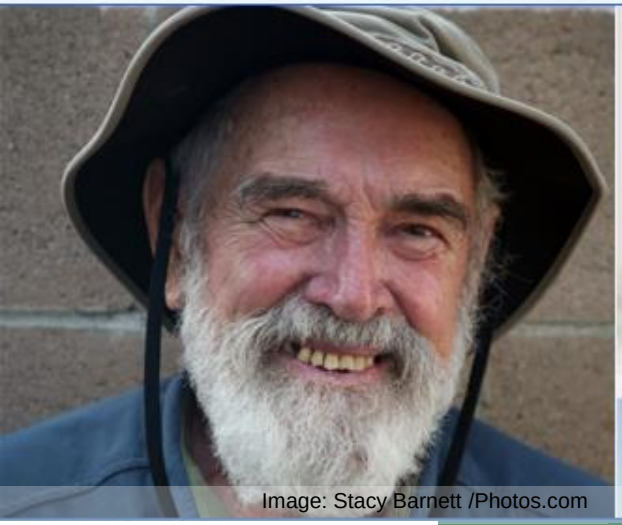
Smiles for Life

A national oral health curriculum

Module 8:
Geriatric Oral Health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STFM SOCIETY OF TEACHERS OF FAMILY MEDICINE

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Educational Objectives

- Describe how socioeconomic issues affect geriatric oral health
- Understand the important of oral assessment of elderly patients
- Identify common oral diseases in the elderly
- Describe oral-systemic relationships in the elderly
- Discuss common oral effects of medications
- Implement effective oral preventive measures for the elderly and their caregivers
- Recognize and describe the elements of effective CHW practices in primary care-dental collaboration

Why Oral Health Matters

Geriatric oral and systemic health are tightly interconnected:

- Poor oral hygiene is associated with increased incidence of pneumonias
- Many medications cause dry mouth, increasing risk of dental caries
- Diabetic glucose control is poorer in the presence of periodontal disease and periodontal disease is worse in diabetic patients especially in those with poor glycemic control
- Poor oral health is a common cause of weight loss and failure to thrive

Community health workers can play an important role in improving the overall health of their patients through addressing oral issues.

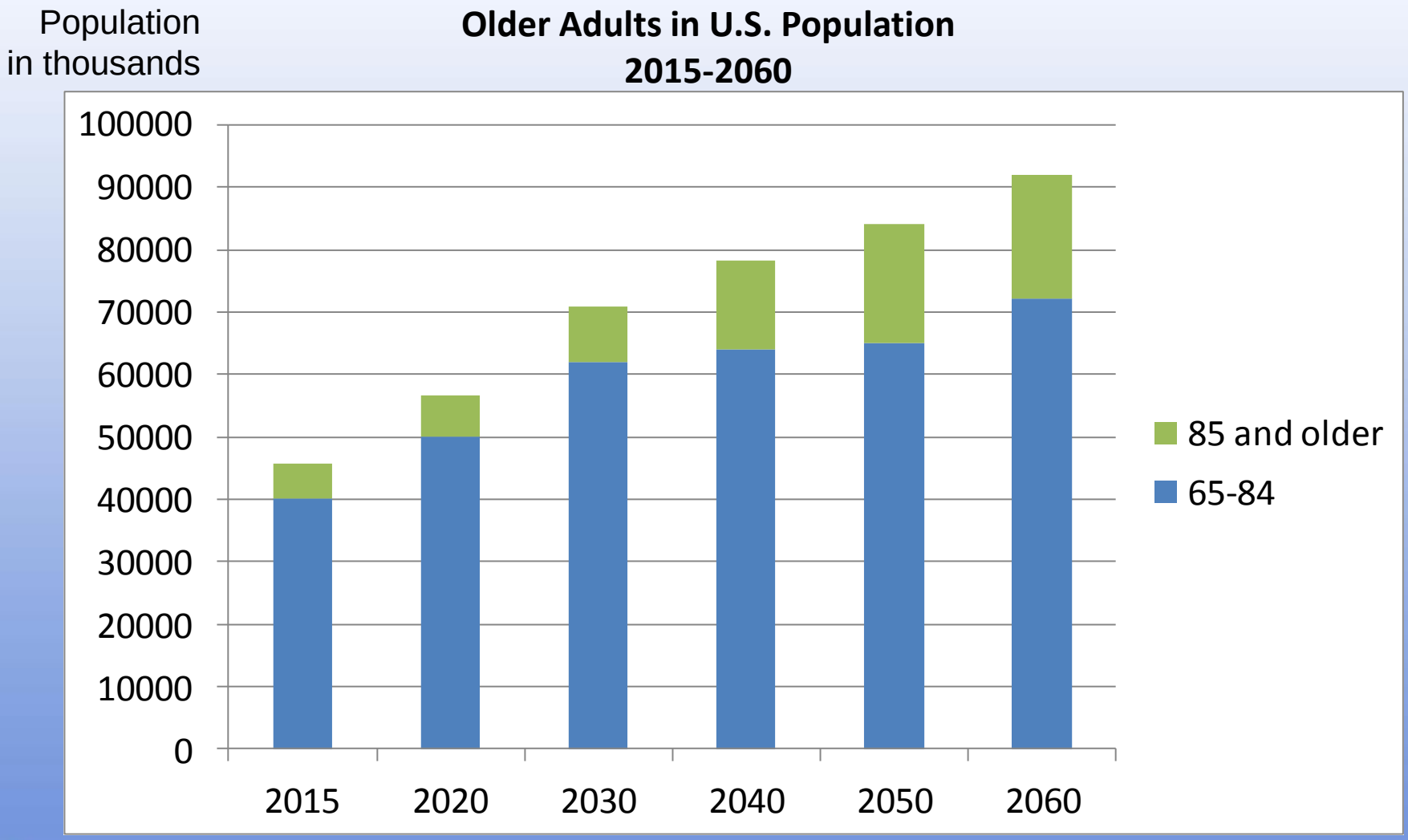
Oral Health Needs of the Elderly

Chapter Objective

- Describe how socioeconomic issues affect geriatric oral health

Image: Alexander Raths /Photos.com

A Growing Population



At Risk Elderly

Chronically Ill

- 80% 1 or more chronic diseases, 30% 3 or more

Low Income

- 14% of those over 65 live in poverty
- Minorities more likely to have low income
- Most lack dental insurance

Homebound or institutionalized

- 1 million receiving homecare, 1.25 million in nursing facilities
- 25% have difficulty performing at least one activity of daily living

Disabled

- 38% of those over 65

Rural

- 15% over 65 live rurally with less medical and dental access

Growing Oral Health Needs

- Elders retain more of their teeth, yet still have high levels of disease
- 50% of elders perceive their dental health as poor or very poor
- Prevalence of oral disease in elders:
  - Caries: 32%
  - Severe periodontal disease: 23%
- Complete tooth loss has declined from 50% to 18% in the past 60 years due to:
  - Water fluoridation
  - Improved dental care
  - Increased emphasis on prevention

Limited Access to Care

Only 43% of elders visit the dentist!

- 70% lack dental insurance
  - Medicare does not cover preventive and outpatient dental treatment
  - Medicaid dental coverage varies by state but is typically limited and usually does not cover routine preventive services
- Poverty
- Limited mobility and transportation
- Disability
- Institutionalization
- Limited evidence-based care guidelines
- Few specialized geriatric dentists

Nursing Facilities

1.25 million elders reside in nursing facilities

- Medicare and Medicaid require oral health assessment and care for residents
- 70-90% of residents cannot brush their own teeth or care for dentures
- Oral care is not consistently delivered
- Only 16% receive any oral care, and average brushing time is 16 seconds

