if a low level of fluoride is constantly maintained in the mouth throughout the day. This can happen if individuals drink water that is fluoridated, and use fluoride toothpaste. Additionally, professional application of fluoride varnish and gel/foam give added protection.

Caries Overview

Notes

Reduce Frequent Consumption of Sugars

There is overwhelming evidence that frequent consumption of sugars is associated with caries. Dietary counseling should be aimed at limiting the frequency of sugar intake. Foods and drinks containing sugars that have been added should be identified, and the frequency of their intake, especially between meals, reduced. The intake of sugar between meals increases the periods of time the plaque pH dips below the critical level of 5.7 (when demineralization occurs). Subjecting teeth to frequent bouts of demineralization allows less time for remineralization. Teeth become more susceptible to decay.

Caries Overview

Notes

Pit and Fissure Sealants

Among children, tooth decay occurs most commonly on the pit and fissure surfaces of back teeth. Pit and fissure sealants create a barrier preventing the access of plaque and acids to the enamel surface. Pit and fissure sealants are a safe and effective way to prevent dental caries. Pit and fissure sealants should be applied as soon as the teeth are sufficiently erupted to allow sealing.

Caries Overview

Notes

Resources

US Department of Health and Human Services. Oral Health in America: A Report of the Surgeon General-- Executive Summary, Rockville, MD: US Department of Health and Human Services, National Institute of Dental and Craniofacial Research, National Institutes of Health, 2000.

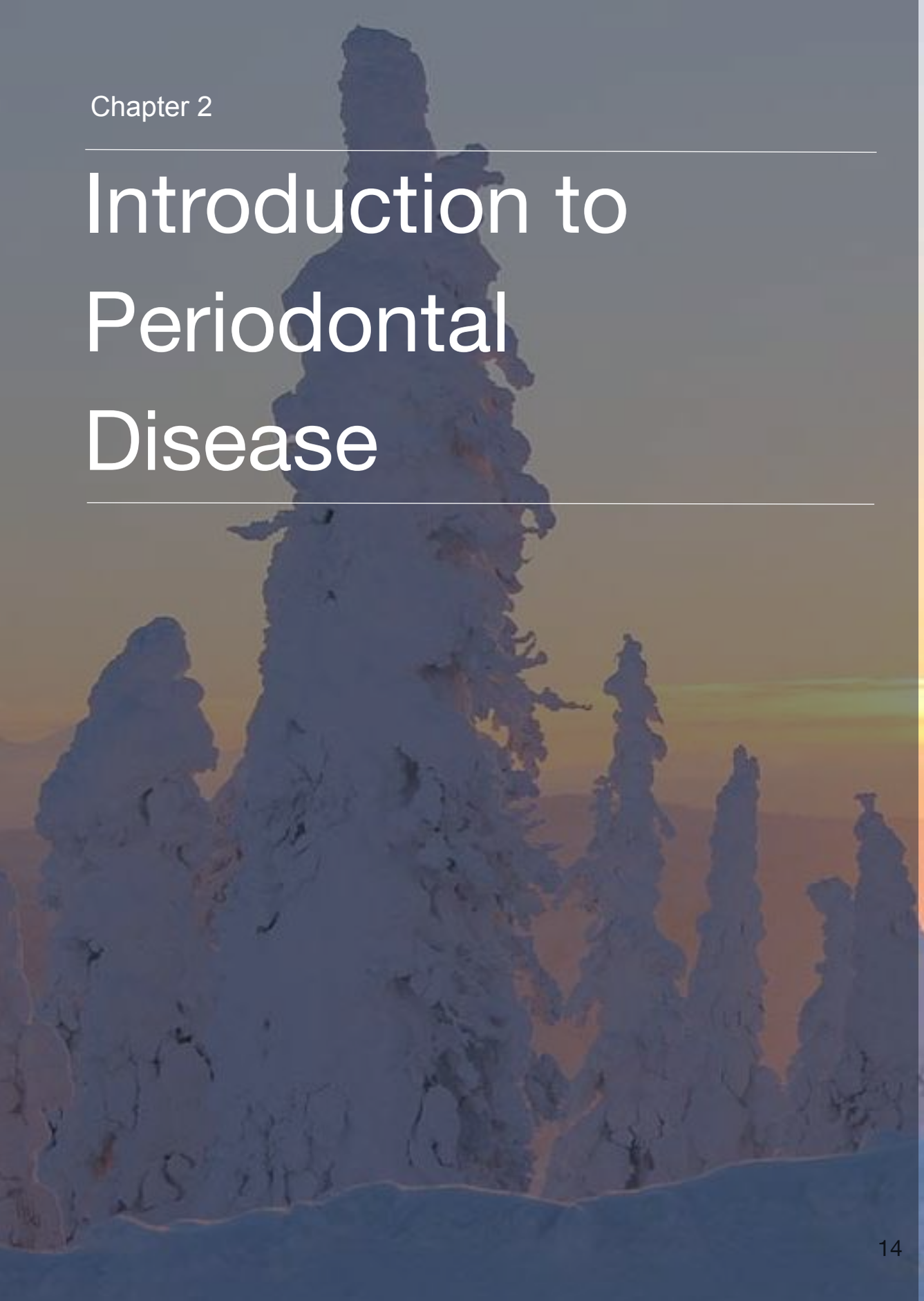
Alaska Native Tribal Health Consortium/University of Kentucky College of Dentistry, Primary Dental Health Aide Training Manuals and PowerPoint Presentations.

Bird, Doni L. and Robinson, Debbie S. Modern Dental Assisting. 10th ed. St. Louis, Missouri: Elsevier; 2012.

G. Todd Smith, DDS, MSD, IHS Periodontal Consultant, Narrated PowerPoint Presentations.

Chapter 2

Introduction to Periodontal Disease

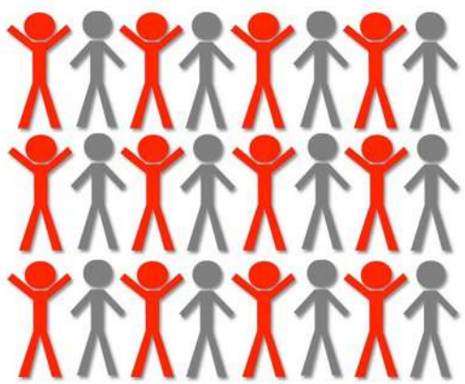


Periodontal Disease

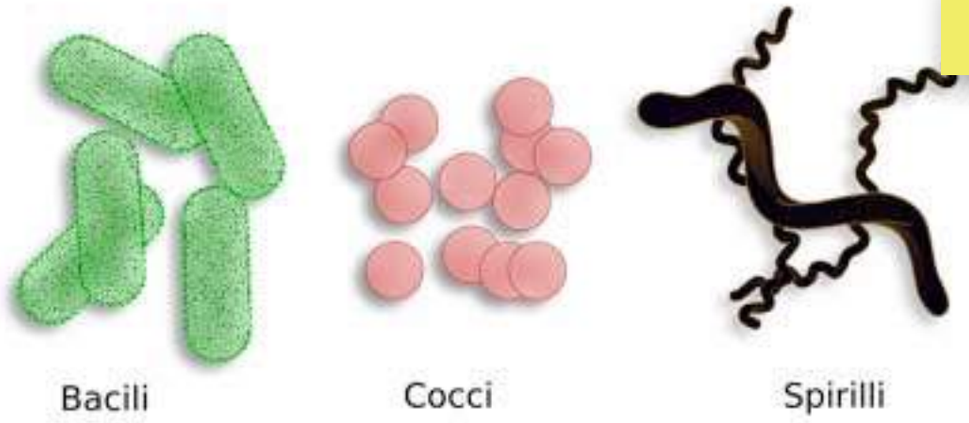
Notes

Prevalence

One out of every two American adults aged 30 and over has periodontal disease, according to recent findings from the Centers for Disease Control and Prevention (CDC). A study titled *Prevalence of Periodontitis in Adults in the United States: 2009 and 2010* estimates that 47.2 percent, or 64.7 million American adults, have mild, moderate or severe periodontitis, the more advanced form of periodontal disease. In adults 65 and older, prevalence rates increase to 70.1 percent.



The findings also indicate disparities among certain segments of the U.S. population. Periodontal disease is higher in men than women (56.4 percent vs. 38.4 percent). Current smokers (64.2 percent) had a much higher prevalence of severe periodontitis. This is consistent with the 2004 *Surgeon General's Report on the Health Consequences of Smoking,* which infers a causal relationship between smoking and periodontitis. Other segments with high prevalence rates include those living below the federal poverty level (65.4 percent), and those with less than a high school education (66.9 percent).



Causes

Bacteria in the mouth infect tissue surrounding the tooth, causing inflammation around the tooth leading to periodontal disease. When bacteria stay on the teeth long enough, they form a film called plaque, which eventually hardens to tartar, also called calculus. Tartar build-up can spread below the gum line, which makes the teeth harder to clean. Then, only a dental health professional can remove the tartar and stop the periodontal disease process.

Prevention and Treatment

According to the American Academy of Periodontology the best ways to prevent periodontal disease are to avoid smoking, maintain control of diabetes, have regular dental cleanings, and practice good oral hygiene.

Periodontal Disease

Terms to Know

Notes

Bulbous: swollen or bulging.

Calculus: mineralized plaque that provides a rough surface for sticky plaque to adhere.

Furcation: the notch or space exposed between the roots of multirooted teeth.

Gingival recession: as periodontal disease progresses, the gingiva may recede, leaving portions of the roots of teeth exposed below the cementoenamel junction (CEJ).

Gingivitis: a bacterial infection that is confined to the gingiva. It is reversible.

Mobility: movement

Periapical: the area surrounding the end of the tooth root.

Periodontal Disease

Notes

Periodontal: supporting and surrounding tissues around the tooth.

Periodontal disease: inflammatory process of the gingival tissues and/or periodontal membrane of the teeth, resulting in an abnormally deep gingival sulcus, possibly producing periodontal pockets and loss of supporting alveolar bone.

Periodontal pocket: indicates the presence of an abnormal depth of the gingival sulcus where the gingival tissue contacts the tooth. A normal sulcus measures 3mm or less.

Periodontitis: a bacterial infection, with inflammation of the periodontium including the gingiva, periodontal ligament, bone, and cementum. Loss of attachment and tissue is irreversible.

Periodontium: tissues comprising gingival, cementum, periodontal ligament, and alveolar bone that attaches, nourishes and supports the tooth.

Plaque: a soft sticky substance that accumulates on teeth composed largely of bacteria and bacterial by-products. Plaque is the primary cause of gingival inflammation and most other types of periodontal diseases.

Periodontal Disease

Notes

Prophylaxis: commonly referred to as prophy or cleaning. It is the technical term for the removal of plaque, calculus and stain from tooth structures. It is intended to control local irritant factors.

Recession: areas where the gingiva has moved away from the crown of a tooth.

Stippling or stippled: textured surface of gingiva similar to the surface of an orange.

Subgingival calculus: forms on root surfaces below the gingival margin and can extend into periodontal pockets.

Sulculus: the natural space found between the tooth and the gum tissue; sulcular refers to the sulcus.

Supragingival calculus: found above the margin of the gingiva.

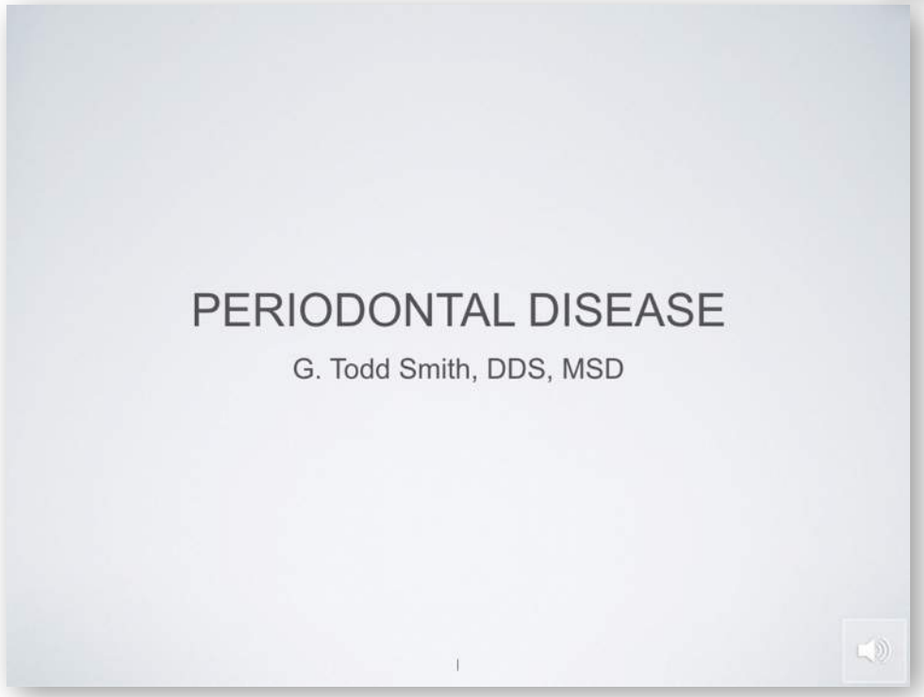
Periodontal Disease

Overview

- Periodontal diseases are mainly the results of infections and inflammation of the gums and bone that surround and support the teeth.
- In its early stage, called gingivitis, the gums can become swollen and red, and they may bleed.
- In its more serious form, called periodontitis, the gums can pull away from the tooth, bone can be lost, and the teeth may loosen or even fall out.

