

---

# Determining the Need For and Appropriateness of Sealants

Clinical Training for School Dental Sealant Programs  
August 2023



# Journal of the American Dental Association

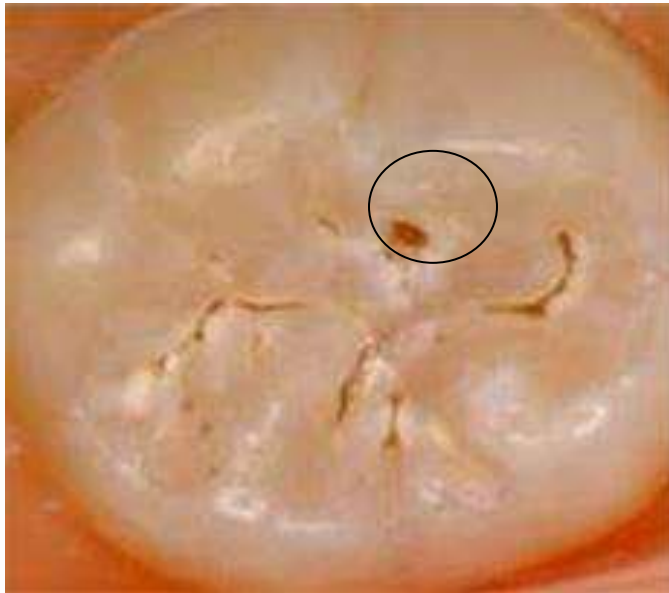
“The expert panel...concluded that sealants are effective in caries prevention and that sealants can prevent the progression of early noncavitated\* carious lesions” (JADA, 2008).

“SBSPs [are] an important and effective public health approach that complements clinical care systems in promoting the oral health of children and adolescents” (JADA, 2009).

\*Noncavitated: Demineralized tooth structure that has not yet collapsed into a cavity.

# Cavitated vs. Non-Cavitated

Cavitated

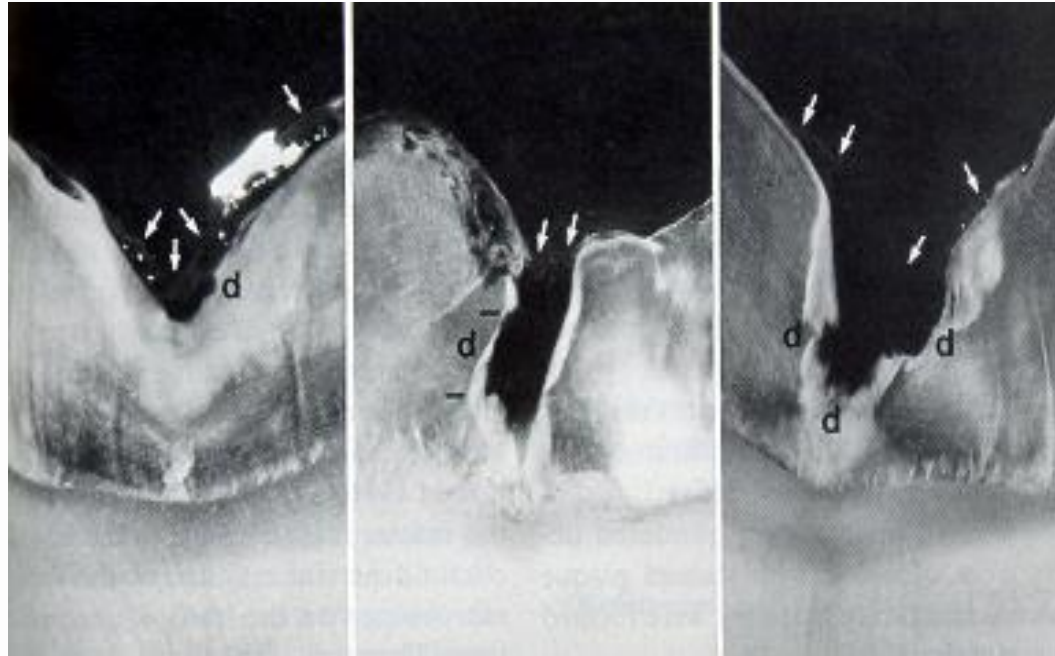


Non-Cavitated



Photos courtesy of Margherita Fontana, DDS, PhD

# Cavitation Caused by a Sharp Explorer



# Cavitation Caused by a Sharp Explorer



Photos courtesy of Hafsteinn Eggertsson, DDS, MSD, PhD

## (JADA, 2010)

Clinicians may use an explorer to:

- Gently remove plaque and debris from the tooth surface.
- Detect changes or breaks in the surface contour by moving it gently in cases in which there is doubt about the presence of a cavitation.
- Evaluate the smoothness or roughness of the tooth surface to help determine lesion activity.
- Help in the assessment of a resin sealant's integrity and retention.

