

Caring For the Oral Health of Individuals With Special Needs: Oral Health Basics

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This webinar is designed to teach individuals a basic understanding of oral disease processes and basic prevention techniques. Oral health professionals likely will not find this information very insightful, but may be introduced to some new ideas for prevention of disease.

Caring For the Oral Health of Individuals With Special Needs

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- PA Department of Health Dental Consultant

These are some of the current affiliations I have that contribute to my knowledge base for these modules. I have been treating individuals with special needs for 25yrs in private practice and in safety net clinic settings. The stories and information that I share with you come from these years of experience, as well as continual research regarding this subject. Many are “trick of the trade” that I have found to be successful in the care of this population.

Caring For the Oral Health of Individuals With Special Needs



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Disclosure

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Specialized products to facilitate the delivery of oral health services

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The speaker, Dr. Alicia Risner-Bauman, does not have any financial interests in Specialized Care Company or ARK Therapeutic Services, Inc. or any other products mentioned in this module.



This is the standard disclaimer and disclosure statement.



**Please view the introduction before
proceeding with this module.**

This webinar is part of the series of modules created to help improve the oral health of individuals with special needs. Viewing introductory module first will make the information in this webinar more relevant.

Learning Objectives

- Identify various oral disease processes.
- Describe the importance of preventing oral disease and maintaining good oral health.
- List basic oral hygiene practices and how to use them for maximum plaque removal.
- Describe the significance of oral disease and how it affects overall health.
- Express confidence in communicating about oral disease.

What is happening in the mouth?

PLAQUE is the sticky biofilm that develops on teeth daily. **BACTERIA** that colonize the film nourished by fermentable **CARBOHYDRATES** producing **ACID** that demineralizes tooth structure and causes **CARIES**. Progression to **PULP** leads to inflammation and necrosis. Acids that are introduced can accelerate demineralization and allow easier bacterial invasion. The bodies **INFLAMMATORY RESPONSE** to the toxins, enzymes, antigens, etc. released by bacteria can cause tissue swelling, attachment loss, and invasive species to multiply leading to tissue destruction. **SALIVA** acts to neutralize the acids thus preventing the destruction. In addition to **BUFFERING** saliva also acts as a **LUBRICANT** to allow the food bolus to be moved along the digestive tract. **FLUORIDE** acts to remineralize and strengthen the tooth enamel matrix.

This is a simplified explanation of the majority of dental disease processes.

What is oral disease?

DENTAL CARIES (DECAY)

- A communicable infectious disease that causes:
 - Dental decay leading to the destruction of tooth crown and root



- *S. mutans* (predominantly) infection of hard tissues: Acids released solubilize/demineralize enamel and dentin changing to a sticky, leathery consistency

Essentially a hole in the tooth is created as caries or decay eats away at the tooth structure. The hole is the cavity. Removing the germs in the biofilm prevents them from causing this destruction. The purpose of the oral care plan is remove bacteria and debris, what I often call schmutz, from the teeth and other oral structures.

What is oral disease?

PERIODONTAL DISEASE

- Infectious disease leading to the destruction of the gingiva, maxilla or upper jaw bone, and mandible or lower jaw bone.



- Mixed bacterial infection causing inflammatory reaction

Plaque is soft and fuzzy feeling. Plaque is easily removed with a soft tooth brush and dental floss. When it stays on the teeth longer than 24 hours it begins to mineralize, becoming calculus or tarter. This hard build up has to be removed by professionals. Bacteria loves this wet, dark environment that is created and thrive to destroy the surrounding tissues, the gingiva or gums. As the destruction gets deeper into the gums, the bone is invaded. Slowly the bone is destroyed. The bone used to be up to the start of the crown of the tooth. Like a fence post being dug and rocked out of the earth, the tooth has nothing to support it anymore.. I have extracted perfectly healthy teeth that had nothing holding them in anymore. Removing the plaque every day from every surface prevents this type of progression.

What is oral disease?