Notes

Presentation 2.1



Gingivitis

Healthy | Gingivitis | Periodontitis

Periodontal Disease Process

Notes

Review 2.1

Question 1 of 14
Which statement describes a healthy periodontium?

- **A.** Gingiva is stippled.
- **B.** Papillae are blunt.
- **C.** Gingiva bleeds on probing.

Periodontal Disease Process

Notes

Resources

US Department of Health and Human Services. Oral Health in America: A Report of the Surgeon General-- Executive Summary, Rockville, MD: US Department of Health and Human Services, National Institute of Dental and Craniofacial Research, National Institutes of Health, 2000.

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G. Todd Smith, DDS, MSD, IHS Periodontal Consultant, Narrated PowerPoint Presentations.

Chapter 3

Introduction to Caries Disease Process

Terms to Know

Terms to Know

Notes

Acid: substance that has a pH of less than 7.

Alkaline: substance that has a pH greater than 7.

Buffer: a solution that resists changes in pH.

Caries process: the dynamic process of demineralization and remineralization that can lead to cavitation (breakdown) of tooth structure.

Cavitated: breakdown of tooth structure.

Contagious: disease spread from one person or organism to another by direct or indirect contact.

Demineralization: when pH is lowered it weakens the tooth structure. First signs of demineralization are white spot lesions.

Dental caries: dental term for the tooth decay process.

Dental plaque: a biofilm consisting of bacteria and bacterial by-products.

Terms to Know

Notes

Infectious: the ability to spread infection from person to person.

Neutral: pH of 7.

Neutralize: make an acidic or alkaline substance chemically neutral.

Opaque: white, chalky area that indicates demineralization of the tooth structure.

Remineralization: the result of minerals in saliva buffering the acid, and strengthening the tooth. It can stop tooth destruction, and reverse demineralization.

White spot lesion: an area of demineralized tooth structure that looks chalky or opaque.

Terms to Know

Notes

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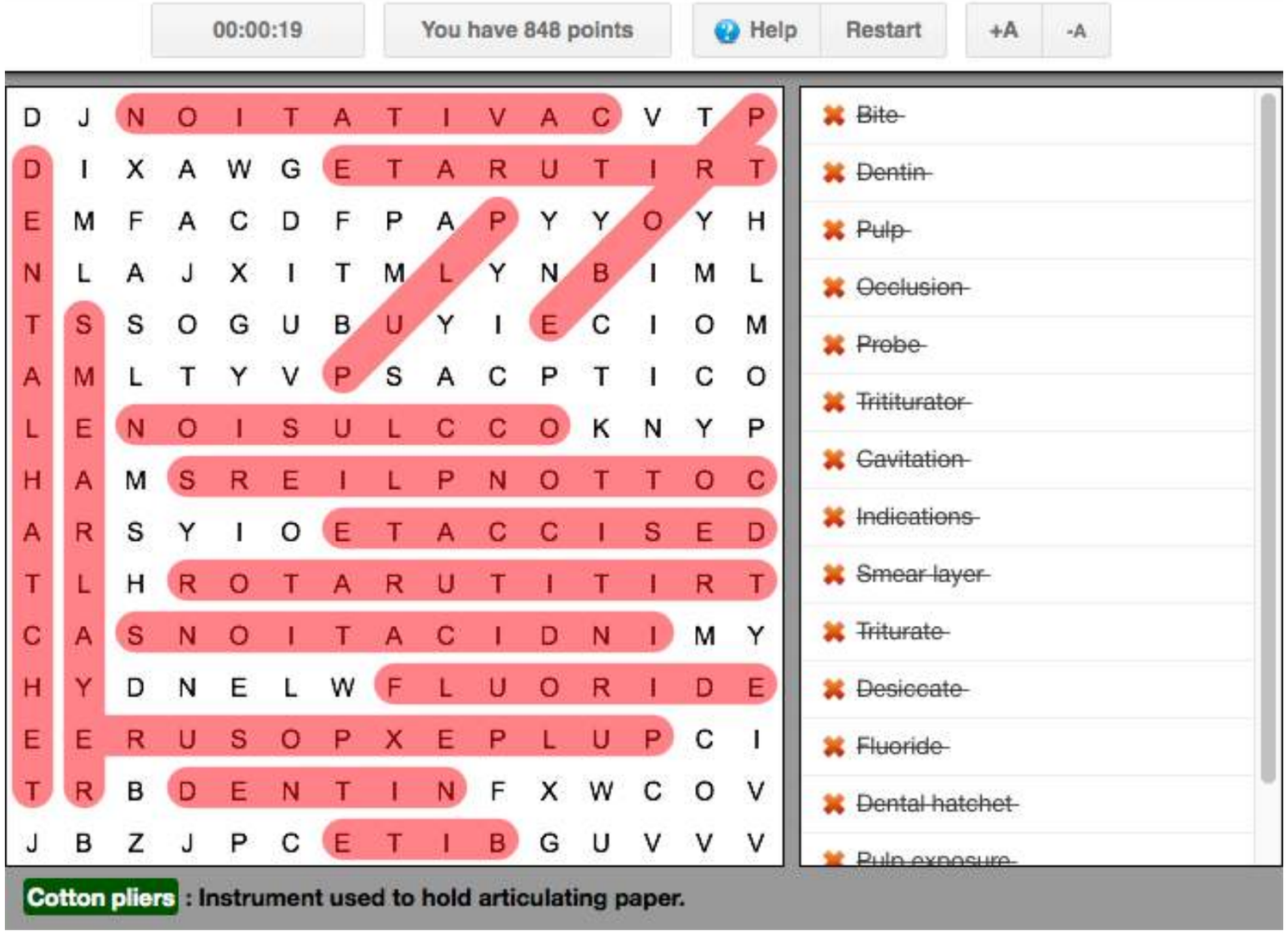


Caries Disease Process

Notes

Learning Objectives:

- Define dental caries
- Explain the dental caries process
- Discuss the demineralization and remineralization process
- Describe factors that contribute to demineralization of tooth enamel
- Describe factors that contribute to remineralization of tooth enamel

Definition of Caries

Dental caries is the scientific term for tooth decay or cavities. It is caused by specific types of bacteria. They produce acid that destroys the tooth's enamel and the layer under it, the dentin.

Dental caries is the dynamic process of demineralization and remineralization that can lead to cavitation

What happens during the caries process?

It is a complicated story.

Caries Disease Process

Notes

Healthy permanent tooth

Caries permanent teeth

Healthy primary tooth

Caries primary teeth

Caries Disease Process

Notes

Review 3.1

Question 1 of 4
Select the answer that best describes the teeth pictured.

- **A.** Healthy primary teeth
- **B.** Healthy permanent teeth
- **C.** Caries primary teeth
- **D.** Caries permanent teeth

Caries Disease Process

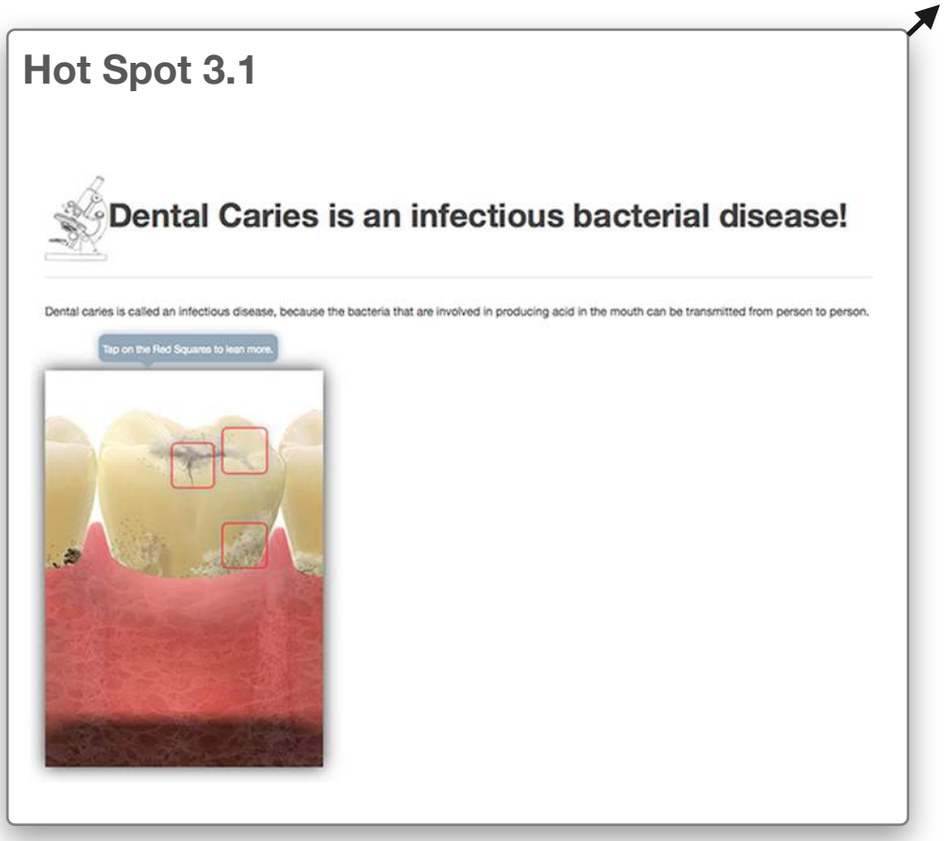
Notes

Dental Caries is an infectious disease.

While many different types of bacteria live in the mouth, Streptococcus mutans and lactobacillus are associated with dental caries.

These bacteria can be transmitted from person to person. Just like when strep throat is transmitted to another person.

For example, if a mom has Streptococcus mutans and lactobacillus in her mouth, and tastes or chews food before feeding it to her baby, she transmits the bacteria to her baby. If a dad has these bacteria in his mouth, and his child puts his fingers into his dad's mouth, and then into his own mouth, bacteria are transmitted. This can also happen when kids share food and beverages or even when teenagers kiss.

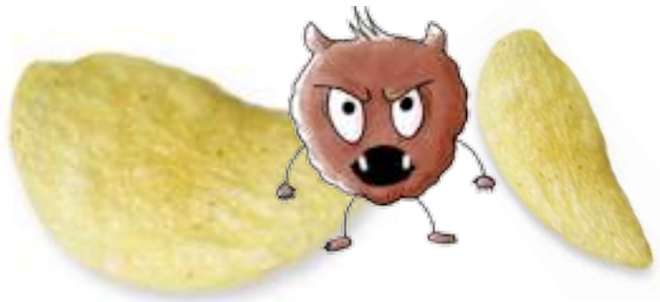


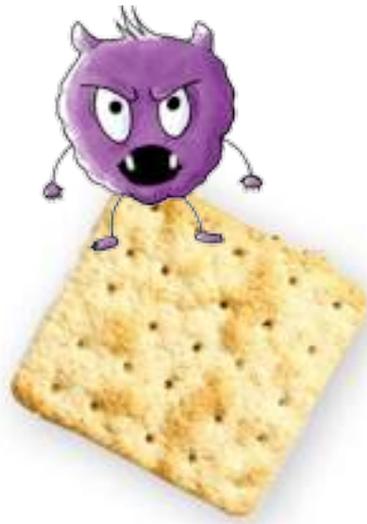
Caries Disease Process

Bacteria

Notes

Streptococcus mutans and lactobacillus are bacteria that live and multiple very quickly in dental plaque. They rely on sugar to live. They love chips, crackers, hard candy, lollipops, sticky candy like gummy bears. They also love drinks like soda pop, Tang, and Kool-Aid as well as coffee or tea with sugar. The bacteria use sugary foods and beverages to reduce the pH in the mouth, and produce acids that break down the tooth enamel.





Caries Disease Process

Notes

pH

Acid, Neutral, or Alkaline?

