

THE MAGICAL BRIDGE TO PROSTHODONTICS

EVIDENCE BASED DENTISTRY ROUNDS
PROSTHODONTICS

9B-3

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EHLERS, ALEXIS SCHROEDER

10/28/2020

ROUNDS TEAM

- **Group Leader: Dr. Derderian**
- **Specialty Leader: Dr. Keesler**
- **Project Team Leader: D4 Zachery Finnegan**
- **Project Team Participants:**
 - **D1 - Alexis Schroeder**
 - **D2 - Rachel Ehlers**
 - **D3 - Amanda Waddle**

PATIENT

- 1-2 slides, patient background
- Age: 41
- Gender: Female
- Ethnicity: Caucasian
- Chief Complaint: "I want to get my crowns"
- Misc. Pt Info:
 - REFUSES removable options
 - Cannot be without A tooth (posteriors included)
 - Maybe 3 weeks?

MEDICAL HISTORY

- Current & past:
 - Diagnoses: Renal failure
 - Conditions: n/a
 - Medications: none
 - Medical Consults, if any: none
 - Treatment considerations:
 - Antibiotic adjustments? (GFR dependent?)
 - Acetaminophen for dental pain

DENTAL HISTORY

- Past Perio Tx – “deeper cleanings”
- Bridges
- Root canals
- Prior to Marquette – no extractions?!?!?

