

# **PRACTICAL CLINICAL COURSES**

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Career Development Program

## **V5143 Sealants and Preventive Resin Restorations – When & How**

Gordon J. Christensen, DDS, MSD, PhD

### **Materials Included**

C.E. Instruction Sheet  
Products List  
Sealant Handout  
Clinician Responsible  
Goals & Objectives  
Overview  
References  
AGD Post-Test

**Gordon J. Christensen**  
**PRACTICAL CLINICAL COURSES**

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# Gordon J. Christensen

## PRACTICAL CLINICAL COURSES

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### V5143 Sealants and Preventive Resin Restorations – When & How

Presented by: Gordon J. Christensen, DDS, MSD, PhD

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# Sealants

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**Why Seal Teeth?** Over the past many years, numerous materials and techniques have been developed to seal the chewing (occlusal) surfaces of teeth. Sealants are necessary because some teeth have defective occlusal surfaces when they erupt into the mouth, and food debris and microorganisms penetrate into the grooves on the teeth during eating. Patients cannot clean these areas effectively, and dental decay (caries) occurs frequently.

**Do All Teeth Need to Be Sealed?** Usually only the back (posterior) teeth require sealing. It is difficult to tell which teeth require sealing because incomplete fusion of the teeth often leaves a microscopic entry from the enamel outside the tooth into the softer dentin inside. Therefore, we suggest that all suspect permanent posterior teeth and selected anterior teeth be sealed as closely to their eruption time as possible.

**Will All Decay Be Prevented?** Sealants placed as close to the eruption time of the teeth as possible prevent the majority of decay on the chewing (occlusal) surfaces of the teeth. However, flossing, brushing, and routine fluoride therapy are required to prevent decay on the other surfaces of the teeth. In the presence of poor oral hygiene, decay may begin between the teeth, since sealants cannot be placed on these surfaces.

**Cost?** The cost for sealing a tooth with plastic is about one-fourth to one-third the cost of filling (restoring) the tooth in the event of decay. Sealants do not require anesthetic or cutting away tooth structure.

**How Long Do Sealants Last?** Studies show that properly placed sealants last many years. However, occasional resealing may be required.

*I have read and understand the above information.*

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PATIENT'S NAME

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DATE

## PROGRAM

### **V5143 Sealants and Preventive Resin Restorations – When & How**

#### CLINICIAN RESPONSIBLE

**Gordon J. Christensen, DDS, MSD, PhD**  
CEO, Practical Clinical Courses  
CEO, CR Foundation  
Practicing Prosthodontist, Provo, Utah

#### GOALS & OBJECTIVES

At the completion of this video presentation, participants should be able to accomplish the following:

1. Discuss the incidence of dental caries in 3<sup>rd</sup> grade children.
2. Discuss the difficulty of seeing initial dental caries using radiographs.
3. Discuss the difficulty of seeing initial dental caries using electronic devices.
4. Describe the weaknesses and strengths of caries detection by the DIAGNOdent.
5. Discuss the percentage of sealant retention to teeth at 5 years of service.
6. List three potential reasons for premature sealant failure.
7. Define how an air slurry polisher works.
8. Define how an air abrasion unit works.
9. Discuss methods to overcome the three major reasons for premature sealant failure.
10. Discuss the financial implications of having dentists place sealants vs. dental assistants or dental hygienists.
11. Discuss the characteristics of teeth that should receive sealants.
12. Discuss the characteristics of teeth that should receive preventive resin restorations.
13. List the steps in the described sealant procedure.
14. List the steps in the described preventive resin procedure.
15. Discuss three significant effects of using glutaraldehyde/HEMA solutions on teeth.
16. Discuss differences in the preventive resin restoration technique between self-etching and etch and rinse bonding agents.
17. Discuss the necessary precautions when using a fast (3-5 second) curing light.
18. List the differences in the sealant technique described in this video and the standard sealant procedure.
19. List the differences in the preventive resin restoration technique described in this video and the standard preventive resin procedure.
20. Discuss the longevity potential of the techniques described in this video compared to conventional techniques.

