

1. Oral Diagnosis: The Physical Exam

# ORAL DIAGNOSIS The Physical Exam

Kathryn Ragalis, DMD, MS

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2. Comprehensive Evaluation

## Comprehensive Evaluation

- Interview the patient
- Gather data
- Analyze the data
- Develop hypotheses
- Establish diagnosis
- Formulate treatment plan
- Arrange for consent and delivery of care

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Purpose

## Purpose

- **Evaluation and screening of general health status**
  - Early recognition to improve prognosis and quality of life
  - Oral findings may be indicative of systemic disease
  - Dental team often first to identify

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Purpose

## Purpose

- **Evaluation of oral health status**
  - Intraoral and extraoral examination
  - Periodontal examination
  - Dental examination

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Purpose

## Purpose

- Oral cancer screening
  - Incidence: 30,000 new cases/year in US, over 8,000 deaths
  - Early detection increases survival rate
  - 5-year survival rate = 50%
    - Localized disease = 76% 5yr survival
    - Metastatic disease = 19% 5yr survival
  - Methods to treat are disfiguring

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Purpose

## Purpose

- Oral cancer screening
  - Risk factors
    - Tobacco
    - Alcohol
    - Sun
    - Diet
    - Age, gender, race

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## Purpose

# Purpose

- Oral cancer screening
  - Teach patient signs, symptoms, risk factors
  - Refer for appropriate counseling, tobacco cessation programs

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## Resources

# Resources

- <http://cancer.gov>
- <http://nidcr.nih.gov>

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9. Basic Techniques

## Basic Techniques

- Visual inspection
- Palpation
- Probing
- Percussion
- Auscultation
- Functional assessment
- Diagnostic imaging
- Biopsy, aspiration, diascopy...

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10. Record Findings

## Record Findings

- What is normal?
  - Within normal limits (WNL)
  - Range

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## Record Findings

# Record Findings

Deviations, describe:

- Localized / generalized
- Single / multiple lesions, separate /coalescing
- Well-defined / diffuse
- Size...mm, cm
- Shape...round, irregular
- Color...red, white, blue, yellow
- Flat / depressed / elevated, raised, exophytic
- Vesicle, bulla (fluid filled) / plaque, papule, nodule, tumor (solid)
- Texture... smooth, irregular, papillary, verrucous, fissured
- Consistency...soft, spongy, hard, resilient, indurated
- Superficial / deep
- Margins
- Pseudomembrane

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## Soft Tissue Changes

# Soft Tissue Changes

- Any change
- Non-healing ulcers (oral heal 10-14 days)
- Red or white lesion with no apparent cause (erythroplakia, leukoplakia)
  - 10% of patients have red and/or white lesion
- Non-tender, non-movable swelling
- Non-symmetry
- Numbness
- Lump in throat, hoarseness

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Sequence

## Sequence

- Must be done prior to ALL treatment
- Follow same sequence
- Tell patient what you are doing

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Sequence

## Sequence

- Begin with least invasive, develop rapport
  1. Clean and safe operator
  2. Interview, dental and medical history
  3. Physical exam

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Physical Examination

## Physical Examination

- What do you need?
  - Safety: Standard precautions
    - Gloves, eye protection, mask
    - Morbidity and Mortality Weekly Report  
Recommendations and Reports December 19, 2003 /  
Vol. 52 / No. RR-17 Guidelines for Infection Control in  
Dental Health-Care Settings — 2003
    - [www.osha.gov](http://www.osha.gov)

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Physical Examination

## Physical Examination

- What do you need?
  - Light
  - Mirror
  - Gauze
  - A few minutes

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## References

# References

- J Am Dent Assoc, November 2001:  
Perform a Death-Defying Act The 90-Second  
Oral Cancer Examination
- J Am Dent Assoc, November 2005:  
Risk Management Considerations for Oral  
Cancer

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## Physical Examination

# Physical Examination

- Extra Oral Examination
- Intra Oral Examination
  - Remove any prostheses

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## Extraoral Exam

# Extraoral Exam

- Begins at first moment
  - General appraisal, physical status... appearance
  - Handshake... vigorous, frail
  - Communication... speech, eye contact, voice



