

California Department of Public Health Office of Oral Health



Oral Health 101: Preventing Dental Decay in Children

Joanna Aalboe, RDH, MPH
Health Program Manager I

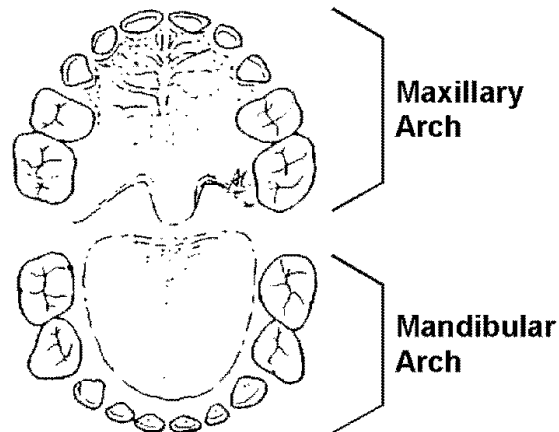
Project Director's Meeting Sacramento, CA
January 17, 2019

Objectives

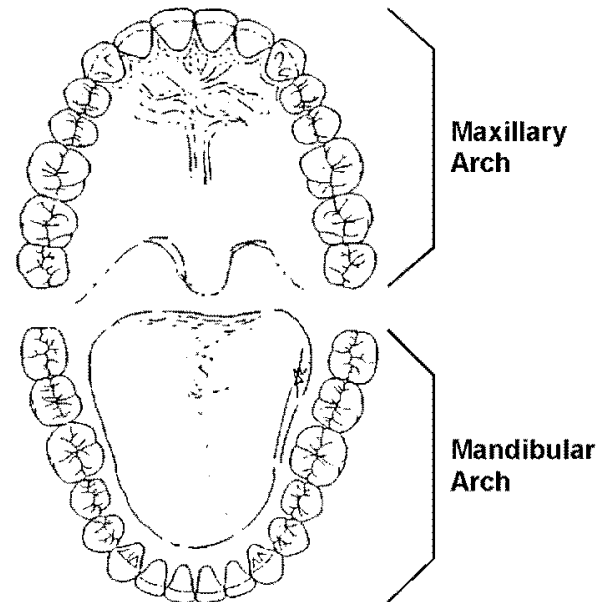


- Introduction to terminology and tooth morphology
- Describe the etiology, prevalence, and consequences of dental caries through childhood
- Discuss prevention measures

Dentitions: Sets of Natural Teeth



Primary
20 teeth



Permanent
32 teeth

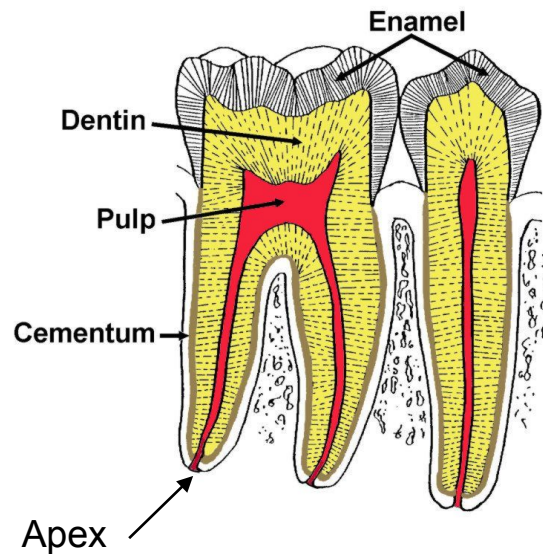
Primary teeth (Baby teeth, milk teeth)

Important functions

1. Mastication (chewing)
2. Holding space for permanent teeth
3. Speech
4. Psychosocial benefits of a healthy smile

They should be maintained if at all possible until they naturally fall out (exfoliate).