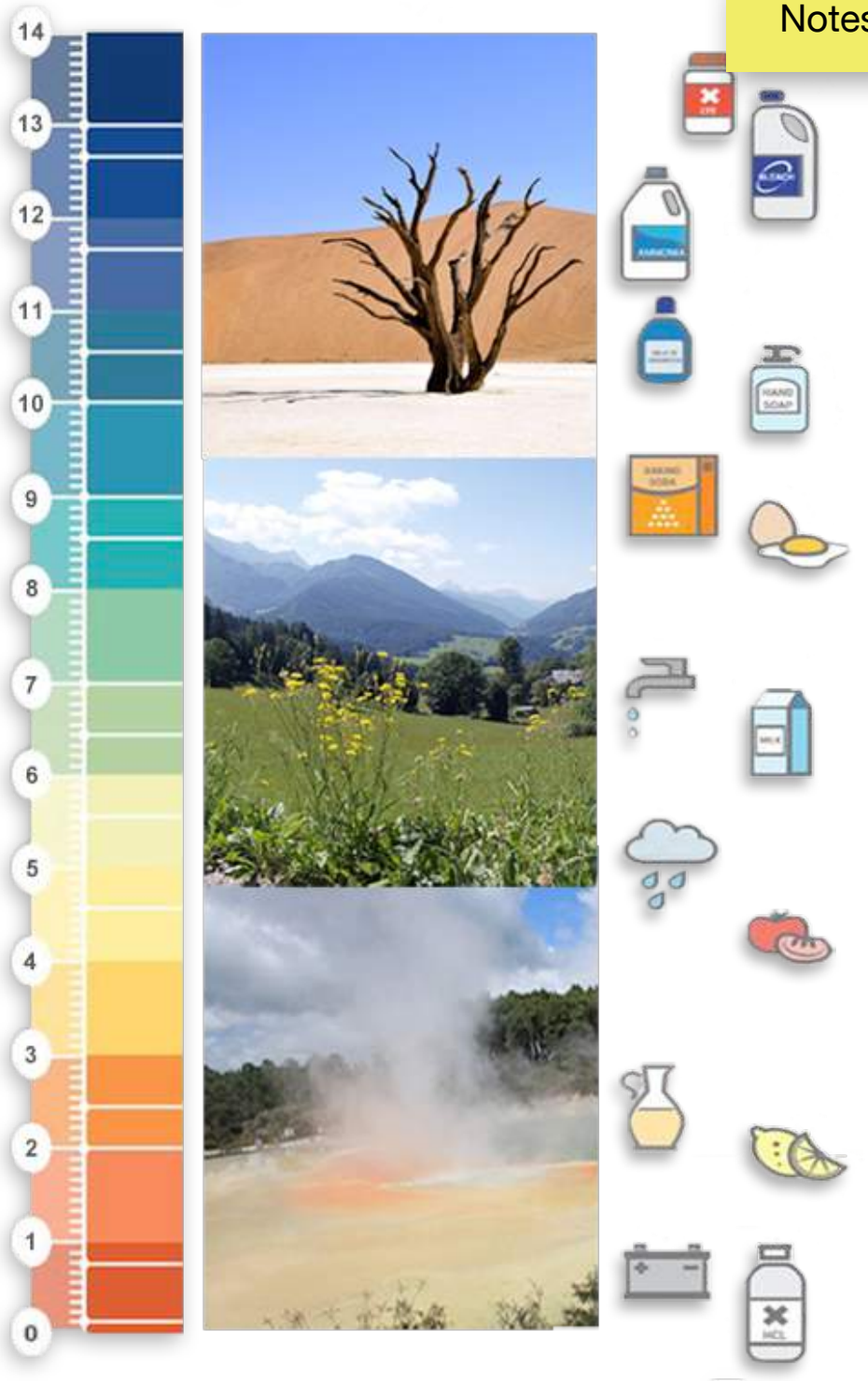
First some background information about pH. A pH scale measures whether a liquid is acidic or alkaline.

The measurements are from 0-14.

A pH below 7 is considered acidic, 7 is neutral, and above 7 is considered alkaline.

Saliva has a pH of 7 or more. The pH for the oral environment is usually between 6-7.

When the pH in the mouth dips below 5.5, acids can attack the teeth and enamel is at risk for demineralization.



Caries Disease Process

Measuring the pH of your mouth

Notes

Eating food or drinking beverages change the pH in the mouth.

Place test strip in your mouth as directed.

PH after eating.

PH after brushing.

Compare resulting color with the guide on the package to determine pH of mouth.

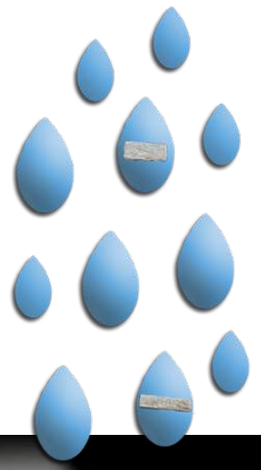
Caries Disease Process

If a tooth were made of bricks…

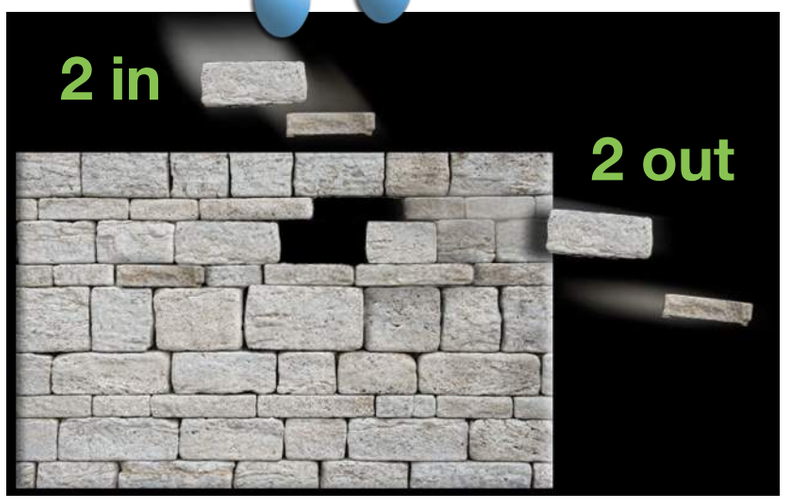
Notes

Imagine each brick is made out of calcium or phosphate. Acid lowers the pH, and removes bricks. Saliva can neutralize the acids and replace calcium and phosphate. If there is balance between the amount of bricks removed and replaced, a tooth is protected. If acid pulls out more bricks than saliva can replace, tooth structure is damaged.

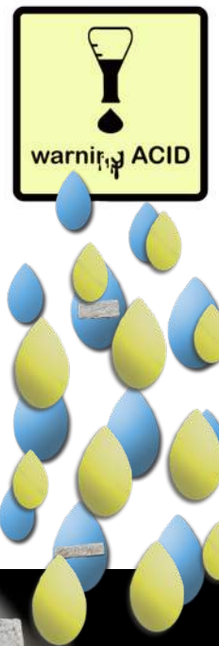
Saliva



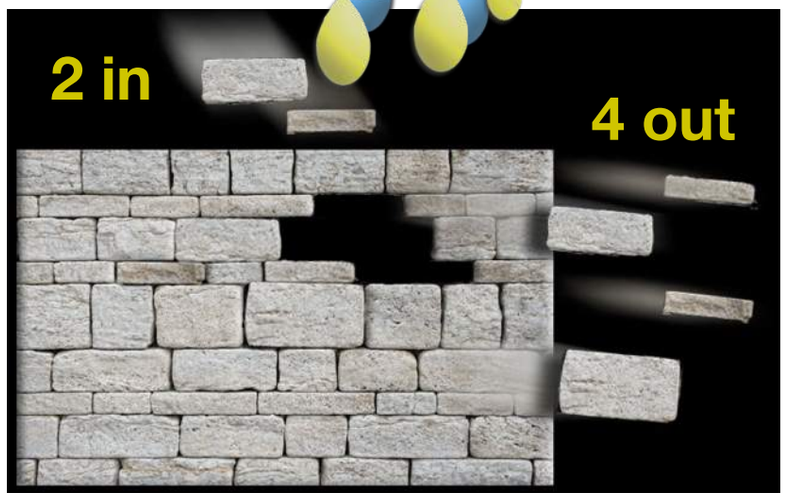
pH 7 to PH 5.6



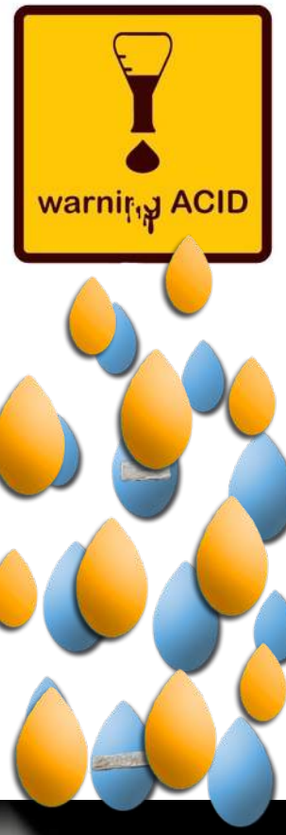
Weak Acid



pH 5.5



Strong Acid

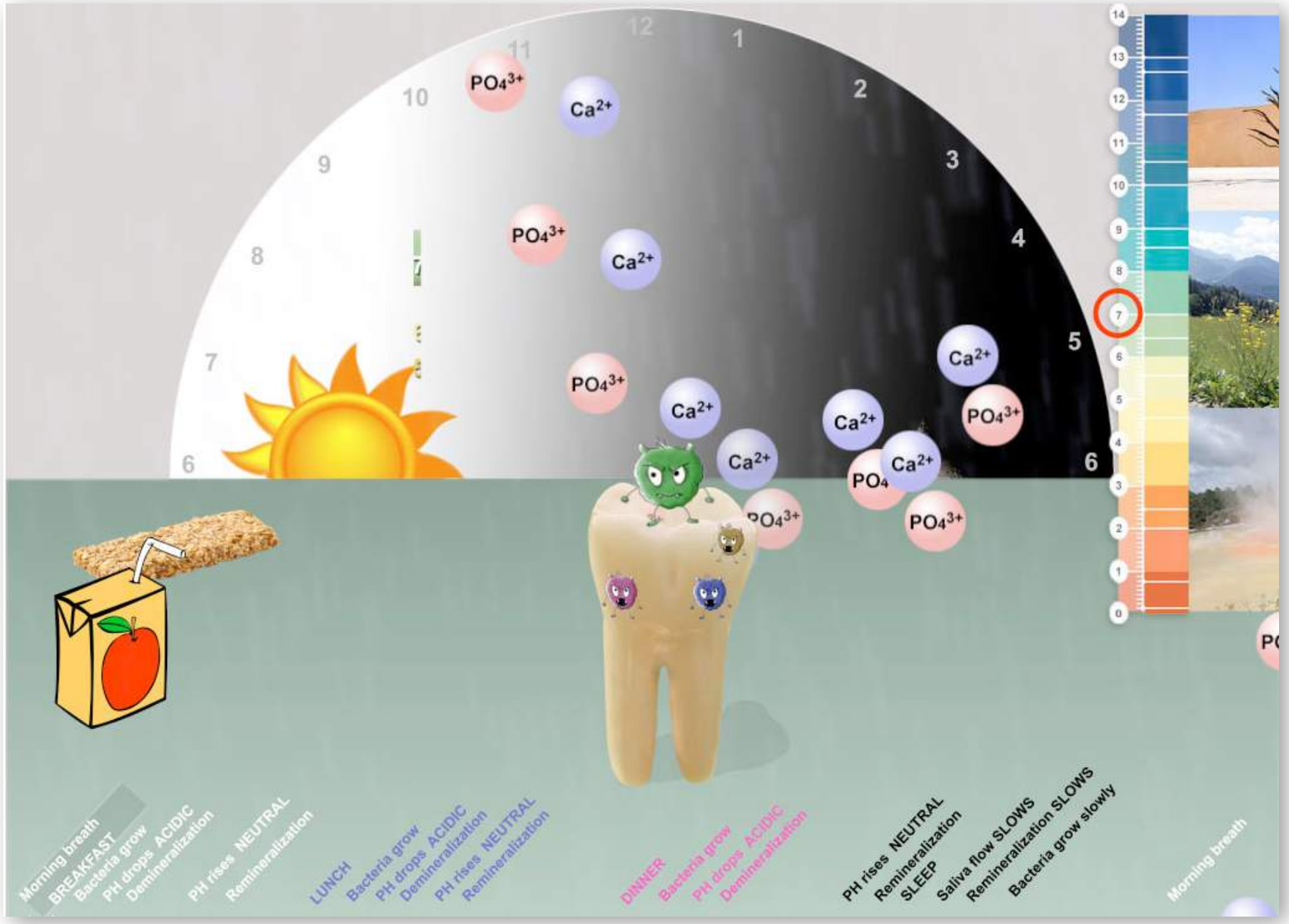


pH 4

Caries Disease Process

Notes

Hot Spot 3.2 Neutral pH Tap on the Red Squares and Circles to learn more.



Caries Disease Process

Demineralization - White Spot Lesions

Notes

As the bacteria eat sugary foods and drinks, they produce acids that dissolve tooth structure. This is called demineralization because minerals like calcium and phosphate are removed from the tooth enamel. The earliest sign of demineralization is a white spot lesion. This is an area of chalky, opaque enamel.

Eating food or drinking beverages change the pH in the mouth. When the pH in the mouth dips below 5.5, acids can attack the teeth and enamel is at risk for demineralization.

The alkaline properties of saliva allow it to neutralize the acid and raise the pH. It takes about 20-40 minutes for saliva to buffer the acid. During this time teeth are at risk.

The following factors contribute to demineralization of tooth enamel:

- Higher levels of bacterial plaque results in more acid production.
- Frequent eating and drinking allows more demineralization time.
- The shape and placement of the teeth can make it difficult to remove plaque.
- Poor oral hygiene increases plaque and sugar sticks longer to tooth surfaces.
- Decreased saliva increases the time enamel is exposed to acids.

