

# Dentistry Across the Life Span

Dr. Domenica “Nikki” Sweier

Clinical Professor

University of Michigan School of Dentistry

[domsw@umich.edu](mailto:domsw@umich.edu)

# Disclaimer

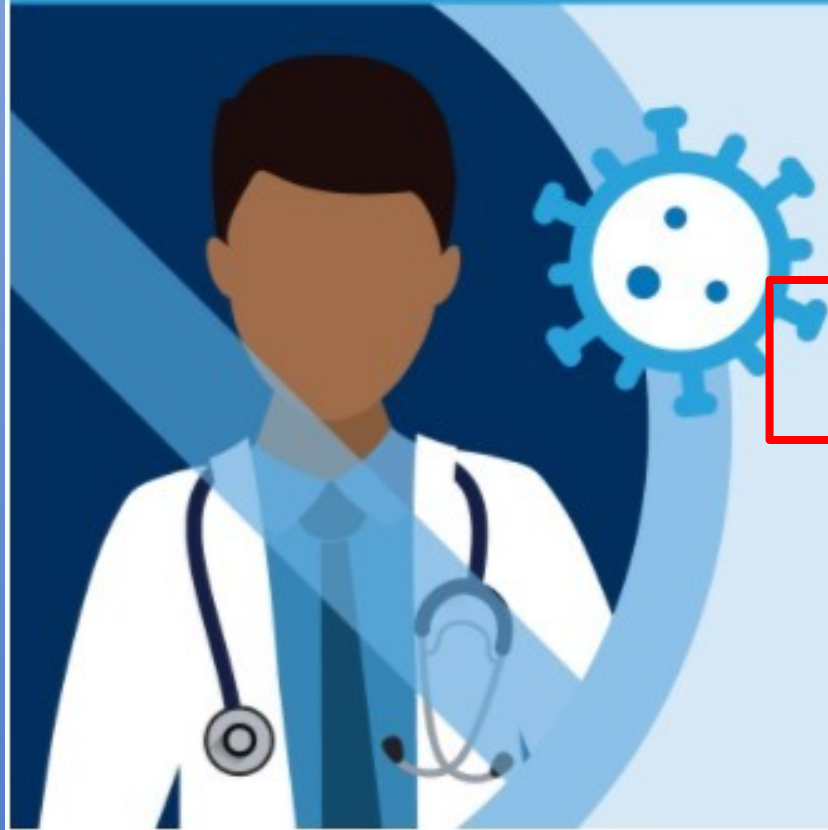
- I have no conflicts of interest to declare



# Objectives

- Discuss strategies to optimize oral health in older adults
- Discuss evidence-based impact of oral health on overall health and well being in older adults
- Discuss common misconceptions of oral health as we age

# Health care disrupted by COVID-19



Cancellation or delay  
among adults over age 50  
with appointments in 2021:

**31%** Dental appointment

**29%** Primary care visit

**28%** Procedure, test  
or operation

Disrupted care  
rescheduled as of  
January 2022:

**64%-85%**  
of vaccinated or  
vaccinated & boosted

**30%-53%**  
of unvaccinated

Kullgren J and Malani P. Pandemic disruptions mean many older adults still haven't gotten needed care. [Healthyagingpoll.org](https://www.healthyagingpoll.org). Accessed Feb 28 2022.

# Exams

- Dental Care as part of overall health and well being!
- Oral health care is important if you have all your teeth, most of your teeth, or no natural teeth at all!
- Exams
  - Every six months
  - Every 12 months if edentulous (no natural teeth)
  - Medical/Dental/Medication History; clinical exam; X-rays
  - Patient expectations! Goals, concerns, desires, and others!

# Domains of Risk Assessment

- Risk of cavities: Caries risk assessment
  - Habits
  - Diet/nutrition
  - Self care
- Risk of gum disease: Periodontal risk assessment
  - Self care
  - Chronic systemic conditions
  - Habits
- Risk of oral cancer: Head and neck cancer risk assessment
  - Habits
  - Self care

# Prevention/Maintenance

- Prophylaxis “Adult Cleaning”
  - Every six months
  - Check gum/bone health
  - Review self care
- Periodontal Maintenance
  - After successful treatment for periodontal disease
  - Every 3 to 4 months is typical
  - Necessary to maintain stability and prevent regression
  - May regress and need more treatment

# X rays

- Radiographs

- Bite Wing Xrays (BWX)

- Detect cavities between teeth
    - Give some indication of bone loss
    - Every 12-18 months generally
    - May shorten or lengthen frequency per clinical condition of patient

- Panorex/Panoramic

- The “forest” look!