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## Extraoral Exam

# Extra Oral Exam

- During movement into operatory
  - Stature
  - Posture
  - Gait



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Extraoral Exam

## Extra Oral Exam

- During movement into operatory



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Extraoral Exam

## Extraoral Exam

- Vital signs
  - Pulse
  - Respiration
  - Temperature
  - Blood pressure



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## Extraoral Exam

### Extraoral Exam

- Face... symmetry, swelling, scars, muscle tone, jaw movement, expression, twitch, paralysis, signs of abuse, pigmentation
- Skin... color, moisture, tone, rash, lesions (heal within 28 days), growths



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## Extraoral Exam

### Extraoral Exam

- Hair... loss, dry, coarse
- Breath... no odor, malodor



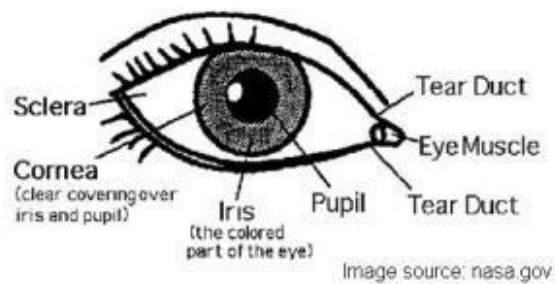
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## Extraoral Exam

# Extraoral Exam

- Eyes
  - Size, shape, color
  - Lacrimation
  - Dryness, Schirmer's Tear Test



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## Extraoral Exam

# Extraoral Exam

- Eyes... dilated pupils, eye glasses, vision, contact lenses, bulging, movements, halos

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## Extraoral Exam

# Extraoral Exam

- Sinuses
  - Frontal
  - Maxillary

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## Extraoral Exam

# Extraoral Exam

- Parotid Glands
  - Location
  - Enlargement



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## Extraoral Exam

### Extraoral Exam

- Thyroid gland
  - Midline location

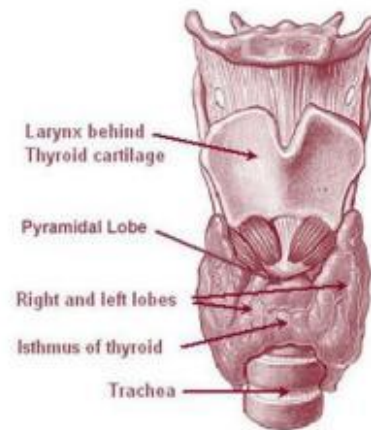


Image source: cancer.gov

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## Extraoral Exam

### Extraoral Exam

- Thyroid gland
  - Visually enlarged
  - Palpate



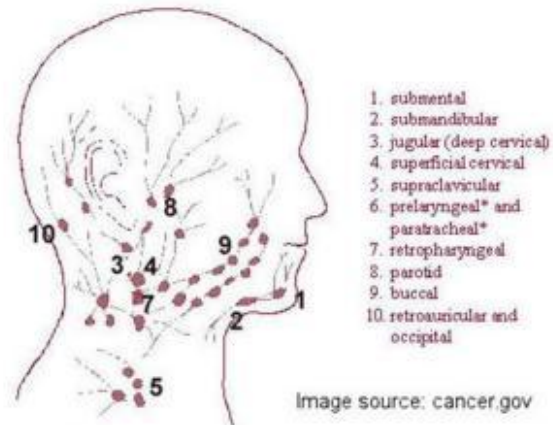
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## Extraoral Exam

# Extraoral Exam

- Lymph nodes  
– Location



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## Extraoral Exam

# Extraoral Exam

- Lymph nodes...  
– Palpation
  - Size
  - Indurated
  - Movable/Fixed
  - Painful
  - How long



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## Extraoral Exam

# Extraoral Exam

- Temporomandibular Joints
  - Symptoms...pain, sounds, headaches, earaches, locking, neck/shoulder/back pain, painful swallow

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## Extraoral Exam

# Extraoral Exam

- Temporomandibular Joints
  - <http://www.orofacialpain.com/> (Tufts)
  - <http://www.gelbcenter.com/>
  - <http://www.dawsoncenter.com>
  - <http://www.occlusion-tmj.org/>
  - <http://www.aacfp.org/>
  - <http://www.pankey.org/>

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## Extraoral Exam

# Extraoral Exam

- Temporomandibular Joints
  - Pain on palpation, loading
  - Sounds
  - Crepitus
  - 3 dimensional image
  - Symptoms changing?