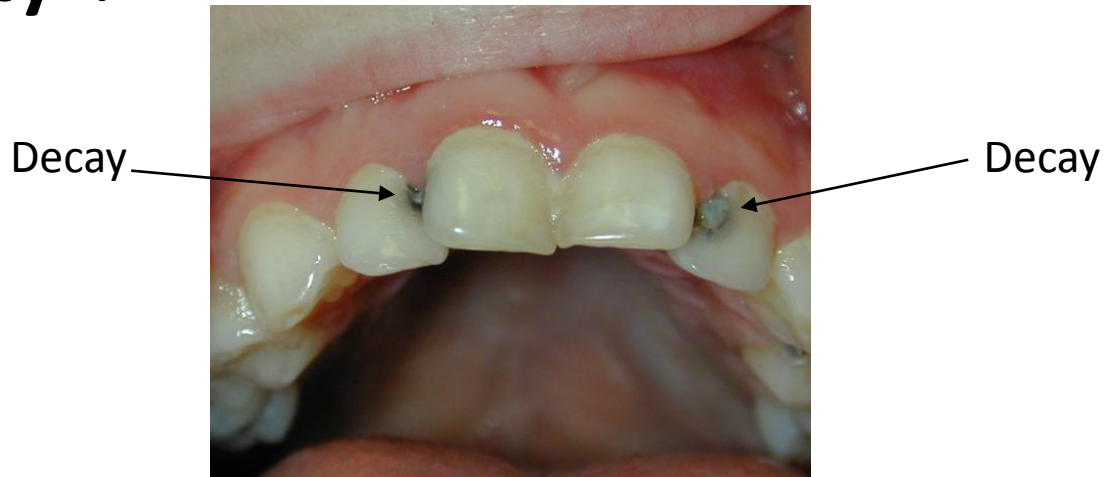
Tooth Tissues



- Enamel
- Dentin
- Pulp
- Cementum
- Apex

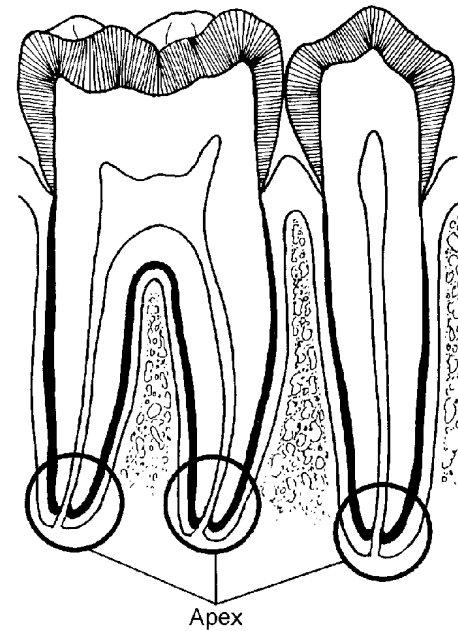
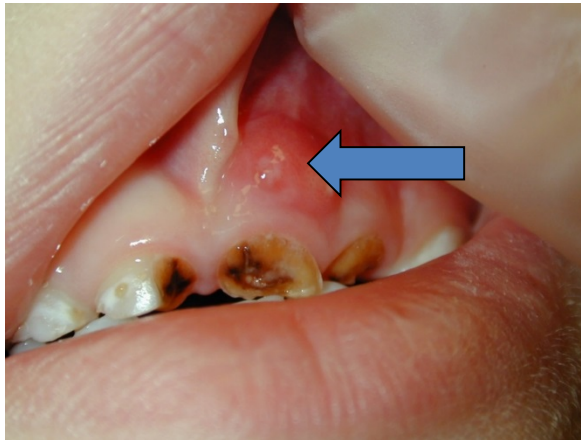
Tooth Decay (Dental Caries)

Occurs when **bacteria** in **plaque** metabolize dietary **sugar** to make **acid**. The acid demineralizes the tooth and creates a “**cavity**”.



more sugars = more acid = more decay

Bacteria from dental decay may infect the dental pulp and drain out of the root of the tooth creating an abscess.