Caries Disease Process

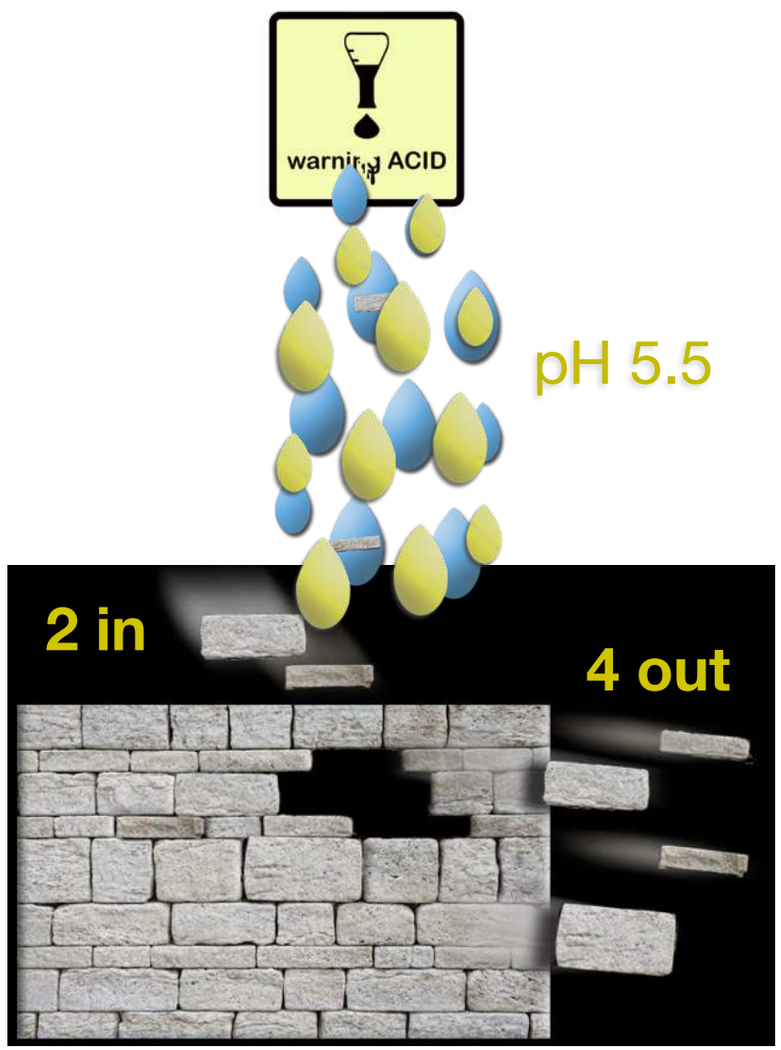
Notes

Acids demineralizes !

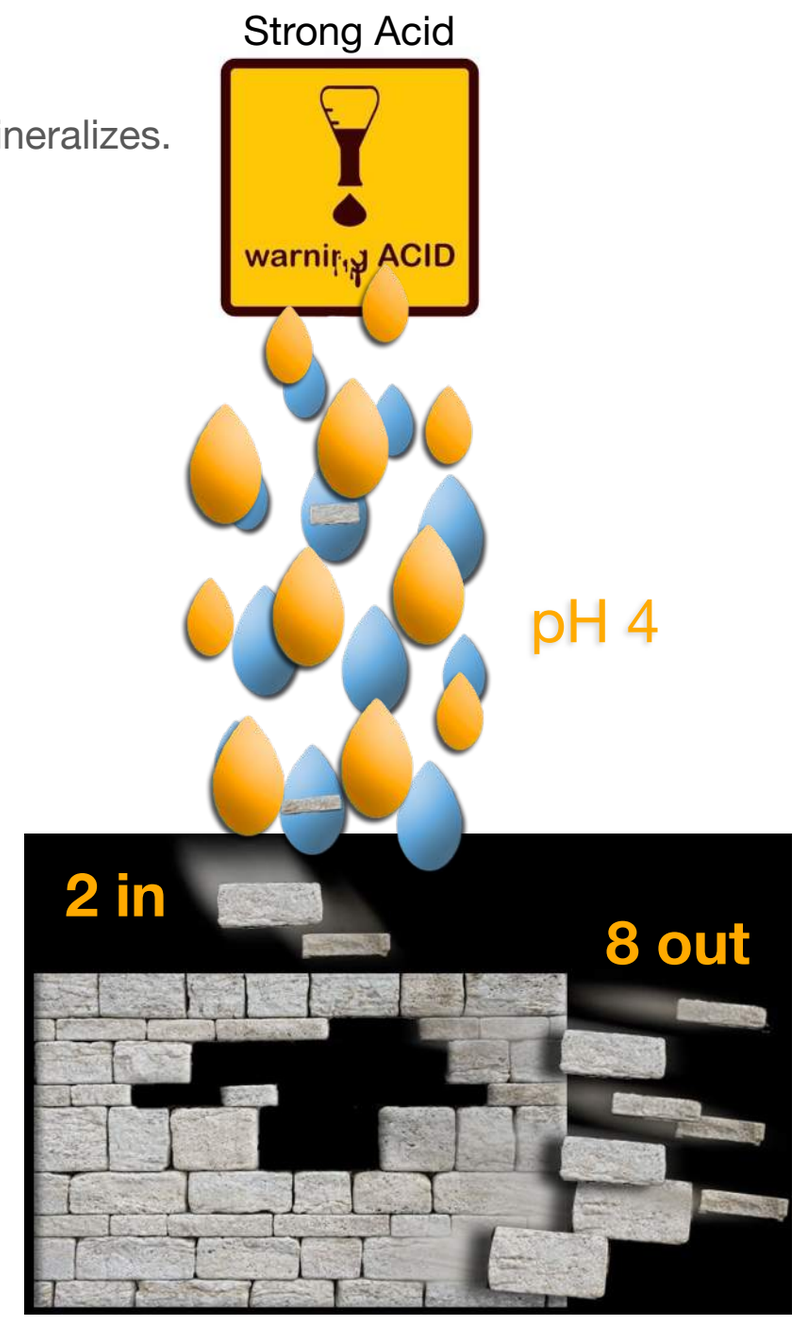
The **stronger** the acid the more it demineralizes.

The **l o n g e r** the acid stays on the tooth the more it demineralizes.

Weak Acid



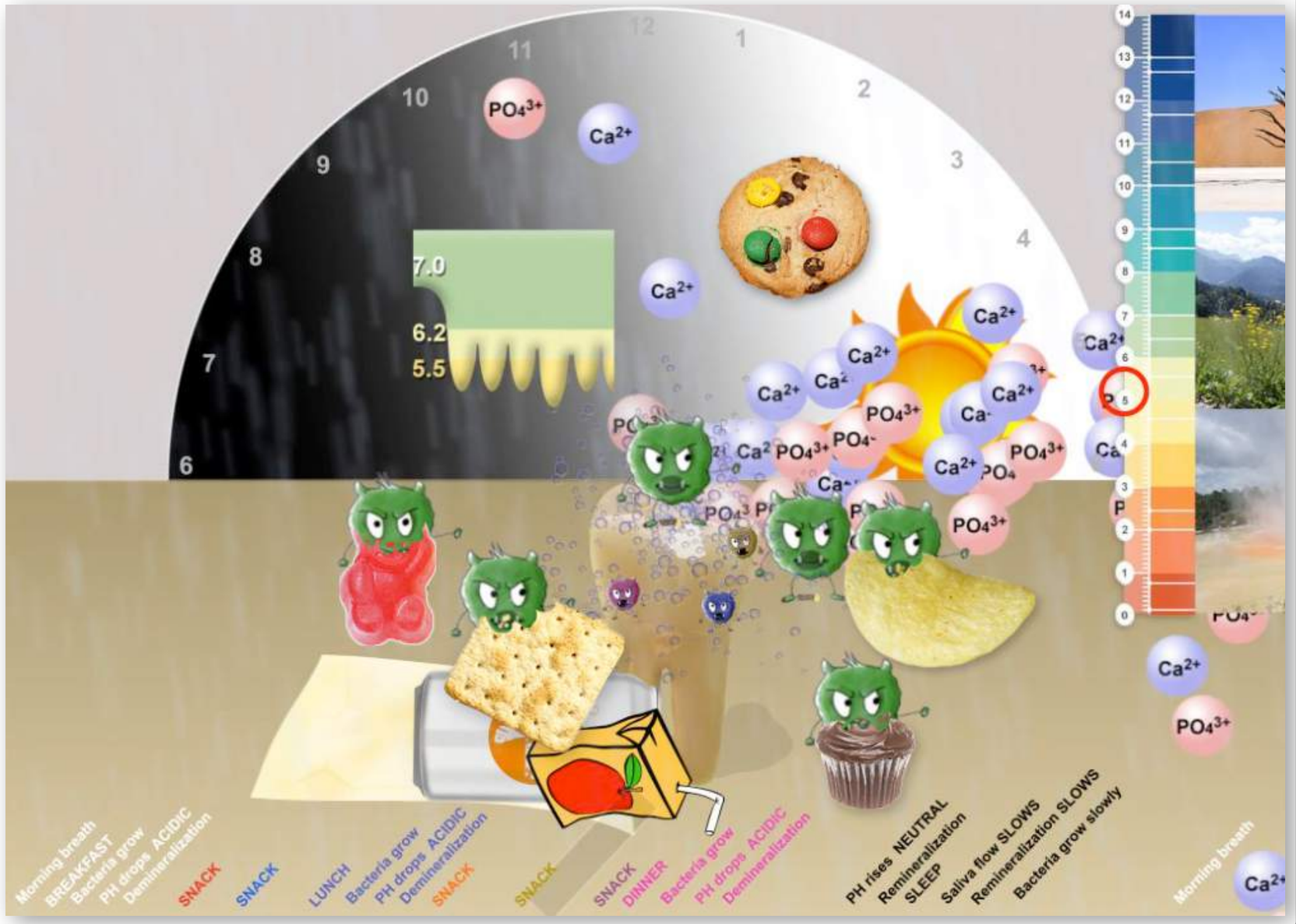
Strong Acid



Caries Disease Process

Notes

Hot Spot 3.3 Demineralization Tap on the Red Squares and Circles to learn more.



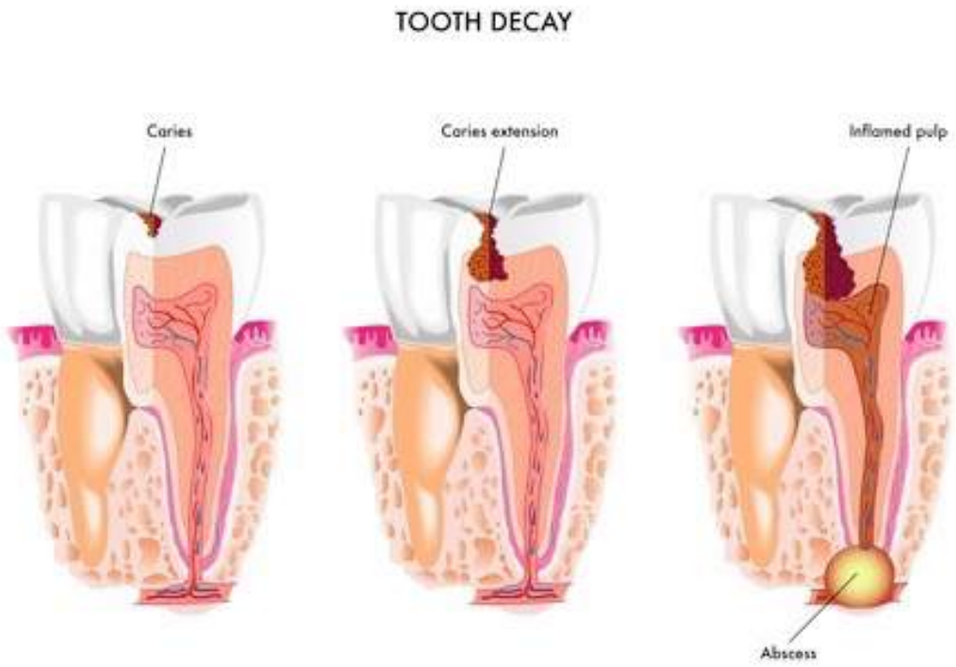
Caries Disease Process

Notes

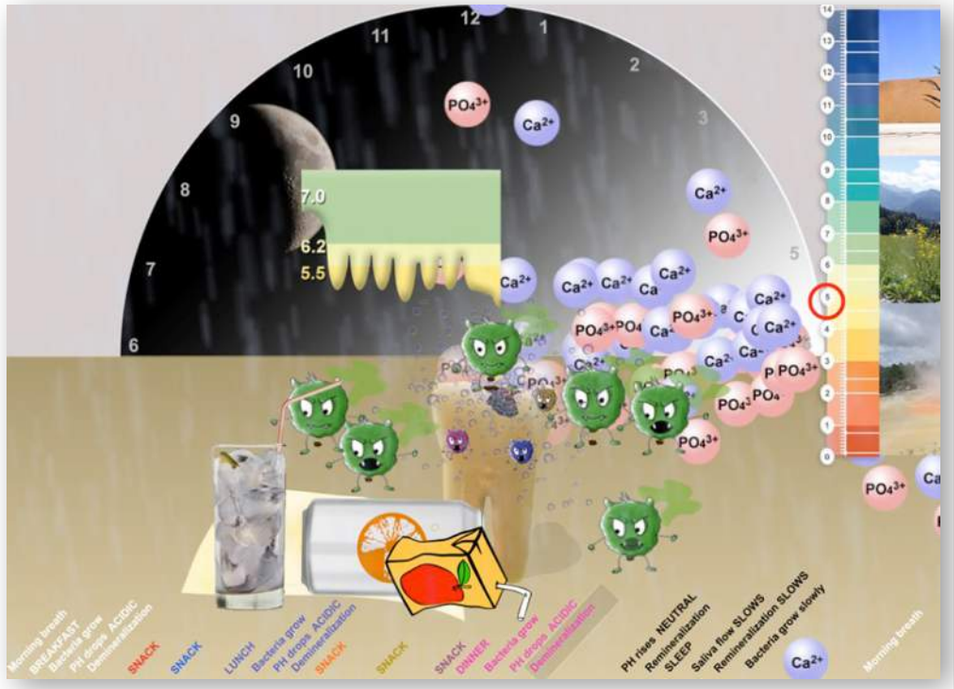
Cavitation

If a decalcified white spot areas become cavitated, tooth structure is lost, and a carious lesion is formed.