RADIOGRAPHS

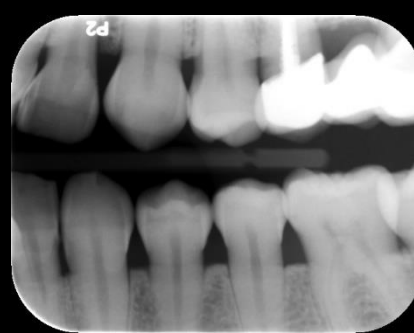


RADIOGRAPHS – LAST FMX

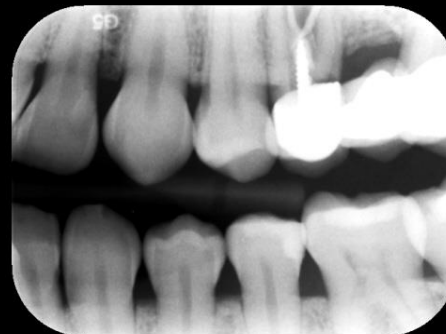


1/23/2017

RADIOGRAPHS - BWS



10/9/2018



10/30/2019

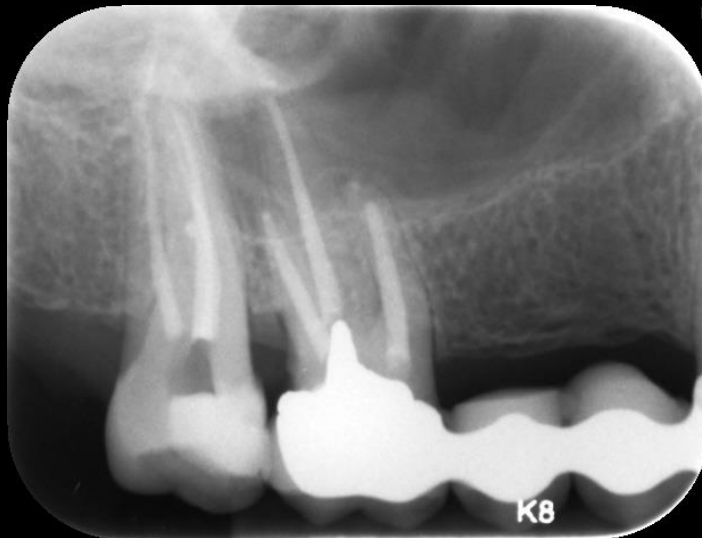
RADIOGRAPHS – RECENT BWS



10/30/2019

RADIOGRAPHS

2/4/2020



9/9/2020



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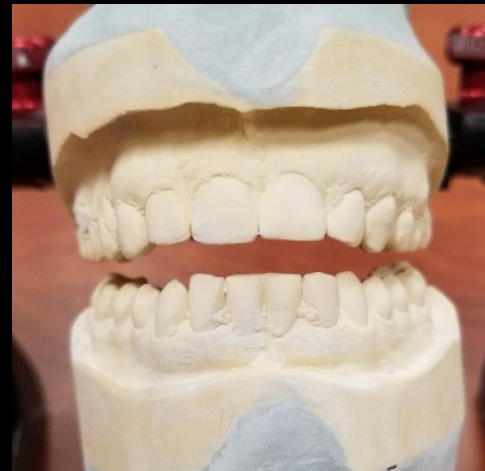
RADIOGRAPHIC FINDINGS

- Bone loss
- RCT: #2, 3, 13 (w/ tapered, threaded post), 31
- Recurrent decay D #3, 29, & #30 and M #31
- Fractured root #13,

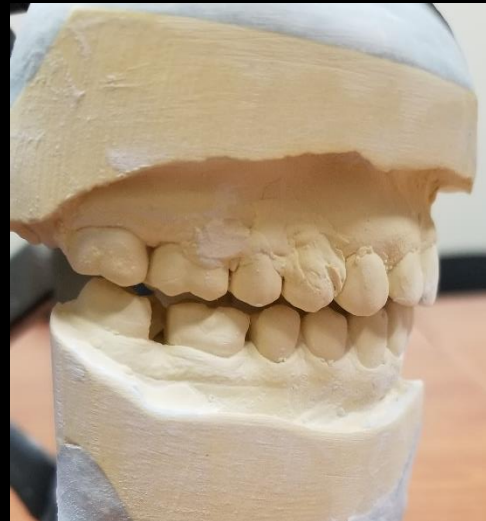
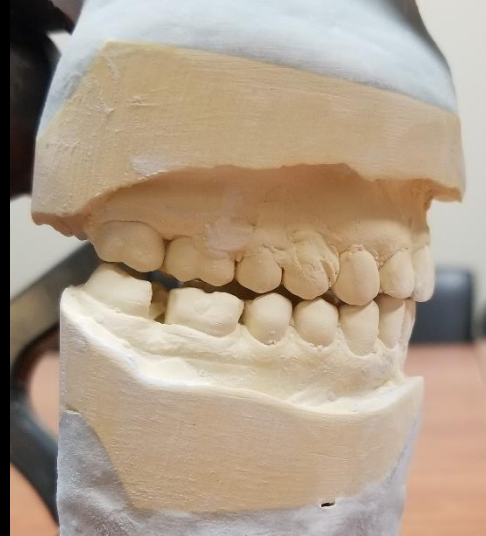
CLINICAL FINDINGS

- Extraoral: non-significant
- Soft Tissue: generalized BOP
- Hard Tissue:
 - Visible fracture #13
 - Temporary restorations: MO#2&31
 - Primary Caries O#18
 - Recurrent decay (D#3, O#12, D#30, MO#31)
 - #30 and 31 deemed non-restorable
 - Defective restoration #3, #15, #31

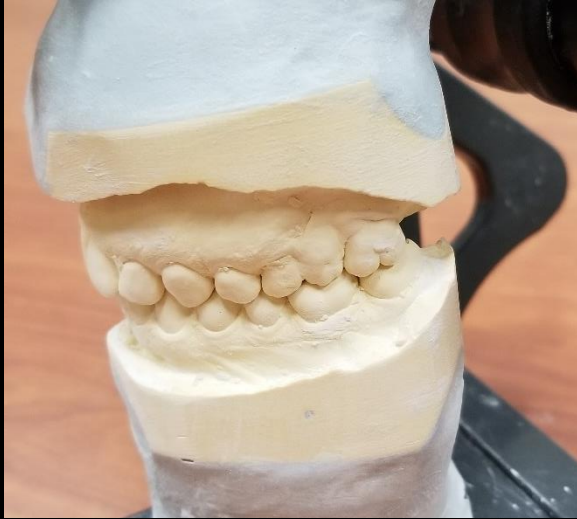
CLINICAL FINDINGS



CLINICAL FINDINGS



CLINICAL FINDINGS



SPECIFIC FINDINGS

- #3- recurrent decay on D
- #13- fractured
- #15- defective restoration (interference to arc of closure)

