

# **PRACTICAL CLINICAL COURSES**

A Service of the Gordon J. Christensen  
Career Development Program

## **V1992 Rescuing Failing Fixed Prosthodontic and Direct Restorations**

Gordon J. Christensen, DDS, MSD, PhD

### **Materials Included**

C.E. Instruction Sheet  
Products List  
Clinicians Responsible  
Goals & Objectives  
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References  
AGD Post-Test

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

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**V1992 Rescuing Failing Fixed Prosthodontic  
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Presented by: Gordon J. Christensen, DDS, MSD, PhD

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## PROGRAM

### V1992 Rescuing Failing Fixed Prosthodontic and Direct Restorations

#### CLINICIANS 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, viewers should be able to:

1. Describe the major challenges observed with failing fixed prosthodontic and direct restorations.
2. Explain the six characteristics of informed consent.
3. State several reasons why zirconia restorations are coming off in service.
4. Compare the failure rate of IPS e.max coming off in service related to zirconia.
5. Describe the method to repair ceramic broken from *single* tooth porcelain-fused-to-metal restorations.
6. Describe the method to repair ceramic broken from porcelain-fused-to-metal *fixed prosthesis restorations*.
7. Describe a repair for an open contact area on an amalgam restoration.
8. Describe a repair for an open contact area on a composite restoration.
9. Describe a repair for an open contact on an IPS e.max anterior restoration.
10. Describe a repair for an open contact on an IPS e.max posterior restoration.
11. Describe a repair for an open contact on a zirconia restoration.
12. Discuss a repair for a tooth with a composite restoration on the mesial surface and caries on the distal surface.
13. Describe the technique for restoring an endodontic access hole in a ceramic crown.
14. Describe the technique for restoring a screw access hole in an implant-supported ceramic crown.
15. List the steps to repair a zirconia crown with a significant chip on the facial surface.
16. Discuss repairing a zirconia-based crown with a large fractured MB cusp.
17. Describe how to remove a fixed prosthesis loose on one end.
18. Describe an overcrown.
19. List the steps in taking off a failing zirconia crown.
20. Describe splinting with orthodontic wire or resin-reinforced fibers and composite.

## OVERVIEW

### **V1992 Rescuing Failing Fixed Prosthodontic and Direct Restorations**

Repair of restorative treatment is seldom discussed in dental education, since the students have only a few months of clinical experience and other topics dominate the curricula. The following and other topics are included in this video presentation:

- The major challenges observed with failing fixed prosthodontic and direct restorations
- Six characteristics of informed consent
- Why zirconia restorations are coming off in service
- The failure rate of IPS e.max coming off in service related to zirconia
- The method to repair ceramic broken from single tooth porcelain-fused-to-metal restorations
- The method to repair ceramic broken from porcelain-fused-to-metal fixed prosthesis restorations
- Repair for an open contact area on an amalgam restoration
- Repair for an open contact area on a composite restoration
- Repair for an open contact on an IPS e.max anterior restoration
- Repair for an open contact on an IPS e.max posterior restoration
- Repair for an open contact on a zirconia restoration
- Repair for a tooth with a composite restoration on the mesial surface and caries on the distal surface
- The technique for restoring an endodontic access hole in a ceramic crown
- The technique for restoring a screw access hole in an implant-supported ceramic crown
- The steps to repair a zirconia crown with a significant chip on the facial surface
- Repairing a zirconia-based crown with a large fractured MB cusp
- How to remove a fixed prosthesis loose on one end
- What is an overcrown
- The steps in taking off a failing zirconia crown
- Splinting mobile teeth with orthodontic wire or resin-reinforced fibers and composite

