

procedural memory

hand under hand

heart disease

osteoporosis

toothbrush

inflammation

patient education

adaptations

pneumonia

free water protocol

occupational therapy

prevention

bad breath

bacteria

ggcodes

ibd

hygiene

oral health

cognition

overall health

diabetes

floss

bleeding gums

brain health

adl



Oral Health is Overall Health

WHY OTPs Can Aid in the Prevention of Pneumonia

Susanne Giannitti OTR/L
ConnOTA Spring Conference 2024

Objectives

- Recognize the association of oral hygiene and how it is crucial to overall health
- Identify five conditions that have been associated with poor oral health
- Utilize techniques and adaptations for good oral care for those with physical challenges as well as cognitive to aid in the prevention of diseases such as pneumonia





- Speech therapist using hand over hand to brush patients' teeth
- Failure to Thrive; no one looked in her mouth
- MOCA Webinar: Oral Health and Markers of Brain Health in Healthy Middle-Aged Adults

Did you know oral health can provide a critical window into broader medical concerns?

“Health care providers other than dentists don’t look in the mouth a lot, and if they do, they’re looking past the teeth and mouth into the throat”

Romesh Nalliah, DDS, MHCM

“Oral health has implications beyond the oral cavity. The systemic consequences of poor oral health are numerous.”

Cyprien Rivier MD, MSc

What is Oral Health?

Oral health refers to the absence of:

- Periodontal disease (gum disease)
 - Gingivitis (gum inflammation)
 - Periodontitis (inflammation of inner gum and bone)
- Caries (cavities, decayed teeth)
 - Filled teeth
- Tooth Loss
 - Dentures, partials, crowns, implants

What can Occupational Therapists Assess in Terms of Oral Hygiene?

In Skilled Nursing Facilities: Self Care Item GG 0130 item B of the Minimum Data Set (MDS) defines:

Oral Hygiene “The ability to use suitable items to clean teeth. Dentures (if applicable): The ability to insert and remove dentures into and from the mouth and manage denture soaking and rinsing with use of equipment.”

In Home Health: Section GG 130 Functional Status item B of the Outcome and Assessment Information Set (OASIS) defines:

Oral Hygiene “The ability to use suitable items to clean teeth/dentures. Ability to insert and remove dentures and manage equipment for cleaning them.”

Not regulatory but hospitals use Activity Measure for Post Acute Care (AM-PAC) for ADLs Item #5

Personal grooming such as brushing teeth (assistance needed)

- unable
- a lot
- a little
- no assistance

Five Conditions Associated with Poor Oral Health

1

Diabetes (DM2)

- Inflamed bleeding gums
- Dry mouth: difficulty swallowing, increase risk for dental infections. An estimated 34–51% of DM2
- Oral thrush which is often linked to uncontrolled diabetes meaning the immune system is not working well

2

Inflammatory Bowel Disease (IBD)

- Canker sores not only add to the discomfort for those with IBD, but also can show that a disease is present
- Inflammation from IBD can result in an overproduction of cytokines, triggering responses that cause these painful ulcers

Five Conditions Associated with Poor Oral Health

3

Heart Disease

- Higher chance of gum disease--Early warning signs:
 - Bleeding gums
 - Persistent bad breath
 - Gum swelling

4

Osteoporosis

- Research shows that it can affect the teeth in noticeable ways
 - Tooth loss
 - Gum disease.

Five Conditions Associated with Poor Oral Health

5

Dementia

- Periodontitis and tooth loss are risk factors for dementia
- Periodontitis pathogens are associated with the development of Alzheimer's Disease
- Tooth loss may impair cognition by reducing sensorimotor stimulation from chewing
- Mastication increases blood flow in the temporal region
- Tooth loss and chewing pain may lead to changes in dietary intake and variety
- Dietary changes can result in nutritional deficiencies
- Nutritional deficiencies are risk factors for cognitive impairment and dementia

Dementia

Pathophysiology: Neuroinflammation via systemic inflammation


- Poor oral health leads to an increase systemic proinflammatory mediators
- Systemic inflammation contributes to neuroinflammation due to the interdependence and central immune systems

Especially when chronic, neuroinflammation leads to:

- Activation of microglia and complement system
- Neurodegeneration, neuronal death, and lowered neuro genesis
- Altered white matter integrity
- Lower gray and white matter volumes
- Cognitive deterioration, including decreased global cognition and executive functions

Hospital-Acquired Pneumonia is Killing Patients

There Is a Simple Way to Stop It

- According to the National Organization for NVHAP Prevention, founded in 2020, pneumonia infects about 1 in every 100 hospital patients and kills 15–30% of them.
 - PNA often extends hospital stays by up to 15 days and makes it more likely that a patient will be readmitted within a month or transferred to an intensive care unit.
 - The federal government does not require hospitals to report cases of NVHAP and as a result, few hospitals understand the origin of the illness, track its occurrence, or actively work to prevent it.
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Hospital-Acquired Pneumonia is Killing Patients

There Is a Simple Way to Stop It

- PNA occurs when germs trigger an infection in the lungs. Bacteria from the mouth gathers in the scummy biofilm on unbrushed teeth and can aspirate into the lungs. Patients face a higher risk if they lie flat, remain immobile for prolonged periods, and do not brush their teeth.
- A growing number of peer-reviewed research papers show that many cases of NVHAP could be avoided if more patients brushed their teeth, staff brush the teeth of patients who need assistance, and avoid cheap non-effective toothbrushes.
- “Brushing one’s teeth greatly reduces the population of bacteria in the mouth” according to Dian Baker Ph.D., who has spent more than a decade studying NVHAP. “When patients brush their teeth, they’re basically taking their bacterial count from hundreds of millions down to just a few, and this greatly reduces their risk of pneumonia.”