[illegible]

DIAGNOSIS

(As pertaining to rounds discussion topic)

- ADA Class III – Moderate Chronic Periodontitis (unstable)
- Repeated recurrent caries
- #3 = recurrent decay; questionable prognosis
- #13 = RCT, symptomatic apical periodontitis, non-restorable

PROBLEM LIST

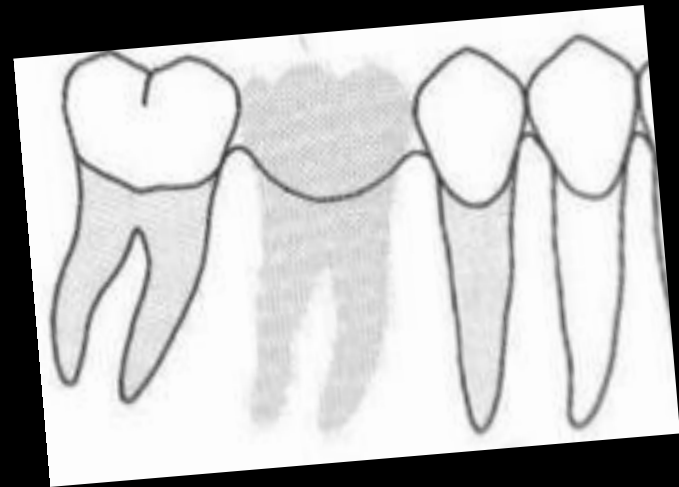
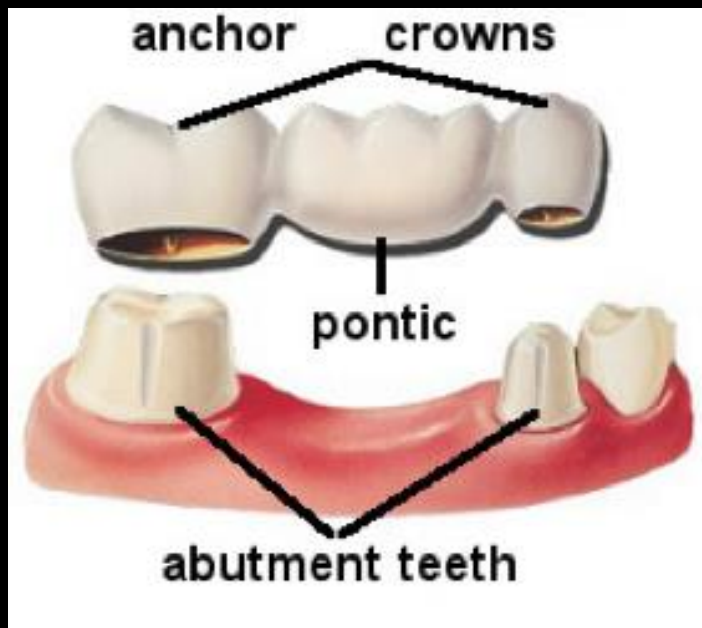
- Missing teeth
- Defective and temporary restorations
- Caries (primary and recurrent)
- Fractured tooth
- Periodontitis and gingival inflammation

D1 BASIC SCIENCE

D1 Question: What is Ante's Law?

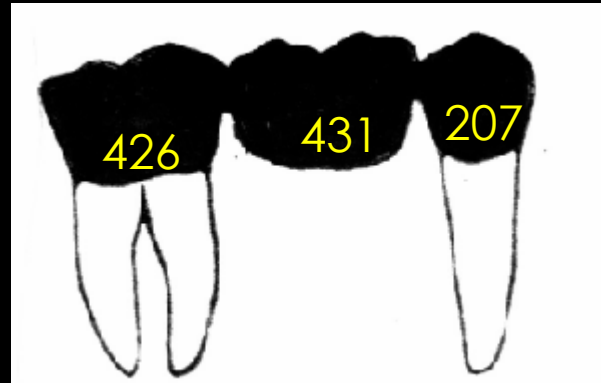
“The combined root surface area of the **abutment teeth** should equal or be greater than that of the teeth being replaced by **pontics**.”