## REFERENCES

### **V1992 Rescuing Failing Fixed Prosthodontic and Direct Restorations**

1. Christensen GJ. Ask Dr. Christensen: Is crown repair the best salvage? *Dental Economics*. 2018 Apr;108(4):73-74.
2. Brignardello-Petersen R. Repairing class II restorations seems to increase the longevity of direct class II restorations, but the benefit may vary substantially depending on the operator. *J Am Dent Assoc*. 2017 Sep;148(9):e135. doi: 10.1016/j.adaj.2017.06.039. Epub 2017 Jul 25.
3. Ruschel VC, Stolf SC, Shibata S, Baratieri LN. A Conservative Technique for Repairing Class IV Composite Restorations. *Oper Dent*. 2017 Jan/Feb;42(1):E10-E15. doi: 10.2341/15-316-T. Epub 2016 Sep 30.
4. Burke FJT. Technique Tips: A New Look at Repairing Fractured Metal-Ceramic Restorations: Use of a Universal Bonding System and Resin Composite, following Sandblasting. *Dent Update*. 2017 Jan;44(1):81.
5. Burke FJT. Technique Tips – Repairing Fractured Metal-Ceramic Restorations using Tribochemical Impregnation. *Dent Update*. 2016 Dec;43(10):989.
6. Kanzow P, Wiegand A, Schwendicke F. Cost-effectiveness of repairing versus replacing composite or amalgam restorations. *J Dent*. 2016 Nov;54:41-47. doi: 10.1016/j.jdent.2016.08.008. Epub 2016 Aug 26.
7. Christensen GJ. Ask Dr. Christensen: When to do heroic repairs of fixed prostheses. *Dental Economics*. 2013 Sep;103(9):36-43.
8. Christensen GJ. Ask Dr. Christensen: PFM Repair. *Dental Economics*. 2009 Oct;99(10).
9. Christensen GJ. When and how to repair a failing restoration. *J Am Dent Assoc*. 2007 Dec;138(12):1605-7.
10. Christensen GJ. Ask Dr. Christensen: Repairing Posterior Crowns & Latex Allergy. *Dental Economics*. 2001 Oct:70-72.
11. Christensen GJ. Salvaging and Repairing Crowns and Fixed Prostheses. *J Am Dent Assoc*. 1994 Aug;125(8):1127-30.



## POST-TEST

### **V1992 Rescuing Failing Fixed Prosthodontic and Direct Restorations**

1. Informed consent:
  - a. requires only informing the patient of what happens if you do nothing.
  - b. is not necessary for repair procedures since many are transitional.
  - c. includes 6 requirements.
  - d. includes 5 requirements.
  
2. Zirconia crowns:
  - a. of generation 1 are very strong.
  - b. can come off frequently during service.
  - c. are not easy to cut off preps.
  - d. all of the above.
  
3. Ceramic broken off a PFM single crown:
  - a. requires an overcrown.
  - b. can often be provisionally repaired with a composite bonded restoration.
  - c. should always have a new crown.
  - d. usually causes pulpal damage.
  
4. IPS e.max restorations:
  - a. come off frequently in service.
  - b. segregate at the tooth-cement interface, when they come off.
  - c. require an MDP primer for repair.
  - d. do not require a silane primer for repair.
  
5. Ceramic broken off a multi-unit fixed prosthesis:
  - a. can be repaired best with a bonded resin.
  - b. can be repaired best with an overcrown.
  - c. does not need an MDP primer when using an overcrown.
  - d. when repaired with an overcrown, is NOT a long-term service.
  
6. Restoring an endodontic access hole in an IPS e.max crown:
  - a. is usually a long-term repair.
  - b. should have patient informed consent about the potential of later failure.
  - c. usually does not require an opaquer agent.
  - d. requires an MDP primer.
  
7. Closing an open contact on a posterior zirconia restoration:
  - a. usually does not require a new crown.
  - b. is capable of being repaired long-term with a composite bonded to the zirconia.
  - c. is not usually a problem for the patient.
  - d. all of the above are false.

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

**V1992 Rescuing Failing Fixed Prosthodontic and Direct Restorations**

- 8. A fixed partial denture loose on one end:
  - a. should always be removed and remade.
  - b. can usually not be removed and recemented.
  - c. can be removed and cemented with a light-cured cement.
  - d. can be removed and recemented with a dual- or auto-cure cement.
  
- 9. Splinting mobile anterior teeth:
  - a. is usually a difficult procedure.
  - b. can be done with a wire or fiber-reinforced composite splint.
  - c. usually requires splinted crowns.
  - d. has to be an expensive procedure.
  
- 10. A product suggested for filling the screw-tightening holes in implants is:
  - a. MDP primer.
  - b. silane.
  - c. Liquid Magic.
  - d. tin foil.

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