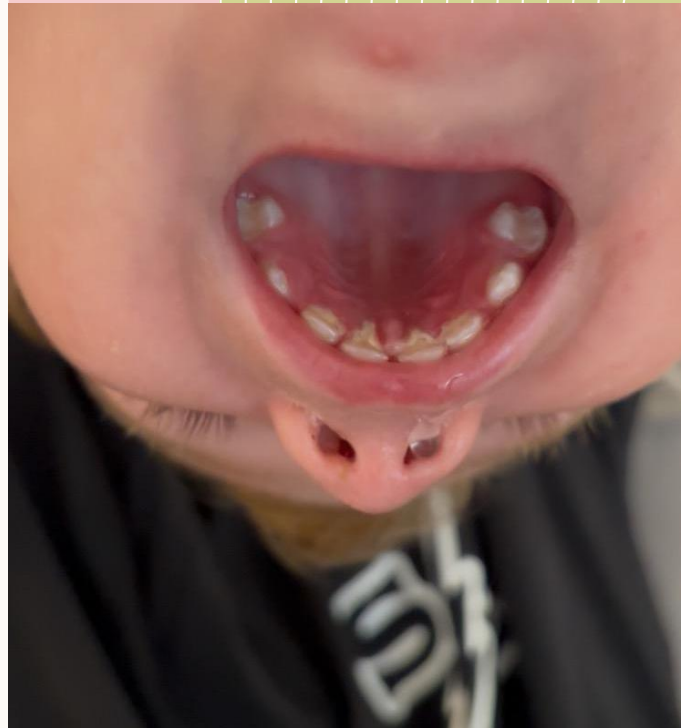
CASE BASED DISCUSSION

CASE 1

- 20-month-old boy
- Fit and well.
- Fever for 3 days.
- Poor oral intake
  (only icecream)
  - **Questions for parents?**
  - **Diagnosis? Causative agent? Infectiousness?**
  - **Peak incidence?**
  - **Management**

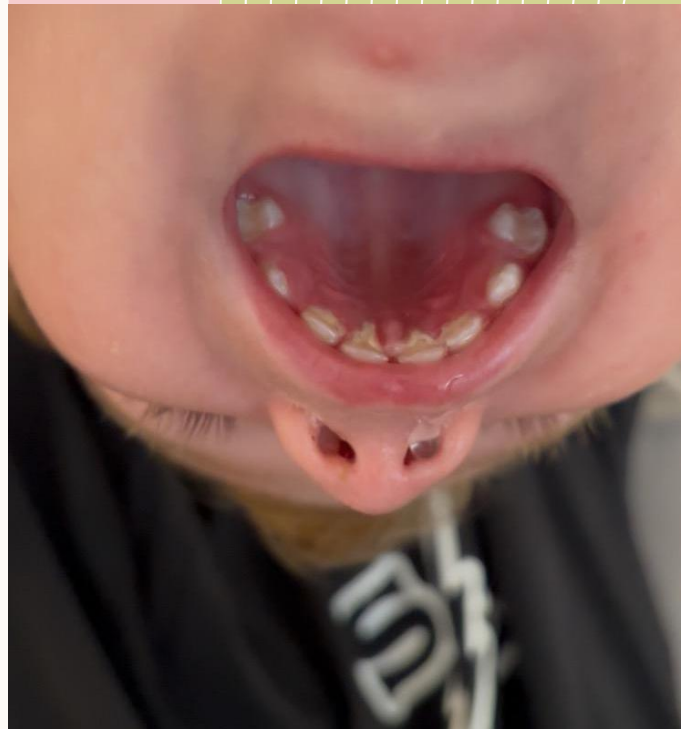
PRIMARY HERPETIC GINGIVOSTOMATITIS

- Herpes simplex Virus Type I
  - Peak incidence 12-18 months
- Symptoms – fever, headaches, malaise, irritability, cervical lymphadenopathy
- Oral symptoms – oral pain, mild dysphagia, stomatitis, intraepithelial fluid-filled vesicles appear
  - Painful, enlarged gingiva
  - Erosions of free gingival margin



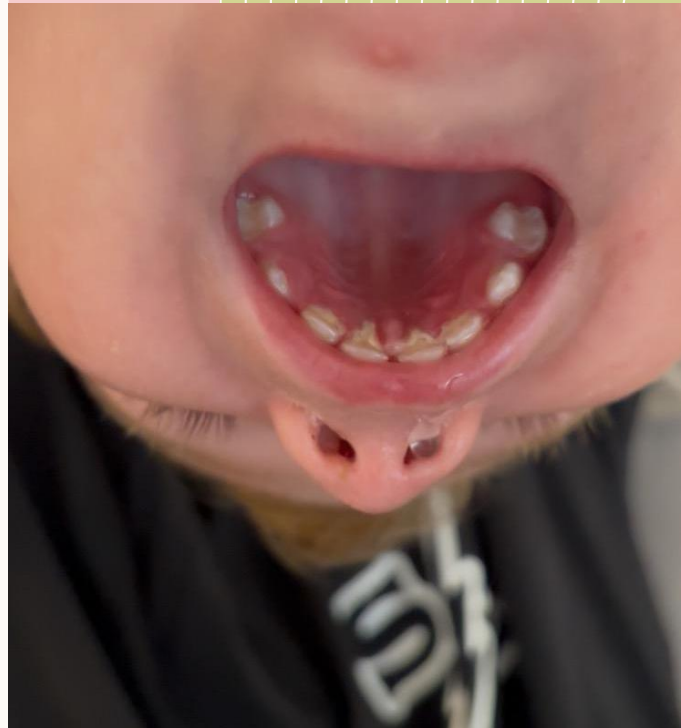
PRIMARY HERPETIC GINGIVOSTOMATITIS

- Incubation time – 3-5 days (48hr history of irritability, pyrexia, malaise)
- Transmission – direct contact with lesions and infected oral secretions
- Course of disease – self limiting, heals within 10-14 days



MANAGEMENT

- Symptomatic care
  - Oral fluids
  - Bed rest
  - Soft diet (icecream ☺)
  - **Analgesia ? Weight = 12kg**

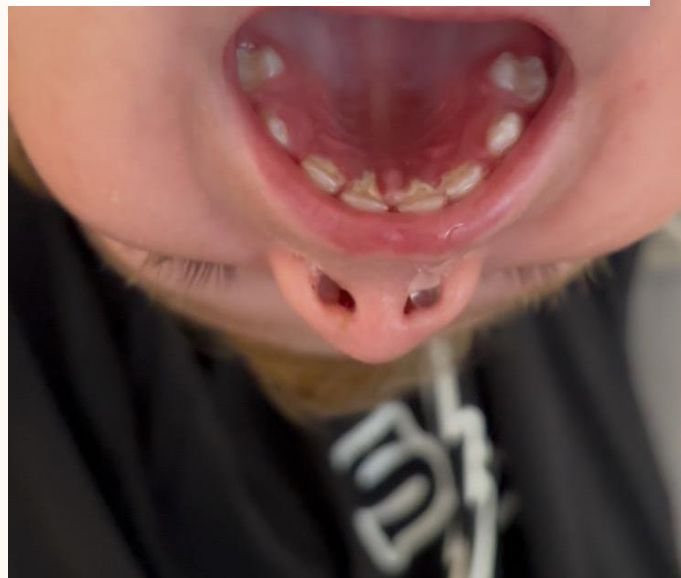


ANALGESIA?