- Periapical

- Entire root of tooth in bone
    - Health of tooth and bony support of tooth



BWX



Periapical



FIGURE 1. Diagnostic panoramic radiograph.



# Oral Health as We Age.....

- Normative Age changes
  - Expected
  - thinning of lining of mouth
  - gum recession
  - changes in translucency of teeth
  - “smile lines” and associated changes in skin
  - “thinning” of lips

- Prevalent Age changes
  - Not expected
  - Modified by life experiences, exposures, etc.
  - Loss of teeth
  - Dry mouth\*

Overlap of two

Example: wrinkles

Normative but influences by sun exposure

# Prevention and Home Care

- Adult Cleaning, prophylaxis, every 6 months
- Periodontal Maintenance Cleaning, every 3-4 months
  - This helps to maintain stability and health
- Brush with fluoridated toothpaste\*
  - Twice per day, once at bedtime at minimum
- Floss, technique sensitive, may use aids
  - Once per day—bed time
- Rinse with fluoridated rinse
  - Once per day\*\*--bed time

# Home care with dentures

- May have a removable partial denture or a complete denture...or a combination!
- Remove at night, let tissues rest
- Cleanse soft tissues with a soft brush
- Cleanse appliance with a brush/water...occasionally a little toothpaste
  - Over sink/counter
  - Washcloth covering bottom of sink
- Soak appliance overnight in water, may use commercial

# Nutrition

- Not just “what” you eat, but “how” you eat, and drink, influence oral health...and systemic health and well being!
- Do less of: opening cans, boxes, and bags and use of preprocessed items!
- Do more of: washing, peeling, chopping and use of fresh items!
- Frequency versus duration
- Crunchy, crispy, colorful foods!
- Vit A: mucosal health and immunity
- Calcium/vitamin D: bones
- Vit. C: connective tissues
- Omega fatty acids protective for inflammation (fish)

# Expected as we age?

- Xerostomia
- Root Caries (cavities)
- Loss of teeth
- Taste discrimination

# Dry Mouth

- Xerostomia
- 1-2L per day
- Quality and quantity
- Medications big contributing factor but also systemic diseases
- **Saliva is extremely important**
  - Swallow
  - Digest
  - Immunity
  - Lubricate
  - Taste
  - Buffer against acids
- High risk of cavities with decreased quality and/or quantity of saliva!!

# Do you have Dry Mouth?

- Chew and swallow an entire cracker without fluids
- May have: difficulty swallowing, cracked lips, bad breath, difficulty wearing a denture, inside of mouth sticky
- What can you do?
  - First try to determine most likely contributing factor(s)
  - Water!
  - Modify medications
  - Rx stimulant
  - Sprays, gels, toothpastes
  - Sugar free chewing gum or mints

# Root Caries (“cavities” or decay)

- Gingiva recede
- Exposure of root surfaces
- Root Surface = cementum
- More prone to sensitivity
- Root surfaces are “softer”
- **Root surfaces more prone to decay**
- Difficult areas to clean
- Good news is that fluoride helps!



# Loss of Teeth

- **Myth buster: loss of teeth is NOT a normal part of aging**
- Better oral care and treatment options increase opportunities to keep our natural teeth
- Fluoride is timeless!
  - Over the counter and Rx fluoride rinses
  - Over the counter and Rx toothpastes with fluoride
- Periodontal disease treatments
- Mechanical cleaning
- Regular Xrays and exams

# Taste Discrimination

- Salt, sour, bitter, sucrose, umami
- Results varied
- Genetic components
- Variety of substances used to test taste
- Many other factors
- **General decline with age in taste perception**
- May affect food choices, habits, and practices of food preparation

# Oral and Systemic Health and Well Being...

- Cardiovascular health
- Diabetes
- Depression
- Medications: Rx and OTC

# Cardiovascular health

- Cardiovascular disease as an inflammatory process
- Periodontal disease is an inflammatory process
- Bacteria from the oral cavity enter the circulatory system through daily functions as well as during oral hygiene and dental treatments
- Oral bacteria have been found associated with “plaques” in the circulatory system