Infection may drain out of end of root into surrounding bone making a gum boil

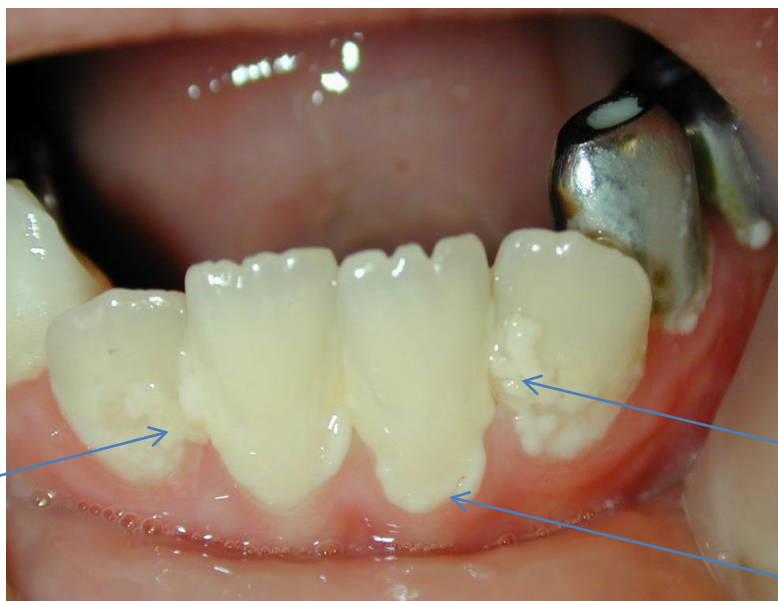
Plaque

A sticky, colorless to tooth-colored film containing bacteria that forms daily around the teeth

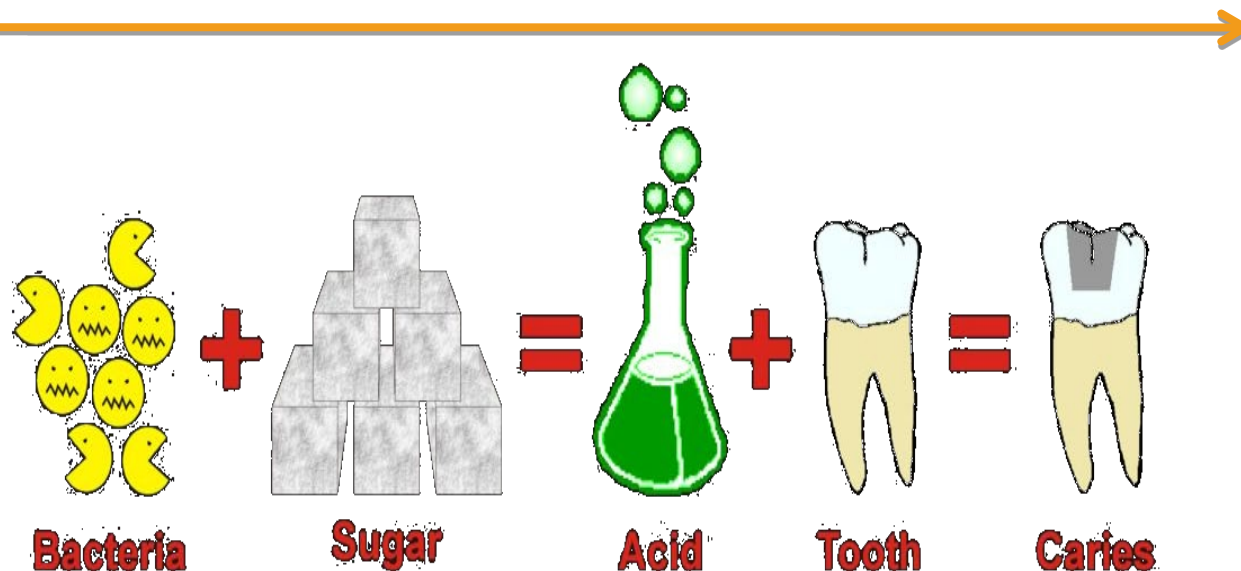


Plaque can be nearly invisible. A special disclosing tablet may be chewed to show plaque.

Thicker plaque forms if person
doesn't brush regularly.