Analgesia ? Weight = 12kg

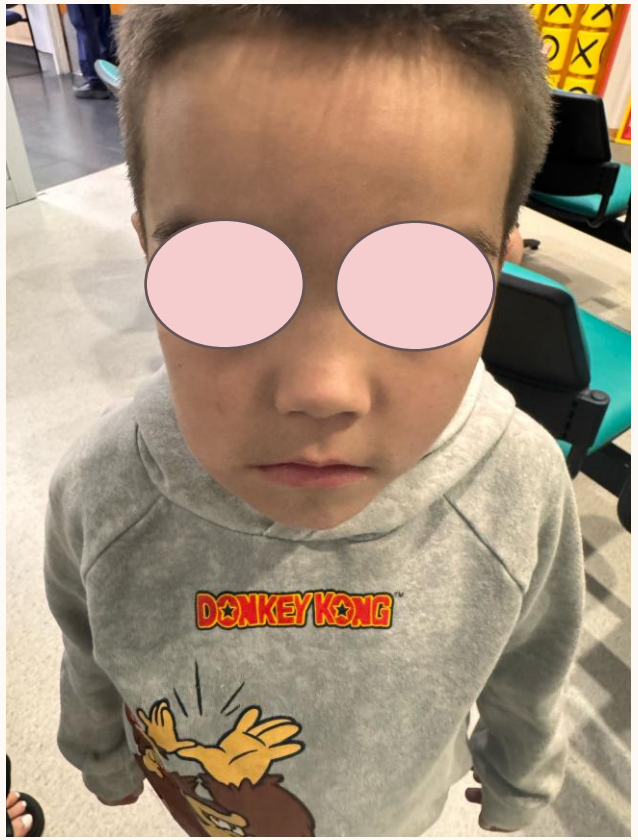
Paracetamol 15mg/kg, 4-6 hrly
(maximum 1g per dose, 4g per day)
15 x 12kg = <u>180mg every 4-6hrs</u>

Panadol 1-5yrs Suspension contains 24mg/ml
180/24 = <u>7.5ml every 4-6hrs</u>



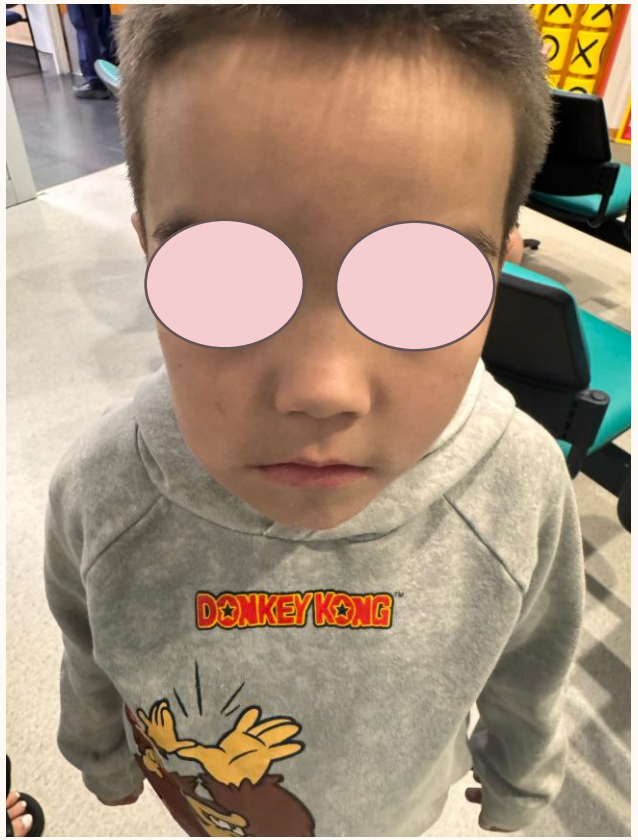
CASE 2

- 5.5-year-old boy
- Presented to your surgery this afternoon
- Lower right-hand-side submandibular swelling started this morning
  - **Questions for parents?**
  - **Initial investigations before looking in mouth?**



INITIAL INVESTIGATION

- Medically fit and well, immunised
- History of chronic nocturnal pain
  - Worsened over past few days
  - Managing with analgesia
- No previous swellings or history of trauma
- No prior dental treatment
- Temperature = 38.5 degrees C
- Firm tender swelling localised to lower RHS
- Weight = 18kg



INITIAL INVESTIGATION

- Early mixed dentition
  - 46, 85, 84 visible
- Large cavity with debris present 85DO
- Loss of Q4 buccal sulcular depth

- **Possible causes of 85 cavity?**
- **What will you see on an x-ray?**
- **Plan for today's management**
  - **Calculate dosages of any medications used (18kg)**