# Diabetes and Oral Health

- Diabetes

- Slower and poor healing
- Affect saliva
- Oral fungal infections
- Higher chance of periodontal disease

- Periodontal Disease

- Affect diabetes course
- HbA1c?
  - Glucose associated with blood cells
  - More indicative of diabetes control over time
- Blood glucose (sugar) control?
  - “finger stick”
  - A snap shot of blood glucose status

# Depression

- Behavioral and Physiological
  - Raised cortisol levels
  - Inflammation
  - Conflicting results from studies
- Periodontal Disease
  - Takes a relatively long time to manifest
  - Follow patients with long diagnosed depression
- Cavities
  - Behavioral components?
  - Lower salivary flow
  - Depressed salivary immunity
- Bi-directional relationships
  - Oral health affects mental health
  - Mental health affects oral health

# Medications: Rx and Over the Counter

- Dry Mouth is the most common side effect
- Testing of drugs not done
  - Too expensive
  - Considered mild side effect not worth testing
- Dramatic effects on quality of life and oral health
- May ask MD about time of administration and alternative Rx

# Dental Treatment Options

- Cavities
  - Silver fillings; tooth colored fillings; crowns
- Periodontal Disease
  - Scaling/Root Planing; grafting; bone grafts\*; crown lengthening
- Esthetics
  - Tooth colored crowns; veneers; “bleaching” ; orthodontics
- Function
  - Removable dentures; implants
- Grinding/Clenching
  - Bitesplints

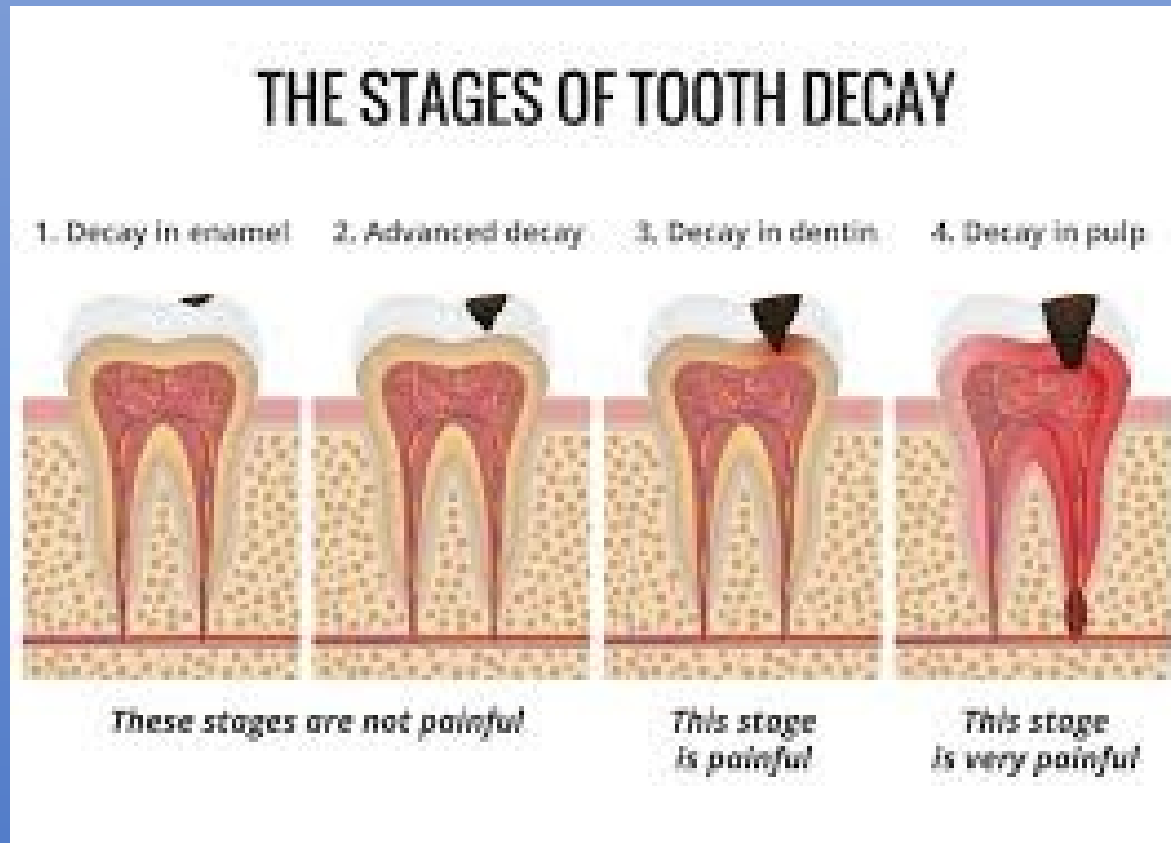


# Individual Teeth

- Cavities

- Demineralized tooth enamel that has penetrated to the underlying dentin, often leaving a hole
- Sensitive to cold and sweets, transient unless it approaches the “pulp” of the tooth which is comprised of nerves/blood vessels
- Remove the affected tooth structure and replace with amalgam, composite, or even gold