Education of nursing staff is critical

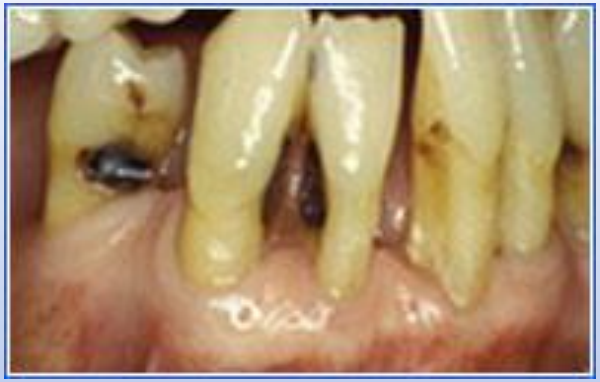
Understanding Oral Health Assessment

Chapter Objective

- Describe an accurate oral assessment of elderly patients

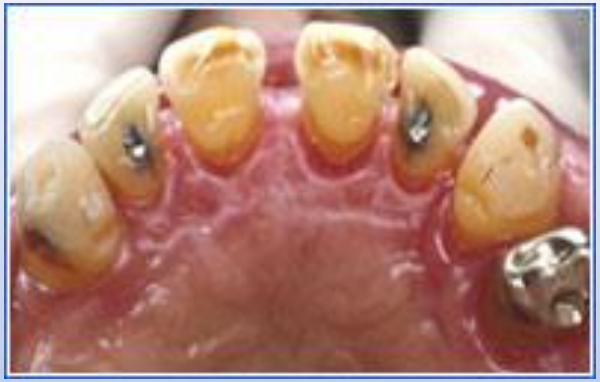
Image: Lisa Kyle Young/Photos.com

Age-Related Changes



Gingival Recession
resulting in root surface exposure

Photo: John McDowell, DDS

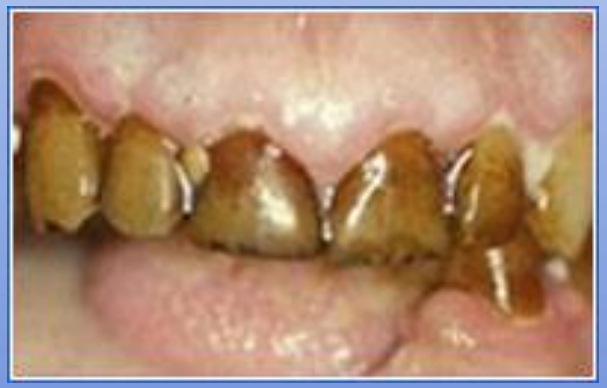


Worn incisal edges and yellowing

Photo: UKCD

Dark Staining

Photo: Robert Henry, DMD, MPH



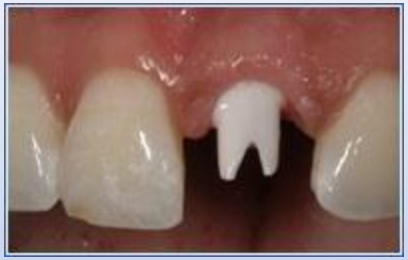
Tobacco Staining

Photo: Robert Henry, DMD, MPH

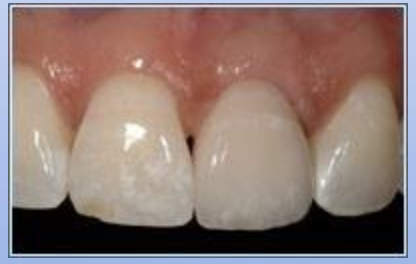
Implants

- Implants are surgically placed into the jaw and then usually crowned.
- Placing dental implants is likely straightforward for patients with a healthy mouth, a history of good oral hygiene, and few medical problems.
- Patients with decreased jaw bone mass (osteoporosis, low hanging maxillary sinus, or bone resorption), diffuse caries, or difficulty with hygiene due to co-morbidities may not be good candidates.
- Patients with poorly controlled diabetes or serious bleeding disorders are also a concern.

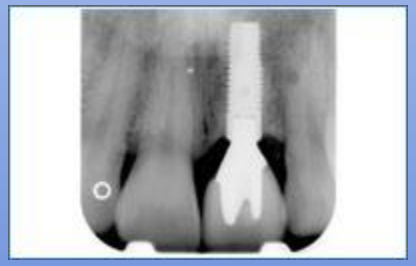
Implant without crown



Implant with crown



Radiograph of implant

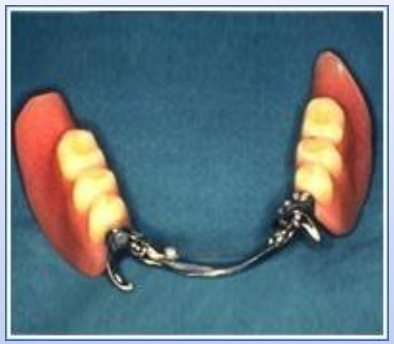


Photos: Ingeborg De Kok, DDS MS

Dentures and Bridges

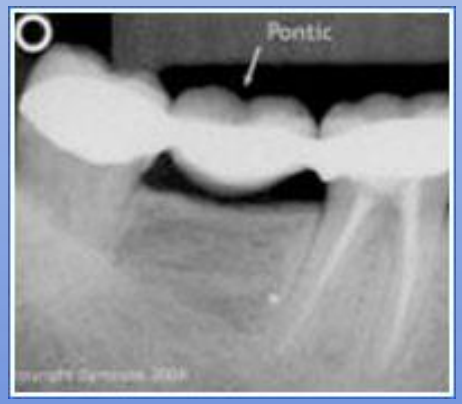
- Removable dentures may be “complete” (replace all teeth) or “partial” (replace some teeth)
- Fixed bridges replace one or more teeth. The bridge is connected to adjacent healthy teeth using a crown.
- A bridge cannot be removed

Dentures



Photos: Robert Henry, DMD, MPH

Bridge



Photos: Robert Henry, DMD, MPH

Complete Dentures

Prevalence

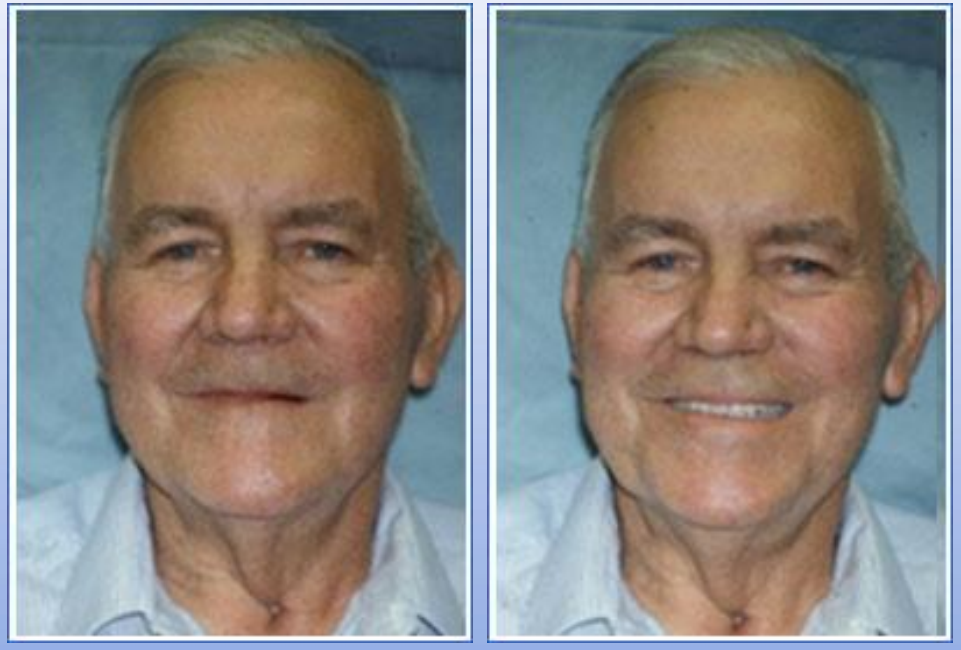
- Over age 65 average 18 remaining teeth
- 25% completely lack teeth

Negative impacts

- Difficulty eating
- Inadequate nutritional intake
- Dissatisfaction with facial appearance

