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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3. 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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4. Purpose

Purpose

• Evaluation of oral health status
  – Intraoral and extraoral examination
  – Periodontal examination
  – Dental examination

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5. 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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6. Purpose

Purpose

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

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7. Purpose

Purpose

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

8. Resources

Resources

– http://cancer.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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11. 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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12. 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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13. Sequence

Sequence

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

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14. Sequence

Sequence

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

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15. 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

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16. Physical Examination

Physical Examination

• What do you need?
  – Light
  – Mirror
  – Gauze
  – A few minutes

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17. 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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18. Physical Examination

Physical Examination

- Extra Oral Examination

- Intra Oral Examination
  - Remove any prostheses

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19. 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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20. Extraoral Exam

Extra Oral Exam

- During movement into operatory
  - Stature
  - Posture
  - Gait

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21. Extraoral Exam

Extra Oral Exam

- During movement into operatory

22. Extraoral Exam

Extraoral Exam

- Vital signs
  - Pulse
  - Respiration
  - Temperature
  - Blood pressure
23. 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

![Image of a person](image1)

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24. Extraoral Exam

**Extraoral Exam**

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

![Image of hair](image2)  ![Image of bald head](image3)

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Extraoral Exam

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

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Extraoral Exam

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

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27. Extraoral Exam

Extraoral Exam

• Sinuses
  – Frontal
  – Maxillary

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28. Extraoral Exam

Extraoral Exam

• Parotid Glands
  • Location
  • Enlargement

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29. Extraoral Exam

Extraoral Exam

- Thyroid gland
  - Midline location

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30. Extraoral Exam

Extraoral Exam

- Thyroid gland
  - Visually enlarged
  - Palpate

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31. Extraoral Exam

Extraoral Exam

- Lymph nodes
  - Location

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32. Extraoral Exam

Extraoral Exam

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

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Extraoral Exam

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

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34. 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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35. Extraoral Exam

Extraoral Exam

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

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36. Extraoral Exam

Extraoral Exam

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

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Extraoral Exam

• Extraoral muscles of mastication
  – MasseTER
    • Origin: zygomatic arch
    • Insertion: angle + lateral ramus, coronoid process
    • Function: closes jaw

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
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**

- Temporalis
- Orbicularis oculi
- Zygomaticus
- Orbicularis oris
- Sternocleidomastoid

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Extraoral Exam

**Extraoral muscles of mastication**

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

**Muscles of the Head and Neck**

- Temporalis
- Orbicularis oculi
- Zygomaticus
- Orbicularis oris
- Sternocleidomastoid

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41. Extraoral Exam

Extraoral Exam

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

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42. 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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43. Intraoral Exam

Intraoral Exam

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

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44. Intraoral Exam

Intraoral Exam

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

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45. Intraoral Exam

Intraoral Exam

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

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46. Intraoral Exam

Intraoral Exam

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

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47. Intraoral Exam

Intraoral Exam

- Hard palate...denture stomatitis

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48. Intraoral Exam

Intraoral Exam

- Hard palate...red lesion

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49. Intraoral Exam

Intraoral Exam

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

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50. Intraoral Exam

Intraoral Exam

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

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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

Intraoral Exam

- Tongue...fibroma, fissures
53. Intraoral Exam

Intraoral Exam

- Tongue...hemangioma

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54. Intraoral Exam

Intraoral Exam

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

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55. Intraoral Exam

Intraoral Exam

- Floor of mouth

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56. Intraoral Exam

Intraoral Exam

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

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

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• Residual Ridge

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59. 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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60. 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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61. Intraoral Exam

Intraoral Exam

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

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62. Intraoral Exam

Intraoral Exam

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

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63. Intraoral Exam

Intraoral Exam

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

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64. Intraoral Exam

Intraoral Exam

- Teeth...fractures, pulp exposure

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65. **Intraoral Exam**

**Intraoral Exam**

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

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66. **Intraoral Exam**

**Intraoral Exam**

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

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67. Intraoral Exam

Intraoral Exam

• Periodontium
  – American Academy of Periodontology
    • [http://www.perio.org/](http://www.perio.org/)
  – Pregnancy and Periodontal Disease
  – Respiratory and Periodontal Disease
  – Diabetes and Periodontal Disease
  – Heart and Periodontal Disease

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68. Intraoral Exam

Intraoral Exam

• Periodontium
  – Size, color, consistency, texture

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69. Intraoral Exam

Intraoral Exam

- Periodontium
  - Attachment

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70. Intraoral Exam

Intraoral Exam

- Periodontium
  - Mobility, calculus

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Intraoral Exam

• Saliva
  – Adequacy…patient complaints, duration

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Intraoral Exam

• Saliva
  – Xerostomia
    • Medications
      – http://www.crlonline.com
      – http://www.drymouth.info

• Diseases
• Radiation therapy

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73. 

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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74. 

Consultations

• Refer for additional evaluation

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75. Documentation

Documentation

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

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76. Documentation

Documentation

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

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77. Documentation

Documentation

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

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78. 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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79. 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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80. 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 Mellum for participating in the lecture

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