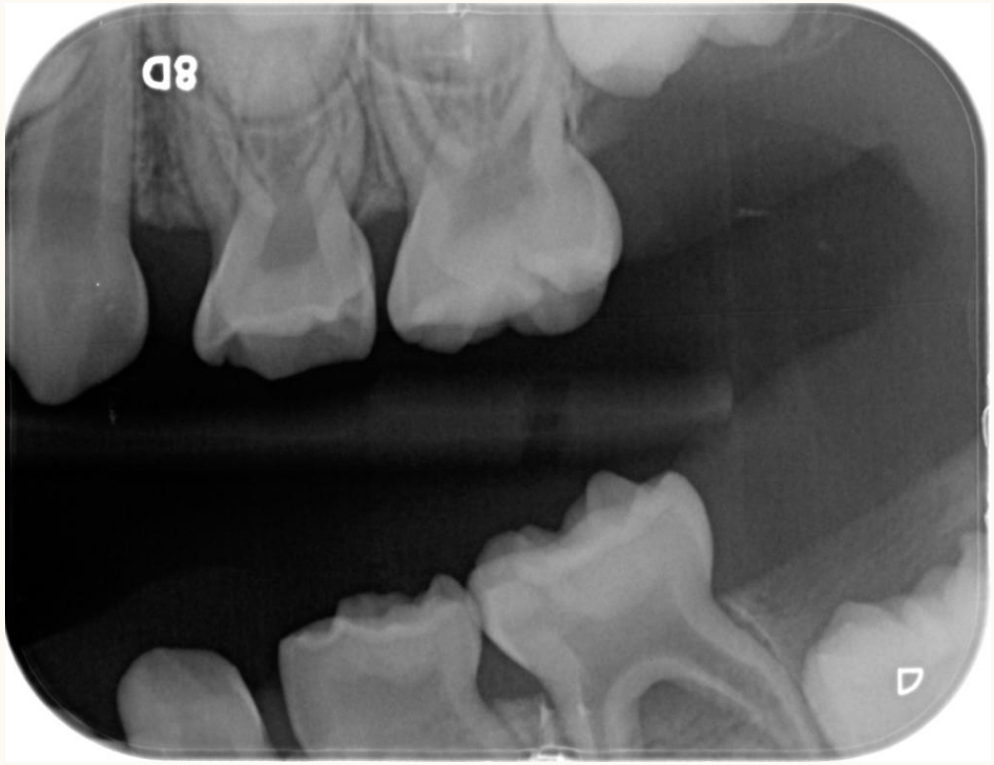
INITIAL INVESTIGATION

- 85 cavity:
  - **HSPM**
  - Dental caries
  - Failed existing restoration
  - Trauma (fracture)

- OR of MIH if HSPM present? **4.66**

INITIAL INVESTIGATION

- Radiographs:
  - Size 0 bitewing
  - OPG
  - Vertical bitewing
  - PA with parent holding film
- Cavity to pulp
- Furcation radiolucency
  - Accessory canals in furcation area

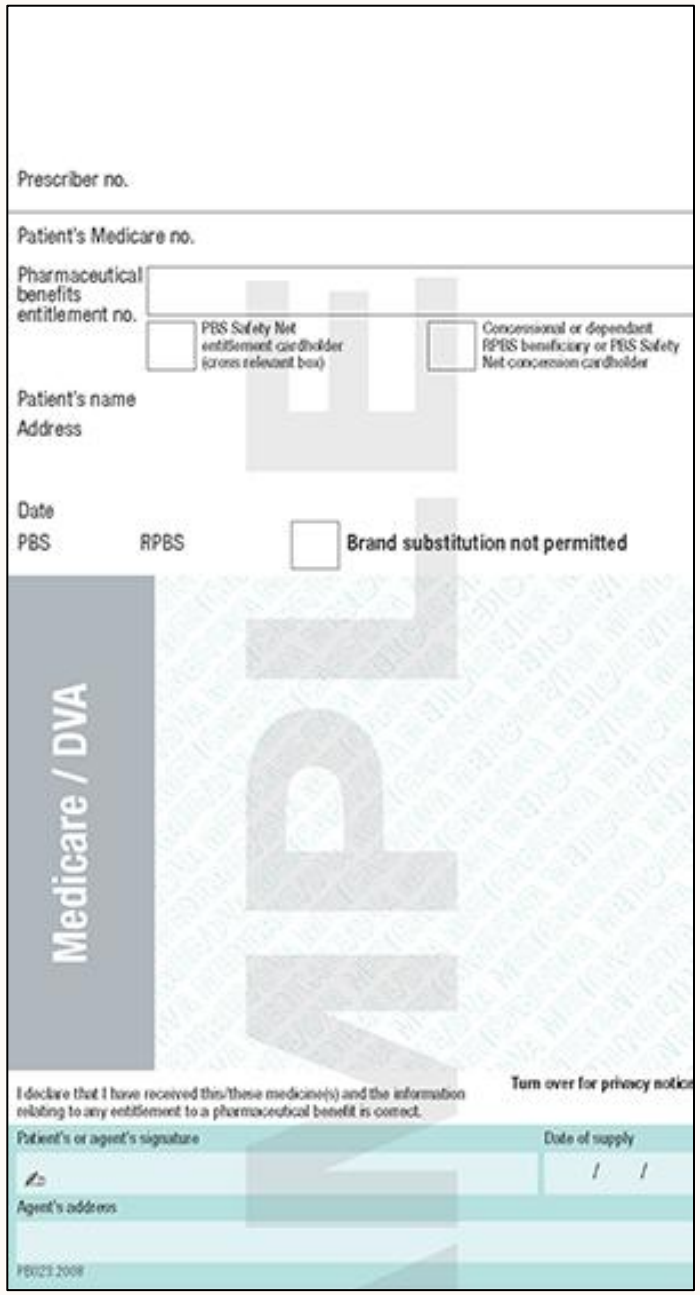


PENICILLIN V

- Dose = 12.5mg/kg up to 500mg orally every 6hrs for 5 days
- Weight = 18kg
- 12.5 x 18kg = 225mg
- Oral suspension 150mg/5ml
  - 225/150 x 5 = **7.5ml every 6hrs for 5 days**

METRONIDAZOLE

- Dose = 10mg/kg up to 400mg orally every 12hrs for 5 days
- Weight = 18kg
- 10 x 18kg = 180mg
- Oral suspension 40mg/ml *(written in lecture as 200mg/5ml)*
  - 180/40 x 1 = **4.5ml every 12hrs for 5 days**



EXERCISE – WRITE A SCRIPT FOR THE ANTIBIOTICS

Dr Senior Student DMD
17 Monash Ave
NEDLANDS WA 6009
6457 4400

Prescriber no. 11094567

Patient's Medicare no.

Pharmaceutical benefits entitlement no.

☐ PBS Safety Net entitlement cardholder (cross relevant box)

☐ Concessional or dependant RPBS beneficiary or PBS Safety Net concession cardholder

Patient's name Riley Child

Address 12 Macarena place
CLAREMONT WA 6010

Date 1/1/2025

PBS ✓ RPBS

☐ Brand substitution not permitted

Medicare / DVA

DOB 2/1/2020 Weight=18kg

Rx: Penicillin V oral suspension 150mg/5ml (200ml)
Take 7.5ml orally every 6hrs for 5 days.

Metronidazole oral suspension 40mg/ml (200ml)
Take 4.5ml every 12hrs for 5 days.

11/05/2025

For dental treatment only.

I declare that I have received this/these medicine(s) and the information relating to any entitlement to a pharmaceutical benefit is correct.