A dental professional must restore the tooth.



Hot Spot 3.4 Cavitation Tap on the Red Squares and Circles to learn more.



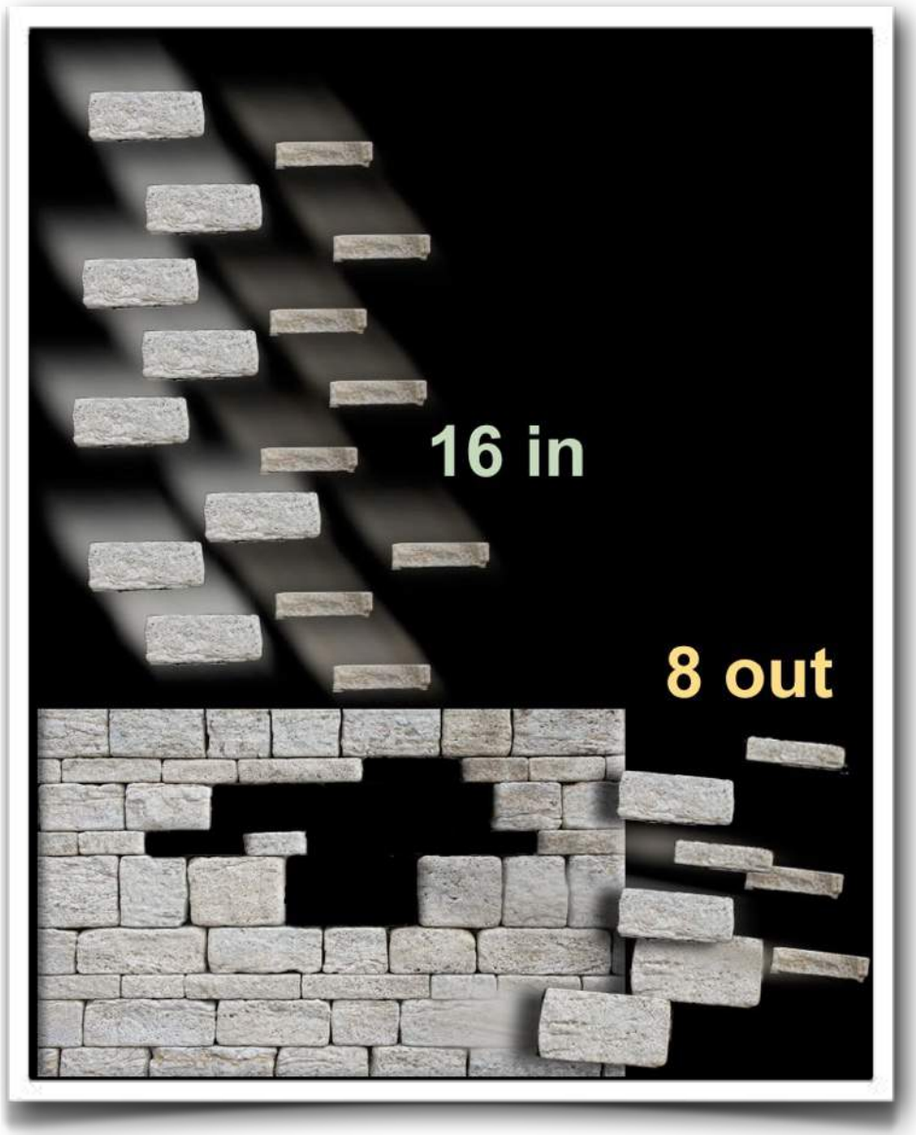
Caries Disease Process

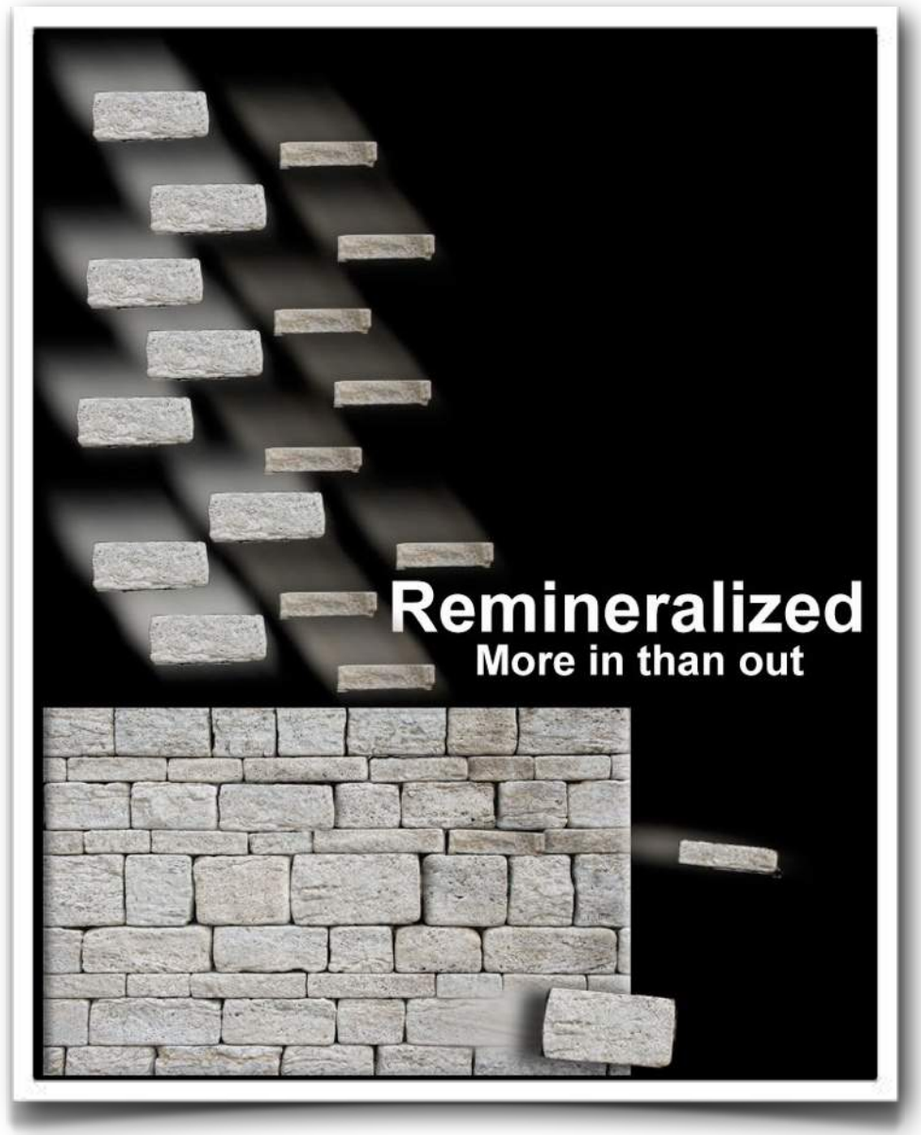
Notes

Remineralization - Repair

Saliva can neutralize the acids and add minerals like calcium and phosphate to tooth enamel.

This is called remineralization, and it can stop tooth destruction and reverse demineralization.



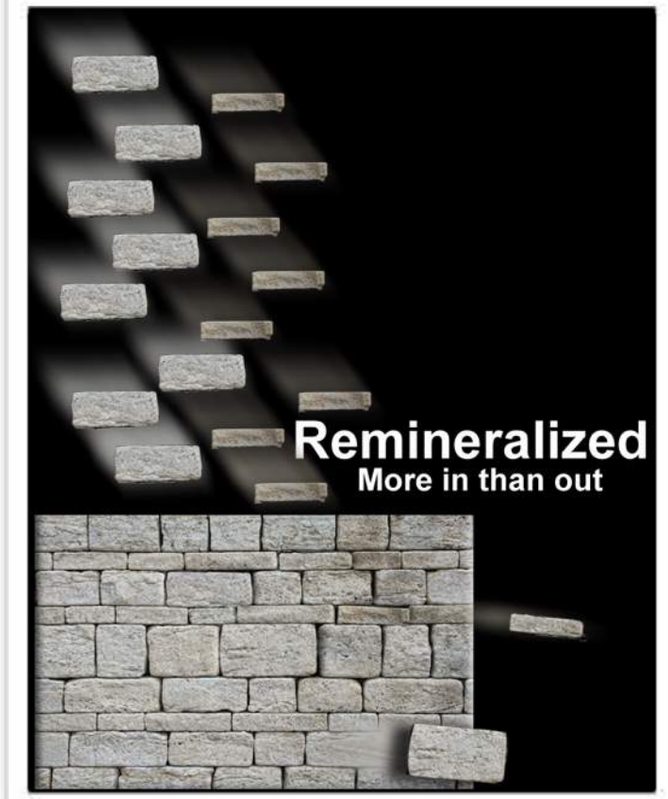


Caries Disease Process

Notes

The following factors contribute to remineralization of tooth enamel:

- Fluoride (toothpaste, mouthrinse, varnish, gel, foam).
- Reducing the intake of sugar foods and drinks.
- Limiting snacking.
- Good oral hygiene to remove bacterial plaque.



Caries Disease Process

Just to Summarize…

As the bacteria eat sugary foods and drinks, they produce acids that dissolve tooth structure.

This is called demineralization because minerals like calcium and phosphate are removed from the tooth enamel.

The earliest sign of demineralization is a white spot lesion. This is an area of chalky, opaque enamel.

Saliva can neutralize the acids and add minerals like calcium and phosphate to tooth enamel.

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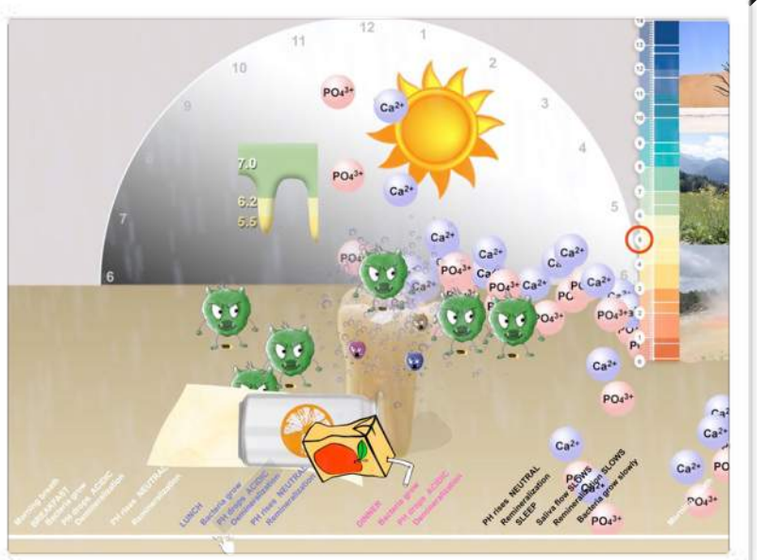
Notes

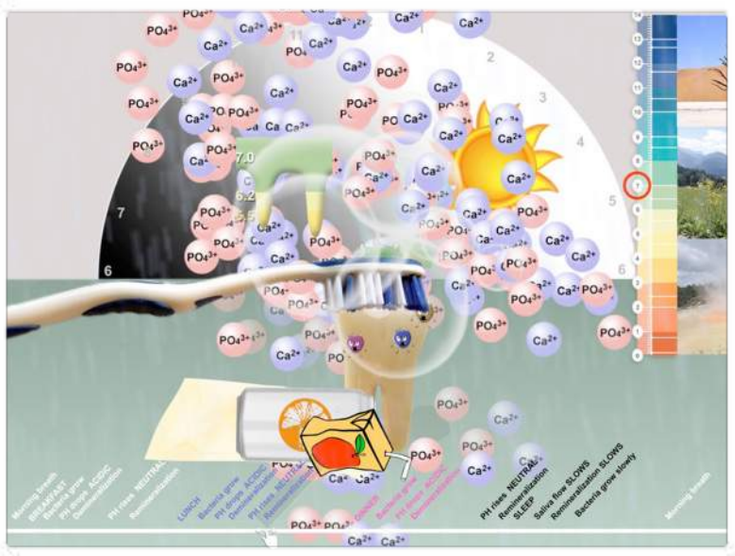
The following factors contribute to remineralization of tooth enamel:

- Fluoride (toothpaste, mouthrinse, varnish, gel, foam).
- Reducing the intake of sugar foods and drinks
- Limiting snacking
- Good oral hygiene to remove bacterial plaque

