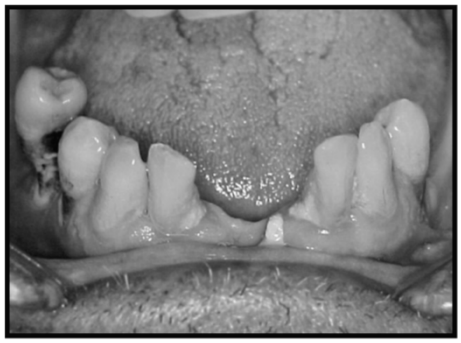

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Assessing the Risk of Rapid Oral Health Deterioration among Older Adults: The ROHD Concept

IOWA College of Dentistry and Dental Clinics

Leonardo Marchini, DDS, MSD, PhD

Has no Conflict of Interest with any Organizations

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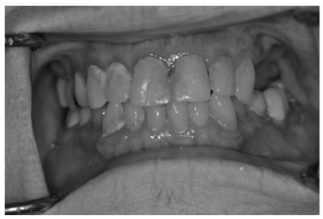
The Snapshot

- Recall exam
  - Update Health History
  - Update Medication List
  - Oral Exam
  - Plan additional treatment
    - Example: 2 new root carious lesions
- Thought process: "What in the patient's health affects me (dentist) today?"



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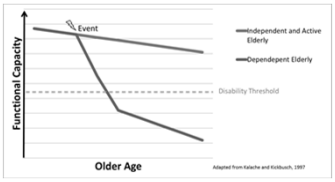
The Moving Picture

- Do you notice a decline in your patient's oral health?
  - Can the decline be prevented? Slowed?
- ROHD: Rapid Oral Health Deterioration
  - The quick decline of oral health associated with advanced age and decreased functional capacity.
  - Frequently associated with an event or diagnosis in general health
    - Example: Dementia, fractured hip resulting in limited mobility



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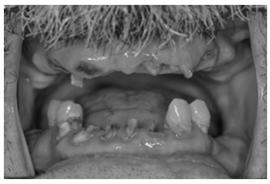
The Disappearing Patient

- **Younger years: good oral hygiene and low caries risk**
- **Diagnosed with Parkinson's Disease**
- **Disappeared from the dental office for 5 years**



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Why is it important to assess ROHD among elderly patients?

Most people are keeping their teeth for life. However, when they get older the combination of general health conditions and lack of adequate social support and/or a catastrophic event can lead them to ROHD. Many times, a dentist can perceive this risk during regular recalls (or lack thereof) and act preventively, avoiding severe irreversible consequences of ROHD.

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ROHD risk factors (based on evidence)

1. **General health conditions**
2. **Social support**
3. **Oral conditions**

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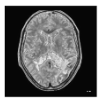
1. General health conditions



-Cognitive deficit

Alzheimer's, other dementias

-Functional deficits

Stroke, osteoarthritis, Parkinson's, etc.

-Sensory loss

Speech, sight, hearing, taste

-Medication

Oral and systemic side effects, drug interactions

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1. General health conditions

-Manageable chronic diseases

Hypertension, diabetes, osteoporosis, etc.

-Degree of dependence/autonomy

Institutionalization, home care, dependence on caregivers, etc.

-Terminal diseases/palliative care

-Life expectancy

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2. Social support

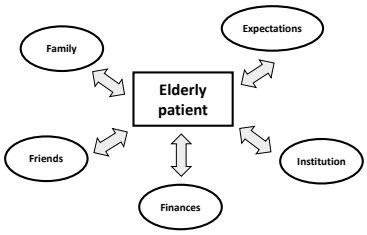
-Institutional support

-Family/social support

-Financial issues

Health insurance, social security, etc.

-Expectations



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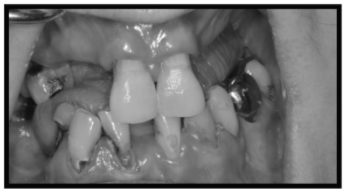
3. Oral conditions

-Oral hygiene
-Periodontal condition
-Number of teeth/restorations
-Prosthetic status
Fixed, removable, implants
-Oral lesions
Inflammation, oral cancer
-Stop seeing the dentist



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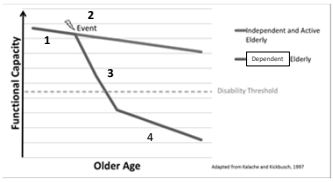
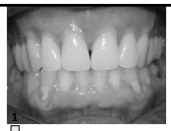
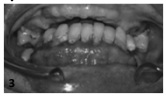




Risk factors
✓General health conditions
✓Social support
✓Oral conditions



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How to analyze the risk?