Turn over for privacy notice

Patient's or agent's signature

Date of supply / /

Agent's address

8023 2008

MANAGEMENT PLAN

- Analgesia - Paracetamol and Ibuprofen
  - Paracetamol 15mg/kg, 4-6 hrly (max 4000mg/day)
  - Ibuprofen 10mg/kg, 6-8hrly (max 2500mg/day)
- Soft diet
- If symptoms worsen contact clinic again
  - Provide referral letter to PCH Dental. Call PCH Dental **BEFORE** patient leaves your surgery to attend.
- If symptoms worsen after hours attend PCH ED
- Book for extraction of 85 in approximately 1 week

EXTRACTION APPOINTMENT - LA

- Topical lignocaine gel 2-5%
  - Dry surface
  - Apply with cotton bud
  - Leave in situ for 2 minutes
  - Wipe away with damp gauze
- Choice of injection technique?
  - Buccal and lingual infiltration (access lingual via interpapillary)

IF IAN BLOCK WAS CHOSEN?

- Anatomical differences between adults and children?
  - Ramus shorter vertically
  - Ramus narrower anterio-posteriorly

EXTRACTION APPOINTMENT - LA

- Choice of LA agent and why?
  - 4% Articaine with adrenaline 1:100,000
  - More effective mandibular infiltration
  - Short acting time
- Could argue for 2% Lignocaine with adrenaline 1:80,000
  - Acidic environment from infection means shorter acting time
  - Need to wait longer to take effect

MAXIMUM LA DOSE CALCULATION

- 4% Articaine with adrenaline 1:100,000
- Weight = 18kg

- 7x18 = 126mg
- 4% Articaine is 40mg/ml
- 126/40 = **maximum 3.15ml**
- 3.15/2.2 = 1.4 carpules

EXTRACTION APPOINTMENT – EXO INSTRUMENTATION

- Forceps:
  - Lower baby hawks
- Luxator
  - 3S or 3C luxator

EXTRACTION APPOINTMENT - EXO

- Instrumentation?
- Forceps:
  - Lower baby hawks
- Luxator
  - 3S or 3C luxator

EXTRACTION APPOINTMENT - EXO

- Instrumentation?
- Forceps:
  - Lower baby hawks
- Luxator
  - 3S or 3C luxator

EXTRACTION APPOINTMENT - EXO

- Luxator – wedge around the tooth to separate the PDL fibres from the tooth. Gently drive in apical direction.
- Forceps –
  1. Molar beaks engage the furcation area
  2. Apical pressure (primary drive)
  3. Lingual movement
  4. Continuous buccal movement
  5. Tooth removal towards buccal

AFTER EXTRACTION

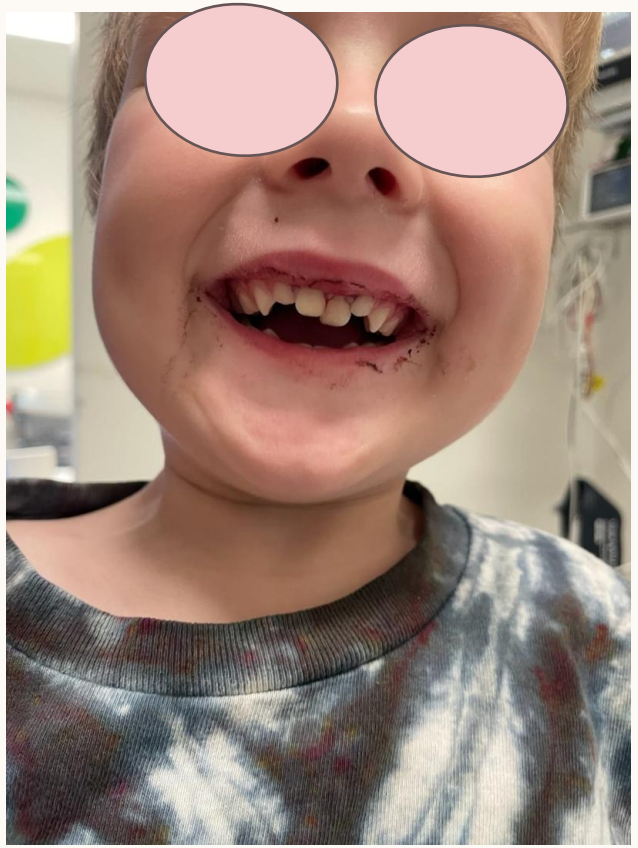
- Irrigate with saline to rinse out pus
- Digital pressure to compress walls of socket
- Bite on sterile gauze to achieve haemostasis
- Suture soft tissues if required
- Verbal and written postop instructions ?
- **Documentation**

CASE 3

- 3-year-old-boy
  - **Initial discussion**
  - **Investigations**
  - **Diagnosis from this image**
  - **Management**

INITIAL DISCUSSION

- **What happened?** Fell forwards onto edge of play equipment
- **When?** 2 hours ago
- **Where?** At the park
- **Who witnessed?** Grandma and older brother
- **Any loss of consciousness etc?** No
- **Any previous trauma?** No
- **Medical history?** Fit and healthy, immunized
- **Non-dental injuries?** Nil



INVESTIGATIONS?

- Check for tooth displacement
  - 61 palatally luxated
- Mobility
  - 51 grade I mobile, 61 and 62 nil
- Tenderness
  - 51 and 61 tender
- Bleeding at gingival crevice
  - 51 and 61
- Soft tissue injuries – mild gingival bruising only

INVESTIGATIONS? RADIOGRAPHS

- Maxillary occlusal + 3xPAs
- 51 –
  - normal PDL
- 61 –
  - root appears shortened
  - Displaced
  - Widened PDL

DIAGNOSIS?