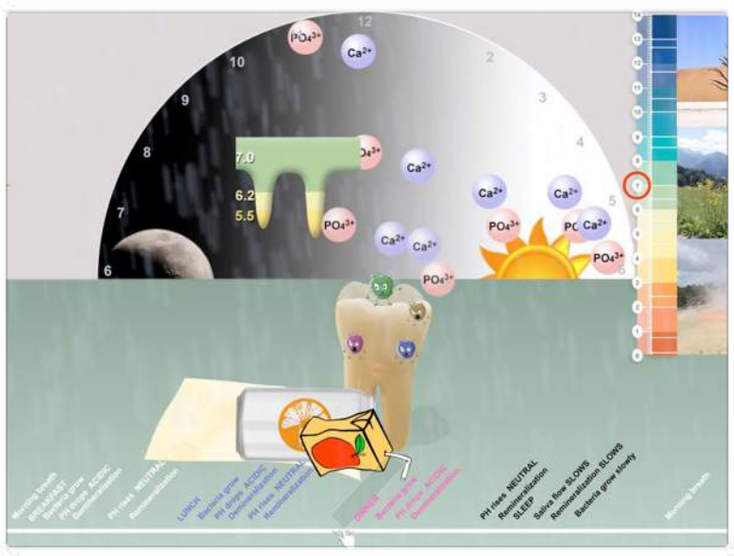
Calcium and phosphate removed by acid



Toothpaste and saliva replace them



White Spot remineralized

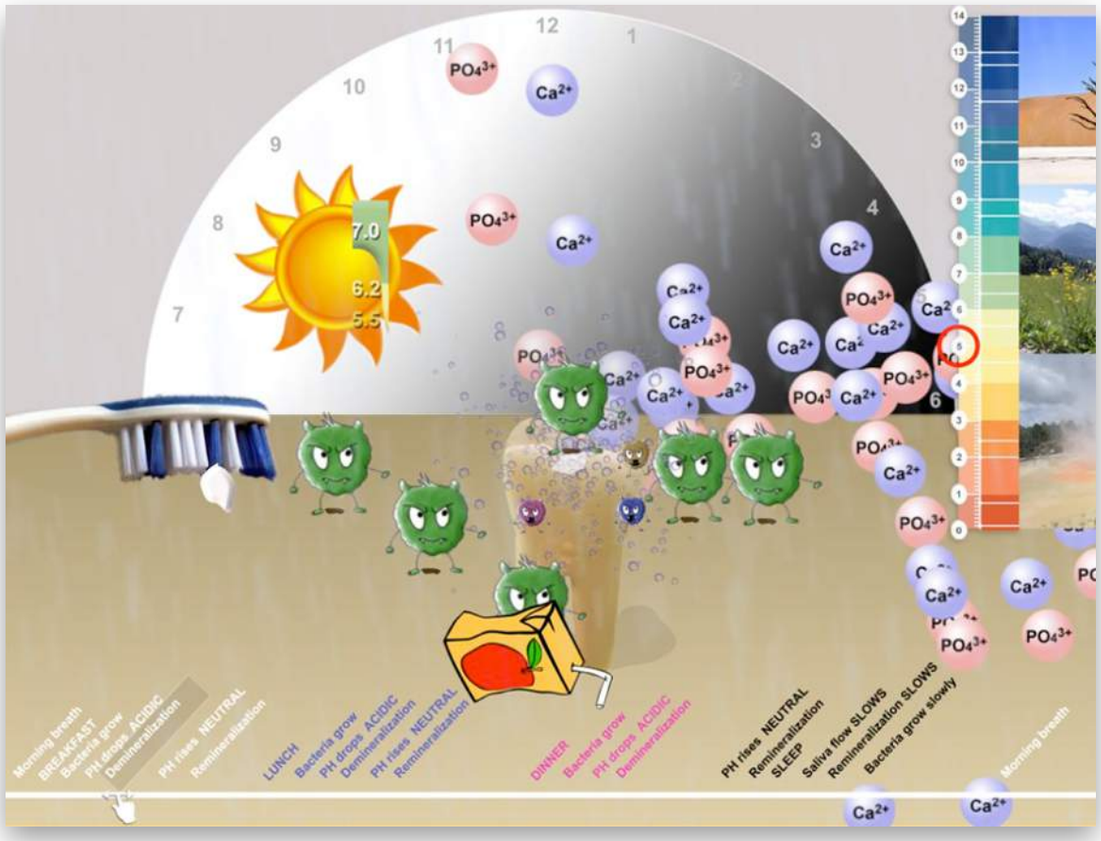


Caries Disease Process

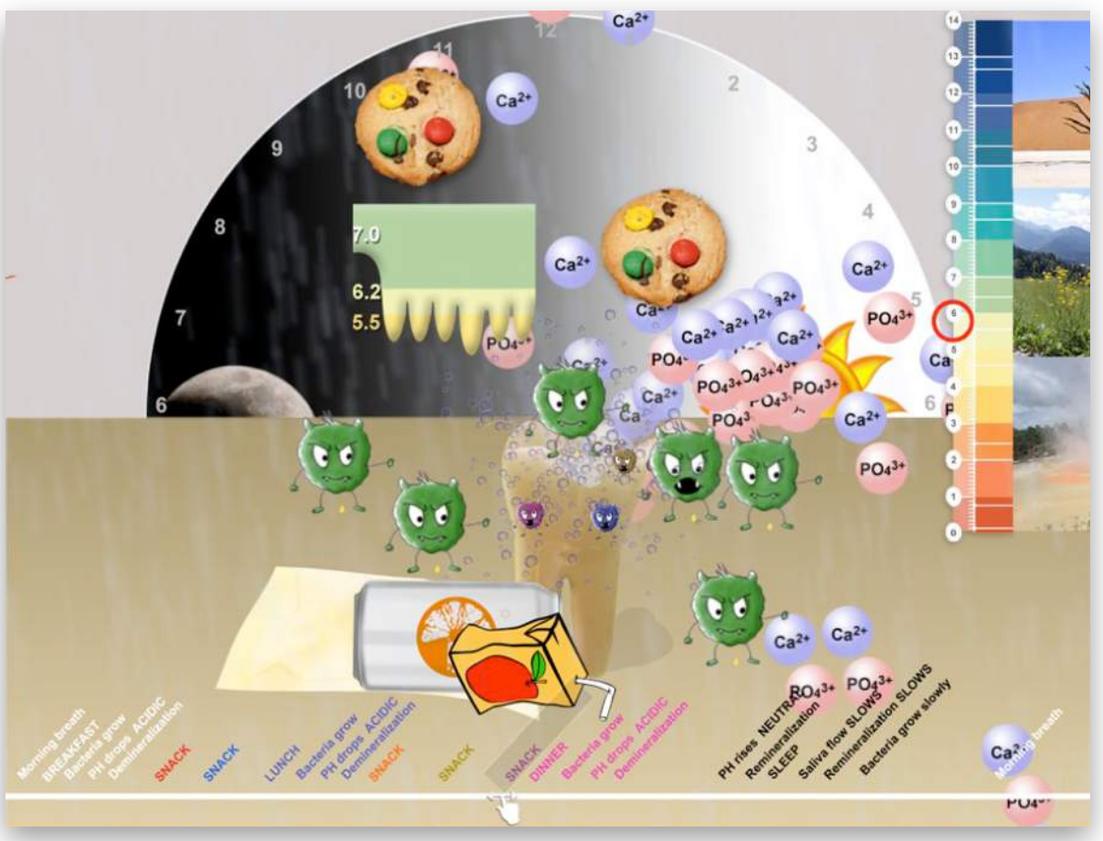
Notes

Open the Interactive Slider Widgets and Slide you finger to the right to learn what happens to a tooth during a day.

Slider 3.1 Brushing After Meals



Slider 3.2 Snacks and Brushing Before Bed



Caries Disease Process

Notes

Remember...

The caries process is when bacteria in dental plaque eat sugary foods and drinks to produce acid that demineralizes enamel.

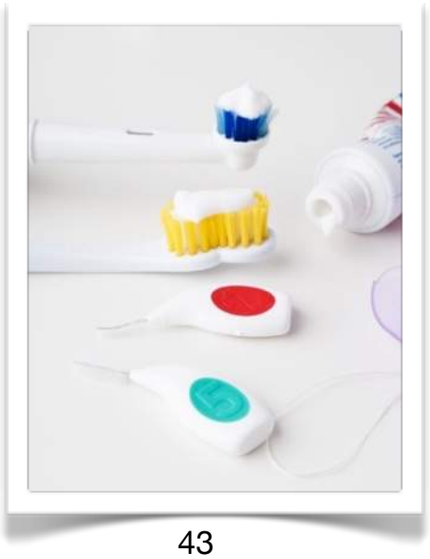
A dynamic and continual battle between demineralization and remineralization takes place throughout the day.

Dental caries result when there is no longer a balance between demineralization and remineralization.

+

= pH 5.5 ↓

+



= pH 7

Caries Disease Process

Notes

Review 3.2 Review

Question 1 of 20
Dental caries is an infectious disease.

T

F

Chapter 4

Fluoride

Fluoride

Terms to Know

Notes

Fluoride: naturally occurring mineral that makes teeth more resistant to tooth decay. Acts to repair or remineralize areas of tooth that have been demineralized.

Knee-to-knee position: technique where a child is place on the parent's lap with the child's head on the parent's knees, and the child's legs around the parent's waist.

Professional-applied topical fluoride: includes treatments (fluoride gel/foam in trays, and fluoride varnish) that are performed by a dental provider.

Self-applied topical fluoride: includes products with fluoride like toothpaste and mouthrinses that can be used daily by a patient.

Systemic fluoride: type of fluoride that is absorbed and distributed throughout the entire body, and deposited into unerupted, developing teeth. If fluoride is taken regularly during the time when teeth are forming (6 months to 6 years-old), it will be added into the enamel layer as teeth develop making them stronger.

Topical fluoride: applied directly to and absorbed by the surface of the teeth. It helps to protect and make the tooth surfaces more resistant to dental caries.

Fluoride

Notes

Learning Objectives

- Discuss the benefits of fluoride
- Compare systemic and topical fluoride
- List different types of topical fluoride
- Demonstrate application of fluoride gel or foam, and fluoride varnish
- Describe fluoride safety
- Discuss recommendations for using fluorides in preventing and controlling dental caries

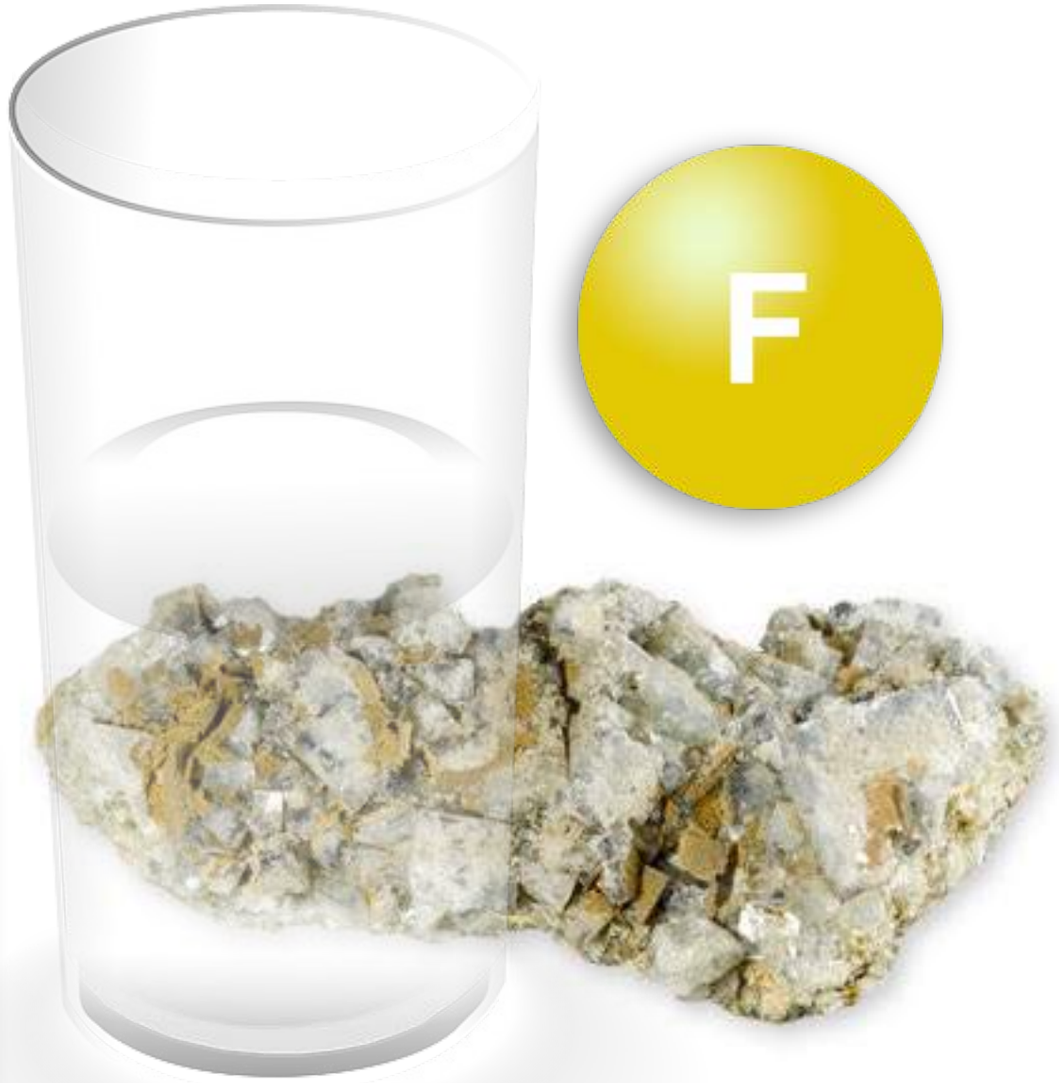
Fluoride

Background Information

Notes

Fluoride is a naturally occurring compound that continues to play a vital role in the prevention of dental caries. The decrease in prevalence and severity of dental caries over the last seventy years is attributed to use of fluorides. The 2003 World Health Organization (WHO) Report on Oral Health reported evidence that long-term exposure to an optimal level of fluoride results in lower levels of caries in both child and adult populations.