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- ✓ ***Do we have (all) the data?***
- ✓ ***What data are important (prioritize)?***
- ✓ ***What will happen if we do nothing?***
- ✓ ***What is the patient's risk for oral condition deterioration?***
- ✓ ***What are the treatment alternatives?***

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Do we have (all) the data?

1. Practitioner decides on type of information to be used in ROHD risk assessment

2. Gather data/information with evidence of risk factors that contribute to ROHD (risk factors based on evidence)

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What data are important?

Trick question!

Identify what of the data/information gathered is likely to be of significance for ROHD and treatment planning

Example: What risk factors need to be overcome in order to improve the patient's oral health?

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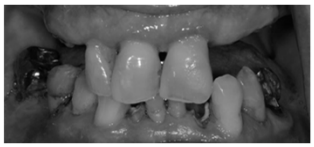
What data are important?

- **Important:**
  - **Dementia**
  - **Lacks support for oral hygiene**
  - **Esthetics**
  - **Xerostomia**
- **Not as important**
  - **Some anticoagulant medication**
  - **Relatively high blood pressure (165/92)**



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What will happen if we do nothing?

What is the foreseeable disease progression if no intervention takes place? Oral & Systemic

Is no intervention in line with the patient's best interest?

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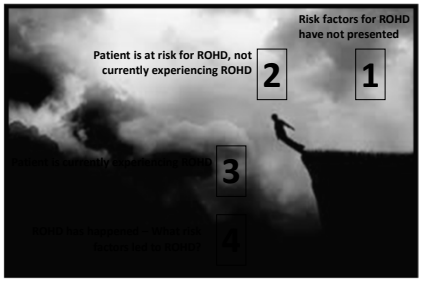
What is the patient's risk for oral condition deterioration?



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Assessing patients' risk for ROHD

- ✓ *What are the data?*
- ✓ *What data is the most important/influential in regards to the treatment plan?*
- ✓ *What will happen if we do nothing?*
- ✓ *What is the patient's risk for oral condition deterioration?*
- ✓ *What are the treatment alternatives?*

1. *Risk factors for ROHD have not presented.*
2. *Risk factors are presenting for ROHD*
3. *Experiencing ROHD with immediate risk for further ROHD*
4. *ROHD has happened – What risk factors led to ROHD?*

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What treatment alternatives can be done?

1. **Identify possible interventions**
2. **Evaluate possible outcomes with and without different types of intervention (conservative/ preventive or extensive/invasive)**
3. **For each intervention, identify/offer evidence and rationale; recommend specific interventions**
4. **Develop a communications plan for the patient and/or caregivers**

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Self assess

Do I have any bias during my ROHD risk analysis?

Did I miss any important data?

Was my communication plan effective?

What is the chance of preventing ROHD in this case?

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Case 1
Patient demographic and social information

- ✓ **92 year old female**
- ✓ **Has moderate to severe dementia**
- ✓ **Presents in wheel chair, speech is mostly incomprehensible and patient has limited understanding of what is being said to her.**

Dr. Montano, Class of 2017

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Case 1
Health history

- ✓ **Stable congestive heart failure**
- ✓ **History of Osteoporosis with Thoracic compressive stress fractures**
- ✓ **Chronic respiratory failure with hypoxia**
- ✓ **Hypernatremia (excess sodium in blood)**
- ✓ **History of hip fracture with reduction April 2010**
- ✓ **Cataract surgery**
- ✓ **Penicillin allergy**

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Case 1
Medications

Drug	Indication	Oral side effects
Docusate	Constipation	No oral side effects
Fentanyl	Pain	Xerostomia
Furosemide	Congestive heart failure	Xerostomia
Gabapentin	Epilepsy, Seizures, Neuralgia Off-label: Insomnia	No oral side effects
Levothyroxine	Hypothyroidism	No oral side effects
Lorazepam	Insomnia	Xerostomia
Morphine	Pain	No oral side effects
Ropinirole HCL	Restless legs syndrome; extrapyramidal symptoms	No oral side effects
Acetaminophen	Pain	No oral side effects