Dentures improve quality of life

- Provide support
- Improve appearance
- Make eating easier

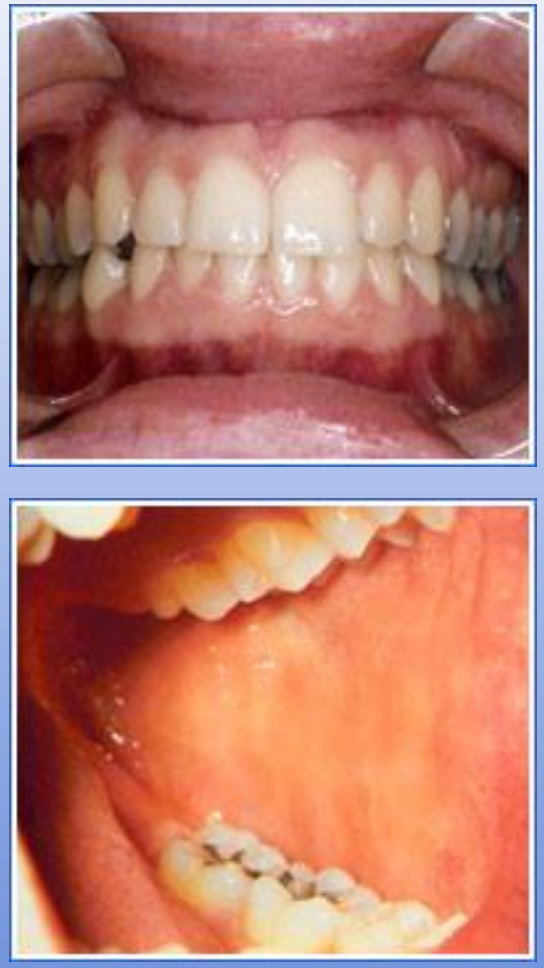


Without dentures With dentures

Photos: Robert Henry, DMD, MPH

Mucosa

Normal

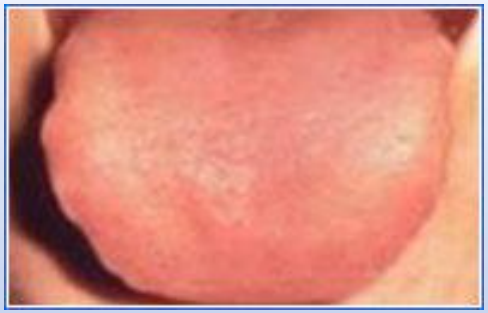


Photos: UKCD, Robert Henry DMD, MPH

- Aging results in thinning of oral mucosa and decreased elasticity
- Mucosa should appear wet and glistening
- Dry mucosa interferes with denture retention and increases risk of caries

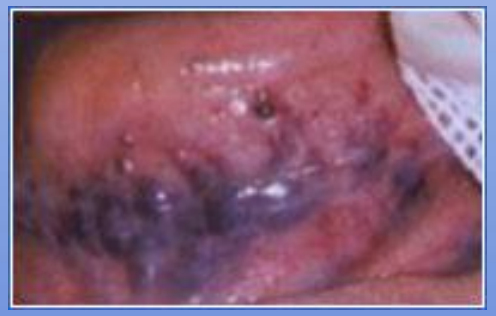
Tongue

Normal



Dry and fissured

Lingual varicosities



Photos: Robert Henry, DMD, MPH

Age-Related Changes

- Fissuring, mucosal thinning and sublingual varicosities
- Although number of taste buds decreases with aging, decreased taste sensitivity is more due to smoking, drugs and dry mouth

Common Oral Problems in the Elderly

Chapter Objective

- Identify and manage common oral conditions in the elderly

Image: Punchstock

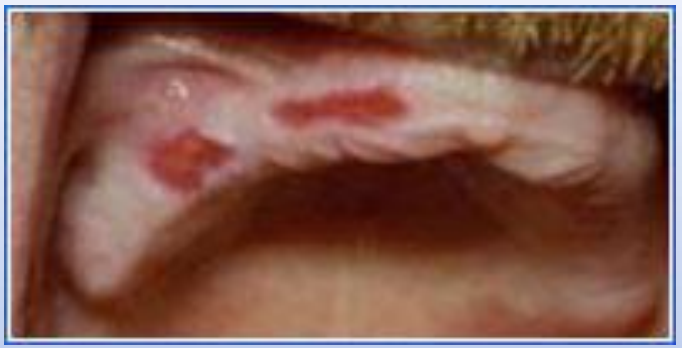
Denture Problems

Ulcerated mucosa from denture irritation

- Ill-fitting dentures
- Poor hygiene
- Dentures left in too long

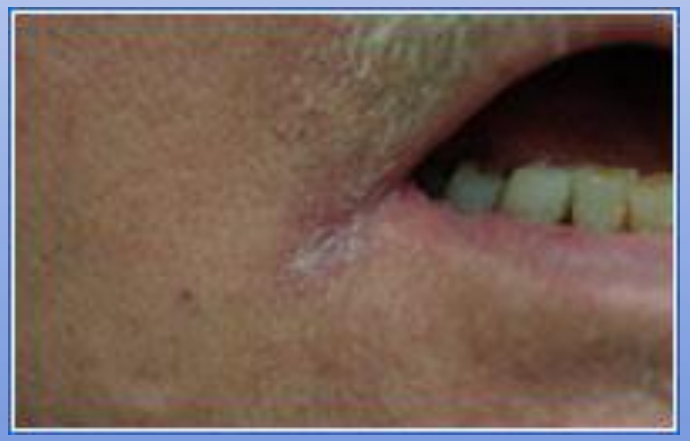
Angular cheilitis

- Common when old dentures have insufficient vertical height



Maxillary Ridge Ulceration

Photo: Robert Henry, DMD, MPH



Angular Cheilitis

Photo: Ricardo Padilla, DDS

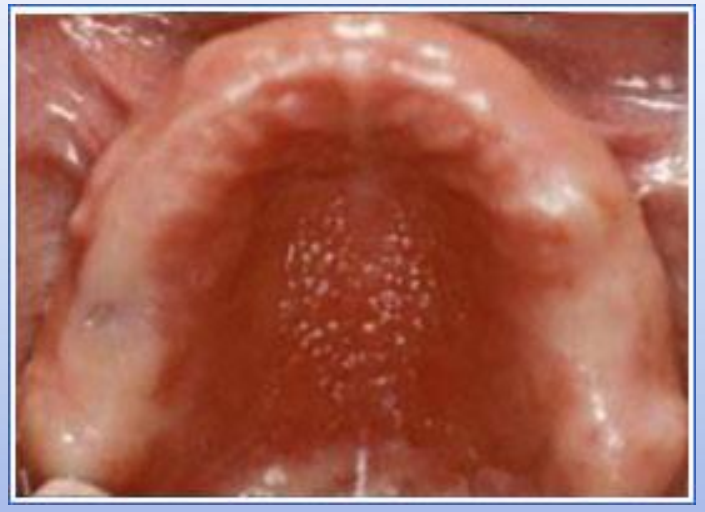
Denture Stomatitis

Symptoms

- Reddening of palate with cobblestoning
- Often asymptomatic

Causes

- Most common risk factor is continuous denture wearing
- Other risk factors:
  - Dry mouth
  - Diabetes or immunosuppression
  - Nutritional deficiencies



Denture Stomatitis

Photo: Robert Henry, DMD, MPH

Treatment

- Treat mouth with topical antifungals for 2 weeks
- Soak dentures in chlorhexidene or nystatin
- Dentures out of mouth for at least 8 hrs nightly

Denture Care

Overnight, saliva decreases and bacterial counts increase. As a result, continuous denture wear may lead to denture stomatitis, redness, and irritation in the palatal tissue.

Poor hygiene of dentures also contributes to denture stomatitis. Plaque and tartur culus collect on dentures just as on natural teeth.