Fluoride helps prevent tooth decay by making the entire tooth surface more resistant to acid. Fluoride also acts to repair or remineralize areas that have been demineralized. The remineralization effect of fluoride is important because it reverses the early decay process as well as creating a tooth surface that is more resistant to decay. Fluoride works in two ways: systemically and topically.



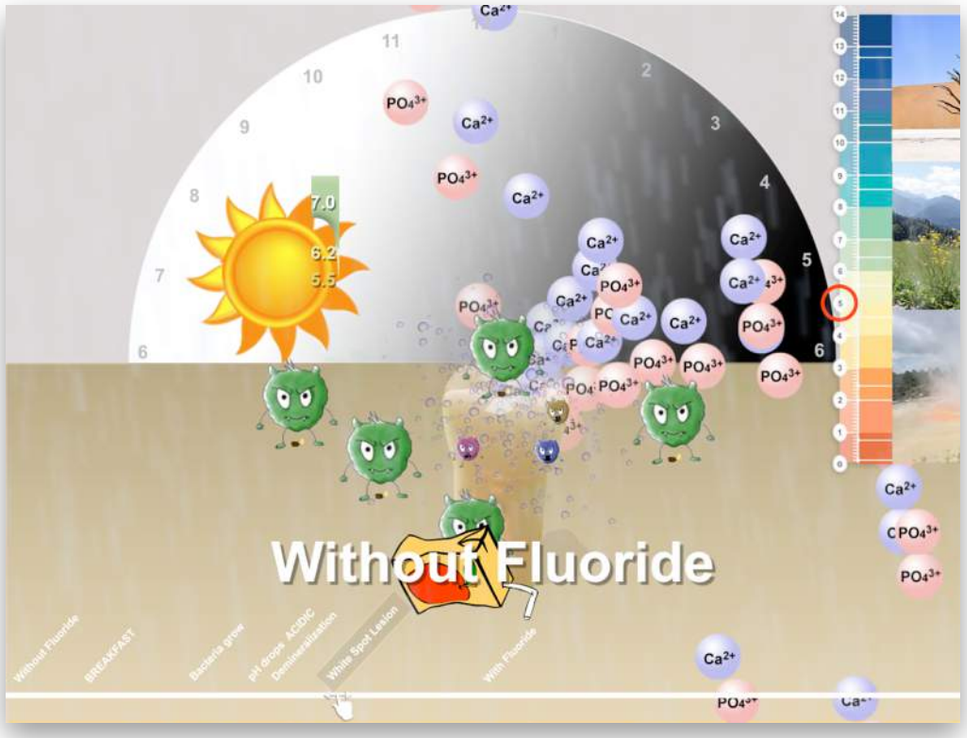
Fluoride

How Fluoride Works

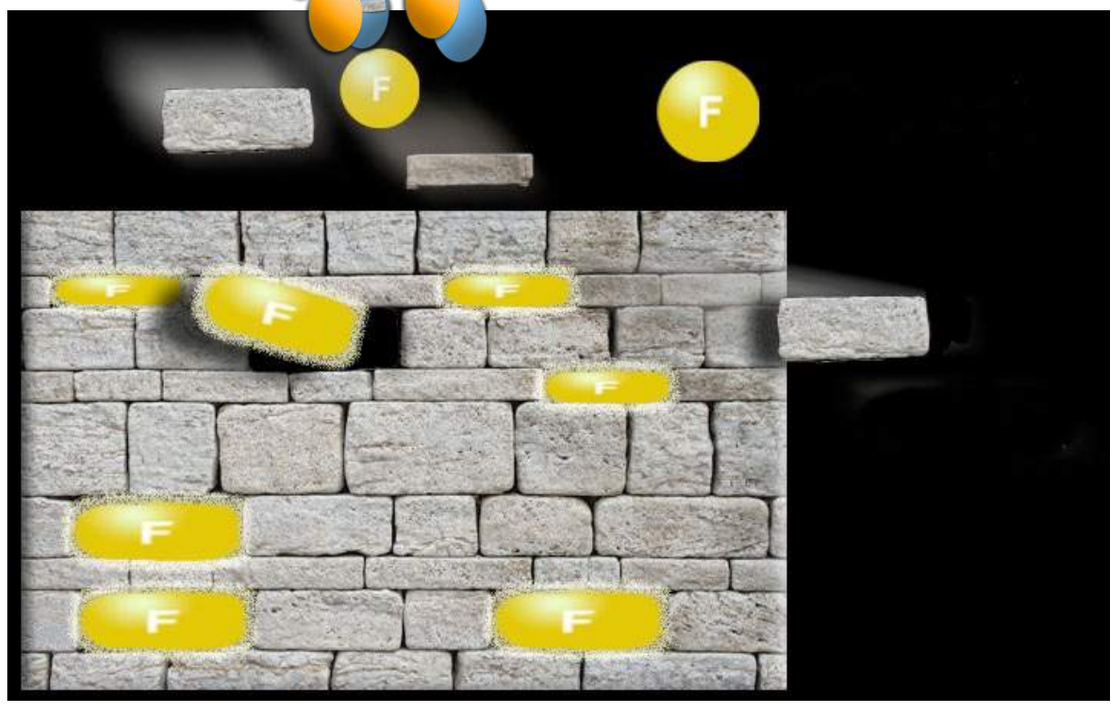
Fluoride joins with calcium and phosphate to stop demineralization.
It also strengths tooth enamel.

Tap to open, then slide you finger to the right to learn more.

Slider 4.1 How Fluoride Works



Notes



Fluoride

Systemic Fluoride

Notes

Systemic fluoride is taken into the body through consuming fluoridated water, fluoride supplements or foods and beverages. Once systemic fluoride is absorbed via the gastrointestinal tract, the blood distributes it throughout the entire body. Fluoride is then deposited into unerupted, developing teeth. If fluoride is taken regularly during the time when teeth are forming (6 months to 6 years-old), it will be added into the enamel layer as teeth develop making them stronger. Systemic fluoride is also found in saliva and it continually bathes the teeth, providing a topical application to protect teeth.

Today the primary source of systemic fluoride is community water fluoridation, which is the adjustment of fluoride deficient water to the level recommended for optimal dental health. The optimum level of fluoride is 0.7-milligrams/ liter of water. By simply drinking tap water in communities with a fluoridated water supply, people can benefit from fluoride's protection from decay. Research has shown community water fluoridation to be safe and the single most effective public health measure to prevent tooth decay in adults and children. Water fluoridation is endorsed by nearly every major national and international health organization including the American Dental Association (ADA), American Medical Association (AMA), World Health Organization (WHO), and the Centers for Disease Control (CDC).

The easiest and most accurate way to determine if there is fluoride in a water system is to contact the local water company and ask. The CDC web site also has a page "My Water's Fluoride" (nccd.cdc.gov/DOH_MWF/Default/Default.aspx) that allows consumers to learn the fluoridation status of their water system.

Other types of systemic fluoride include dietary supplements (tablets, drops or lozenges) and fluoride-vitamins. Most supplements contain sodium fluoride as the active ingredient. Tablets and lozenges are manufactured with 1.0, 0.5, or 0.25 mg fluoride. Fluoride supplements can be prescribed for children at high risk for tooth decay and whose primary drinking water has a low fluoride concentration. A dentist or physician must prescribe fluoride supplements.

Fluoride

Notes

Topical Fluoride

Topical fluoride is applied directly to and absorbed by the surface of the teeth. It also helps protect and make the root surfaces less sensitive by adding fluoride into the “softer” root surface.

Self-Applied Topical Fluoride

Toothpaste

One method of self-applied topical fluoride that is responsible for a significant drop in the level of cavities since 1960 is the use of fluoride-containing toothpaste. For children younger than 3 years, parents and caregivers should begin brushing as soon as teeth begin to come into the mouth. The amount of fluoride toothpaste should be no more than a smear or the size of a grain of rice. For children 3 to 6 years of age, the amount of fluoride toothpaste should be pea-sized. Children’s brushing should be supervised to ensure that they use the appropriate amount of toothpaste.

Fluoride

Notes

Mouthrinses

Another type of self-applied fluoride is fluoride mouthrinse. An individual swishes the mouthrinse for one minute and then spits it out. Fluoride mouthrinses may be used in the dental clinic or at home. The ADA recommends the use of fluoride mouthrinses, but not for children under six years of age because they may swallow the rinse.

Fluoride Mouthrinse

- Prior to giving a fluoride rinse, seat the patient in an upright position.
- Explain the procedure to the patient.
- Remove the lid from the container, and give it to the patient.
- Be sure to advise the patient that fluoride rinse should not be swallowed.
- Have the patient swish vigorous with the fluoride rinse for one minute.
- Use the saliva ejector to clear the fluoride rinse from the patient's mouth.

Post-application Instructions

Advise patient not to eat, drink or rinse for 30 minutes after the application.

Fluoride

Professionally-Applied Topical Fluoride

Notes

Dental providers apply fluoride gel, foam and varnish during dental appointments. These products are more concentrated than the self-applied fluorides, and applications are not needed as frequently.

Fluoride Gel or Foam

Fluoride gel and foam are applied by a tray technique. Fluoride trays are soft, flexible, disposable trays that come in small, medium, and large sizes. They may be single, or hinged to treat both arches at the same time. The fluoride tray should be selected to fit completely over the patient's teeth, completely covering the last tooth in each arch, and extending to the gingival margin.

Supplies

- Disposable gloves
- Mirror
- Gauze sponges (2 x 2)
- Saliva ejector
- Disposable fluoride tray
- Fluoride gel or foam

Fluoride

Gel or Foam Application

Notes

1. Place a small bead of fluoride gel in the tray. Be sure to use a minimum amount of fluoride. Any excess may be swallowed and cause nausea.

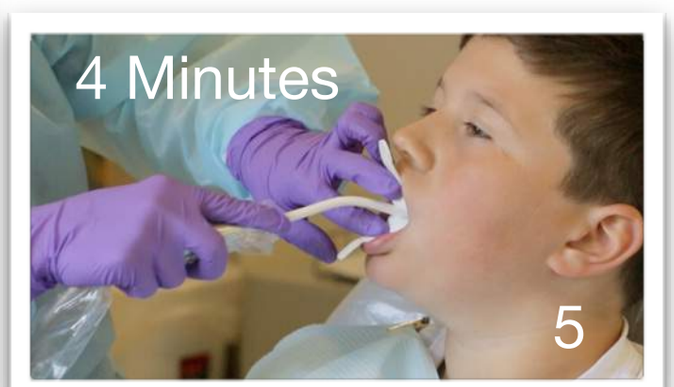
2. When using fluoride foam, place several small dots of foam in the tray. Fluoride foam expands after it is dispensed, and it is important not to overfill the tray.

3. Dry teeth completely.

4. Insert the tray(s) into the patient's mouth.

5. During the four-minute application time, place a saliva ejector into the patient's mouth.

6. Remove tray(s) and suction the patient's mouth completely.



Post-application Instructions

Advise patient not to eat, drink or rinse for 30 minutes after the application.

Fluoride

Notes

Fluoride Varnish

The purpose of applying fluoride varnish is to retard, arrest, or reverse the process of tooth decay in children at medium to high risk for dental caries. Most studies have shown 25-45% reductions in the decay rate with the use of fluoride varnish.

Fluoride varnish is available in a choice of flavors, white or yellow colors and varying package sizes. After the varnish is applied to teeth, it forms a sticky layer, which hardens when it comes in contact with saliva. Fluoride is then absorbed into the enamel of the tooth from the hardened varnish. It is recommended that the varnish be allowed to remain on the teeth for up to six hours for optimal absorption.

Fluoride

Key Advantages of Fluoride Varnish

Notes

- Does not require special dental equipment.
- Minimal ingestion of fluoride during and after treatment.
- Does not require a professional dental cleaning prior to application.
- Is easy and quick to apply.
- Dries immediately upon contact with saliva.
- Safe and well tolerated by infants, young children, and individuals with special needs.
- Is inexpensive.

Supplies

- Disposable gloves
- Gauze sponges (2 x 2)
- Unit dose package of fluoride varnish with applicator

Fluoride

Positioning the Patient

Notes

Knee-to-Knee:

- Place the child on the parent's lap with the child's head on the parent's knees and the child's legs around the parent's waist.
- Position yourself knee-to-knee with the parent and treat the child from behind the head.
- The child may fuss, however, the varnish application is not uncomfortable.

Fluoride

Notes

Fluoride Varnish Application

- Use a toothbrush to clean the teeth, if possible.
- Dry the teeth by wiping them with gauze to remove excess saliva.
- Paint a thin layer of the fluoride varnish on all surfaces of the teeth.
- Once the varnish is applied, you need not worry about moisture (saliva) contamination. The varnish sets quickly.

			
Open DuraShield unit dose and blend varnish to a unified color before application. Prophylaxis is not necessary prior to fluoride varnish application.	Apply a thin layer of petroleum jelly or lip balm to patient's lip. Dry tooth area to be treated - drying should not be excessive as varnish sets with intraoral moisture.	Apply thin layer of DuraShield (0.5mm thick) to all tooth surfaces, including molars (inset). Continue until all teeth are treated. Use Dental floss to ensure varnish reaches interproximal areas.	Children may drink water immediately after procedure. Advise patient to choose foods that are soft and not to brush until the next morning to allow longest fluoride exposure.