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## Extraoral Exam

# Extraoral Exam

- Temporomandibular Joints
  - Range of motion
    - Maximum opening 40-55mm, deviation on opening/closing
    - Lateral excursion
    - Protrusion, retrusion



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## Extraoral Exam

# Extraoral Exam

- Extraoral muscles of mastication
  - MASSETER
    - Origin: zygomatic arch
    - Insertion: angle + lateral ramus, coronoid process
    - Function: closes jaw



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## Extraoral Exam

# Extraoral Exam

- Extraoral muscles of mastication
  - TEMPORALIS
    - Origin: temporal fossa
    - Insertion: coronoid process, anterior border ramus
    - Function: closes, retracts jaw

### Muscles of the Head and Neck

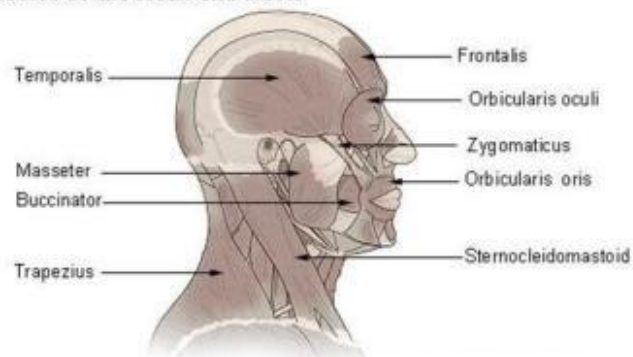


Image source: CANON IP  
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Extraoral Exam

## Extraoral Exam

### Extraoral muscles of mastication

- **TRAPEZIUS**
- Origin: occipital protuberance, spinus process C7, T1-T12
- Insertion: clavicle, scapula
- Function: head, neck, shoulder movements

**Muscles of the Head and Neck**

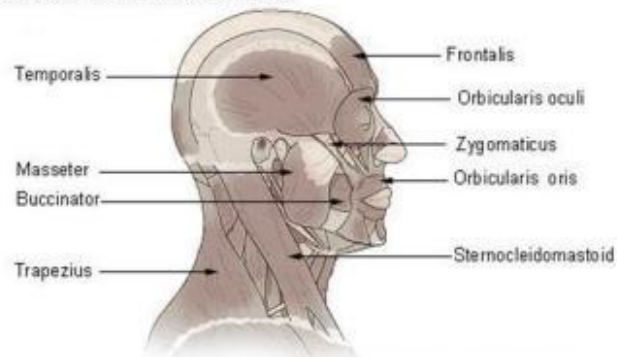


Image source: Cancer.Net  
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Extraoral Exam

## Extraoral Exam

### • Extraoral muscles of mastication

- **STERNOCLEIDOMASTOID**
- Origin: sternum, clavicle
- Insertion: mastoid process
- Function: rotates, bends head

**Muscles of the Head and Neck**

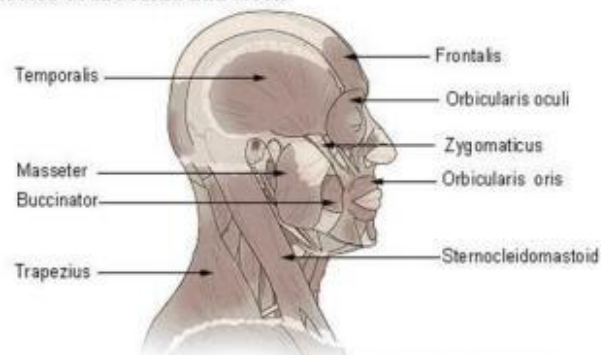


Image source: Cancer.Net  
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Extraoral Exam

## Extraoral Exam

- Cranial nerves
  - Screen for neurologic problems
  - I Olfactory... smell
  - II Optic... vision
  - III Oculomotor, IV Trochlear, VI Abducens... eye movement
  - V Trigeminal... chewing, face/mouth sensory, symmetrical blinking