Tooth 61: lateral luxation in palatal direction

Tooth 51: subluxation

MANAGEMENT

Tooth 61 –

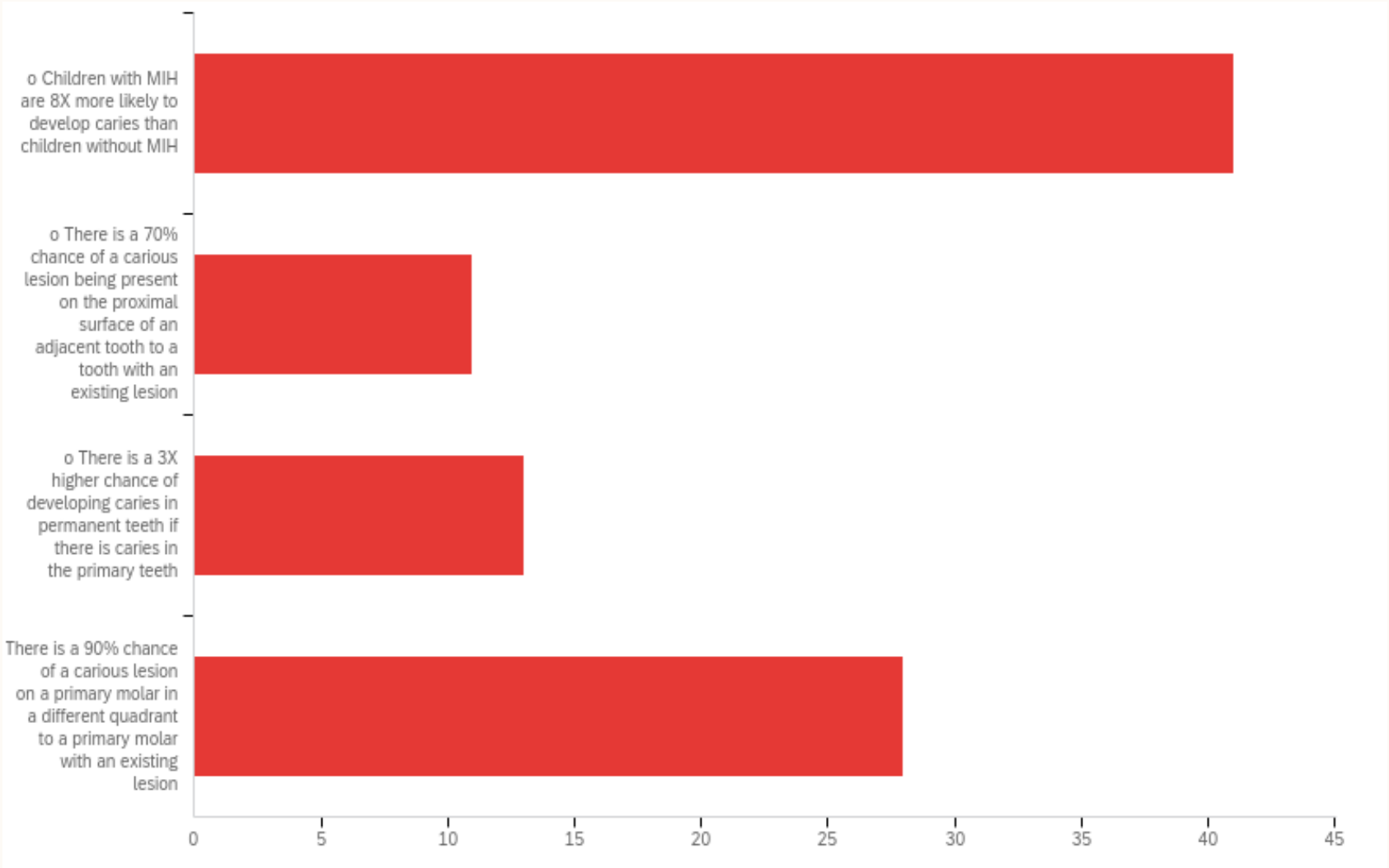
- *If occlusal interference* = exo
- *If no occlusal interference* = conservative management

Tooth 51 –

- Conservative management
  - Soft diet
  - Analgesia
  - Ongoing review and monitoring

PATTERN OF CARIES SPREAD

Q39 - Which of these statements is false?



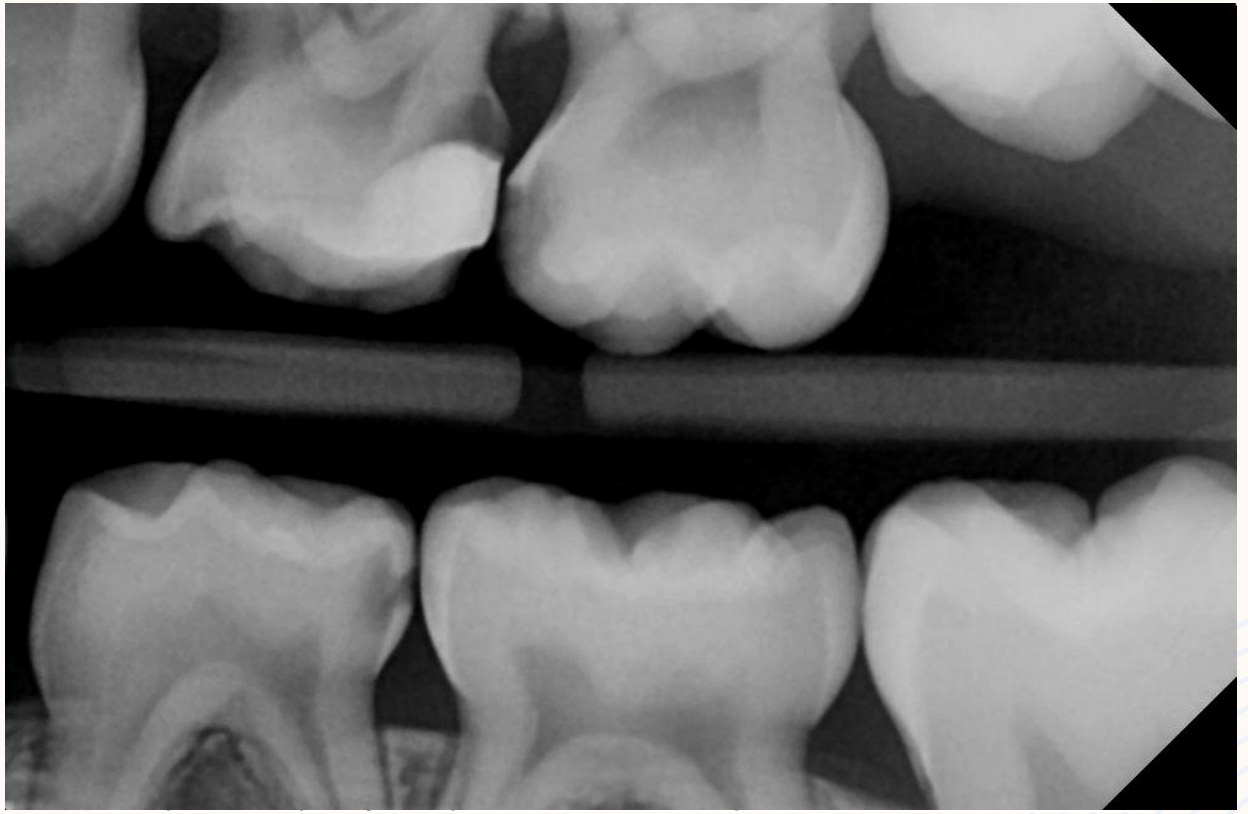
CARIES SPREADING TO ADJACENT PROXIMAL SURFACES

69% of primary teeth with proximal caries developed caries on the adjacent proximal surface.

Comparative Study > J Clin Pediatr Dent. 1997 Fall;22(1):59-62.