Fluoride

Notes

Movie 4.1 Applying Fluoride Varnish

Post-application Instructions

- Avoid crunchy foods (chips, toast) and hot liquids (soup, coffee) for six hours.
- Do not brush or floss until the next morning.
- Do not use fluoride mouthrinse, gels or toothpaste until the next day.

Fluoride

Notes

Resources:

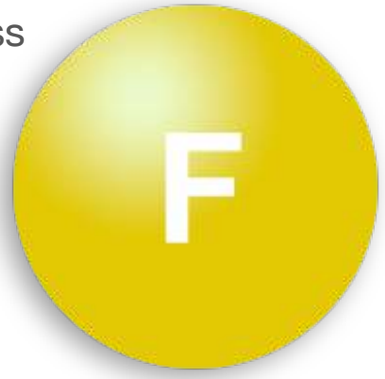
- Alaska Native Tribal Health Consortium/University of Kentucky College of Dentistry, Primary Dental Health Aide Training Manuals and PowerPoint Presentations.
- Bertness J, Holt K, eds. 2010. Fluoride Varnish: A Resource Guide. Washington, DC: National Maternal and Child Oral Health Resource Center.
- Bird, Doni L. and Robinson, Debbie S. Modern Dental Assisting. 10th ed. St. Louis, Missouri: Elsevier; 2012.

Fluoride

Notes

Dental Fluorosis

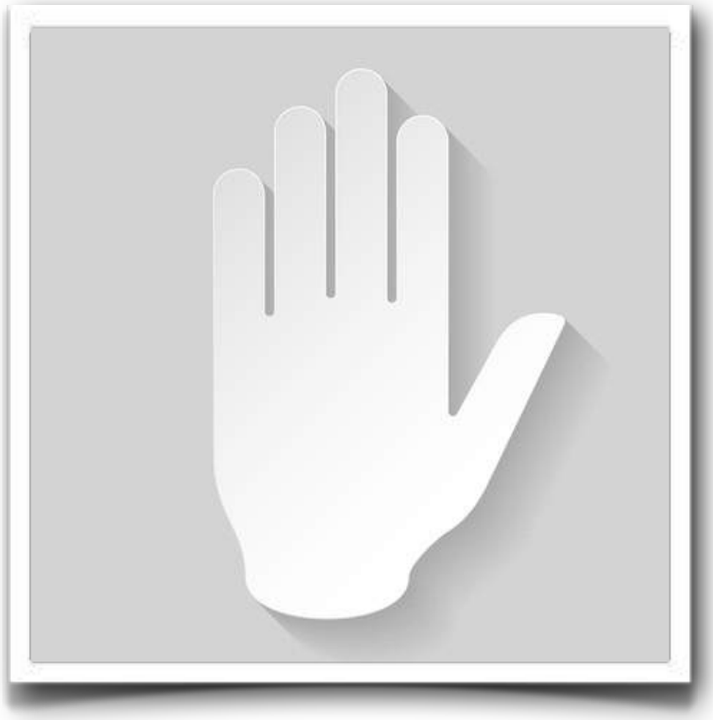
Fluoride is absorbed easily into tooth enamel, especially in children's developing teeth. In young children, excess fluoride intake can cause dental fluorosis, typically a harmless cosmetic discoloring or mottling of the enamel. Parents should be educated to monitor the use of toothpaste, mouthrinses and fluoride supplements in young children to ensure they are not ingesting too much.



Fluoride Safety

While fluoride occurs naturally and is safe and effective at recommended levels, it should be stored out of the reach of children:

- Do not store large quantities at the home.
- Fluoride mouthrinse use in school programs should be kept in a locked area.
- Young children need to be supervised when brushing and rinsing.
- Children under the age of 6 should not use fluoride mouthrinse.



Fluoride

Notes

Recommendations for Fluoride Use:

The Centers for Disease Control and Prevention has provided recommendations for using fluorides in preventing and controlling dental caries.

CDC
CENTERS FOR DISEASE CONTROL AND PREVENTION

In public health and clinical practice it is recommended that:

- Fluoridation should continue and extend into the fluoridation of community drinking water.
- Counsel parents and caregivers regarding use of fluoride toothpaste by young children, especially those less than 2 years of age.
- Target fluoride mouthrinses to persons at high risk for dental caries.
- Apply high-concentration fluoride products to persons at high risk for dental caries.

For purpose of self-care, it is recommended that patients:

- Be aware of the fluoride concentration in the primary source of drinking water.
- Use small amounts of fluoride frequently.
- Supervise use of fluoride toothpaste among children younger than 6 years of age.
- Have professionally applied fluoride treatments for individuals at high risk for dental caries.
- If the primary drinking water contains more than 2 ppm fluoride, then use an alternative source of water for children 8 years of age and younger.

Fluoride

Notes

Resources

- World Health Organization. The World Health Report 2002. Reducing Risks, Promoting Healthy Life. Geneva: World Health Organization, 2002.
- CDC. Recommendations for using fluoride to prevent and control dental caries in the United States. MMWR Recomm Rep 2001;50(RR-14):1-42.
- Tinanoff N. Use of Fluorides. In: Berg J, Slayton RA, eds, Early Childhood Oral Health. Wiley-Blackwell, Ames, Ia; 2009:92-109.
- Div of Oral Health, National Center for Chronic Disease Prevention and Health Promotion, CDC. Achievements in public health, 1900-1999; Fluoridation of drinking water to prevent dental caries. JAMA 2000;283(10): 1283-6.
- Weintraub JA, Ramos-Gomez F, Jue B, et al. Fluoride varnish efficacy in preventing early childhood caries. J Dent Res 2006;85(2):172-6.
- Marinho VC, Higgin JP, Logan, S, Sheiham A. Systematic review of controlled trials on the effectiveness of fluoride gels for the prevention of dental caries in children. J Dent Ed 2003;67(4):448-58.

Acid

substance that has a pH of less than 7.

Related Glossary Terms

Drag related terms here

Index Find Term

Chapter 3 - Terms to Know

Alkaline

substance that has a pH greater than 7.

Related Glossary Terms

Drag related terms here

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Chapter 3 - Terms to Know

Buffer

a solution that resists changes in pH.

Related Glossary Terms

Drag related terms here

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Chapter 3 - Terms to Know

Bulbous

swollen or bulging.

Related Glossary Terms

Drag related terms here

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Chapter 2 - Terms to Know

Calculus

mineralized plaque that provides a rough surface for sticky plaque to adhere.

Related Glossary Terms

Drag related terms here

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Chapter 2 - Terms to Know

Caries process

the dynamic process of demineralization and remineralization that can lead to cavitation (breakdown) of tooth structure.

Related Glossary Terms

Drag related terms here

Index Find Term

Chapter 3 - Terms to Know

Cavitated

breakdown of tooth structure.

Related Glossary Terms

Drag related terms here

Index Find Term

Chapter 3 - Terms to Know

Contagious

disease spread from one person or organism to another by direct or indirect contact.

Related Glossary Terms

Drag related terms here

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Chapter 3 - Terms to Know

Demineralization

when pH is lowered it weakens the tooth structure. First signs of demineralization are white spot lesions.

Related Glossary Terms

Drag related terms here

Index Find Term

Chapter 3 - Terms to Know

Dental caries

dental term for the tooth decay process.

Related Glossary Terms

Drag related terms here

Index Find Term

Chapter 3 - Terms to Know

Dental plaque

a biofilm consisting of bacteria and bacterial by-products.

Related Glossary Terms

Drag related terms here

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Chapter 3 - Terms to Know

Fluoride

naturally occurring mineral that makes teeth more resistant to tooth decay. Acts to repair or remineralize areas of tooth that have been demineralized.

Related Glossary Terms

Drag related terms here

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Chapter 4 - Terms to Know

Furcation

the notch or space exposed between the roots of multirooted teeth.

Related Glossary Terms

Drag related terms here

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Chapter 2 - Terms to Know

Gingival recession

as periodontal disease progresses, the gingiva may recede, leaving portions of the roots of teeth exposed below the cementoenamel junction (CEJ).

Related Glossary Terms

Drag related terms here

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Chapter 2 - Terms to Know

Gingivitis

a bacterial infection that is confined to the gingiva. It is reversible.

Related Glossary Terms

Drag related terms here

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Chapter 2 - Terms to Know

Infectious

the ability to spread infection from person to person.

Related Glossary Terms

Drag related terms here

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Chapter 3 - Terms to Know

Knee-to-knee position

technique where a child is place on the parent’s lap with the child’s head on the parent’s knees, and the child’s legs around the parent’s waist.

Related Glossary Terms

Drag related terms here

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Chapter 4 - Terms to Know

Mobility

movement

Related Glossary Terms

Drag related terms here

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Chapter 2 - Terms to Know

Neutral

pH of 7.

Related Glossary Terms

Drag related terms here

Index Find Term

Chapter 3 - Terms to Know

Neutralize

make an acidic or alkaline substance chemically neutral.

Related Glossary Terms

Drag related terms here

Index Find Term

Chapter 3 - Terms to Know

Opaque

white, chalky area that indicates demineralization of the tooth structure.

Related Glossary Terms

Drag related terms here

Index Find Term

Chapter 3 - Terms to Know

Periapical

the area surrounding the end of the tooth root.

Related Glossary Terms

Drag related terms here

Index Find Term

Chapter 2 - Terms to Know

Periodontal

supporting and surrounding tissues around the tooth.

Related Glossary Terms

Drag related terms here

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Chapter 2 - Terms to Know

Periodontal disease

inflammatory process of the gingival tissues and/or periodontal membrane of the teeth, resulting in an abnormally deep gingival sulcus, possibly producing periodontal pockets and loss of supporting alveolar bone.

Related Glossary Terms

Drag related terms here

Index Find Term

Chapter 2 - Terms to Know

Periodontal pocket

indicates the presence of an abnormal depth of the gingival sulcus where the gingival tissue contacts the tooth. A normal sulcus measures 3mm or less.

Related Glossary Terms

Drag related terms here

Index Find Term

Chapter 2 - Terms to Know

Periodontitis

a bacterial infection, with inflammation of the periodontium including the gingiva, periodontal ligament, bone, and cementum. Loss of attachment and tissue is irreversible.

Related Glossary Terms

Drag related terms here

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Chapter 2 - Terms to Know

Periodontium

tissues comprising gingival, cementum, periodontal ligament, and alveolar bone that attaches, nourishes and supports the tooth.

Related Glossary Terms

Drag related terms here

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Chapter 2 - Terms to Know

Plaque

a soft sticky substance that accumulates on teeth composed largely of bacteria and bacterial by-products. Plaque is the primary cause of gingival inflammation and most other types of periodontal diseases.

Related Glossary Terms

Drag related terms here

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Chapter 2 - Terms to Know

Professional-applied topical fluoride

includes treatments (fluoride gel/foam in trays, and fluoride varnish) that are performed by a dental provider.

Related Glossary Terms

Drag related terms here

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Chapter 4 - Terms to Know

Prophylaxis

commonly referred to as prophy or cleaning. It is the technical term for the removal of plaque, calculus and stain from tooth structures. It is intended to control local irritant factors.

Related Glossary Terms

Drag related terms here

Index Find Term

Chapter 2 - Terms to Know

Recession

areas where the gingiva has moved away from the crown of a tooth.

Related Glossary Terms

Drag related terms here

Index Find Term

Chapter 2 - Terms to Know

Remineralization

the result of minerals in saliva buffering the acid, and strengthening the tooth. It can stop tooth destruction, and reverse demineralization.

Related Glossary Terms

Drag related terms here

Index Find Term

Chapter 3 - Terms to Know

Self-applied topical fluoride

includes products with fluoride like toothpaste and mouthrinses that can be used daily by a patient.

Related Glossary Terms

Drag related terms here

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Chapter 4 - Terms to Know

Stippling or stippled

textured surface of gingiva similar to the surface of an orange.

Related Glossary Terms

Drag related terms here

Index Find Term

Chapter 2 - Terms to Know

Subgingival calculus

forms on root surfaces below the gingival margin and can extend into periodontal pockets.

Related Glossary Terms

Drag related terms here

Index Find Term

Chapter 2 - Terms to Know

Sulculus

the natural space found between the tooth and the gum tissue; sulcular refers to the sulcus.

Related Glossary Terms

Drag related terms here

Index Find Term

Chapter 2 - Terms to Know

Supragingival calculus

found above the margin of the gingiva.

Related Glossary Terms

Drag related terms here

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Chapter 2 - Terms to Know

Systemic fluoride

type of fluoride that is absorbed and distributed throughout the entire body, and deposited into unerupted, developing teeth. If fluoride is taken regularly during the time when teeth are forming (6 months to 6 years-old), it will be added into the enamel layer as teeth develop making them stronger.

Related Glossary Terms

Drag related terms here

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Chapter 4 - Terms to Know

Topical fluoride

applied directly to and absorbed by the surface of the teeth. It helps to protect and make the tooth surfaces more resistant to dental caries.

Related Glossary Terms

Drag related terms here

Index Find Term

Chapter 4 - Terms to Know

White spot lesion

an area of demineralized tooth structure that looks chalky or opaque.

Related Glossary Terms

Drag related terms here

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Chapter 3 - Terms to Know