The Cause of Dental Caries (Tooth Decay)

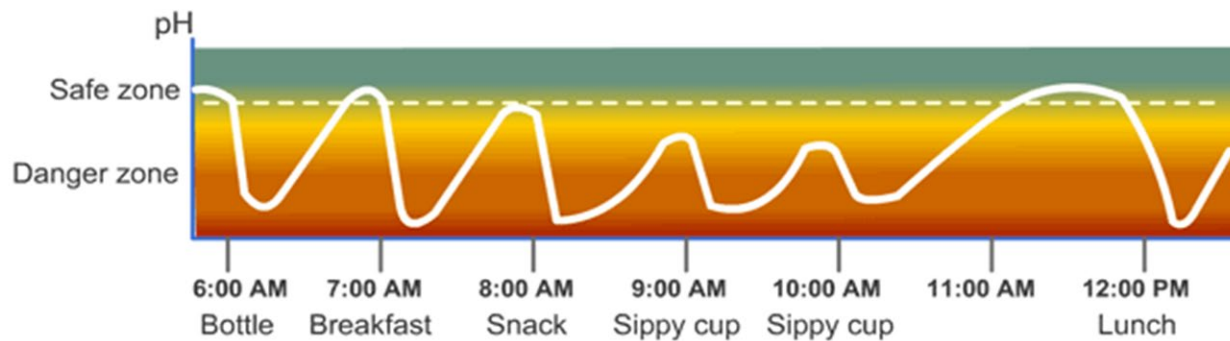


Dental Caries is caused by acid attack on a tooth.
The acids are formed from the interaction of bacteria
in plaque and sugar.

Frequency

It's not only WHAT, but HOW often children eat

- Acids produced by oral bacteria persist 20-40 minutes after sugar ingestion and cause enamel **demineralization**.
- **Remineralization** occurs when acid is buffered by saliva.
- **Frequent** sugar consumption=insufficient time for remineralization to occur; teeth are subjected to continued demineralization and the caries process progresses.



Streptococcus Mutans (cavity causing bacteria) transmission from mother to child – **CAVITIES ARE CONTAGIOUS**

***Streptococcus mutans*
Transmission**



Prevalence of the Problem

- Dental decay is a **preventable** disease, yet it remains the **most common chronic childhood disease** in America, five times more common than asthma.
- In California,
 - 54% of kindergarteners and 70% of third graders have experienced tooth decay.
 - Nearly one-third of children have untreated tooth decay.

Consequences of the Problem

Dental Decay is a disease with long-term health effects.

- Pain
- Infection
- Impaired chewing and nutrition
- Increased caries in permanent dentition
- Sleep difficulty
- Poor self-esteem
- School absences- Children miss 874,000 days of school each year due to dental problems
- Poor school performance
- Extensive and expensive dental work under anesthesia



Ways to prevent dental decay

- Daily oral hygiene
- Community Water Fluoridation
- Sealants
- Fluoride applications