## OVERVIEW

### **V5143 Sealants and Preventive Resin Restorations – When & How**

Sealants are an everyday procedure in most general and pediatric dental offices. However, many of them are placed without removing plaque from occlusal grooves and fissures. Also, most dentists use sealant materials which have high polymerization shrinkage and wear significantly during service. This video presents several methods to reduce the premature failure of the reported 50% of sealants at 5 years of service, demonstrates the suggested techniques, and makes practice management suggestions for sealants and preventive resin restorations. The following topics are included:

- Tooth occlusal anatomy
- Caries detection using radiographs, visual observation, and electronic devices
- Air slurry polishers
- Air abrasion and hydroabrasion units
- The weakness of most current sealants
- Overcoming the weaknesses of current sealant techniques
- Removing plaque, calculus, and stain using air abrasion units
- What is a sealant?
- What is a preventive resin restoration?
- Use of disinfectants and desensitizers when placing sealants
- Cost effectiveness of sealants vs. preventive resin restorations
- A comparison of the clinical techniques for sealants, preventive resin restorations, and conventionally prepared restoration
- Sealant materials vs. fully filled restorative resins
- Differences among sealants, preventive resin restorations, and conventional-sized resin restorations related to desired material physical characteristics
- The step-by-step sealant procedure
- The step-by-step preventive resin procedure
- Longevity of these restorations
- Upkeep of sealants



## REFERENCES

### **V5143 Sealants and Preventive Resin Restorations – When & How**

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2. Simonsen RJ. Conservation of tooth structure in restorative dentistry. *Quintessence Int* 1985;16:15-24.
3. Christensen RP, Ploeger BJ, Palmer TM. The role of pit-and-fissure discoloration in caries assessment. *Compen* 2001;22:996-1007.
4. Feigal RJ. The use of pit and fissure sealants. *Pediatr Dent* 2002;24:415-22.
5. Yazici AR, Kiremitci A, Celik C, et al. A 2-year clinical evaluation of pit and fissure sealants placed with and without air abrasion pretreatment in teenagers. *JADA* 2006;137:1401-5.
6. Subramaniam P, Babu KL, Naveen HK. Effect of tooth preparation on sealant success – an in vitro study. *J Clin Pediatr Dent*. 2009 Summer;33(4):325-31.
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8. Dukic W, Glavina D. Clinical evaluation of three different materials for fissure sealing after 12 months. *Acta Med Croatica*. 2006 Jun;60(3):209-14.
9. Simonsen RJ. Preventive resin restorations and sealants in light of current evidence. *Dent Clin North Am*. 2005 Oct;49(4):815-23, vii.
10. Eminkahyagil N, Gokalp S, Korkmaz Y, Baseren M, Karabulut E. Sealant and composite bond strength to enamel with antibacterial/self-etching adhesives. *Int J Paediatr Dent*. 2005 Jul;15(4):274-81.

## POST-TEST

### **V5143 Sealants and Preventive Resin Restorations – When & How**

1. The three types of occlusal restorations discussed in this video were:
  - a. Class II resins, Class III restorations, sealants.
  - b. Class I restorations, Class II restorations, preventive resin restorations.
  - c. Class I restorations, sealants, preventive resin restorations.
  - d. none of the above.
  
2. About 80% of the dental caries of childhood occur:
  - a. on the proximal tooth surfaces.
  - b. on the occlusal tooth surfaces.
  - c. on the facial and lingual surfaces of the teeth.
  - d. in the anterior part of the mouth.
  
3. To have the DIAGNOdent record caries relatively accurately \_\_\_\_\_ must be removed.
  - a. plaque
  - b. tooth stain
  - c. dental caries
  - d. saliva
  
4. Initial dental carious lesions on tooth occlusal surfaces are:
  - a. present only after one year after tooth eruption.
  - b. very difficult to detect.
  - c. easily detected.
  - d. detected easily with an explorer.
  
5. Air abrasion may be accomplished legally by:
  - a. dentists and any qualified staff person.
  - b. dental hygienists.
  - c. dental assistants.
  - d. a dentist.
  
6. Air slurry polishers may not be used legally by:
  - a. dentists and any qualified staff person.
  - b. dental hygienists.
  - c. dental assistants.
  - d. none of the above.
  
7. Preventive resin restorations are classified for third-party payment as:
  - a. sealants.
  - b. Class II restorations.
  - c. Class I restorations.
  - d. Class III restorations.

**POST-TEST (CONT'D)**

**V5143 Sealants and Preventive Resin Restorations - When & How**

- 8. Sealants cost patients approximately \_\_\_\_\_ times less than preventive resin restorations.
  - a. 2
  - b. 3
  - c. 4
  - d. 5
  
- 9. Glutaraldehyde/HEMA solutions:
  - a. disinfect.
  - b. desensitize.
  - c. are compatible with restorative resins.
  - d. all of the above.
  
- 10. It was suggested that sealants may be accomplished using \_\_\_\_\_ as the total sealant material.
  - a. conventional resin-based composite restorative material
  - b. unfilled bonding material
  - c. the primer of any bonding agent
  - d. the acid etch of a generation 4 bonding material

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