Dentures should be:

- Removed at night to let oral tissues rest
- Brushed with liquid hand soap, dishwashing liquid, or denture cleaning paste—avoid using regular toothpaste
- Soaked overnight in a cup of water or denture cleaner

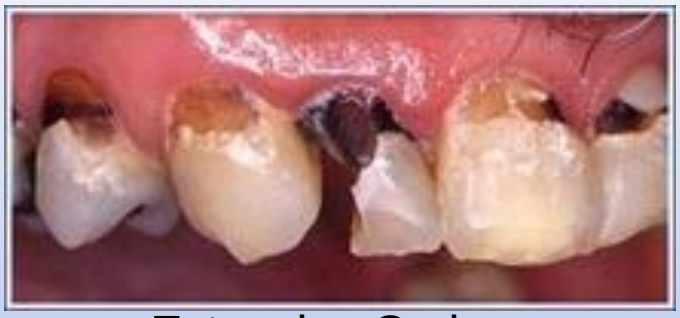
Caries: Causes & Symptoms

Causes

- Dietary carbohydrates are metabolized by bacteria into acids resulting in destruction of tooth structure
- Root caries is common in the elderly
  - Gingival recession exposes susceptible root surfaces
  - Root caries progresses rapidly

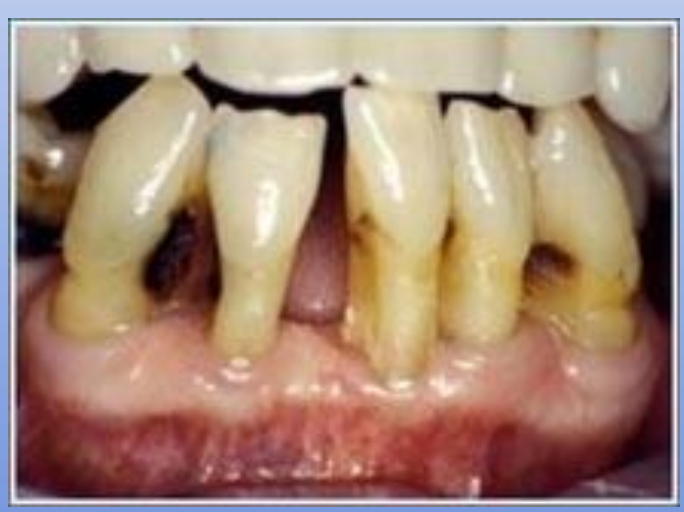
Symptoms

- Mild disease asymptomatic
- Pain
- Cellulitis
- Abscess



Extensive Caries

Photo: John McDowell, DDS



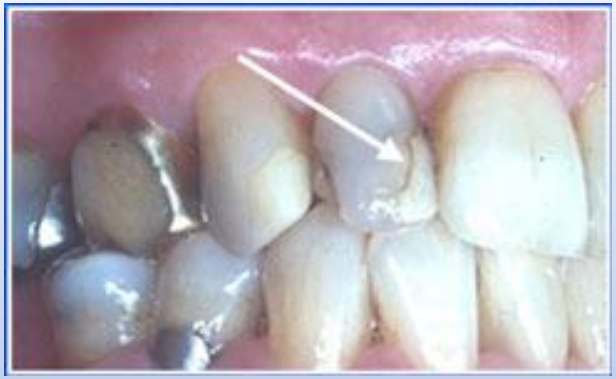
Root Caries

Photo: Robert Henry, DMD, MPH

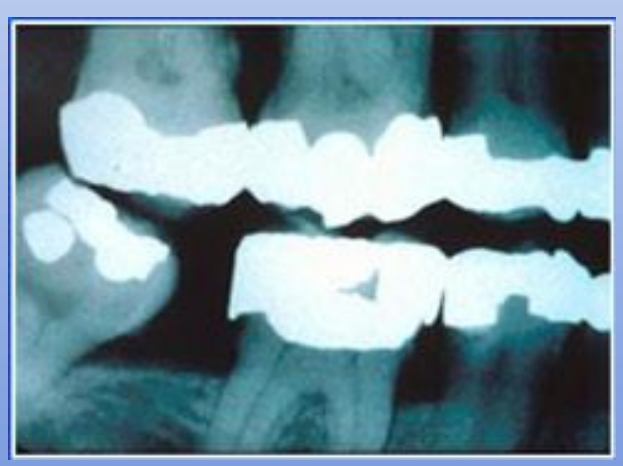
Caries: Risks

Risk factors

- High bacterial counts
- Frequent consumption of sugar-containing foods
- Inadequate fluoride
- Low socio-economic status
- Physical disabilities and dementia
  - Brushing and other oral hygiene activities become more difficult
- Existing restorations or appliances
- Dry Mouth
- Medication
  - Decrease salivary flow
  - May contain high levels of sucrose



Recurrent Caries



Malocclusion of drifting teeth after extraction

Photos: UKCD

Gingivitis

Symptoms

- Tenderness
- Reddening
- Bleeding gums

Causes

- Plaque buildup
- Changes in hormone levels
- Oral foreign bodies
- Gum inflammation but no destruction of periodontal ligament or bone

Treatment

- Good home hygiene
- Regular dental visits

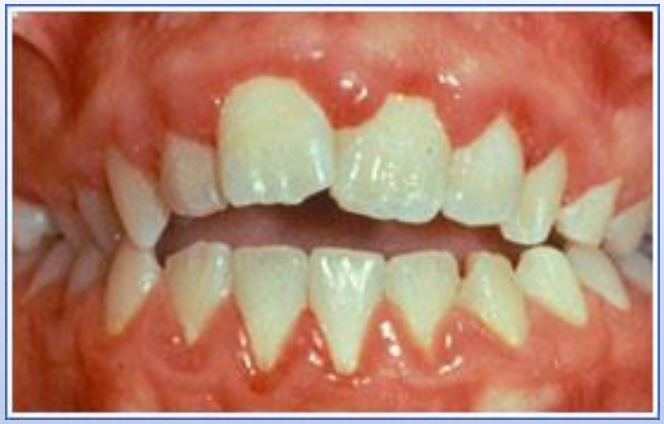


Photo: John McDowell, DDS

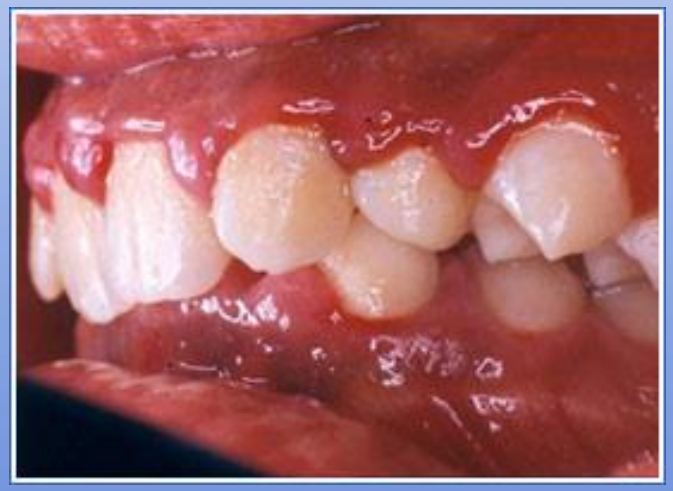


Photo: Joanna Douglass, BDS, DDS

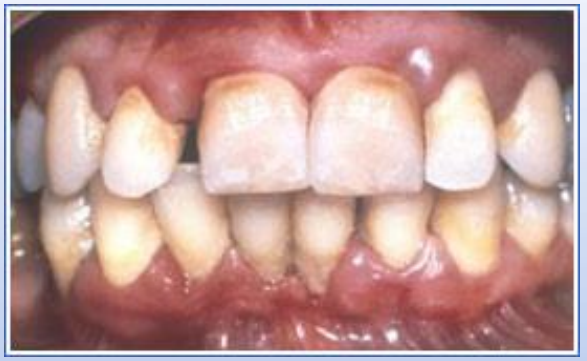
Periodontitis

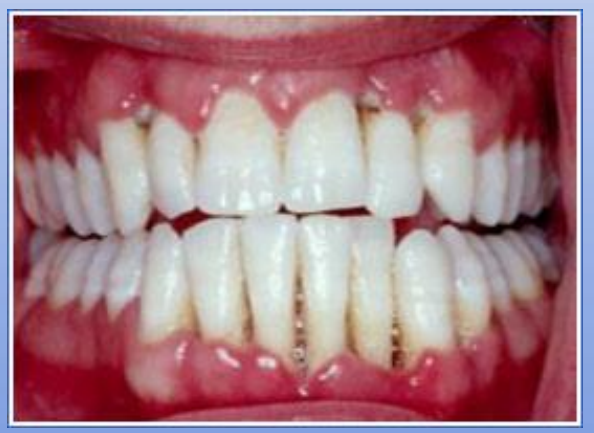
Causes

- Chronic plaque exposure causes inflammation which leads to
  - Destruction of periodontal ligament
  - Loss of supporting bone
  - Tooth loosening and loss

Treatment

- Good oral hygiene and regular dental visits
- Cessation of tobacco and other irritants such as cannabis
- Physician will recommend appropriate treatment