ABSCESSSES

- Pain, abscesses, systemic infection and even death



- Inflammatory response to necrotic tissue in pulp of tooth or bacterial invasion of gums and bone

As the bacteria or caries gets to the inner structure of the tooth, it eventually reached the pulp or nerve chamber, the root canal. Here the tissue dies. When the body reacts to this dead tissue, sort of like gangrene in the tooth, an infection develops at the base of the tooth. This will swell like a balloon in a sac in the bone causing pressure and pain. Eventually it leaves the bone taking the path of least resistance and invading the areas surrounding the tooth root. This pus filled sac can appear as a pimple on the gum above the tooth, a larger swelling above the tooth or in the fold where the cheek meets, or into the spaces of the face and lymph nodes causing facial swelling. It can also grow toward the floor of the mouth and close the airway, known as Ludwig's angina, or travel in these spaces to the pericardial sac around the heart or into the cavernous sinus, a group of veins the go directly to the brain. Sometimes a swelling will not occur if the infection is able to drain through the tooth itself, therefore not being painful because the nerve is "dead" and there is not swelling, the pus drains out the tooth. The belief is that King Tut died from a tooth abscess that reached his brain based on what they found when they examined his mummy. Preventing the development of disease to this state is critical and is one of the many reasons why an attainable oral care plan is needed.

What is oral disease?

HALITOSIS

- Bad breath from bacterial destruction or retained food.



- <https://www.google.com/search?q=bad+breath+pictures+cartoons&sa=X&espv=2&biw=970&bih=857&tbn=isch&imgil=>

There are many causes for bad breath. Sometimes the smell comes from a lingering flavor in the mouth, such as garlic. Stomach acids can also cause halitosis and signal a need to evaluate for acid reflux. Diabetics can also have a sweet smell on their breath when they are having problems with their insulin not breaking down sugars. Usually the smell is caused by retained food and bacteria trapped in the mouth. As the food decomposes it can cause a foul odor. The destruction of the gums and bone also has a unique smell produced by the bacteria that cause cavities and gum disease. An abscess can also smell when it drains. Proper oral hygiene is necessary to remove the cause of the bad smell. This is another reason it is so important to clean the tongue. The tongue is not flat, and bacteria can grow in the deep little papilla or crevices that it has all over the surface.

What is oral disease?

CANCER

- Cancer of the head and neck, including lips and face
- American Cancer Society estimates in 2017 there will be roughly 50,000 diagnoses of oral cavity and pharynx (throat) cancer. Of these, 1 in 5 will not survive.
- Risk factors include
 - use of tobacco products especially smokeless tobacco or “chew”
 - Excessive alcohol consumption
 - Human Papilloma Virus (HPV16)
 - Exposure to sunlight
 - Immune suppression
 - Genetic disorders



- 2017 American Cancer Society Inc., Surveillance Research.
- <https://www.cancer.org/cancer/oral-cavity-and-oropharyngeal-cancer/causes-risks-prevention/risk-factors.html>

HPV DNA (a sign of HPV infection) is now found in about 2 out of 3 oropharyngeal cancers. Another reason to get the HPV vaccine. Using SPF sunscreen lip balm is of great importance. Lip cancers, especially melanomas, are common. Every time you go outside, not matter the weather, your face is generally exposed to UV rays from the sun, even when it is cloudy. I got a second degree sunburn on my face on a cloudy day. I had to have the blisters lanced and still have scars from it. With oral cancer, early detection is critical. If you see anything unusual, it is better to have an oral health professional evaluate the area than to “wait and see”. These cancers can be very fast growing and invasive. Treatment can involve removing parts of the bones or tissues tissues of the face.

What is oral disease?

MUSCLE AND JOINT DISORDERS

- The temporomandibular joints or TMJs can be inflamed.
- 5 sets of facial muscles can spasm.
- Upper and lower jaw bones can fracture or be formed improperly.
- Functions of the mouth including chewing and swallowing.

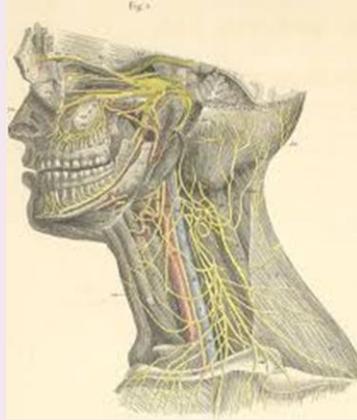


The difficulty with the jaw is that it is a stationary bone and a bent bone that moves on both sides of the stationary bone. 5 sets of muscles allow the full range of motion. 30% of the population clicks and it is not a problem. Most TMJ pain is caused by muscle spasms. Relieving these spasms relieves the pain. Oral care can be very difficult when there is chronic facial pain associated with muscle spasms. Facial massage beforehand can improve cooperation by decreasing the pain of opening and closing.

What is oral disease?

NERVOUS SYSTEM DISORDERS

- Nerve inflammation can cause chronic facial and or mouth pain
- Viruses can be in the nerves
- Abnormal nerve function prevents normal use of the jaws
- Nerve pain in the tooth is pulpitis.