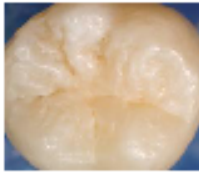
# ICDAS: International Caries Detection and Assessment System

# ICDAS

- ICDAS
  - Use of a standardized system
  - Based on best available evidence
  - Early caries detection
  - Later stage caries severity



Seal



Restore



- 0 = Sound; no caries change after air drying (5 sec); or non-caries change such as stain, hypoplasia, wear, erosion and other non-caries phenomena.**
- 1 = First visual change in enamel, seen after air drying, or colored change limited to the confines of the pit and fissure area.**
- 2 = Distinct visual change in enamel seen when wet, white or colored, wider than the fissure/fossa.**
- 
- 3 = Localized enamel breakdown, with no visible dentin, discontinuity of surface enamel, widening of fissure. Ball-end probe may confirm.**
- 4 = Underlying dark shadow from dentin with or without localized enamel breakdown.**
- 5 = Distinct cavity with dentin exposed at the base of the cavity.**
- 6 = Extensive cavity with dentin visible at base and walls of the cavity (or 1/2 surface).**

# ICDAS Classification #0

- “Sound, no caries”
- Preventive care advised (i.e. seal)



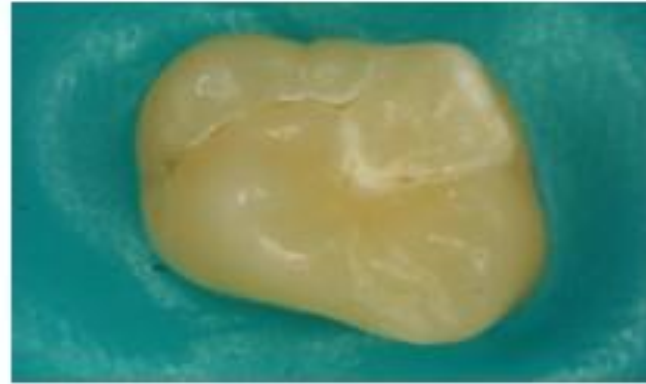
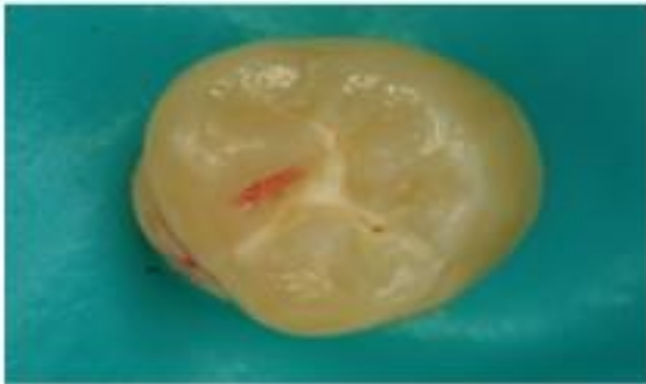
# ICDAS Classification #1

- “Early stage decay”
- First visual change in enamel
- Limited to the change of enamel color within the pit and fissure areas
- Preventive care advised (i.e. seal)



## ICDAS Classification #2

- “Early stage decay”
- Distinct visual change in enamel
- May be white or colored and wider than the fissure or pit
- May be incipient (non-cavitated) caries lesions
- Preventive care advised (i.e. seal)



# ICDAS Classification #3

- “Established decay”
- Localized enamel breakdown
- No visible dentin
- Discontinuity of surface enamel
- Widening of fissure or pit
- Operative care advised



# ICDAS Classification #4

- “Established decay”
- Shows an underlying dark shadow from dentin with or without localized enamel breakdown
- Operative care advised



# ICDAS Classification #5

- “Severe decay”
- Distinct cavity with visible dentin
- Extensive cavity with dentin visible at base and walls
- Operative care advised