Advanced periodontal disease

Photos: UKCD

Leukoplakia and Erythroplakia

Symptoms

- Subtle white or red patch
- May progress to elevated plaques that ulcerate

Treatment

- Seek medical help for any unexplained lesions

Leukoplakia

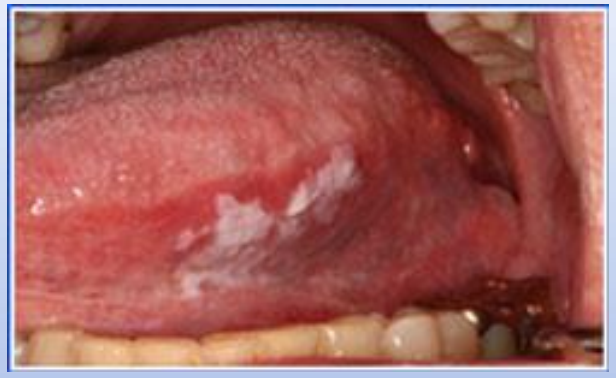


Photo: Joel Goodman DMD

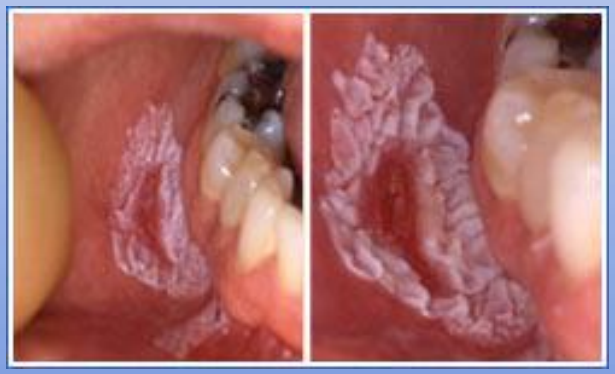


Photo: John McDowell, DDS

Erythroplakia

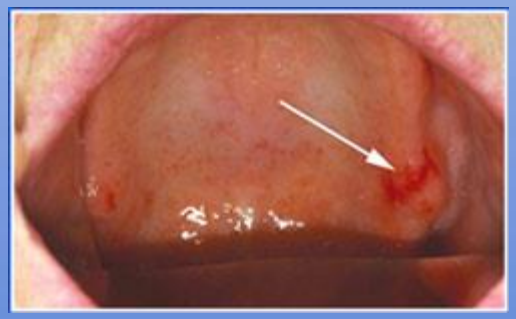


Photo: Ellen Eisenberg, DMD

Oral Cancer: Epidemiology

Prevalence

- Ninth most common cancer
- Seven times more likely in the elderly
- Rising incidence in African American males

Epidemiology

- Alcohol and tobacco
- Human Papilloma Virus, HPV 16
- Sunlight (lip cancer)
- Betel nuts

Symptoms

- Red or white patches persisting beyond 2 weeks
- Ulcers that are non-healing or bleed easily
- Masses

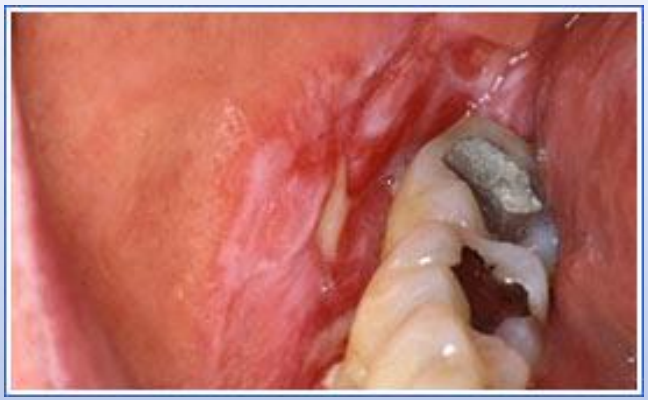


Photo: John McDowell, DDS

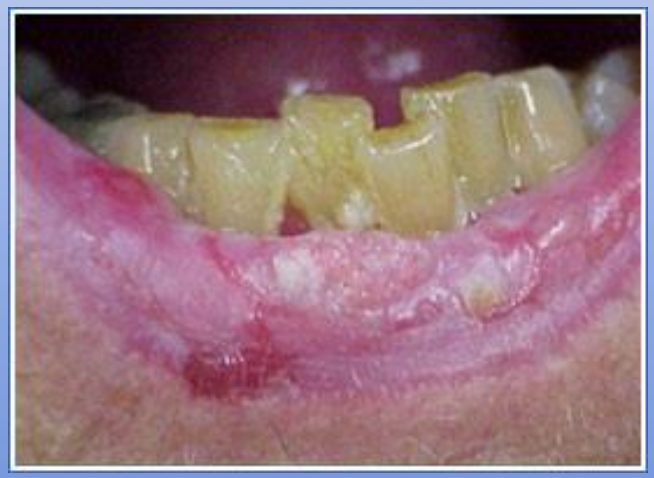
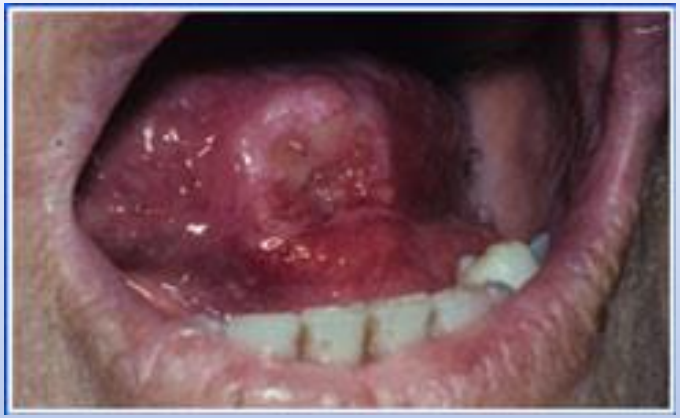


Photo: Ellen Eisenberg DMD

Oral Cancer: Treatment

Treatment

- Health care provider will determine the best treatment



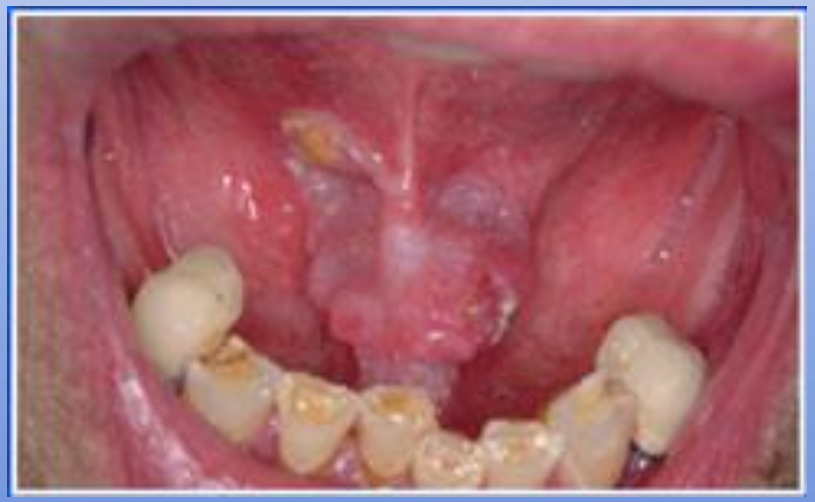
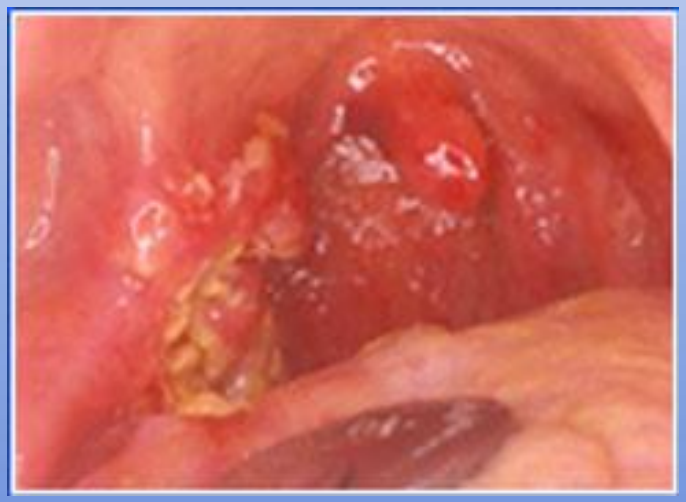