<https://www.google.com/url?sa=i&rct=j&q=&esrc=s&source=images&cd=&cad=rja&uact=8&ved=0ahUKewjK76XjOPQAhUK4CYKHBYgDOEQjBoIBg&url=http%3A%2F%2Fwww.anatomyatlases.org%2Ffatlasofanatomy%2Fplate26%2F04enmouth.shtml&bvm=bv.140496471,d.eWE&psig=AFQjCNEHdqWiRl43voed3jlx70Co7nTYA&ust=1481232952750435>

Nervous system disorders can be extremely hard to diagnose when dealing chronic conditions such as trigeminal neuralgia, a constant pain of the nerves to the teeth. Toothache pain that is sharp to cold or hot is usually coming from the nerve in the tooth. Dental professionals use tests to determine if it is reversible, able to be fixed with a restoration not involving the pulp, or irreversible where the pulp or nerve will not improve without root canal therapy or extractions. RCT is the last ditch effort to avoid EXT the tooth. Sometime RCTs are done to save a badly broken tooth that does not have nerve problems. Part of the oral care plan may involve testing of the facial nerves or a consultation with a neurologist.

What is oral disease?

DEVELOPMENTAL DISORDERS

Median Rhomboid glossitis



Macroglossia



Distraction osteogenesis



Unilateral Complete Cleft lip



- <http://www.slideshare.net/hamzehbattikhi/oral-pathology-developmental-disorders-of-teeth-and-craniofacial-malformations>

While certain disorders are rare and present by themselves in the oral cavity, others are commonly associated with syndromes. For example, it is common to see macroglossia in individuals with Down Syndrome. This enlarged tongue causes a spreading of the mandible during growth and a flaring of the teeth. Often times these individuals are missing permanent teeth. Understanding the syndromes and the oral manifestations is needed in order to develop proper oral care plans for individuals.

What is oral disease?

MISSING TEETH

- Missing teeth can lead to movement and problems with remaining teeth in addition to making chewing more difficult



Inadequate prostheses, poorly fitting dentures and partials can cause sores, problems chewing, and jaw pain

Teeth are held in the bones by the periodontal ligaments which act as shock absorbers when we have teeth. After the teeth are removed, these shock absorbers are gone. Dentures are designed to fit on the ridge of the jaw after the teeth are removed. The bone then takes the 5000 pounds of force involved with chewing. That constant pressure on the bones cause them to recede or shrink. As this happens, the denture no longer fits properly. Dentures need to be refit every 3-5 years and replaced every 7-10 years. Adhesive is used to help keep dentures in place, but it will not stabilize a denture that is no longer fitting in the mouth. Dentures carry bacteria and other things as well, so even people with dentures need an oral care plan for the dentures and the mouth.

What is oral disease?

POOR OCCLUSION

- When teeth do not fit together properly chewing and hygiene can be difficult
- Traumatic occlusion happens when teeth hit too hard causing pain and sometimes changes in the gingiva and bone around the tooth
- Biting of adjacent tissues
- Patients can grind into the pulp of the tooth
- TMJ Dysfunctions are oftentimes muscular caused by parafunctional activity



Orthodontics or braces can help to put teeth into a more favorable alignment for chewing and cleaning. Sometimes removing some teeth is necessary to make cleaning the remaining teeth easier. People who grind their teeth can have chronic pain in the face and TMJ. They also destroy the enamel and then the dentin of the tooth when the surfaces run across each other. Part of the oral care plan should include measures to improve the bite or stop bad habits that destroy the teeth. I used to hear some of my patients coming down the hall because the grinding was so loud. It is common in people with spasticity to clench and grind causing multiple issues. Many cannot tolerate wearing an appliance to stop the grinding.

What is oral disease?

FUNGAL INFECTIONS

- Candidiasis, commonly known as thrush, is a fungal infection that causes redness, burning, and is painful
- Angular cheilitis is a fungal infection that happens when saliva accumulates in the corners of the mouth due to collapsed occlusion or other problems.
- Both require prescription medication to treat



- <http://www.webmd.com/oral-health/ss/slideshow-mouth-problems>
- https://phil.cdc.gov/phil/details.asp?pid=1217#modalIdString_CDClmage_0

Candida is usually diagnosed as a white plaque that wipes off and leaves the tissue underneath beat red. It can be painful or asymptomatic. Oftentimes individuals will not be aware that they have this problem. Other times, especially in infants, it prevent the person from eating. Again, keeping the mouth clean is an important step in managing these infections. Also being aware that these can occur when on antibiotics is important to know so that measures can be taken to watch for this during treatment. Treating the sores in the corner of the lips is an important part of the oral care plan,

What is oral disease?