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Extraoral Exam

## Extraoral Exam

- Cranial nerves
  - VII Facial... salivary + lacrimal glands, facial expressions, Bell's Palsy, taste
  - VIII Auditory... hearing, equilibrium, tinnitus
  - IX Glossopharyngeal... taste post 1/3
  - X Vagus... taste, bp, hr
  - XI Spinal Accessory... trapezius, scm, swallowing
  - XII Hypoglossal... tongue movements

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### Intraoral Exam

## Intraoral Exam

- Lips...color, texture, size, history sun exposure, blisters, ulcers, traumatic lesions, angular chielosis



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### Intraoral Exam

## Intraoral Exam

- Mucobuccal fold...color, contour, frenum/frena, effects of tobacco use



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## Intraoral Exam

### Intraoral Exam

- Buccal mucosa...color, traumatic lesions, linea alba, moistness, parotid papilla, fordyce granules, leukoedema, pigmentation



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## Intraoral Exam

### Intraoral Exam

- Hard palate...height, contour, color, rugae, tori, incisive papilla, growths, ulcers, nicotinic stomatitis



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Intraoral Exam

## Intraoral Exam

- Hard palate... denture stomatitis



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Intraoral Exam

## Intraoral Exam

- Hard palate... red lesion



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## Intraoral Exam

### Intraoral Exam

- Soft palate...color, size, shape, petechiae, ulcers, trauma, gag reflex
- Uvula...size, shape, midline location



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## Intraoral Exam

### Intraoral Exam

- Oropharynx, tonsils...color, tonsils present, enlarged, surface character



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## Intraoral Exam

### Intraoral Exam

- Tongue...shape, color, texture, consistency, papillae, coating, lesions, functional deviation, scalloping
  - Most common site oral of cancer
  - Dorsal, lateral borders, tip, ventral
  - 2x2 gauze



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## Intraoral Exam

### Intraoral Exam

- Tongue...fibroma, fissures



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### Intraoral Exam

## Intraoral Exam

- Tongue...hemangioma



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### Intraoral Exam

## Intraoral Exam

- Floor of mouth...Wharton's duct openings, varicosities, lesions, frenum



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Intraoral Exam

## Intraoral Exam

- Floor of mouth



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Intraoral Exam

## Intraoral Exam

- Gingiva...margins, recession, zone of attached, mucogingival line, lesions



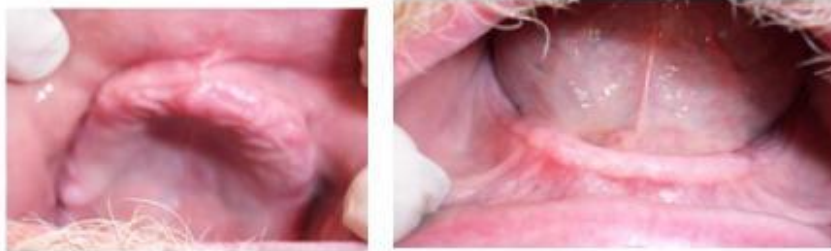
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Intraoral Exam

## Intraoral Exam

- Residual Ridge...color, firm, soft, ridge resorption, irregular



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Intraoral Exam

## Intraoral Exam

- Residual Ridge



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Intraoral Exam

## Intraoral Exam

- Intraoral muscles of mastication
  - MEDIAL PTERYGOID
    - Origin: sphenoid, max. tuberosity
    - Insertion: medial surface ramus
    - Function: closes jaw



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Intraoral Exam

## Intraoral Exam

- Intraoral muscles of mastication
  - LATERAL PTERYGOID
    - Origin: sphenoid, infratemp crest, lat pterygoid plate
    - Insertion: neck of condyle , articular disc
    - Function: depresses, protrudes, side to side



