

PRACTICAL CLINICAL COURSES
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Career Development Program*

V3514
The NEW Glass Ionomers Really Work!

Gordon J. Christensen, DDS, MSD, PhD
Rella P. Christensen, PhD

Materials Included:

C.E. Instruction Sheet
Products List
Clinician Responsible
Goals & Objectives
Overview
Supplemental Materials
AGD Post-Test

Gordon J. Christensen
PRACTICAL CLINICAL COURSES

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Gordon J. Christensen
PRACTICAL CLINICAL COURSES
Sources of Products Discussed in

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Presented by Gordon J. Christensen, DDS, MSD, PhD & Rella P. Christensen, PhD

1. **Cavity Conditioner**
GC America Inc.
3737 W 127th Street
Alsip, IL 60803
(800)323-7063
www.gcamerica.com
2. **ChemFil Rock**
Dentsply Sirona
13320-B Ballantyne Corporate Pl.
Charlotte, NC 28277
(844)848-0137
www.dentsplysirona.com
3. **Composi-Tight 3D Fusion Matrix**
Garrison Dental Solutions
150 DeWitt Lane
Spring Lake, MI 49456
(888)437-0032
www.garrisondental.com
4. **Dr. Colonna Series
Placement Instruments**
American Eagle Instruments Inc.
6575 Butler Creek Road
Missoula, MT 59808
(800)551-5172
www.am-eagle.com
5. **EQUIA Forte**
GC America Inc.
3737 W 127th Street
Alsip, IL 60803
(800)323-7063
www.gcamerica.com
6. **EQUIA Forte Coat**
GC America Inc.
3737 W 127th Street
Alsip, IL 60803
(800)323-7063
www.gcamerica.com
7. **EQUIA Forte HT Fil**
GC America Inc.
3737 W 127th Street
Alsip, IL 60803
(800)323-7063
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8. **Filtek Supreme Ultra**
3M Oral Care
2510 Conway Avenue
St. Paul, MN 55144
(800)634-2249
(651)733-1110
www.3m.com
9. **Filtek Universal Restorative**
3M Oral Care
2510 Conway Avenue
St. Paul, MN 55144
(800)634-2249
(651)733-1110
www.3m.com
10. **Fuji Automix LC**
GC America Inc.
3737 W 127th Street
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www.gcamerica.com
11. **Fuji II LC**
GC America Inc.
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Alsip, IL 60803
(800)323-7063
www.gcamerica.com
12. **Fuji IX GP Extra**
GC America Inc.
3737 W 127th Street
Alsip, IL 60803
(800)323-7063
www.gcamerica.com
13. **G5 All-Purpose Desensitizer**
Clinician's Choice Dental Products
167 Central Avenue, Suite 200
London, ON N6A 1M6
Canada
(800)265-3444
www.clinicianschoice.com
14. **GLUMA Desensitizer**
Kulzer, LLC
4315 S. Lafayette Blvd.
South Bend, IN 46614
(800)431-1785
www.kulzer.com
15. **Glu/Sense Dentin Desensitizer**
Centrix, Inc.
770 River Road
Shelton, CT 06484
(203)929-5582
www.centrixdental.com

16. **Harmonize**
Kerr Corporation
200 S. Kraemer Blvd, Bldg E2
Brea, CA 92821
(800)537-7123
www.kerrdental.com
17. **IonoStar Plus**
VOCO America, Inc.
1245 Rosemont Drive
Suite 140
Indian Land, SC 29707
(888)658-2584
www.voco.com
18. **IPC Instrument**
Local Dealers
19. **IPC Instrument**
Premier Dental Co.
1710 Romano Drive
Plymouth Meeting, PA 19462
(888)670-6100
(610)239-6000
www.premierdentalco.com
20. **Ketac Fil Plus Aplicap**
3M Oral Care
2510 Conway Avenue
St. Paul, MN 55144
(800)634-2249
(651)733-1110
www.3m.com
21. **Ketac Nano**
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St. Paul, MN 55144
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(651)733-1110
www.3m.com
22. **Ketac Universal Aplicap**
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2510 Conway Avenue
St. Paul, MN 55144
(800)634-2249
(651)733-1110
www.3m.com
23. **Microbrush**
Microbrush International
1376 Cheyenne Avenue
Grafton, WI 53024
(866)866-8698
(262)375-4011
www.microbrush.com
24. **MicroPrime G**
Zest Dental Solutions
2875 Loker Avenue East
Carlsbad, CA 92010
(800)262-2310
(442)244-4835
www.zestdent.com
25. **Midwest 329, 330, ¼, ½ Burs**
Dentsply Sirona
13320-B Ballantyne Corporate Pl.
Charlotte, NC 28277
(844)848-0137
www.dentsplysirona.com
26. **MTA Flow**
Ultradent Products, Inc.
505 West Ultradent Drive
South Jordan, UT 84095
(888)230-1420
(801)572-4200
www.ultradent.com
27. **OptraSculpt**
Ivoclar Vivadent Inc.
175 Pineview Drive
Amherst, NY 14228
(716)691-0010
www.ivoclarvivadent.us
28. **PolitiP Finishing Cup**
Ivoclar Vivadent Inc.
175 Pineview Drive
Amherst, NY 14228
(716)691-0010
www.ivoclarvivadent.us
29. **Riva Self Cure HV**
SDI North America Inc.
1279 Hamilton Pkwy
Itasca, IL 60143
(800)228-5166
(630)361-9200
www.sdi.com.au
30. **Scotchbond Universal**
3M Oral Care
2510 Conway Avenue
St. Paul, MN 55144
(800)634-2249
(651)733-1110
www.3m.com
31. **Tapered Diamond**
Premier Dental Co.
1710 Romano Drive
Plymouth Meeting, PA 19462
(888)670-6100
(610)239-6000
www.premierdentalco.com
32. **Tapered Diamond**
Various Manufacturers