XEROSXTOMIA aka DRY MOUTH

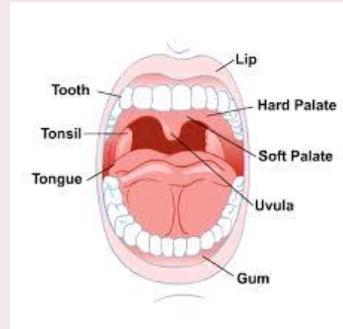
- Dry mouth can cause increased cavities without the buffering capacity of saliva to neutralize acids.
- Hard to swallow food
- Can cause bad breath
- Makes wearing a denture more difficult
- Can be caused by medications
- Difficulty speaking
- Must have thorough dental examination and treatment completed before head and neck radiation therapy



This is a huge problem for individuals with special needs. We see this in the majority of elderly populations due to the number and types of medications they are on. If you see this condition, it is extremely important to see a dentist on a regular basis because it complicates so many other oral conditions. Part of the oral care plan needs to deal with this issue. Using the rinses or medications appropriately is important for maximum effect. On rising, before meals, and at bedtime are the most critical times. This condition can add to problems when people turn to sugary beverages or candies all day long to keep their mouth moist.

Thoroughly remove plaque daily to prevent bacterial buildup that leads to oral disease.

- Soft toothbrush
- 2x2min Brush two times per day for two minutes
- 3 sides of teeth to clean:
 - Biting side
 - cheek side
 - tongue side
- Brush gums as well
- Brush tongue

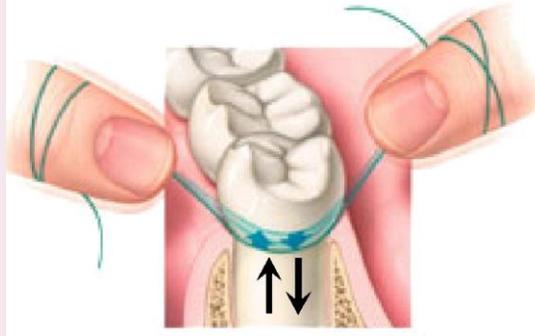


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Most people are never taught the best way to do this. It is important to have an oral health professional teach individuals and care givers proper technique. The most important thing to remember is that we need to remove the biofilm or plaque from all the surfaces of all the teeth at the very least every 24hours. How to accomplish this is a large part of the modules to follow. DEMONSTRATE HERE WITH LARGE TEETH AND BRUSH

Thoroughly remove plaque daily to prevent bacterial buildup that leads to oral disease.

- Floss to remove plaque between teeth
- Wipe both teeth (don't just bounce between teeth)



It is important that the plaques is removed by wiping one tooth and then wiping the next. You have to be a swiper not a bouncer.

Thoroughly remove plaque daily to prevent bacterial buildup that leads to oral disease.

- You may need to modify a toothbrush, or find the best position for brushing or flossing.



The major goal of the oral care plan is to design a way to remove the plaque daily. Developing the plan and utilizing special tools and methods is great, as long as the people doing the job are able to do the job! The plan needs to be developed with the individual and the care giver in mind. Most plastic toothbrushes can be run under hot water and bent. These are very useful to use on lower back teeth. Sponges, balls, and large handles can be designed to help individuals hold a brush better. All these types of items need to be considered in developing the oral care plan.

Nutrition and Diet

- Bacteria convert sugar to acid in mouth that destroys enamel
- Acidic foods and beverages cause destruction of enamel
- Sooner back to neutral pH, not acid, the better for the teeth



It's a germ game in there. Acid just makes it easier for the germs, and sugars provide the nourishment to keep them going, it is that simple. This is meth mouth. The acid from the meth effects the teeth and causes dry mouth. They crave sweets, so they turn to sweet sodas such as Mountain Dew. Doing the Dew is like drinking battery acid. The pH of battery acid is 1, Mountain Dew is 2. You cant fix this. These individuals end up in dentures before they are 30. Imagine how well a denture will fit when they are 80 years old after 50 years of pounding on the ridges. Not well. So many of the individuals come in asking to have the teeth out because they cannot take the pain and they are not going to care for their teeth.

Nutrition and Diet

Sugar 1tsp=4grams : Read Labels

- 33grams of sugar in typical cola drink=8 1/4 tsp. sugar
- Juices have natural and artificial sugars
- Anything gummy or tacky usually has sugar



- United States Department of Agriculture

Learn this conversion and get rid of the gummies! We already talked about this in the introduction, but it is important enough to mention again. Be a label reader.