Free Water Protocol (Cleveland Clinic)


What are the rules of the Free Water Protocol?

- Dysphagia patients on thickened fluids or NPO are allowed water between meals.
- They may drink water after brushing or swabbing teeth until they take their first bite of food.
- Water is not allowed during meals or for 30 minutes after meals. The patient may drink as much water as desired throughout the day if the rules are followed.
- Consumption of other thin fluids is not permitted.
- Swallowing rules and strategies should be adhered to.

Why should the Free Water Protocol be followed?

- Water has a neutral pH, whereas other thin fluids such as coffee, tea, milk, or juice do NOT. Water is therefore the safest fluid for the lungs to naturally absorb if it accidentally goes the wrong way during swallowing.
- It will help keep the body hydrated and less thirsty.
- The mouth will feel less dry, and secretions will become thinner.

Consider this...

- When doing an OT evaluation, do you assess the client's ability to brush their teeth?
 - Does your facility provide toothpaste, denture cream/tablets, toothbrushes, mouth wash, floss, emesis basin, mirror, etc.?
 - Have you ever adapted a toothbrush for a patient?
 - Have you ever taught a family member how to brush the teeth of someone with dementia?
 - Has the GG Code for oral hygiene influenced you to write OT goals concerning brushing teeth?
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Toothbrush Adaptations



- Purchasing a brush with a larger handle.
- Making a slit into a tennis ball and sliding the bottom of the toothbrush handle into the tennis ball.
- Sliding the bottom of the toothbrush into a bicycle handle grip or foam tubing.
- Wrapping a small cloth, Coban, craft foam, or elastic bands around the handle of the brush.
- Mobile Arm Support

Toothbrush Adaptations



EazyHold Blue Silicone Universal Cuff

Individuals who require changes to the shape of the toothbrush to make it more angled for better access to their teeth:

- Purchasing a brush that is bent to a more useful angle for brushing.
- Warming the toothbrush handle (avoiding the bristles) gently bend the plastic handle.

Individuals might need a longer brush to reach their mouth better to be able to brush on their own:

- Attach closed cell foam or small lumen PVC piping to the bottom of the toothbrush.

Toothbrush Selections



- Try an electric toothbrush. Not only does this make brushing easier, but it also makes brushing faster and more efficient.
- Always choose a toothbrush that has SOFT bristles rather than HARD bristles.
- Change the toothbrush or toothbrush head every three months or after one is sick (cold, cough, stomach flu, etc.)



Samba robotic toothbrush

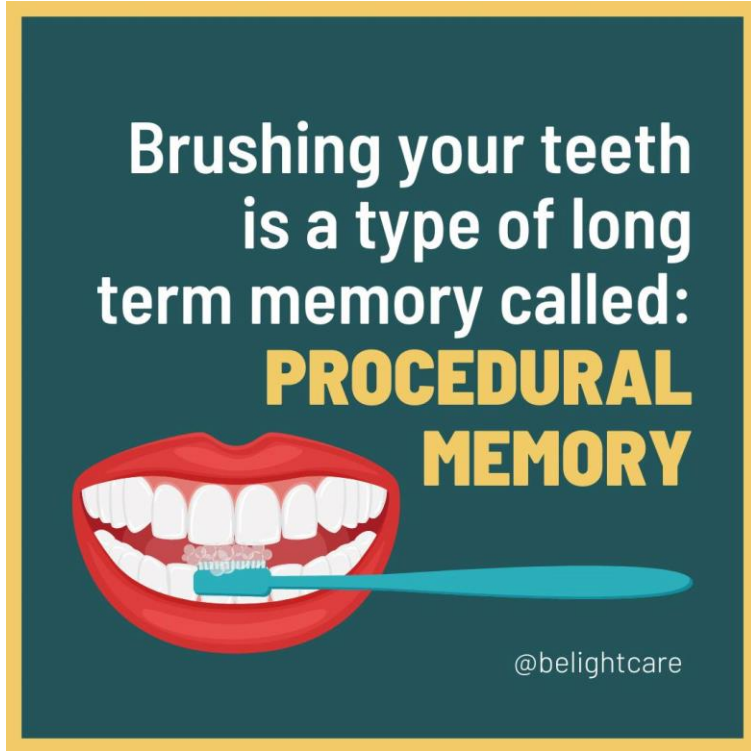
- Sleek, ergonomic handle for comfortable grip and easy maneuverability.
- Adaptive cleaning modes: Adjusts brushing intensity and motion based on individual needs and preferences.

Flossing



"You don't have to floss all your teeth, just the ones you want to keep."
Dr. Eben Askins

Adaptations for Dementia



- Brushing your teeth incorporates muscle memory.
- Once the person begins the back-and-forth motions procedural memory may kick in.
- Assist them enough to get to that point, you will often find that their body takes over!

Adaptations for Dementia

Is someone with dementia resisting brushing their teeth?



Try changing the flavor
of toothpaste to:

cinnamon fennel berry grape
mango vanilla lemon flavorless

Adaptations for Dementia

The person with dementia may not brush due to painful gums and cannot express this



The Collis Curve toothbrush is specially designed with curved bristles to clean tooth surfaces, clean the sulcus, and massage the gums all at the same time

Adaptations for Dementia



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Questions, comments, or need resources for support?

Do not hesitate to contact me:

