

**SELECTING SUCCESSFUL  
RPD ABUTMENTS:  
CROWN TO ROOT RATIO**

7B-5

NOVEMBER 18<sup>TH</sup>, 2020

# ROUNDS TEAM

- **Group Leader: Dr. Rossi**
- **Specialty Leader: Dr. Chien**
- **Project Team Leader: Maggie Mueller**
- **Project Team Participants: Elbethel Defare, Kelsi Salzwedel, Jessica Wertz**

## PATIENT: REZIQ

- 57 year old male
- CC: “I like my partial.”

# MEDICAL HISTORY

Significant for:

- Type II Diabetes
- Kidney stone removal

# MEDICAL HISTORY

## Medications:

- Metformin
- Glipizide
- Aspirin (81 mg)
- Vitamin D
- Potassium

# DENTAL HISTORY

- Partial maxillary dentition (#12 missing)
- Partial mandibular dentition (#'s 19, 30, 31 missing)
- Previous History of Tx:
  - Restorative
  - Endo (#12, #20, #18 done before patient came to Marquette)
  - Fixed Pros –
    - Bridge #11-13
    - Crowns (#18, #20)
  - Extractions (#1, 12, 16, 17, 19, 30, 31)
- Removable Partial Denture
  - Class III Mod I

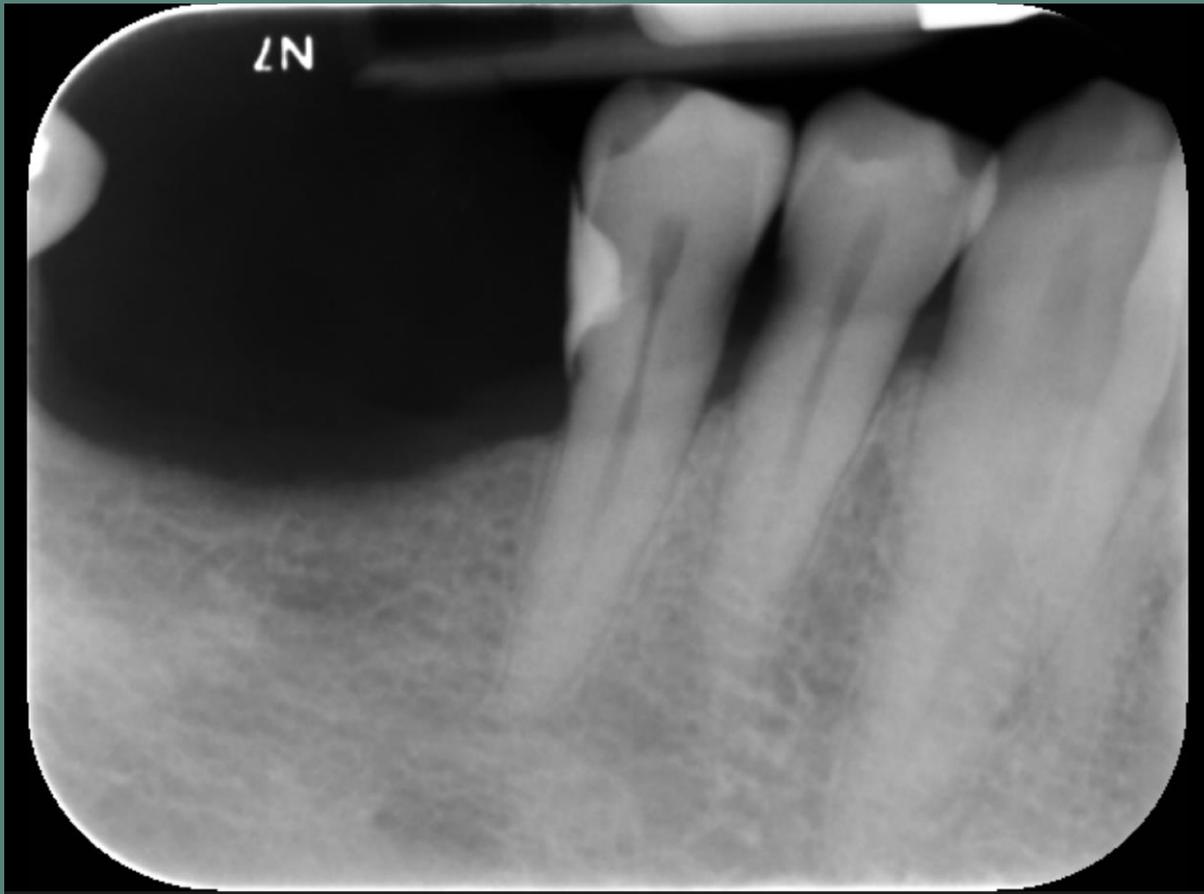
# FMX



# BW OF LOWER RIGHT



# PA OF LOWER RIGHT



## RADIOGRAPHIC FINDINGS

- Primary caries – Mesial of #29
- Recurrent caries – Distal of #28
- Non-carious cervical lesions – #'s 3, 4, 8, 21, 22, 29
- Overhanging margins – Distal of #15
- Partially obturated #18
- Moderate generalized bone loss

## CLINICAL FINDINGS

- Primary caries – Mesial #29
- Recurrent caries – Distal #28
- Defective restoration Distal #28
- Perio findings
  - CAL up to 9 mm on #3, 7 mm on #14, 7 mm on #29





# DIAGNOSIS

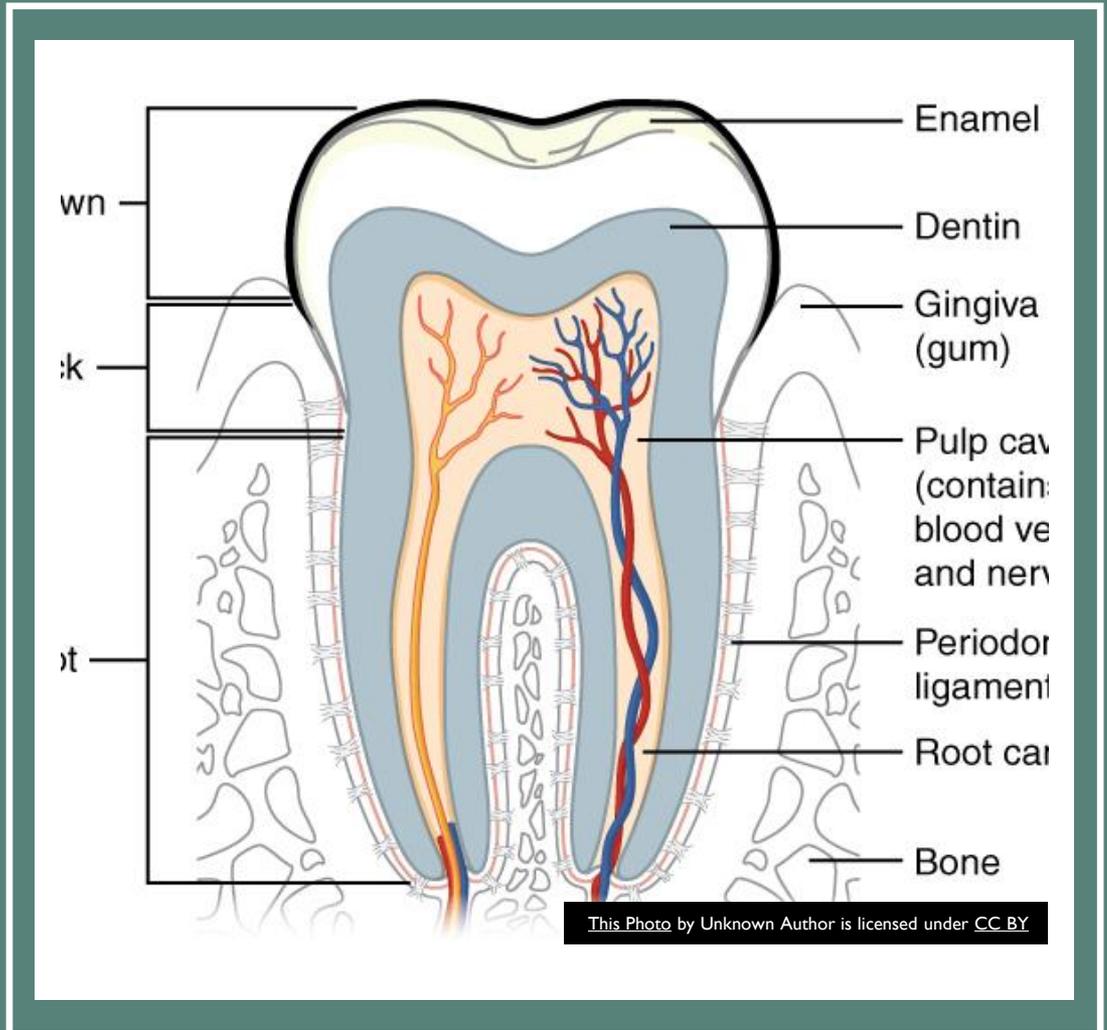
- Dental caries: #28, 29
- Perio diagnosis: Stage III, Grade B localized periodontitis
  - Mucogingival insufficiencies on #3, 14, 20, and 29
  - Clinical attachment loss via generalized recession but particularly on #3, 4, 5, 13, and 14.
  - Treatment plan of connective tissue graft for #3 with a coronally positioned flap at #4 and #5, connective tissue grafts for #14, 21, 22, 24, and a free gingival graft for #29.

## PROBLEM LIST

- Caries
- Defective restoration
- Missing teeth
- Perio disease
- Home care

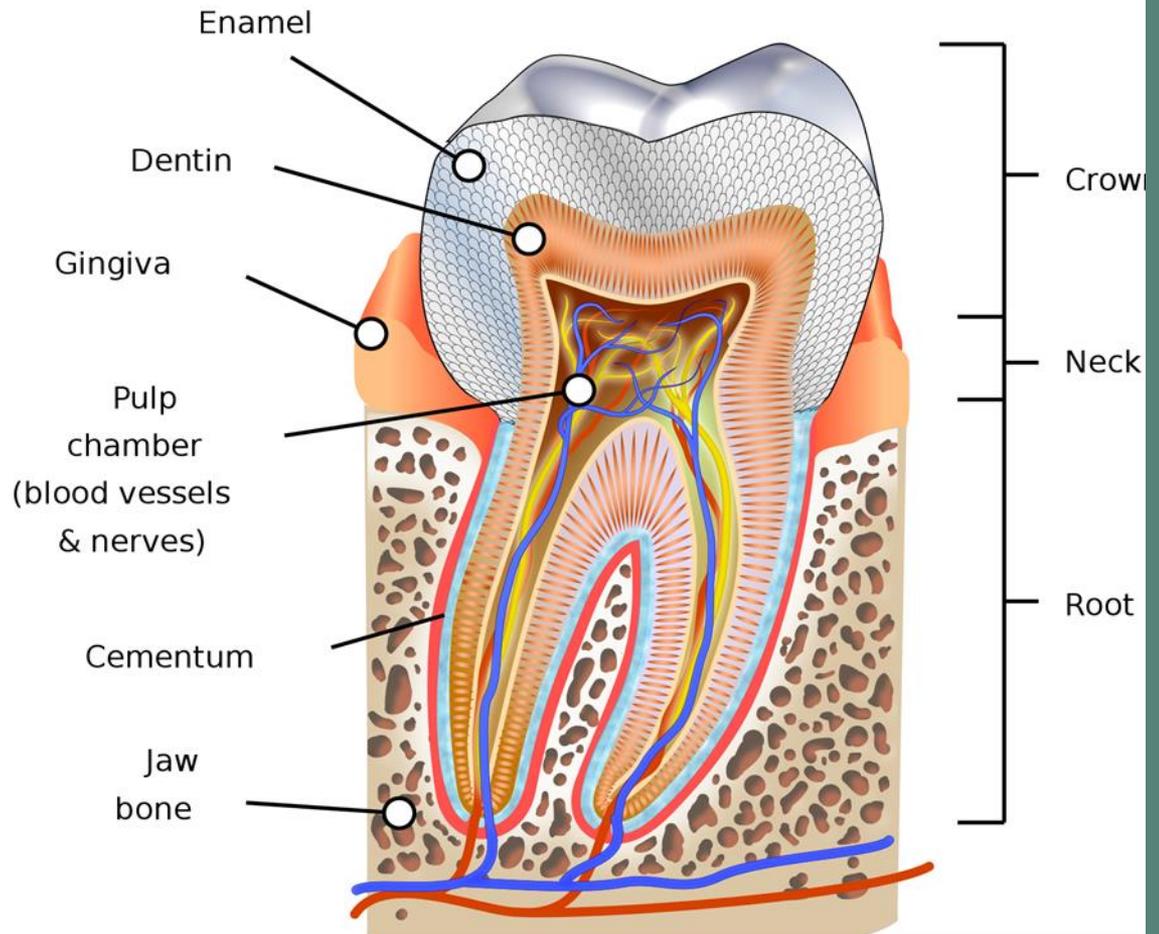
DI BASIC  
SCIENCE: WHAT IS  
THE ANATOMY OF  
A TOOTH?

- **Anatomical crown**
- **Clinical crown**
- **Anatomical root**
- **Clinical root**
- **Root apex**
- **Apical foramen**
- **Enamel**
- **Dentin**
- **Cementum**



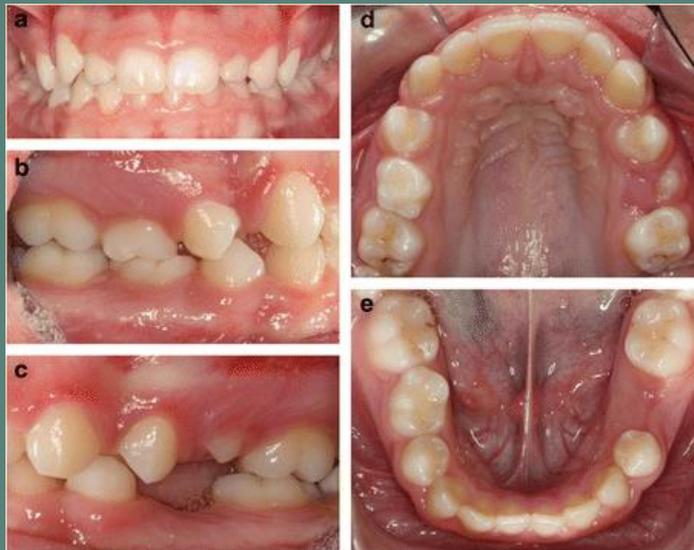
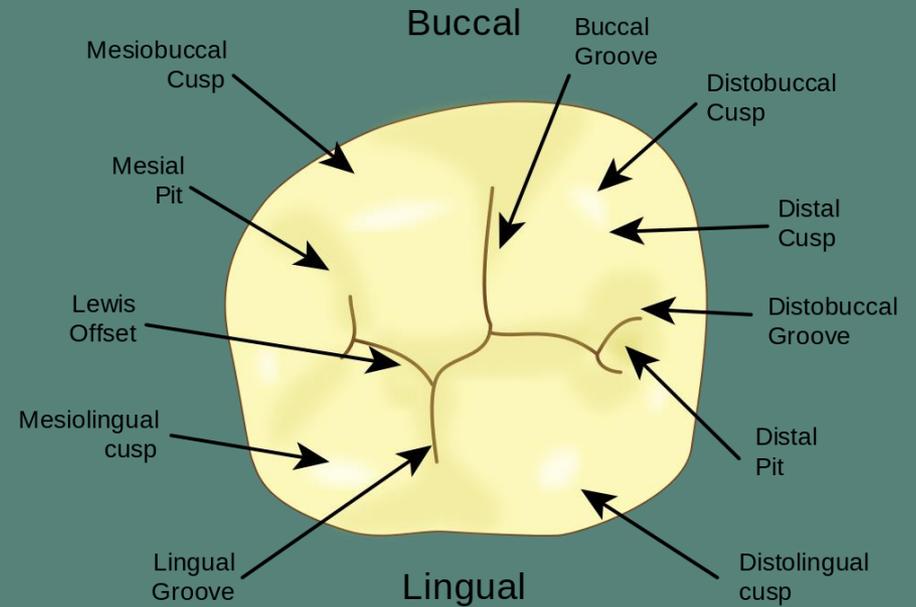
## DI BASIC SCIENCE: WHAT IS THE ANATOMY OF A TOOTH?

- Alveolar process
- Alveolar bone
- Gingiva
- Periodontal ligament



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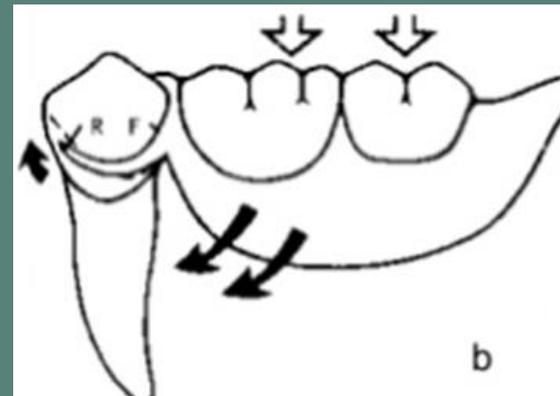
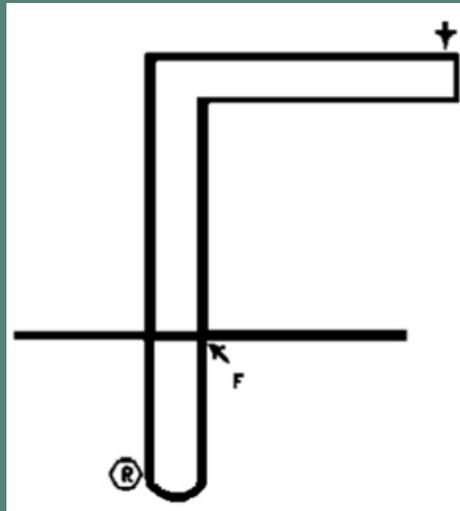
- Mesial surface
- Distal surface
- Labial/Buccal surface
- Lingual surface



- Marginal ridges
- Triangular ridges
- Transverse ridges
- Oblique ridge
- Primary grooves
- Secondary grooves

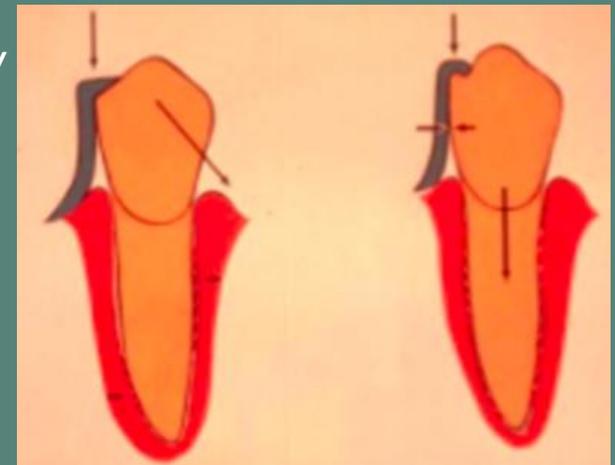
# D2 PATHOLOGY: WHAT DIRECTIONAL FORCES ARE DESTRUCTIVE TO AN RPD ABUTMENT?

- An RPD undergoes multiple stress types during function
- Cantilever forces are destructive to the abutment tooth
- A cantilever is a structure that is supported on one end and extends horizontally = distal extension of an RPD



## D2 PATHOLOGY: WHAT DIRECTIONAL FORCES ARE DESTRUCTIVE TO AN RPD ABUTMENT?

- Support from the teeth and the edentulous ridge are not equal under occlusal loading (Hussain)
- Problem: class I lever forces = extraction forces on abutment
  - Goal: class III lever forces
  - Achieved by: using a stress releasing clasp
- Problem: B/L forces = orthodontic-like movement
  - Goal: apically directed forces
  - Achieved by: a positive rest seat to direct forces apically



## D3 PICO

- **Clinical Question:**

# PICO FORMAT

**P:**

**I:**

**C:**

**O:**

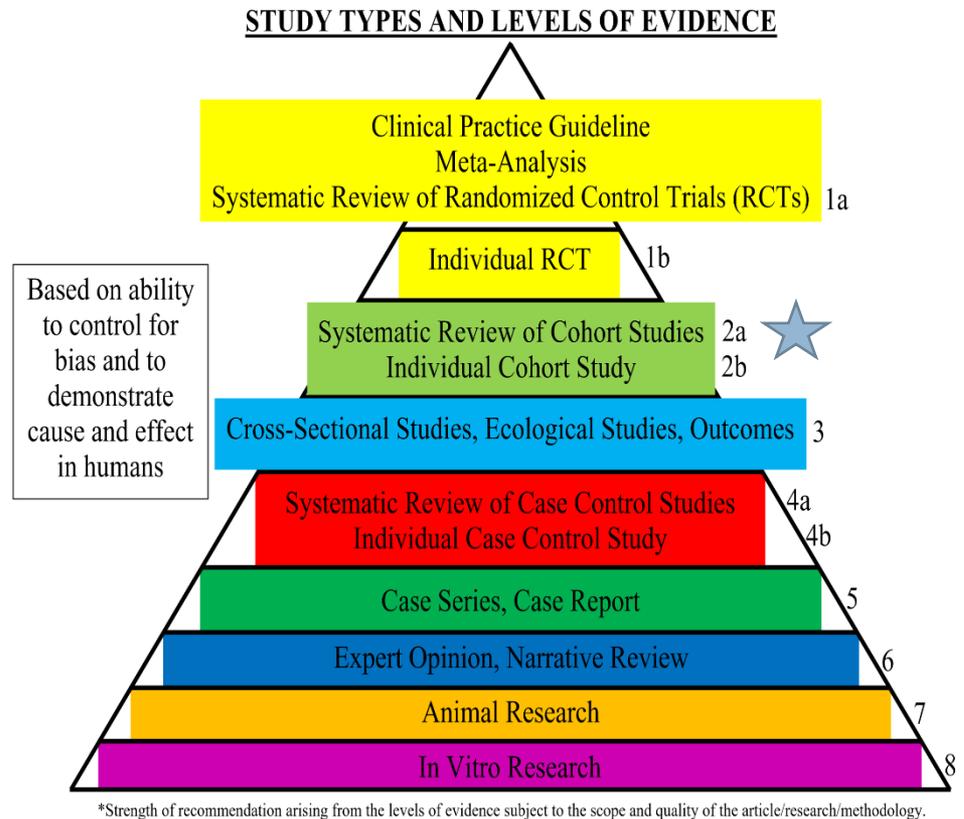
# PICO FORMATTED QUESTION

CLINICAL BOTTOM LINE

# SEARCH BACKGROUND

# ARTICLE I:

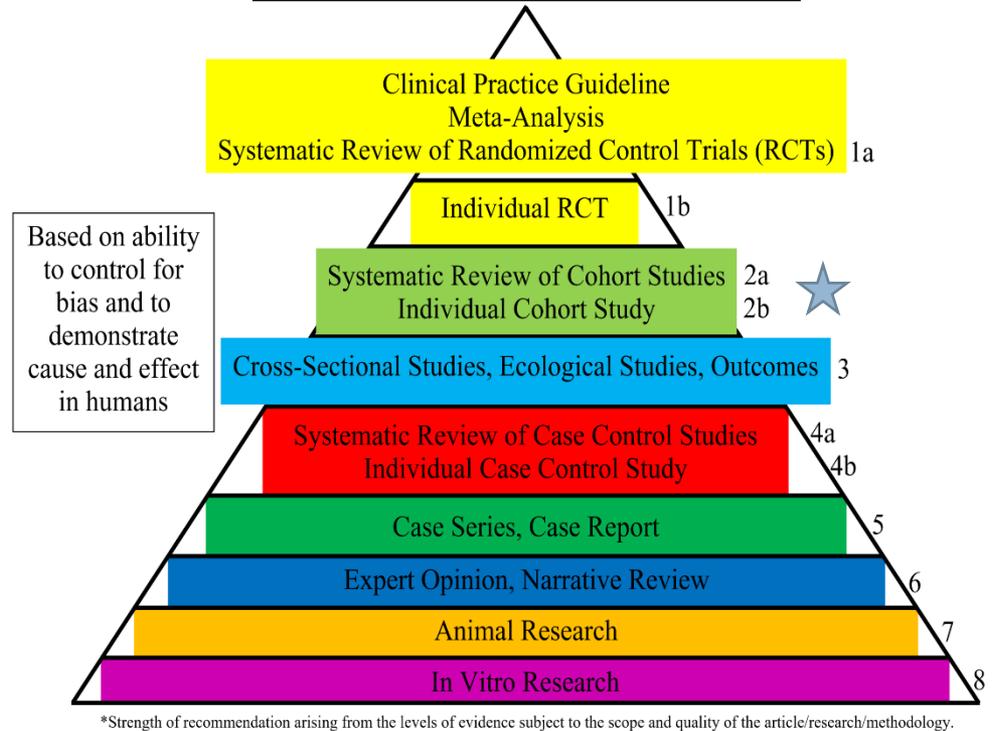
# CHOICE OF ARTICLE I



# ARTICLE 2:

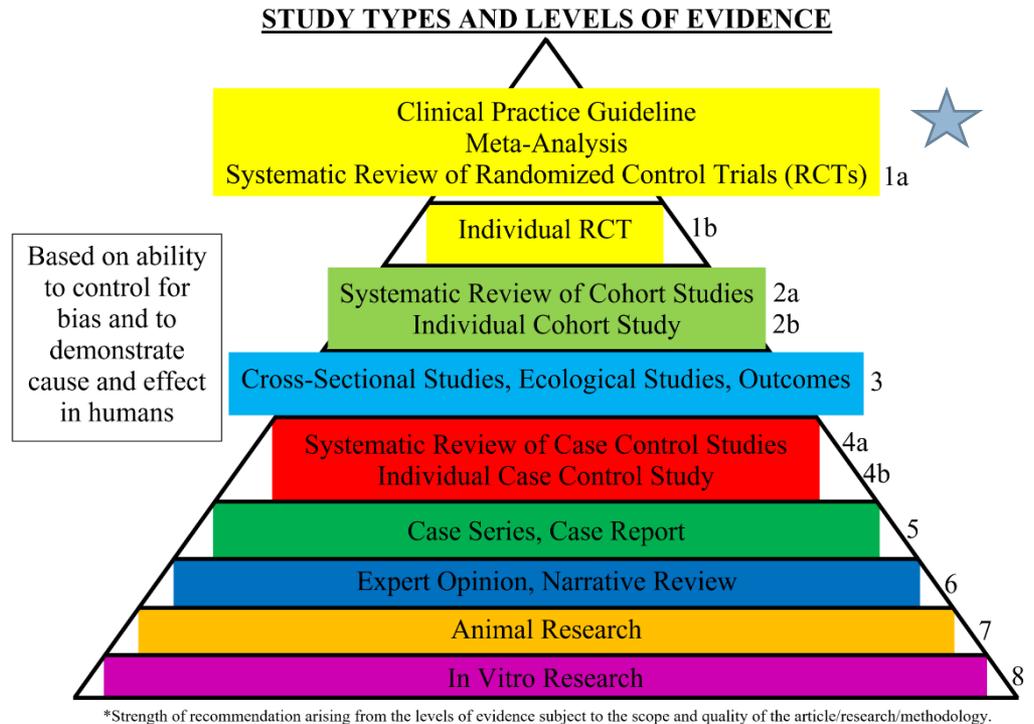
# CHOICE OF ARTICLE 2

## STUDY TYPES AND LEVELS OF EVIDENCE



## ARTICLE 3:

# Choice of Article 3



# Summary of Research

- 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

# RECOMMENDATION LEVEL

## **Strength of Recommendation Taxonomy (SORT) For Guidelines and Systematic Reviews**

See article **J Evid Base Dent Pract 2007;147-150**

- A** – Consistent, good quality patient oriented evidence
- B** – Inconsistent or limited quality patient oriented evidence
- C** – Consensus, disease oriented evidence, usual practice, expert opinion, or case series for studies of diagnosis, treatment, prevention, or screening

BOTTOM LINE

QUESTIONS ?