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Case 1
Dental History

- ✓ Patient has been seen by the geriatric mobile unit since April of 2011
  - ✓ Very Cooperative for treatment
  - ✓ Minimal Decay
- ✓ Periodic Exam October 2015
  - ✓ Hospice Care
  - ✓ 7 carious lesions
  - ✓ Son consented to 1 glass ionomer restoration and application of silver diamine fluoride
- ✓ Periodic Exam February 2017.
  - ✓ No longer on Hospice
  - ✓ Limited cooperation – short appointments
  - ✓ 8 carious lesions & 9 root tips or non-restorable teeth

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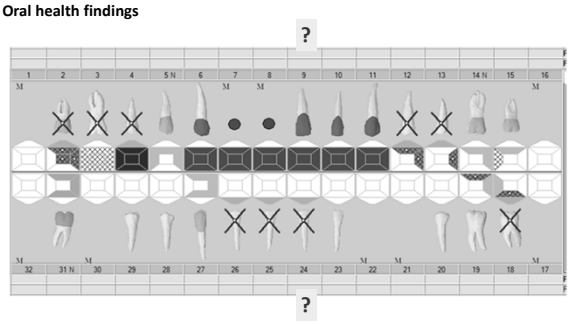
Case 1
Oral health findings



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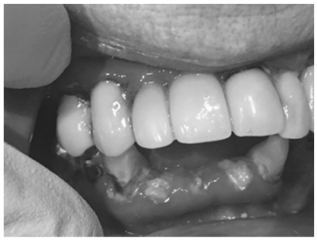
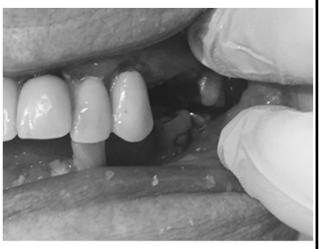
2017





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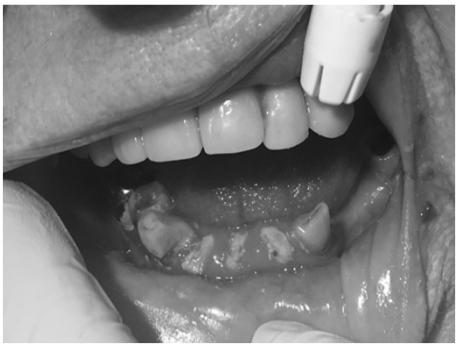

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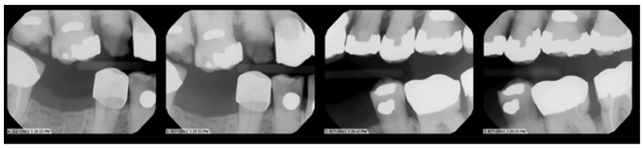
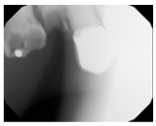
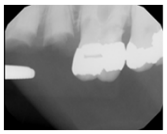
Periodic Exam in 2015



Periodic Exam in 2017





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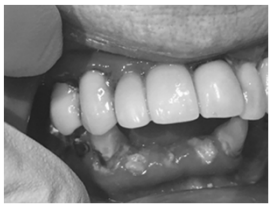
Case 1
Do we have all the data?

- ✓ **How have oral hygiene routines been done?**
- ✓ **Is the Pt able to express pain/discomfort?**
- ✓ **Family expectations?**
- ✓ **Insurance?**



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Oral pain is usually reported by the patient. However, older patients with dementia and other conditions affecting their cognition are often unable to communicate their symptoms.

Non-verbal signs of oral pain that should be considered include the following:

- ✓ **Neglecting to eat**
- ✓ **Disinterested in food**
- ✓ **Chewing of the lip, tongue or hands**
- ✓ **Pulling at the face or mouth**
- ✓ **Not wearing dentures**
- ✓ **Grinding of teeth or dentures**
- ✓ **Aggression**
- ✓ **Alteration in activity level**
- ✓ **Avoiding oral hygiene**
- ✓ **Noisy breathing**
- ✓ **Negative vocalization**
- ✓ **Tense body language**
- ✓ **Protection of sore areas**
- ✓ **Distressed facial expressions**

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Case 1
What data is more relevant for ROHD and treatment planning?