Fluoridation in Water

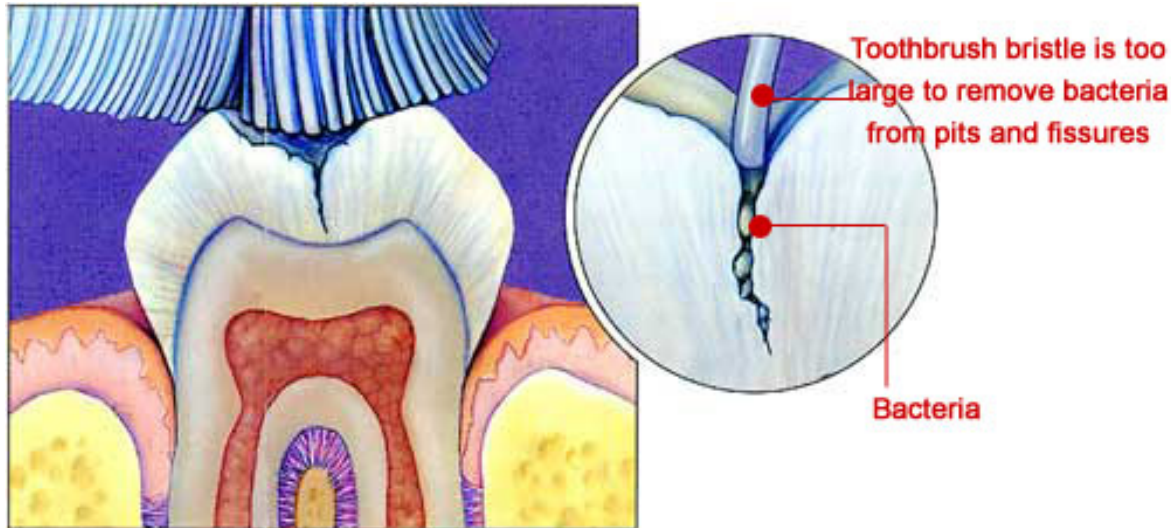
- Fluoride is a naturally occurring mineral that can help prevent tooth decay.
- Fluoride protects teeth by making them more resistant to acid.
- Fluoride also works to hinder bacterial activity necessary for the formation of tooth decay.



Sealants reduce decay by 60%

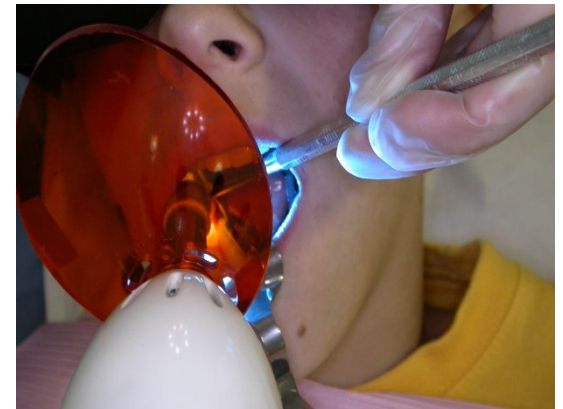
Two main effects of sealants:

1. Prevent and arrest cavities in pits and fissures (grooves) of primary and permanent molars.
2. Minimize progression of early carious lesions in the occlusal (chewing) surface of teeth.

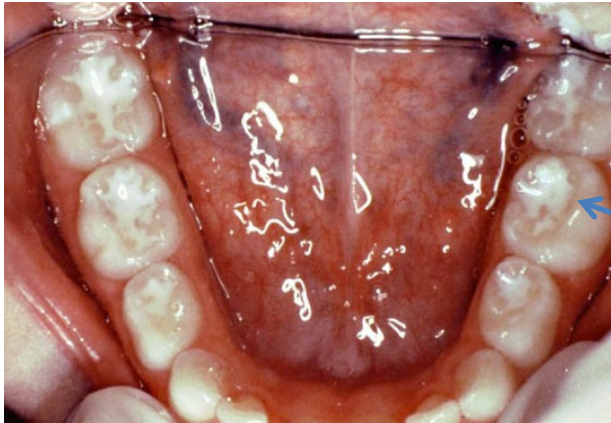


Sealants

- Clear plastic coatings applied in liquid to chewing surfaces of permanent molars and then “cured” to harden forming a barrier to decay causing bacteria.