# Cavities and Fillings...



# “Root Canals”-Endodontic Therapy

- If the cavity goes beyond the enamel, through the dentin, and into the pulp
- The blood vessels and nerves become affected-PAIN
  - Spontaneous, constant
  - Temperature, chewing
- Infection may develop as the area becomes contaminated by the bacteria from the oral cavity
- An Abscess may develop



# What if a filling is not enough?

- If too much tooth structure is damaged or lost from trauma, a “full coverage” crown is indicated.
- Crowns may be metal or porcelain, or a combination of the two



# Esthetics: Full coverage crowns



# Esthetics: Braces and Veneers



Aligning teeth and bite with braces



Modify shade, shape, and size with veneers with minimal tooth structure loss

# Esthetics: Whitening

- Home bleaching: longest
  - Over the counter
  - Tape
  - Overnight common
- Dentist prescribed bleaching: Intermediate time
  - Carrier trays
  - gel
- In office bleaching: one visit
  - Highest concentration
  - Light
  - Up to 8 shades!





# Single Tooth Replacement

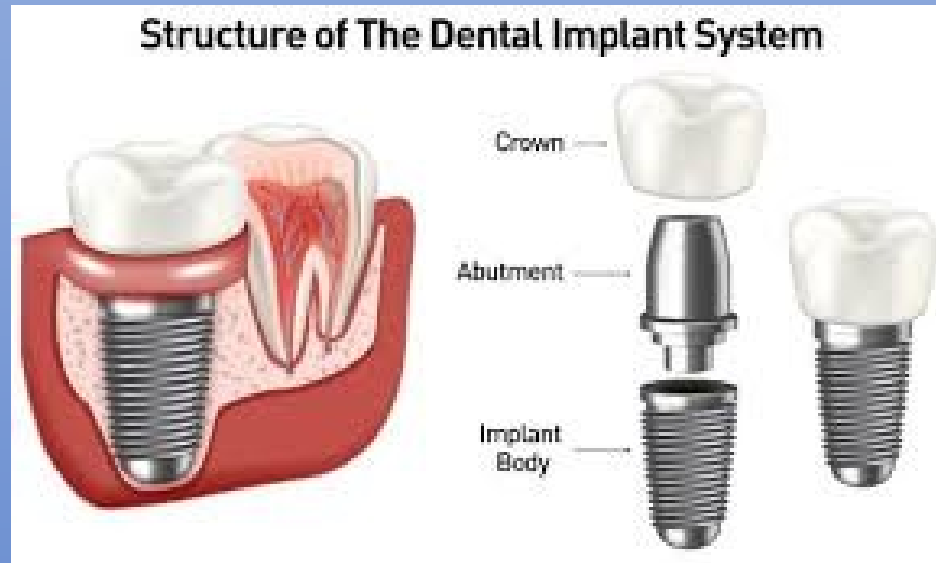
- Bridge
  - Tooth supported
  - Implant supported
- Implant





# Implants

- Need bone quality and quantity
- No periodontal disease
  - Treated, stable
- Need space
  - Between teeth
  - Between upper teeth and lower teeth
- 3D imaging