Photo: Ricardo Padilla, DDS



Photos: Ellen Eisenberg DMD

Oral-Systemic Linkages in the Elderly

Chapter Objective

- Describe oral-systemic relationships in the elderly

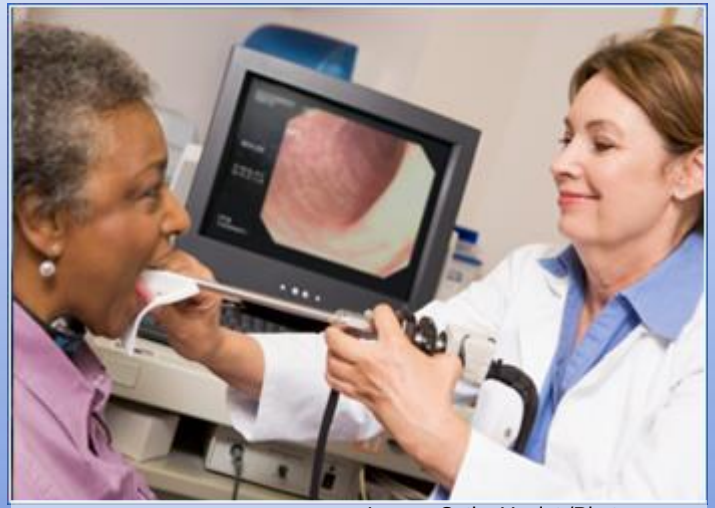


Image: Cathy Yeulet /Photos.com

Nutrition

Tooth loss, dentures, and decreased saliva all can alter diet

- Changed sensory perception of eating (texture and taste)
- Lowered masticatory efficiency
- Decreased intake of important nutrients
  - Fruits, vegetables, fiber
  - Vitamin C, beta carotene
- Compensatory habits such as sucking of mints or consuming sweetened beverages to mitigate dry mouth
  - “Empty calories”
  - Increased caries risk

Soft Diet

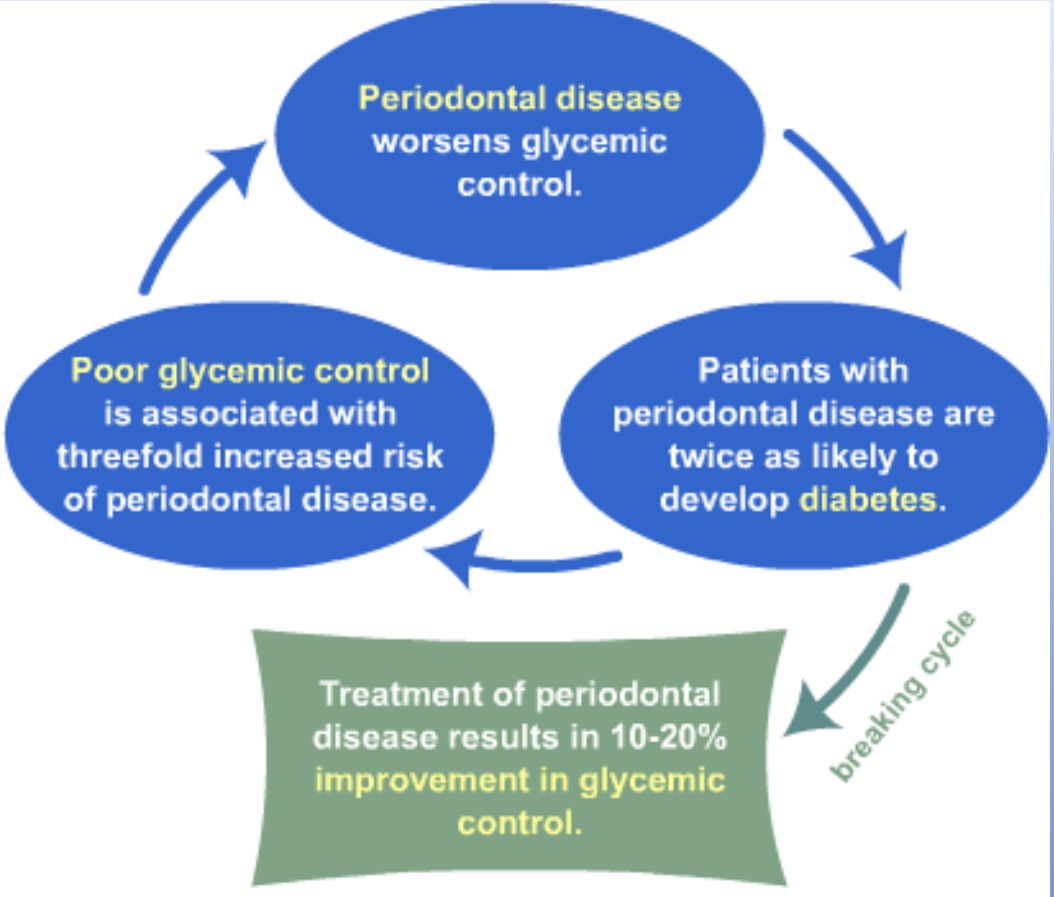
Photo: Robert Henry, DMD, MPH

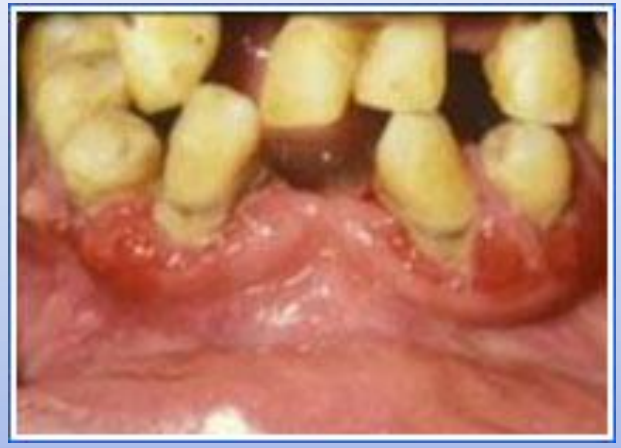
Fruits, vegetables and whole grains

Photo: Michelle Wrightson, MD

Diabetes

A vicious cycle





Severe Periodontitis

Photo: UKCD

Osteoporosis and Osteonecrosis

Patients with osteoporosis may experience oral changes

- Increased tooth loss
- Require denture adjustments as jaw shape changes
- American Dental Association recommends regular dental care for patients on bisphosphonates

Osteonecrosis

- Prevalence is rare, at approximately 0.1%
- Can occur at the site of a tooth extraction or spontaneously
- Symptoms include:
  - Jaw pain
  - Swelling and infection
  - Loosening teeth
  - Drainage and exposed bone

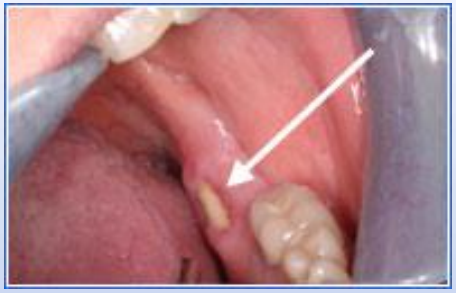


Photo: John McDowell, DDS

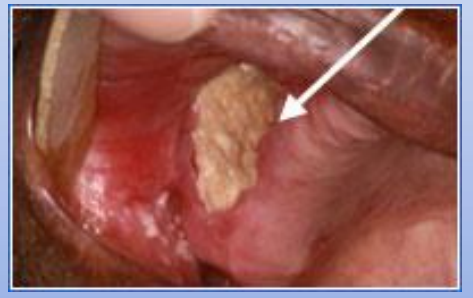
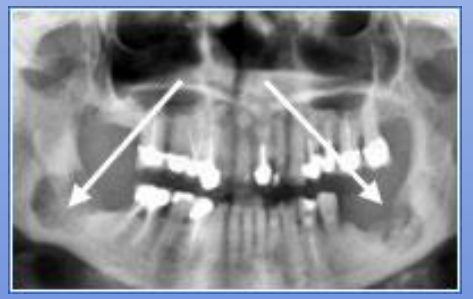