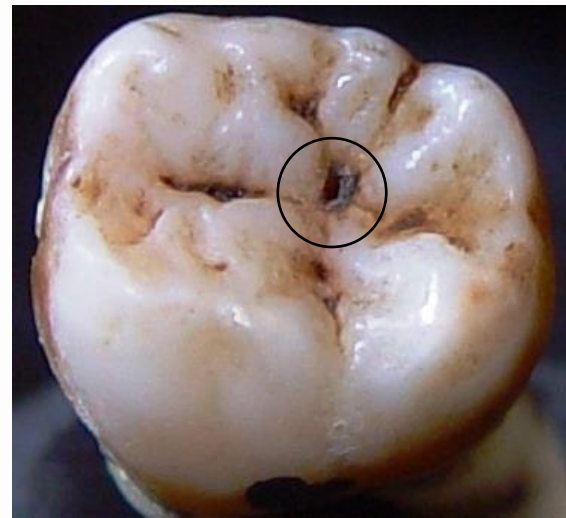
# ICDAS Classification #6

- “Severe decay”
- Extensive cavity with dentin visible at base and walls
- Operative care advised





# Cavitated Lesions – Don't Seal – Refer for Treatment

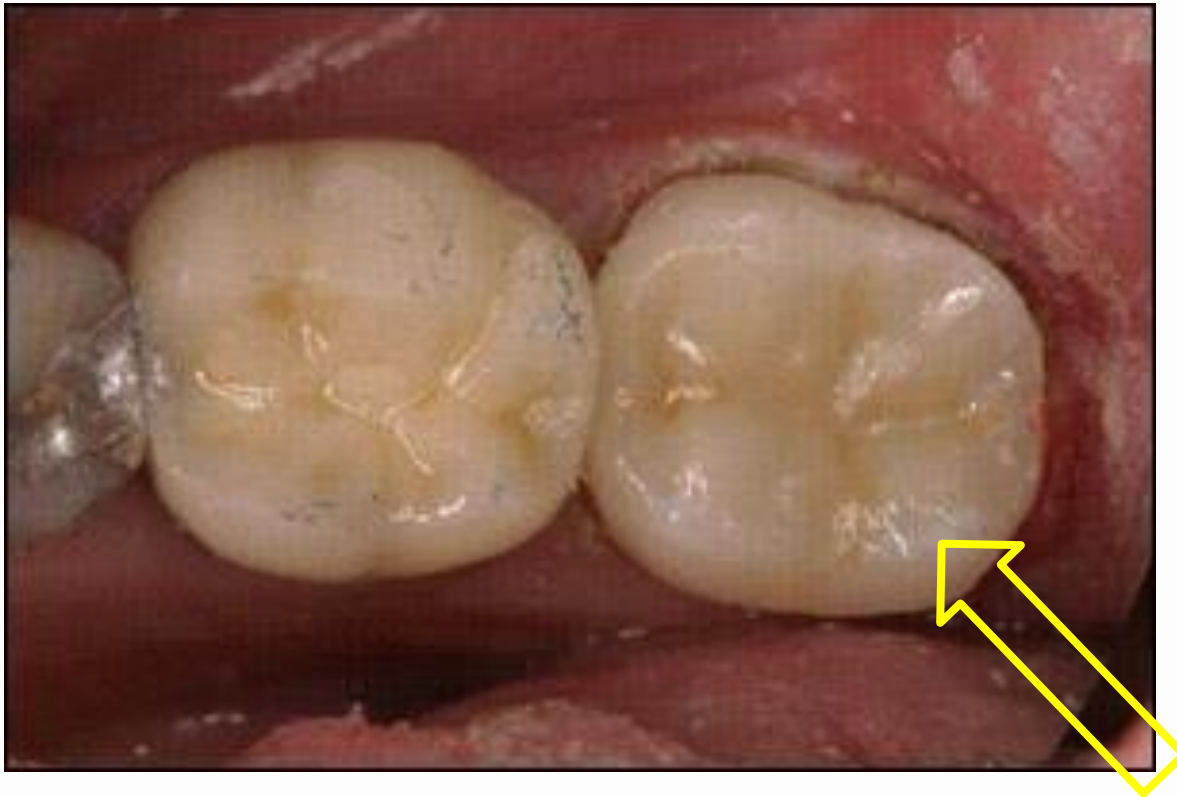


These two molars have cavitated lesions extending beyond the usual limits of the pit or fissure.

# To Seal or Not to Seal....

# #1 Second Molar

Seal or Not Seal?



# #2 Molar

Seal or Not Seal?