Sealants



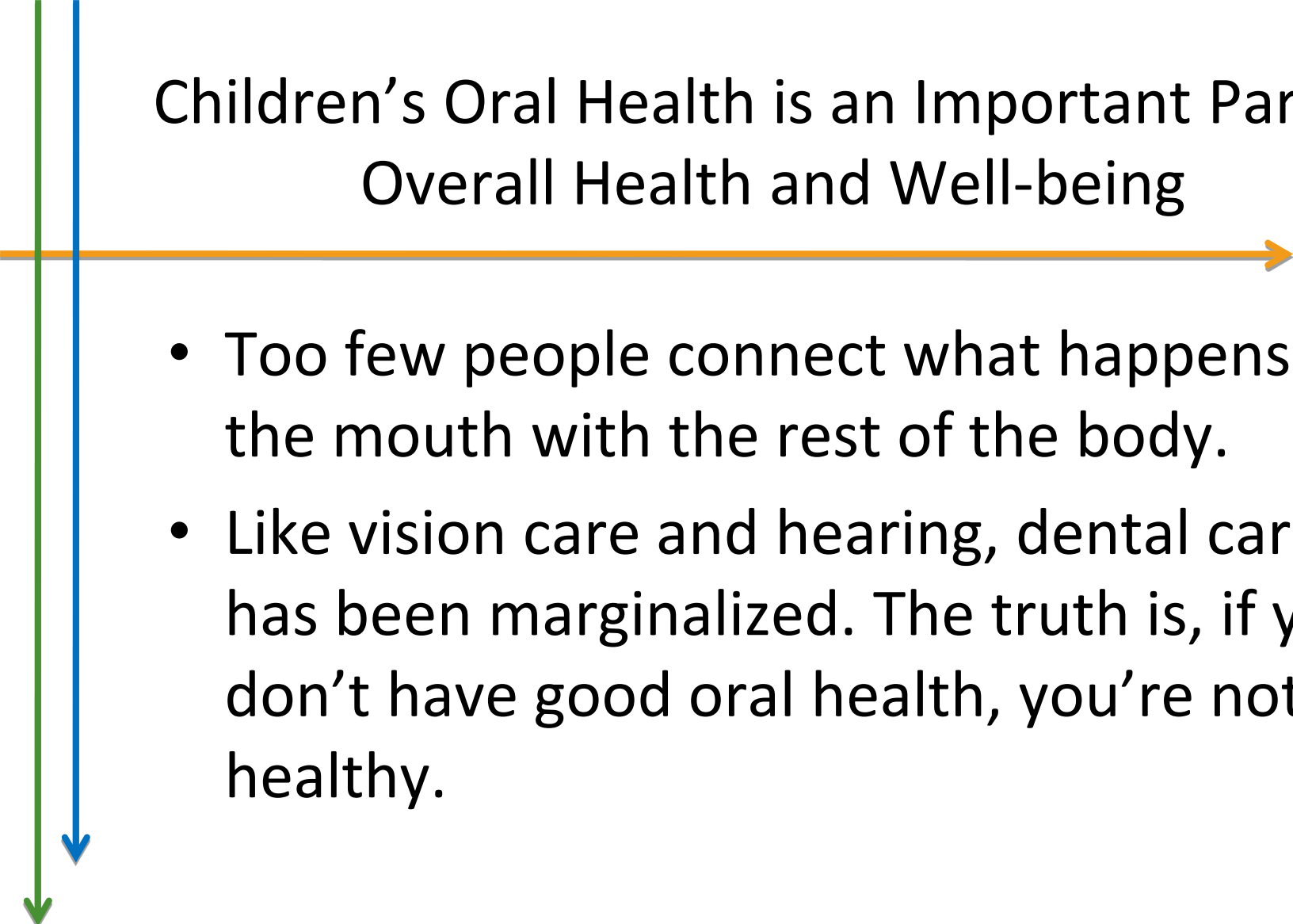
SEALANTS



**Before Fissure
Sealant**

**After Fissure
Sealant**

Children's Oral Health is an Important Part of Overall Health and Well-being



- Too few people connect what happens in the mouth with the rest of the body.
- Like vision care and hearing, dental care has been marginalized. The truth is, if you don't have good oral health, you're not healthy.

Take Home Messages

A green vertical line and a blue vertical line run down the left side of the slide. A green arrow points downwards at the bottom of the green line, and a blue arrow points downwards at the bottom of the blue line. A thick orange horizontal arrow points from the left edge of the slide towards the right, ending just before the text area.

- Tooth decay is a disease process caused by cariogenic bacteria.
- Tooth decay is preventable!
 - Our job is to promote proven oral health policy and practice, and
 - To assist in the development of initiatives to prevent and control oral disease.
- Cavities develop through the interaction of bacteria, dietary sugars, and teeth
- Oral Health is essential to overall health