Photo: Ricardo Padilla, DDS



Radiograph: Alan Lurie, DDS

Aspiration Pneumonia

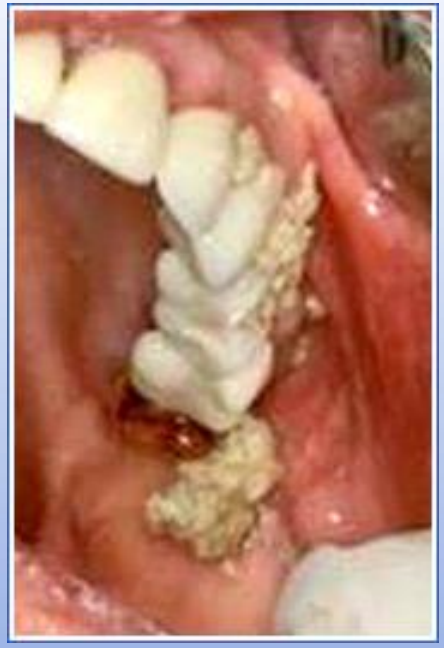
- Aspiration of oral bacteria is associated with pneumonia, particularly in bedridden and hospitalized patients
- 83% of patients who develop nosocomial pneumonias are mechanically ventilated
- Oral care protocol interventions led to an 89.7% reduction in ventilator associated pneumonia
- Oral hygiene strategies in hospitalized and nursing home populations also can reduce the incidence of pneumonia

Image: John Foxx/Photos.com

Vascular Disease

Periodontal disease is associated with coronary artery disease and cerebrovascular disease, though the impact is unclear.

- Treatment of periodontal disease has not been shown to date to reduce cardiovascular risk



Food Packing
Photo: B.J. Brown , RDH, MS

Strokes can clearly result in multiple oral problems, such as:

- Oral sensory and motor deficits
- Poor tongue function and lip seal
- Dysphagia (difficulty or discomfort swallowing)
- Reduced oral clearance of foods and increased food packing (accumulation)
- Reduced dexterity negatively affecting ability to perform oral hygiene
- Increased caries and periodontal disease risk

Rheumatoid Arthritis

Inter-relationship exists between oral health and rheumatoid arthritis

- Periodontal disease is more common in patients with RA
- Treatment of periodontal disease may reduce severity of RA
- RA may involve TMJ (Temporomandibular Joint), affecting chewing and eating
- RA can cause diminished salivary output (Sjogren's Syndrome), which leads to xerostomia and caries
- Reduced dexterity negatively affects ability to perform oral hygiene
- Increased caries and periodontal disease risk

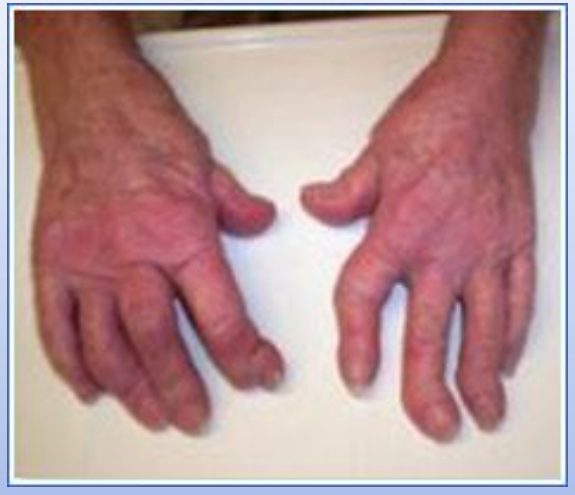


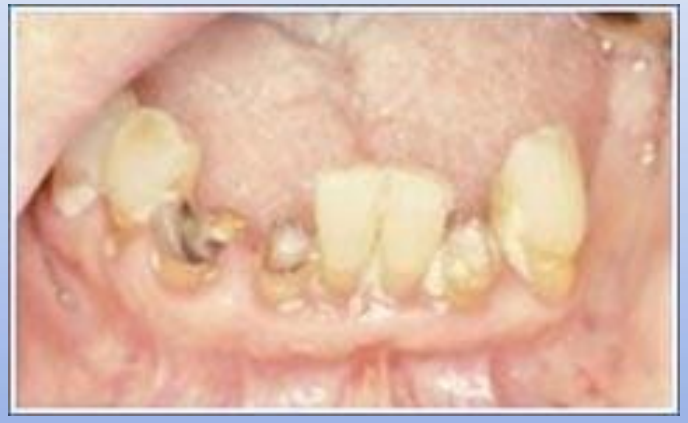
Photo: B.J. Brown , RDH, MS

Dementia

Patients with Dementia have increased risk for caries, periodontal disease and oral infections

Contributing factors:

- Self care deficits
- Chronic disease burden
- Dietary changes
- Dependence on caregivers
- Difficulty complying with:
  - Medications
  - Oral hygiene
  - Appointments
- Challenging behaviors
- Postural impairments
- Swallowing difficulty
- Lack of understanding leading to resistance to care



Caries and Periodontitis

Photo: B.J. Brown , RDH, MS

Oral Effects of Medications

Chapter Objective

- Discuss common oral effects of medications

Image: Alexander Raths/Photos.com

Xerostomia

Sensation of dry mouth due to decreased salivary flow

- Common in the elderly
- Medications are typical cause
- Common in rheumatic disease and after radiation therapy
- Sjögren's syndrome typically presents with xerostomia
- Xerostomia significantly increases risk for caries and periodontal disease

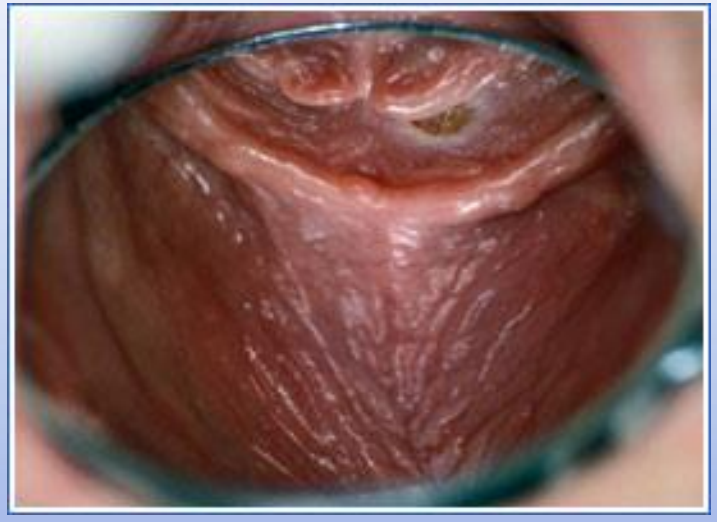
Saliva is the most important protection against caries

Xerostomia

Most often caused by medications

A positive response to at least one of the following questions indicates xerostomia

- Does your mouth feel dry?
- Does your mouth feel dry when eating?
- Do you have difficulty swallowing dry foods?
- Do you sip liquids to aid swallowing?
- Is the amount of saliva in your mouth too little most of the time?



Dry Mucosa

Photo: Robert Henry, DMD, MPH

Signs

- Mucosa is dry and friable in appearance
- No pooling of saliva in floor of mouth

Managing Xerostomia

Avoid

- Irritants such as alcohol, caffeine and smoking
- Sugar containing drinks and candies

Suggest

- Sips of water, especially during eating
- Sugarless gum and mints

Prevent caries and periodontal disease

- Meticulous oral hygiene

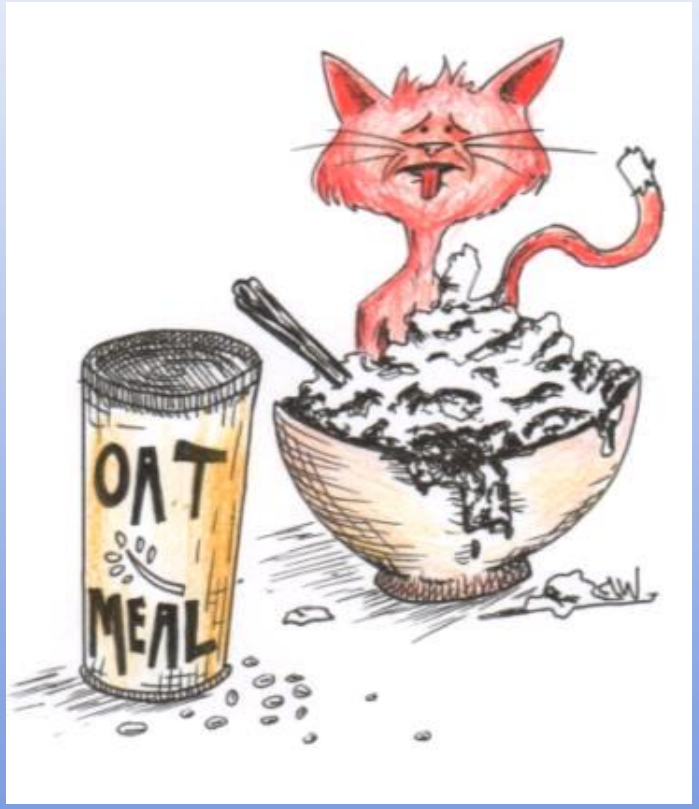
Sugarless Gum and Mints

Photos: Robert Henry, DMD, MPH

Taste Alteration

Taste alteration (dysgeusia) is associated with over 200 drugs

- Major impact on quality of life
- Often overlooked by clinicians
- Can lead to weight loss and depression
- Taste may be decreased, altered, or made unpleasant
- Compensation with sugared foods can lead to caries