Inter-Professional Care

- Identify oral health issues and refer early for treatment and prevention measures
- Modify medications to decrease xerostomia
- Identify limitations and share strategies to overcome obstacles to oral health care
- Be familiar with antibiotic prophylaxis recommendations for heart valve and joint replacements

Discussing the problems faced with any part of the personal care needed for good health is important. Understand that oral care can be particularly difficult because of the area of the body that it is and that oral care can be seem very invasive. It is a critical part of good health and yet it is overlooked. Be sure to share with providers any challenges that you face when providing care. Be sure to ask for advice on how to improve care. Create an open relationship with oral health care providers in your area. Refer early to help provide the best preventive interventions necessary. Do not be afraid to express your concerns to all care providers in order to create a plan that can be followed. The sooner the entire team works together, the healthier individuals with special needs can be.

Importance of Regular Dental Visits

- Early detection of dental decay and periodontal disease increases the likelihood of successful treatment.
- Earlier treatment is easier and less invasive.
- Preventive maintenance assures success over a lifetime.



Many general dentists do not feel comfortable treating individuals with special needs, and may refuse to even give an appointment. Technically, this is not allowed under the Americans with Disabilities Act. However, it is important to discuss with dentists what their comfort level is before making the appointment. Since there are many ability levels, some patients are easier to care for than others. Ask if they are willing to meet the individual before an appointment is made for an evaluation to see the office, allow the provider and staff to see the ability levels of the individual, and allow the care givers to share their concerns about care. A meet and greet can oftentimes allow everyone to make a better determination about care and whether they can plan and work together.

Importance of Regular Dental Visits

- First dental visit should occur at age one or with the eruption of the first tooth, whichever is first.
- Parent education.
- Evaluate risk factors for child.
- Show parents proper techniques for caring for child's teeth.
- Discuss diet and nutrition.

The earlier individuals start going to the dentist, the more routine it becomes. If a provider and care givers can grow together, often times care and oral care plans develop easily with all the changes of the individual. I had some patients that I started seeing at a very young age. Sometimes the parents would ask me to contact other health care professionals to tell them how I was able to take care of their child. I was happy to provide my "tricks of the trade" to anyone else involved in the care of the patient. Do not be afraid to ask for this assistance. The health of the individual is the most important part, not the egos of the providers or care givers.

Importance of Regular Dental Visits

- Oral cancer screenings to detect oral cancer early leads to less invasive and more successful treatment.



Oral Lichen Planus



Traumatic Occlusion
or Leukoplakia



Black Hairy Tongue

- <http://www.webmd.com/oral-health/ss/slideshow-mouth-problems>

As mentioned earlier, oral cancer is aggressive, disfiguring, and can be deadly, Have regular visits to screen for conditions.

Importance of Regular Dental Visits

- Systemic diseases and vitamin deficiencies can be indicated by the condition of the mouth, gums, cheeks, and tongue.
- The tongue and oral cavity are frequently the first regions of the body to show signs indicative of a vitamin deficiency.
- Tongue abnormalities may manifest as tongue enlargement, loss of normal tongue anatomy, and sometimes burning and tingling.
- Diabetes is often indicated by certain types of gum disease.
- <http://reference.medscape.com/features/slideshow/nutrition-def#page=2>

Talk to your providers and health care colleagues about your concerns. We may see the patient more often than the medical providers, so keeping track of oral conditions we can sometimes find secondary problems. I had a patient whose tongue appeared to be growing larger at each visit, it ended up she had a pituitary gland tumor that was discovered when she mentioned this to her PCP.

Addressing Medical complications in the Oral Care Plan

- Individuals with special needs are at risk for dental disease.
- Medical complications can be exasperated by poor oral health.
- Increased oral disease can be caused by medical complications.
- Modifications to home care and appointments may be necessary in order to accommodate medical comorbidities.
- Working with allied health professionals is imperative to create an oral health care plan.

There is a module that addresses these concerns entitled “Caring for the Oral Health of the Individual With Special Needs: Addressing or Understanding Medical Complications in the oral Care Plan”. This module does not go into the medical conditions themselves as much as it discusses changes necessary for the oral care plan in the office and at home, things that can influence oral health and how to address and manage them in the oral care plan.

Questions?

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THANK YOU



Again, we wish to thank the Dental Trade Alliance Foundation and the Dental Lifeline Network for the grant that supported this presentation. Please contact me via email if you have any questions or concerns regarding this presentation. We hope you enjoy the remaining modules for your care giving level. Thank you for your participation.