-Irwin Ante, 1926

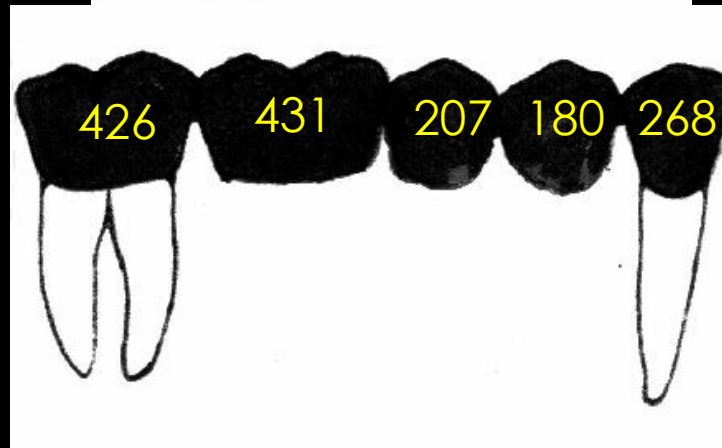


ANTE'S LAW

Mandibular	
Central incisor	154
Lateral incisor	168
Canine	268
First premolar	180
Second premolar	207
First molar	431
Second molar	426
Third molar	373



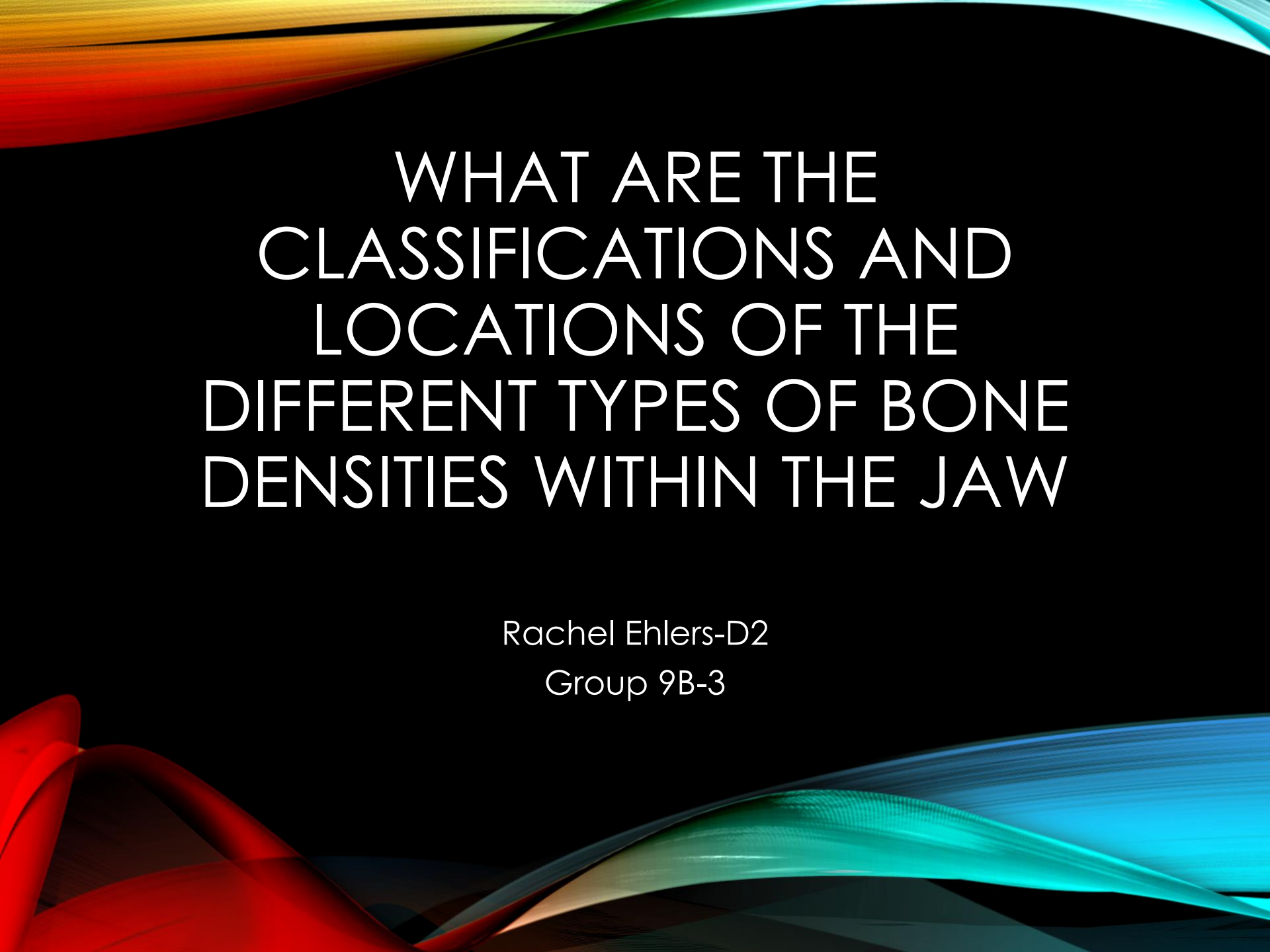
$426 + 207 = 633$
 $633 > 431$
 Obeys Ante's Law



$426 + 268 = 694$
 $431 + 207 + 180 = 818$
 $818 > 694$
 Does NOT obey
 Ante's Law

References:

- Ante IH, "The Fundamental Principles of Abutments," *Mich State Dent Soc Bull*, 1926.
- Jepsen A, "Root Surface Measurement and a Method for X-ray Determination of Root Surface Area," *Acta Odontol Scand*, 1963.
- Lexicomp for Dentistry. (13, March 28). Average Root Surface Area and Fixed Prosthetic Replacements. Retrieved October 18, 2020, from <http://0-online.lexi.com.libus.csd.mu.edu/lco/action/doc/retrieve/docid/ihtcd/908997?cesid=alto6QAHG0s>



WHAT ARE THE CLASSIFICATIONS AND LOCATIONS OF THE DIFFERENT TYPES OF BONE DENSITIES WITHIN THE JAW

Rachel Ehlers-D2

Group 9B-3

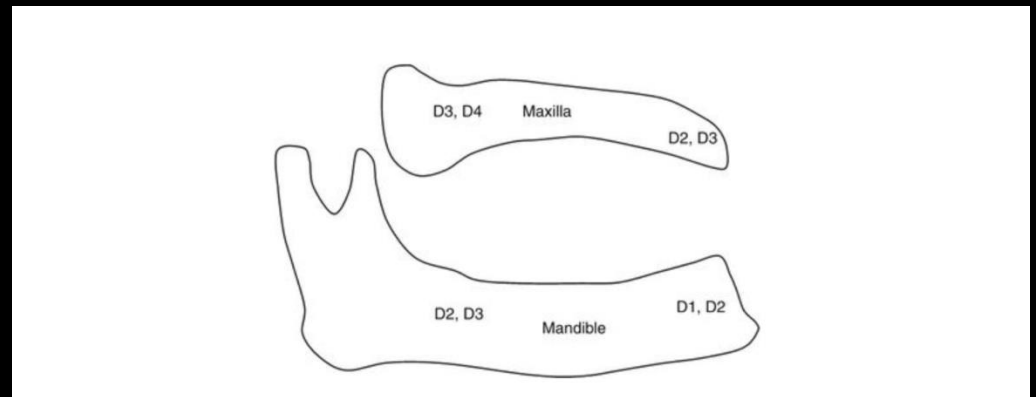
- Jaw is made up of cortical and trabecular bone
 - i. Differences seen microscopically
 - ii. Cortical bone= stiffer and more brittle
 - iii. Cortical bone= heals with little to no woven bone which yields bone strength when healing next to an implant
 - iv. Trabecular bone= sparsely located in the jaw → surgical implant challenges

<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4955555/>

https://www.researchgate.net/publication/221917615_Bone_Quality_Assessment_for_Dental_Implants

MISCH BONE DENSITY CLASSIFICATION

- D1= Homogenous, dense cortical
- D2= Thick, porous cortical with coarse trabecular
- D3= Thin, porous cortical with fine trabecular
- D4= Fine trabecular



- Trabecular bone in D4 can be up to 10x weaker than the cortical bone in D1
- Implant success is generally most predictable in D1/D2 bone (anterior mandible). D3/D4 (maxillary posterior) has the most complications/failures.
- Higher implant failure rates in posterior maxilla
- Mandible has higher implant success rate compared to maxilla- specifically posterior mandible

D3 PICO

- **Clinical Question:**

PICO FORMAT

P:

I:

C:

O:

PICO FORMATTED QUESTION

CLINICAL BOTTOM LINE

SEARCH BACKGROUND

- **Date(s) of Search:**
- **Database(s) Used:**
- **Search Strategy/Keywords:**

SEARCH BACKGROUND

- **MESH terms used:**

ARTICLE 1 CITATION, INTRODUCTION

- Citation: Authors, Title, Journal, Date, Volume, Page Numbers.
- Study Design:
- Study Need / Purpose:

ARTICLE 1 SYNOPSIS

- 1-2 slides
- Method
- Results
- Conclusions
- Limitations

ARTICLE 1 SELECTION

- 1 slide
- Reason for selection
- Applicability to your patient
- Implications

ARTICLE 2 CITATION, INTRODUCTION

- Citation: Authors, Title, Journal, Date, Volume, Page Numbers.
- Study Design:
- Study Need / Purpose:

ARTICLE 2 SYNOPSIS

- 1-2 slides
- Method
- Results
- Conclusions
- Limitations

ARTICLE 2 SELECTION

- 1 slide
- Reason for selection
- Applicability to your patient
- Implications

LEVELS OF EVIDENCE

- ☐ **1a** – Clinical Practice Guideline, Meta-Analysis, Systematic Review of Randomized Control Trials (RCTs)
- ☐ **1b** – Individual RCT
- ☐ **2a** – Systematic Review of Cohort Studies
- ☐ **2b** – Individual Cohort Study
- ☐ **3** – Cross-sectional Studies, Ecologic Studies, “Outcomes” Research
- ☐ **4a** – Systematic Review of Case Control Studies
- ☐ **4b** – Individual Case Control Study
- ☐ **5** – Case Series, Case Reports
- ☐ **6** – Expert Opinion without explicit critical appraisal, Narrative Review
- ☐ **7** – Animal Research
- ☐ **8** – In Vitro Research

STRENGTH OF RECOMMENDATION TAXONOMY (SORT)

<input type="checkbox"/>	A – Consistent, good quality patient oriented evidence
<input type="checkbox"/>	B – Inconsistent or limited quality patient oriented evidence
<input type="checkbox"/>	C – Consensus, disease oriented evidence, usual practice, expert opinion, or case series for studies of diagnosis, treatment, prevention, or screening

Double click table to activate check-boxes

Optional footer for reference citations or other notes. Delete if not needed.

Template Revised 9/10/2020

CONCLUSIONS: D3

How does the evidence apply to this patient?

- Consider/weigh:
 - Literature
 - Group Leader & Specialist experience
 - Patient circumstances & preferences

Based on the above considerations, how will you advise your D4?

CONCLUSIONS: D4

Based on your D3's bottom line recommendations, how will you **advise** your patient?

How will you **help** your patient?

DISCUSSION QUESTIONS

- 1-2 slides
- List posted discussion questions
- Questions may also be from Group Leader or Specialist

DISCUSSION QUESTIONS

THANK YOU