Artwork: Joseph Wrightson

Oral Preventive Care

Chapter Objective

- Implement effective oral preventive measures for the elderly and their caregivers

Image: Digital Vision /Punstock

Prevention of Oral Disease

Patient steps

- Maintain good oral hygiene
- Keep dentures clean
- Avoid sugary snacks and drinks
- Avoid alcohol and tobacco
- Use fluoridated toothpaste

CHW steps

- Encourage regular dental visits
- Assist patients in accessing care

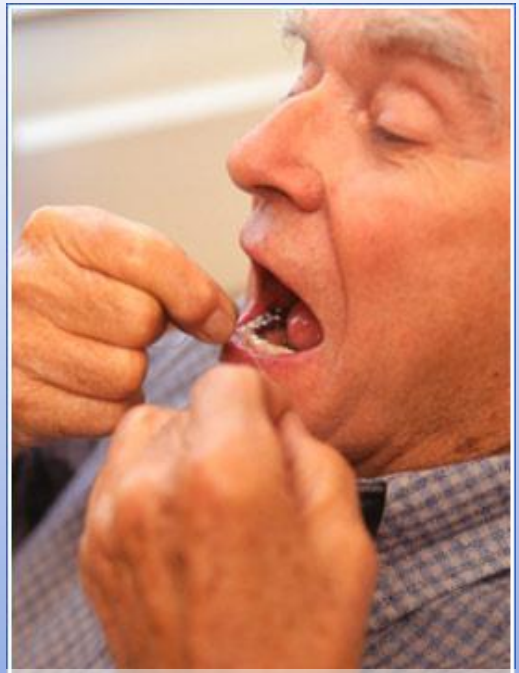


Image: Valueline/Punchstock

Oral Hygiene in the Elderly

Oral Hygiene

- Brush at least twice a day with a soft toothbrush
- Focus on the area where the tooth meets the gum
- Use a good quality electric toothbrush for best results
- Floss regularly

Challenges

- Many elderly patients have problems maintaining their own oral hygiene, including those who have:
  - Strokes
  - Arthritis
  - Dementia
- Assistive devices and guidance should be considered for patients and caregivers

Image: Photodisc/Punchstock

Specialized Hygiene Aids

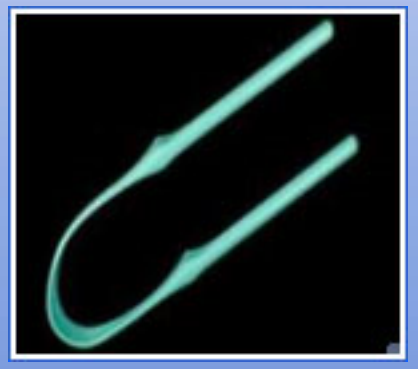
For patients with compromised dexterity

- Toothbrushes with enlarged handles for easier gripping
- Toothbrushes that brush multiple surfaces at once
- Flossing aids
- Tongue scraper for hairy tongue

Large Handles

Collis Curve™ or Surround™ toothbrush

Floss Holders



Tongue Scraper

Photos: Robert Henry, DMD, MPH

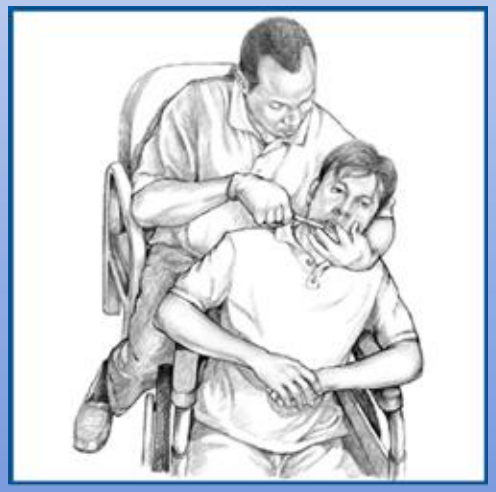
Specialized Hygiene Aids

For patients unable to brush their own teeth or who cannot cooperate

- Collis Curve™ or Surround™ toothbrushes
- Flossing aids
- Mouth props (purchase or tape gauze around a bite stick)
- Caregivers will find it easier to stand behind patient when assisting with brushing

Mouth Props

Photos: Robert Henry, DMD, MPH



Brushing Position

NIH Publication No. 11-5191

Dependent Care

Suggesting oral hygiene protocols in nursing facilities and dependent care settings

- Decreases the incidence of pneumonias
- Prevents 1 in 10 pneumonia deaths

Oral hygiene protocols have positive outcomes:

- Staff are educated about the importance of oral care
- Designated oral hygiene aides are trained
- Oral assessment is performed
- Supplies are available
- Daily care is documented
- Oral care occurs with limited interruptions

CHWs can recommend online resources available for providing oral health education for nursing staff.

CHW Collaboration

Chapter Objective

- Recognize and describe the elements of effective preventive primary care-dental collaboration

Image: Jupiterimages/Photos.com

Care Coordination

- Effective two-way communication between primary care and dental clinicians is critical
- Patients particularly in need of care coordination
  - Medically complex
  - On anticoagulants
  - Require antibiotic prophylaxis
- Educate about oral issues

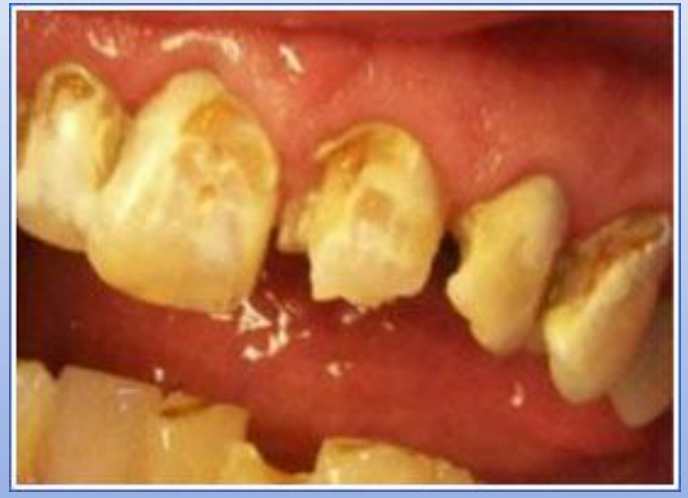
Image: Comstock/Photos.com

Elder Abuse

Elder abuse is highly under-reported

First presentation may be oral

- Broken, neglected teeth or dentures
- Black eye or broken nose
- Bruises to chin, earlobes, especially if at varying stages of healing
- Finger marks on face or neck
- Poor hygiene
- Signs of malnutrition or dehydration
- Unexplained or implausible injuries



Broken Teeth

Photo: B.J. Brown , RDH, MS

Take Home Messages

- The geriatric population is growing and has increasing oral needs.
- Chronic systemic disease increases the burden of oral disease. The reverse is also true.
- Elder quality of life can be improved with attention to their oral health.
- Elders in hospitals and nursing facilities who receive good oral preventive care have a lower incidence of pneumonia.
- CHWs should counsel patients on effective oral preventive measures including regular dental visits.
- Effective inter-professional collaboration is often vital to successful outcomes.

Questions?

Image: Jupiterimages/Photos.com