33. **TheraCal LC**
BISCO Dental Products
1100 West Irving Park Road
Schaumburg, IL 60193
(800)247-3368
www.bisco.com
34. **7901 Trimming & Finishing Bur**
Dentsply Sirona
13320-B Ballantyne Corporate Pl.
Charlotte, NC 28277
(844)848-0137
www.dentsplysirona.com
35. **Ultra-Etch**
Ultradent Products, Inc.
505 West Ultradent Drive
South Jordan, UT 84095
(888)230-1420
(801)572-4200
www.ultradent.com
36. **VALO Grand**
Ultradent Products, Inc.
505 West Ultradent Drive
South Jordan, UT 84095
(888)230-1420
(801)572-4200
www.ultradent.com
37. **Vitrebond Plus**
3M Oral Care
2510 Conway Avenue
St. Paul, MN 55144
(800)634-2249
(651)733-1110
www.3m.com

Product names, the products themselves, and company names change rapidly. Please contact the companies shown to confirm current information.

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PROGRAM

V3514 The NEW Glass Ionomers Really Work!

CLINICIANS RESPONSIBLE:

Rella P. Christensen, PhD

Director, TRAC Research
Co-Founder, CR Foundation (formerly CRA)

Gordon J. Christensen, DDS, MSD, PhD

Founder and CEO, Practical Clinical Courses
Senior Consultant & Previous CEO, CR Foundation
Practicing Prosthodontist, Provo, Utah

GOALS & OBJECTIVES

At the completion of this video presentation, viewers should be able to:

1. Discuss the historical perspective of glass ionomer.
2. List previous limitations of glass ionomer materials.
3. List advantages of glass ionomers.
4. Discuss differences between conventional glass ionomers and resin-modified glass ionomers.
5. Name three new brands of conventional glass ionomer.
6. List several old or new resin-modified glass ionomers.
7. Discuss the microbiology of dental caries.
8. Discuss the necessity for disinfection of tooth preparations.
9. Discuss using glass ionomer as a liner.
10. Discuss using glass ionomer as a base.
11. Discuss using **conventional glass ionomer** as a small tooth restoration.
12. Discuss using **resin-modified glass ionomer** as a small tooth restoration.
13. List the steps in the sandwich technique.
14. List the steps in using glass ionomer as a full dentin replacement.
15. Discuss the desirability of educating your patients about glass ionomer restorations.
16. Discuss the need or lack of it for using dentin conditioners before using glass ionomer.
17. List the steps for using glutaraldehyde-containing solutions before placing resin-based composite in a normal depth Class II prep.
18. List the potential reason why glass ionomer has had minimal usage in North America prior to the introduction of the NEW glass ionomers.
19. Discuss how the fluoride ions in glass ionomer can get to the tooth surface when used in the sandwich technique.
20. Compare the marginal adaptation of conventional glass ionomer with composite marginal adaptation.