- ✓ Moderate to severe dementia
  - ✓ Short periods of cooperation
- ✓ Inability to maintain own oral hygiene
  - ✓ Nurses/CNAs do not brush patient's teeth
  - ✓ Son (POA) lives 1 hr away

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Case 1
What will happen if we do nothing?

- ✓ Patient could potentially get an acute infection from the retained root tips.
- ✓ Teeth with existing caries could fracture, leaving patient with fewer teeth to chew, decreasing quality of life if loss impairs ability to eat.

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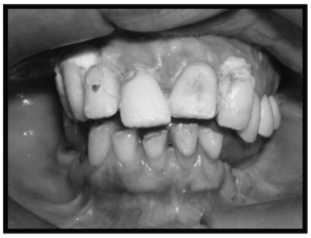
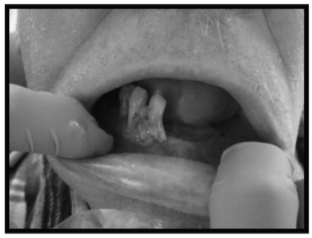
Aspiration pneumonia





Conclusions: According to the results of the current systematic literature review oral health care, consisting of tooth brushing after each meal, cleaning dentures once a day, and professional oral health care once a week, seems the best intervention to reduce the incidence of aspiration pneumonia.

Gerodontology 2013; **30**: 3–9 36

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Diseases that may be associated with hematogenous spreading of oral biofilm bacteria	
Infective endocarditis	Wilson et al. 2007 (149)
Acute bacterial myocarditis	Parahitiyawa et al. 2009 (111)
Brain abscess	Mueller et al. 2009 (99)
Liver abscess	Wagner et al. 2006 (144)
Lung abscess	Parahitiyawa et al. 2009 (111)
Cavernous sinus thrombosis	Parahitiyawa et al. 2009 (111)
Prosthetic joint infection	Bartzokas et al. 1994 (19)
Diseases and conditions for which periodontal inflammation is considered as a risk factor	
Cardiovascular disease	Persson & Persson 2008 (112)
Cerebrovascular disease	Dorfer et al. 2004 (40)
Diabetes mellitus with poor glycemic control	Lim et al. 2007 (82)

Beikler & Flemmig, 2011
Periodontology 2000, 55: 87-103

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Case 1
What is the patient's risk for rapid oral health deterioration?

1. Risk factors for ROHD have not presented.

2. Risk factors XYZ are presenting for ROHD

3. Experiencing ROHD with immediate risk for further ROHD

4. ROHD has happened – What risk factors led to ROHD?

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Case 1
What treatment alternatives can be done?

Option 1
Extract all retained root tips.
Excavate carious lesions; restore with appropriate glass ionomer.
Prophy, topical fluoride, exit exam.
Maintenance: Prevident, Caregivers OHI, Fluoride varnish, recalls.

Option 2
Apply SDF to root tips and monitor
Excavate carious lesions; restore with appropriate glass ionomer
Prophy, topical fluoride, exit exam.
Maintenance: Prevident, Caregivers OHI, Fluoride varnish, recalls.

Option 3
No treatment

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Case 1
Treatment of choice

Option 1

Extract all retained root tips.

Excavate carious lesions; restore with appropriate glass ionomer.

Adult Prophy, topical fluoride, exit exam

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Case 1
Communication plan for patient or caregiver regarding the proposed treatment and maintenance care

- ✓ **Explaining Tx and gaining consent from PoA**
- ✓ **Post-surgery instructions for NH staff**
- ✓ **Post-operative instructions for NH staff**
- ✓ **Maintenance plan for NH staff – How to gain their support?**

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Case 1
Results

- ✓ **Completed 8 restorations with the goal of maintaining patient function**
- ✓ **Patient was placed on Hospice Care after restorations were completed**
  - ✓ **Son denied extractions**
  - ✓ **No current periapical radiolucencies or signs of acute infection**
- ✓ **Patient died 14 days later**

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Case 1
Self-assessment

- ✓ **Communication**
- ✓ **Prevention**
- ✓ **Invasive vs. Conservative Treatment**

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Thank you for your attention!

leonardo-marchini@uiowa.edu

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