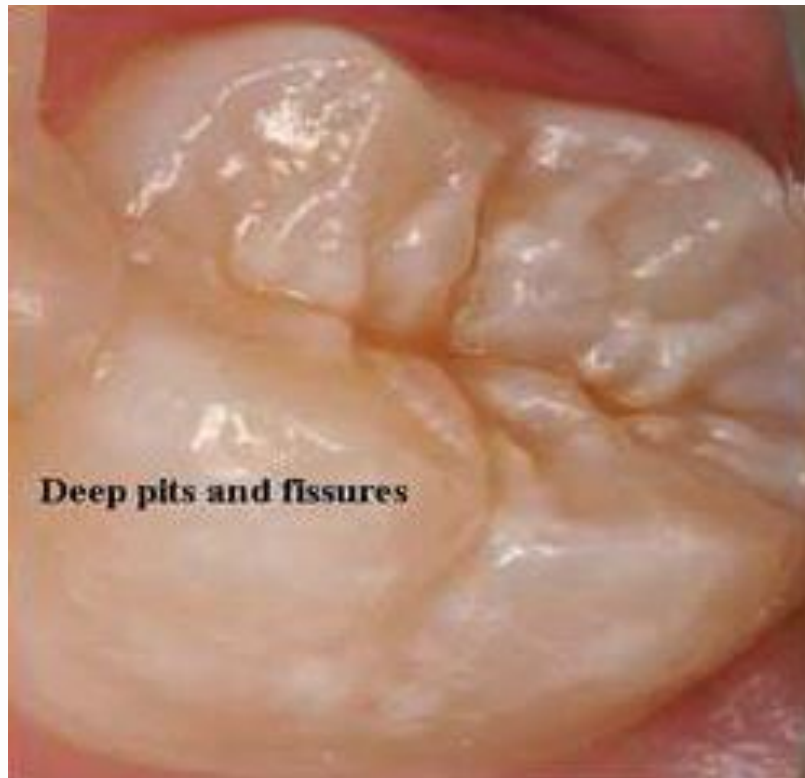
# #3 Molar

Seal or Not Seal?



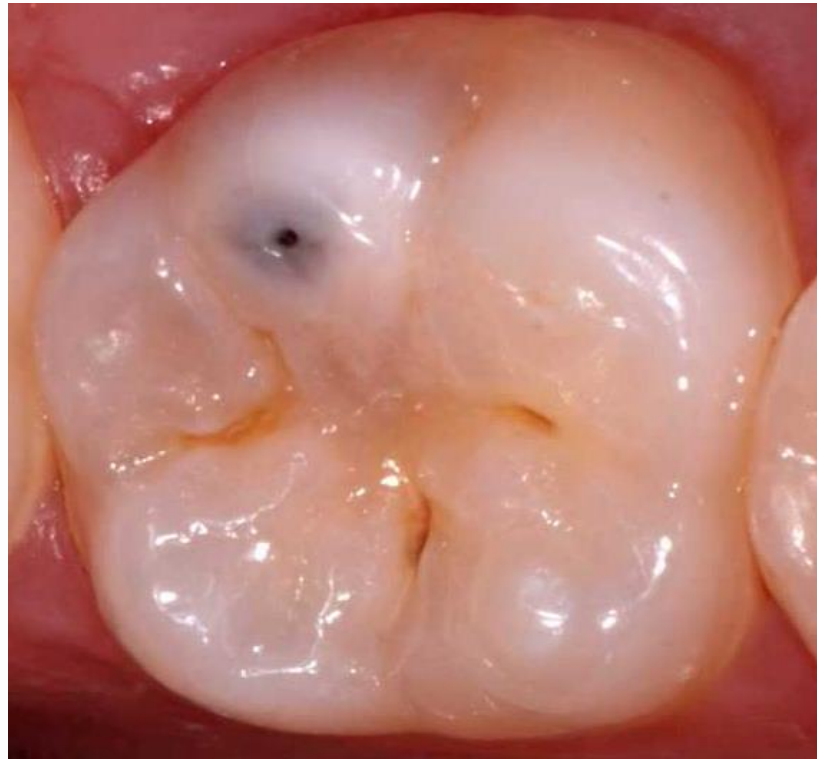
# #4 Molar

Seal or Not Seal?