Progression of interproximal caries in the primary dentition

J A Dean [1], D H Barton, I Vahedi, E A Hatcher



Dean et al 1997

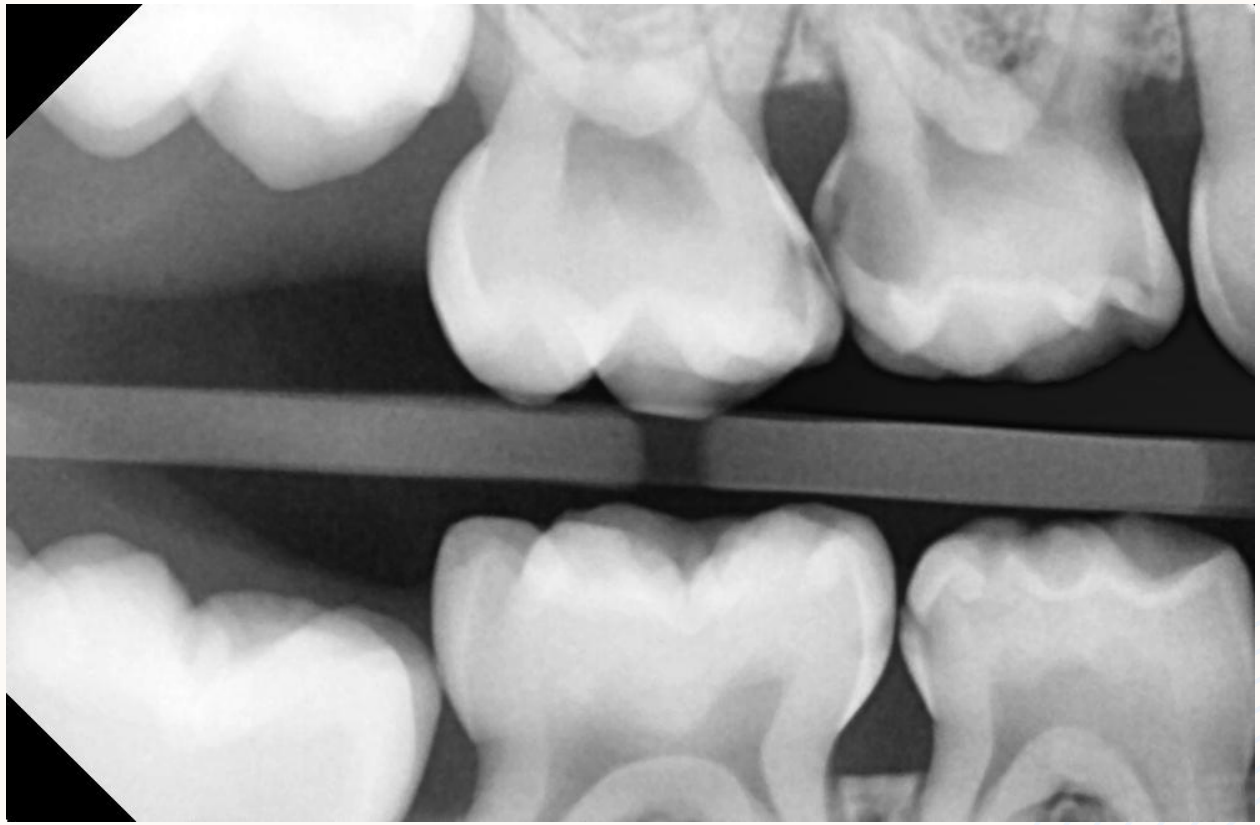
CARIES IN A DIFFERENT QUADRANT

89% of patients with a proximal carious lesion on a primary tooth in one quadrant developed another primary molar proximal lesion in another quadrant

Comparative Study > J Clin Pediatr Dent. 1997 Fall;22(1):59-62.

Progression of interproximal caries in the primary dentition

J A Dean [1], D H Barton, I Vahedi, E A Hatcher

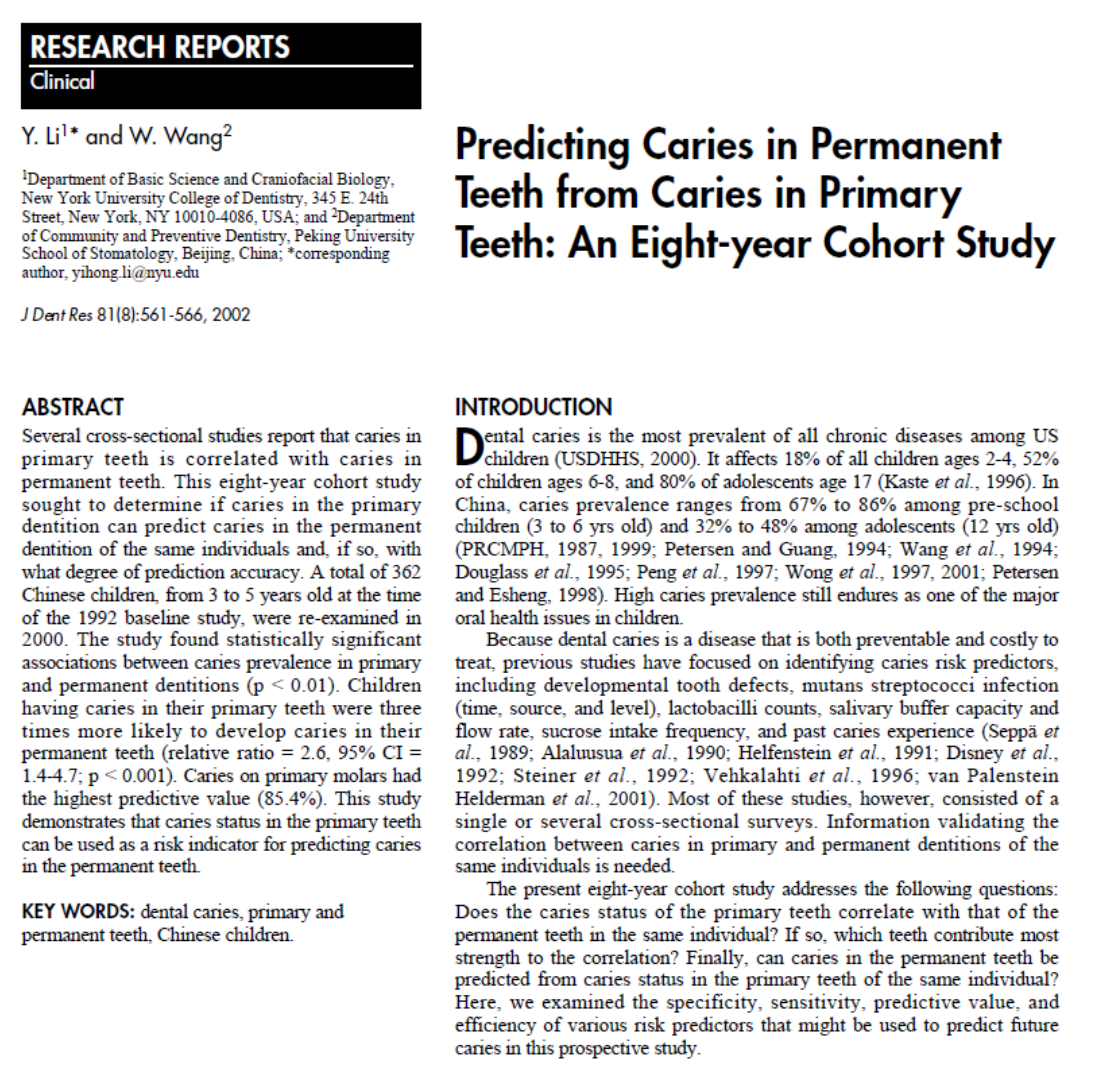


Dean et al 1997

CARIES IN PRIMARY TO PERMANENT TEETH

Children with caries in the primary teeth were **3 times** more likely to develop caries in their permanent teeth.