# Multi-Teeth Replacement

- Bridge
- Removable Partial Denture
- Implants



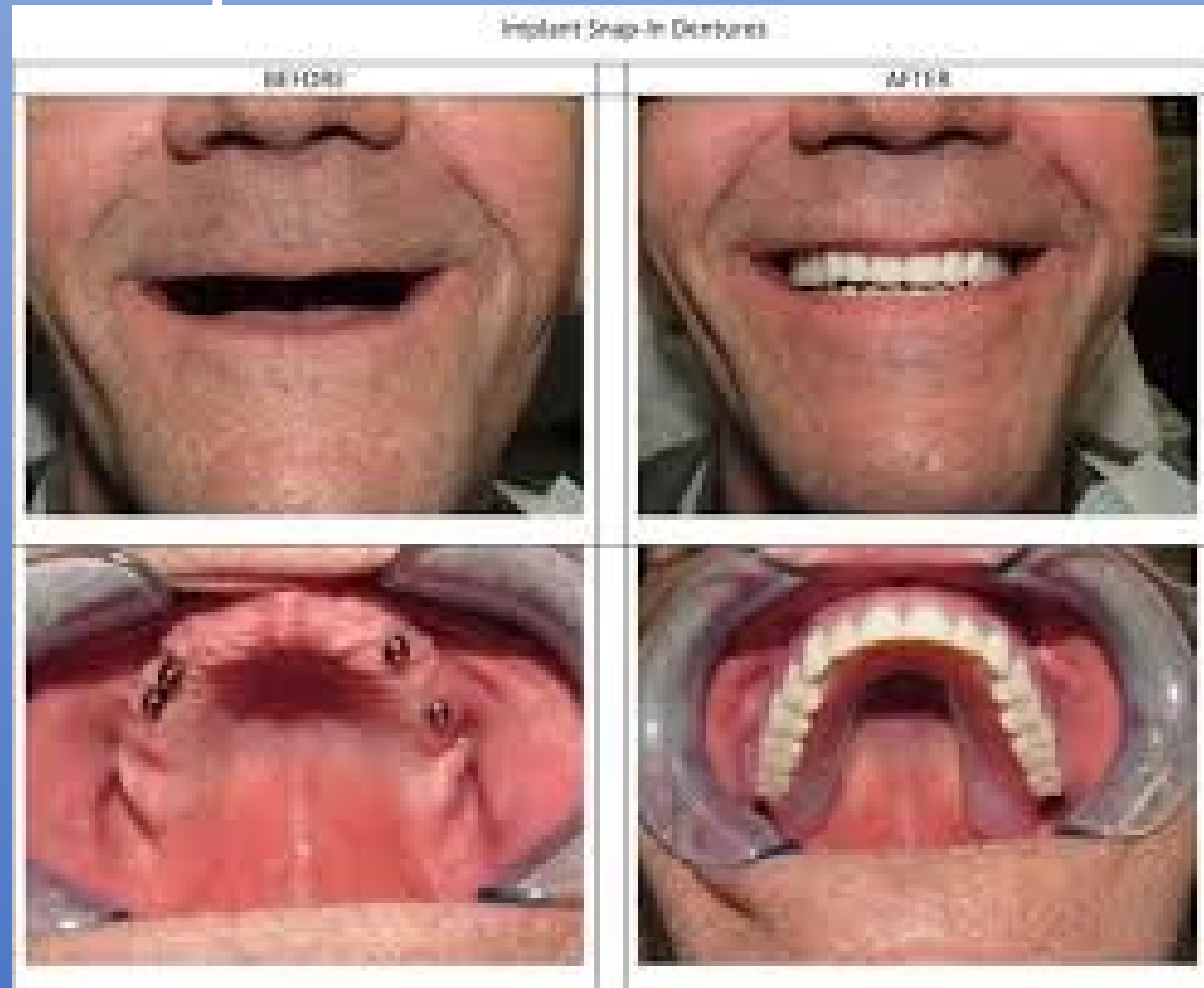
# Whole mouth replacements

- Conventional complete dentures



# Whole mouth replacements

- Implant supported complete dentures



# University of Michigan School of Dentistry

- Patient Care
- Levels of oral health care providers-dentists and dental hygienists
  - Student = \$, ㄣ ㄣ ㄣ
    - Learning to become dentist or dental hygienist
    - Least expensive but most time
  - Graduate student = \$\$, ㄣ ㄣ
    - Dentist or dental hygienist in advanced training
    - Specialty programs
    - Intermediate in expense and time
  - Faculty = \$\$\$, ㄣ
    - Dental Faculty Associates
    - Specialists and generalists
    - Most expensive but shortest in time
    - Similar to local private practices

# Questions?

[My email address](mailto:domsw@umich.edu)  
[: domsw@umich.edu](mailto:domsw@umich.edu)  
[u](#)

School web page:  
[Dent.umich.edu](http://Dent.umich.edu)

Phone number for  
new patient  
information:  
[888-707-2500](tel:888-707-2500)