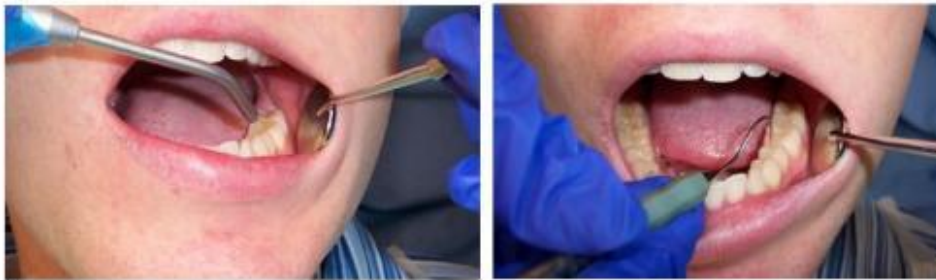
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Intraoral Exam

## Intraoral Exam

- Teeth...# present, decay: M--O/I--D--  
B/F--L/P surfaces, margins of  
restorations



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Intraoral Exam

## Intraoral Exam

- Teeth...percussion, pulp vitality test, caries  
detector



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Intraoral Exam

## Intraoral Exam

- Teeth...erosion, attrition, food impaction, open contacts, supernumerary



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Intraoral Exam

## Intraoral Exam

- Teeth...fractures, pulp exposure



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Intraoral Exam

## Intraoral Exam

- Teeth...abrasion, malposed, super-eruption



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Intraoral Exam

## Intraoral Exam

- Occlusion
  - Angle Class I, II Div. 1 + 2 , III
  - Overjet
  - Overbite
  - Midlines



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Intraoral Exam

## Intraoral Exam

- **Periodontium**
  - American Academy of Periodontology
    - <http://www.perio.org/>
  - Pregnancy and Periodontal Disease
  - Respiratory and Periodontal Disease
  - Diabetes and Periodontal Disease
  - Heart and Periodontal Disease

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Intraoral Exam

## Intraoral Exam

- **Periodontium**
  - Size, color, consistency, texture



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Intraoral Exam

## Intraoral Exam

- Periodontium
  - Attachment



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Intraoral Exam

## Intraoral Exam

- Periodontium
  - Mobility, calculus



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Intraoral Exam

## Intraoral Exam

- Saliva
  - Adequacy... patient complaints, duration



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Intraoral Exam

## Intraoral Exam

- Saliva
  - Xerostomia
    - Medications
      - <http://www.crlonline.com>
      - <http://www.drymouth.info>
    - Diseases
    - Radiation therapy

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## Intraoral Exam

# Intraoral Exam

## Saliva

### – Diagnostic tool

- Bacteria, infectious diseases
  - Caries, periodontitis risk, TB
- Viruses, antibodies
  - Hepatitis, HIV, Influenza
- Chemicals, hormones, drugs
  - Drug testing, alcohol testing
- Indicators of diseases, biomarkers
  - Cancer markers

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## Consultations

# Consultations

- Refer for additional evaluation

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Documentation

## Documentation

- Dental record is medical-legal document
  - Record of diagnoses, findings
  - Record of treatment, rxs
  - Includes all diagnostic imaging, photography, test results
  - Recommendations
  - Patient responses

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Documentation

## Documentation

- Dental record is medical-legal document
  - Comprehensive
  - Easy to use
  - Clear, legible
  - Retrievable
  - Protected

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Documentation

## Documentation

- SOAP (Subjective, Objective, Assessment/Analysis, Plan) notes



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Documentation

## Documentation

- SOAP notes
  - S: Subjective
    - Patient's chief concern
    - Patient's own words, actions
  - O: Objective
    - Health history, vital signs, premedication
    - Dental history
    - Diagnostic database
    - Clinical findings, imaging

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Documentation

## Documentation

- SOAP notes
  - A: Assessment / Analysis
    - Specific Diagnosis, diagnostic summary
    - Risk assessment
  - P: Plan
    - List diagnostic, preventive, therapeutic, reevaluation indicated
    - Procedures performed
    - NV: next visit

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Main Points

## Main Points

- Examine ALL patients... frequently, thoroughly
- Teach your patients- signs, symptoms, risk factors, modify habits (diet, smoking cessation)
- Document ALL findings... including exam done, WNL
- Follow-up
- Seek consultations, make referrals

**Thanks to Dental students  
Sylvia Suarvedez and Nick  
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lecture**



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