(Primary molars are highest predictive value = 85.4%)



RESEARCH REPORTS
Clinical

Y. Li[1]* and W. Wang[2]

[1]Department of Basic Science and Craniofacial Biology, New York University College of Dentistry, 345 E. 24th Street, New York, NY 10010-4086, USA; and [2]Department of Community and Preventive Dentistry, Peking University School of Stomatology, Beijing, China; *corresponding author, yihong.li@nyu.edu

J Dent Res 81(8):561-566, 2002

Predicting Caries in Permanent Teeth from Caries in Primary Teeth: An Eight-year Cohort Study

ABSTRACT

Several cross-sectional studies report that caries in primary teeth is correlated with caries in permanent teeth. This eight-year cohort study sought to determine if caries in the primary dentition can predict caries in the permanent dentition of the same individuals and, if so, with what degree of prediction accuracy. A total of 362 Chinese children, from 3 to 5 years old at the time of the 1992 baseline study, were re-examined in 2000. The study found statistically significant associations between caries prevalence in primary and permanent dentitions ($p < 0.01$). Children having caries in their primary teeth were three times more likely to develop caries in their permanent teeth (relative ratio = 2.6, 95% CI = 1.4-4.7; $p < 0.001$). Caries on primary molars had the highest predictive value (85.4%). This study demonstrates that caries status in the primary teeth can be used as a risk indicator for predicting caries in the permanent teeth.

KEY WORDS: dental caries, primary and permanent teeth, Chinese children.

INTRODUCTION

Dental caries is the most prevalent of all chronic diseases among US children (USDHHS, 2000). It affects 18% of all children ages 2-4, 52% of children ages 6-8, and 80% of adolescents age 17 (Kaste *et al.*, 1996). In China, caries prevalence ranges from 67% to 86% among pre-school children (3 to 6 yrs old) and 32% to 48% among adolescents (12 yrs old) (PRCMPH, 1987, 1999; Petersen and Guang, 1994; Wang *et al.*, 1994; Douglass *et al.*, 1995; Peng *et al.*, 1997; Wong *et al.*, 1997, 2001; Petersen and Esheng, 1998). High caries prevalence still endures as one of the major oral health issues in children.

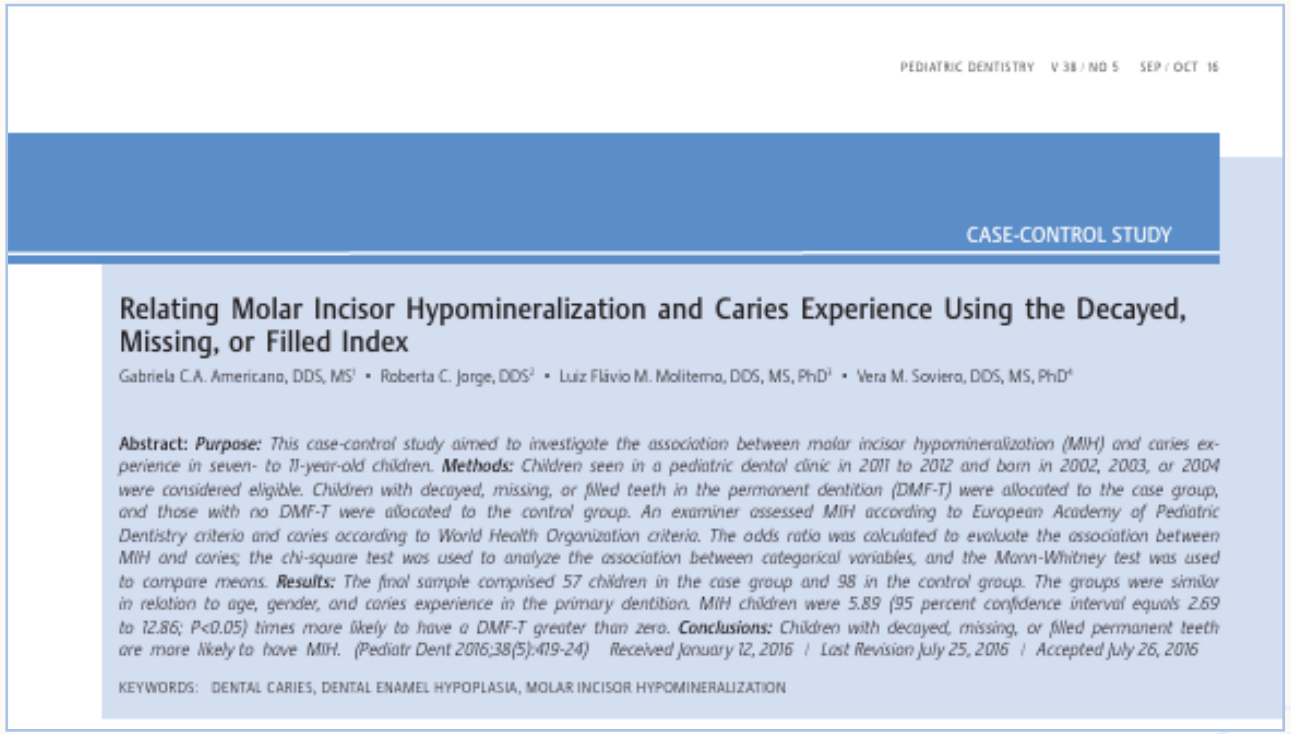
Because dental caries is a disease that is both preventable and costly to treat, previous studies have focused on identifying caries risk predictors, including developmental tooth defects, mutans streptococci infection (time, source, and level), lactobacilli counts, salivary buffer capacity and flow rate, sucrose intake frequency, and past caries experience (Seppä *et al.*, 1989; Alaluusua *et al.*, 1990; Helfenstein *et al.*, 1991; Disney *et al.*, 1992; Steiner *et al.*, 1992; Vehkalahti *et al.*, 1996; van Palenstein Helderman *et al.*, 2001). Most of these studies, however, consisted of a single or several cross-sectional surveys. Information validating the correlation between caries in primary and permanent dentitions of the same individuals is needed.