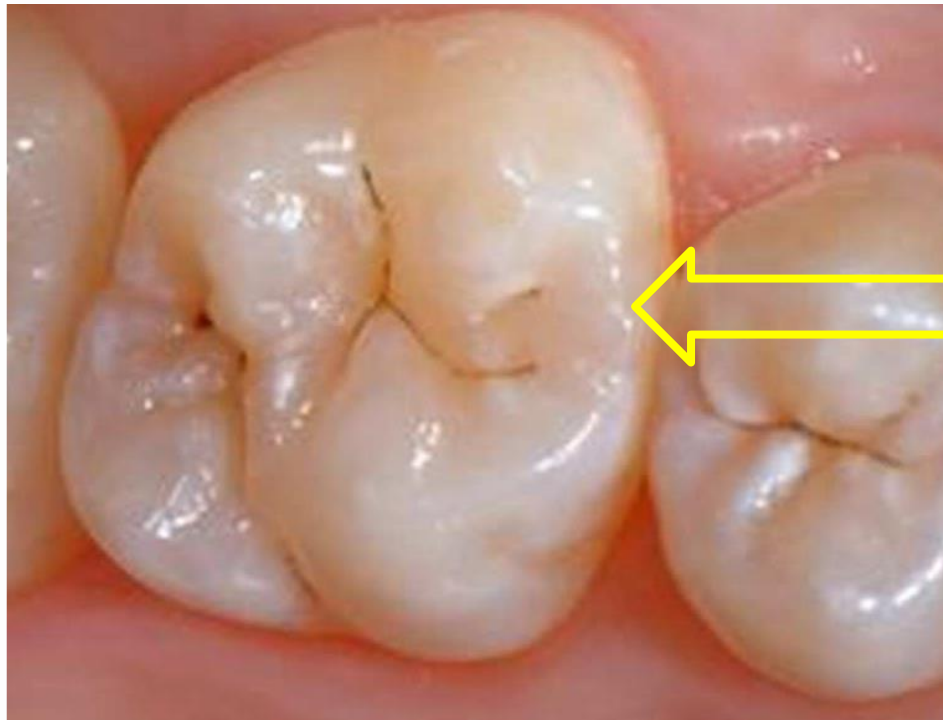
# #5 Molar

Seal or Not Seal?



# #6 Molar

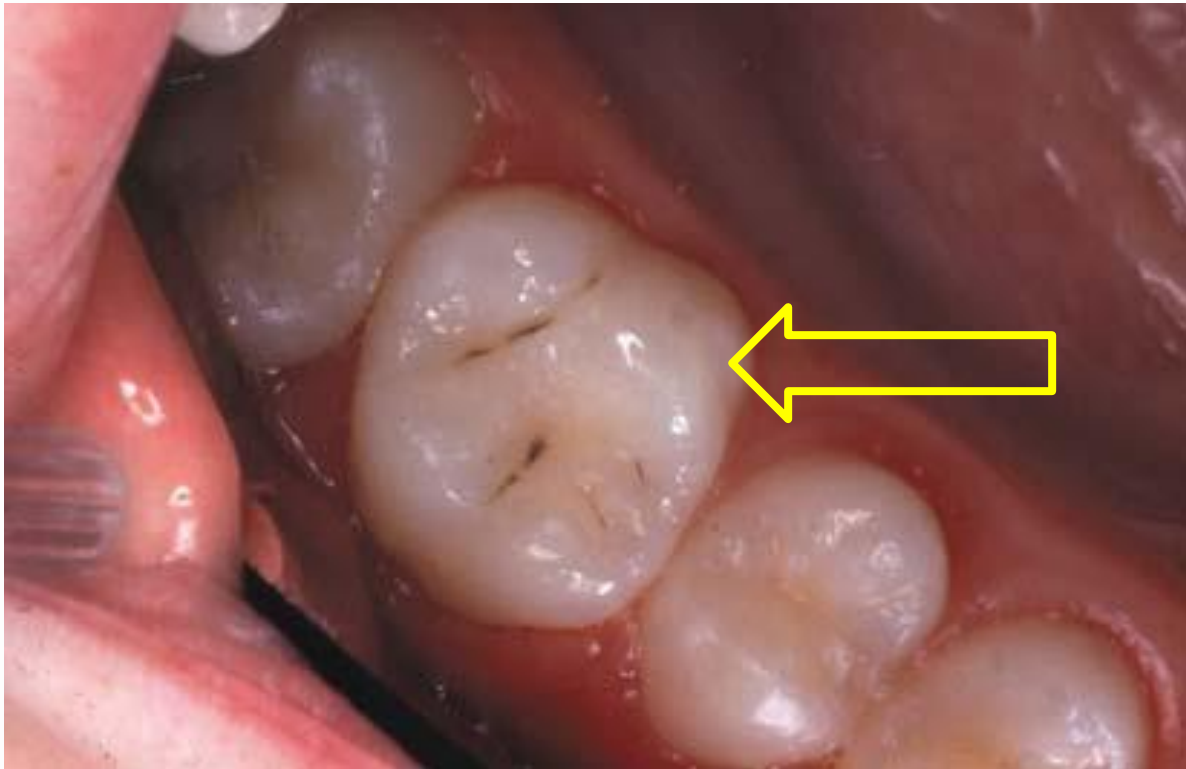
Seal or Not Seal?





# #7 Molar

Seal or Not Seal?



# #8 Molar

Seal or Not Seal?



# #9 Molar

Seal or Not Seal?



# #10 Second Molar

Seal or Not Seal?



**Questions?**