The present eight-year cohort study addresses the following questions: Does the caries status of the primary teeth correlate with that of the permanent teeth in the same individual? If so, which teeth contribute most strength to the correlation? Finally, can caries in the permanent teeth be predicted from caries status in the primary teeth of the same individual? Here, we examined the specificity, sensitivity, predictive value, and efficiency of various risk predictors that might be used to predict future caries in this prospective study.

Li & Wang 2002

CHILDREN WITH MIH AND CARIES

Children with MIH are **5.89 times** more likely to have a DMFT greater than zero than children without MIH.



PEDIATRIC DENTISTRY V 38 / NO 5 SEP / OCT 16

CASE-CONTROL STUDY

Relating Molar Incisor Hypomineralization and Caries Experience Using the Decayed, Missing, or Filled Index

Gabriela C.A. Americano, DDS, MS[1] • Roberta C. Jorge, DDS[2] • Luiz Flávio M. Moliterno, DDS, MS, PhD[3] • Vera M. Soviero, DDS, MS, PhD[4]

Abstract: ***Purpose:*** *This case-control study aimed to investigate the association between molar incisor hypomineralization (MIH) and caries experience in seven- to 11-year-old children.* ***Methods:*** *Children seen in a pediatric dental clinic in 2011 to 2012 and born in 2002, 2003, or 2004 were considered eligible. Children with decayed, missing, or filled teeth in the permanent dentition (DMF-T) were allocated to the case group, and those with no DMF-T were allocated to the control group. An examiner assessed MIH according to European Academy of Pediatric Dentistry criteria and caries according to World Health Organization criteria. The odds ratio was calculated to evaluate the association between MIH and caries; the chi-square test was used to analyze the association between categorical variables, and the Mann-Whitney test was used to compare means.* ***Results:*** *The final sample comprised 57 children in the case group and 98 in the control group. The groups were similar in relation to age, gender, and caries experience in the primary dentition. MIH children were 5.89 (95 percent confidence interval equals 2.69 to 12.86; P<0.05) times more likely to have a DMF-T greater than zero.* ***Conclusions:*** *Children with decayed, missing, or filled permanent teeth are more likely to have MIH.* *(Pediatr Dent 2016;38(5):419-24) Received January 12, 2016 / Last Revision July 25, 2016 / Accepted July 26, 2016*

KEYWORDS: DENTAL CARIES, DENTAL ENAMEL HYPOPLASIA, MOLAR INCISOR HYPOMINERALIZATION

Americano et al 2016

o Children with MIH are 8X more likely to develop caries than children without MIH

False statement

CHILDREN WITH MIH AND CARIES

Children with MIH are **5.89 times** more likely to have a DMFT greater than zero than children without MIH.

Americano et al 2016

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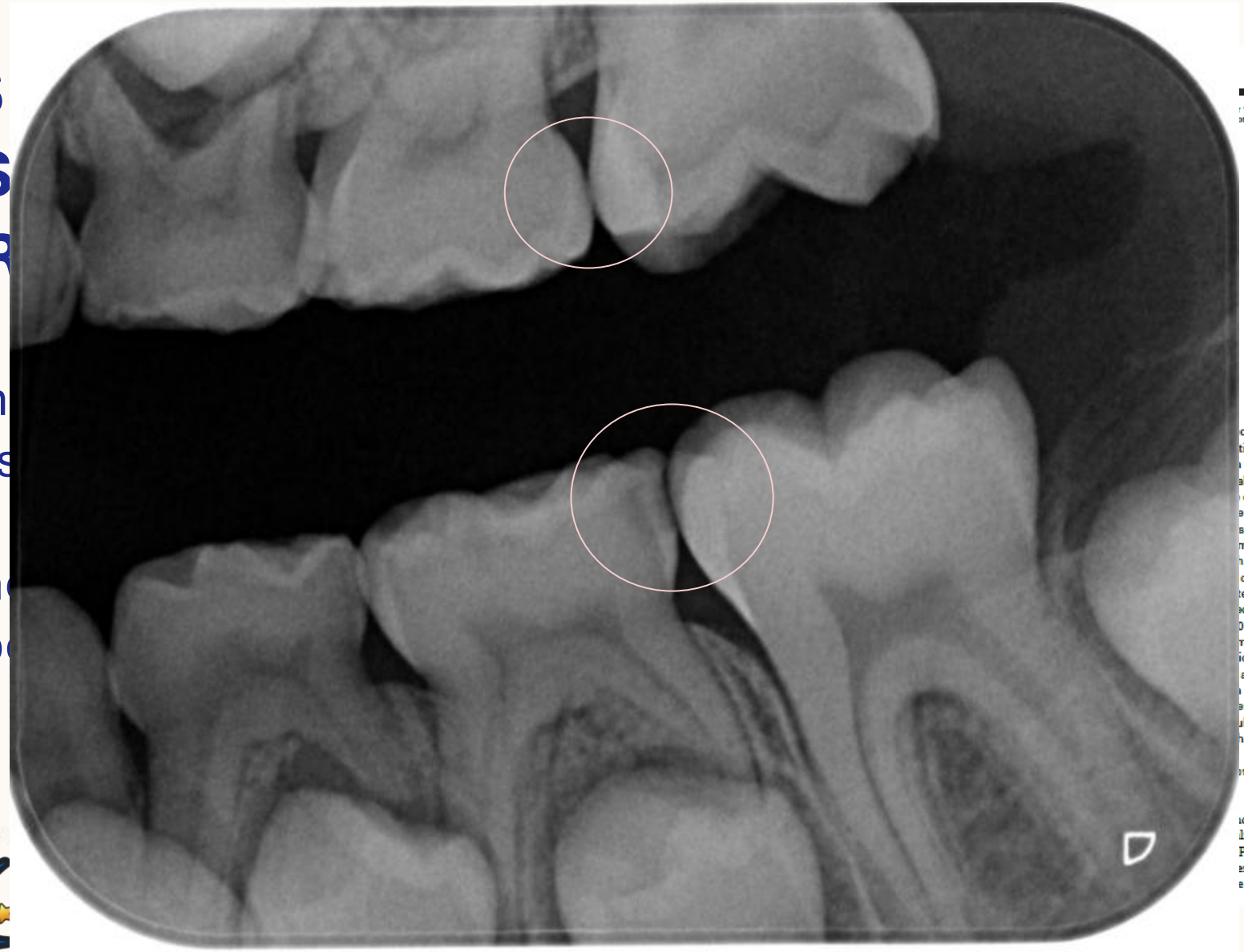

QUESTIONS?