OVERVIEW

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Glass ionomer has not been a popular dental material in North America since its introduction in the 1970s. The reason is primarily the difficult working characteristics of the material. In the past few years, conventional glass ionomers have been significantly improved, allowing them to be reevaluated for use. This presentation includes the following topics:

- The historical perspective of glass ionomer
- Previous limitations of glass ionomer materials
- Advantages of glass ionomers
- Differences between conventional glass ionomers and resin-modified glass ionomers
- Three new brands of conventional glass ionomer
- Several old and new resin-modified glass ionomers
- The microbiology of dental caries
- The necessity for disinfection of tooth preparations
- Using glass ionomer as a liner
- Using glass ionomer as a base
- Using **conventional glass ionomer** as a small tooth restoration
- Using **resin-modified glass ionomer** as a small tooth restoration
- The steps in the sandwich technique
- The steps in using glass ionomer as a full dentin replacement
- Desirability of educating your patients about glass ionomer restorations
- Need or lack of it for using dentin conditioners before using glass ionomer
- The steps for using glutaraldehyde-containing solutions before placing resin-based composite in a normal depth Class II prep
- The main reason why glass ionomer has had minimal usage in North America prior to the introduction of the NEW glass ionomers
- How the fluoride ions in glass ionomer can get to the tooth surface when used in the sandwich technique
- The marginal adaptation of conventional glass ionomer with composite marginal adaptation

SUPPLEMENTAL MATERIALS

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1. Fuhrmann D, Murchison D, Whipple S, and Vandewalle K. [Properties of New Glass-Ionomer Restorative Systems Marketed for Stress-Bearing Areas](#). Oper Dent. Jan/Feb 2020;45(1):104-110.
2. Rajić VB, Malčić AI, Kütük ZB, Gurgan S, Jukić S, and Miletić I. [Compressive Strength of New Glass Ionomer Cement Technology based Restorative Materials after Thermocycling and Cyclic Loading](#). Acta Stomatol Croat. 2019 Dec;53(4):318-325.
3. Ilie N. [Maturation of restorative glass ionomers with simplified application procedure](#). J Dent. 2018 Dec;79:46-52.
4. Ching HS, Luddin N, Kannan TP, Rahman IA, and Abdul Ghani NRN. [Modification of glass ionomer cements on their physical-mechanical and antimicrobial properties](#). J Esthet Restor Dent. 2018 Nov;30(6):557-571.
5. Jones G and Taylor G. [Glass ionomer or composite resin for primary molars](#). Evid Based Dent. 2018 Oct;19(3):86-87.
6. Christensen GJ. [Ask Dr. Christensen: Resin-modified glass ionomer versus flowable as a liner or base](#). Dental Economics. 2012 Oct;102(10):36-43.
7. Christensen GJ. [Compomers vs. resin-reinforced glass ionomers](#). J Am Dent Assoc. 1997 Apr;128(4):479-80.
8. Christensen GJ. [Why is glass ionomer cement so popular?](#) J Am Dent Assoc. 1994 Sep;125(9):1257-8. doi: 10.14219/jada.archive.1994.0156.
9. Christensen GJ. [Glass ionomer-resin: a maturing concept](#). J Am Dent Assoc. 1993 Jul;124(7):248-9. doi: 10.14219/jada.archive.1993.0270.
10. Christensen GJ. [Glass ionomer as a luting material](#). J Am Dent Assoc. 1990 Jan;120(1):59-62. doi: 10.14219/jada.archive.1990.0005.

POST-TEST

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1. Conventional glass ionomer in its original form was:
 - a. sticky.
 - b. difficult to adapt to tooth preparation walls.
 - c. opaque.
 - d. all of the above.

2. Conventional glass ionomers:
 - a. wear in service similar to composite.
 - b. have more opacity than typical composites.
 - c. are all triturator activated.
 - d. cannot be hand mixed.

3. Conventional glass ionomers:
 - a. are weaker than resin-modified glass ionomers.
 - b. can be cured with light.
 - c. have a short setting time.
 - d. none of the above.

4. The NEW generation of conventional glass ionomers is:
 - a. stronger than the older ones.
 - b. faster setting than the older ones.
 - c. more putty-like than the older ones.
 - d. all of the above.

5. The conventional glass ionomer brand used for the ART technique was:
 - a. Fuji I.
 - b. Fuji II LC.
 - c. Ketac Nano.
 - d. Fuji IX.

6. Resin-modified glass ionomers have _____% of resin.
 - a. 10
 - b. 20
 - c. 30
 - d. 40

7. Conditioners for resin-modified glass ionomers:
 - a. are mandatory.
 - b. are phosphoric acid.
 - c. are elective.
 - d. should be left on the prep for 40 seconds.

POST-TEST (CONT'D)

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- 8. Glutaraldehyde-containing materials (Gluma, G5, MicroPrime, and Glu/Sense):
 - a. are not dangerous.
 - b. should not be allowed to get on soft tissue.
 - c. should be left on the prep for 2 continuous minutes.
 - d. need to be agitated when applied to the prep.

- 9. When applying glutaraldehyde and a liner:
 - a. the glutaraldehyde is the first material to use on the prep.
 - b. the glutaraldehyde and the liner material are mixed and applied together.
 - c. the liner goes on the prep before the glass ionomer.
 - d. the sequence of placement does not matter.

- 10. Use of conventional or resin-modified glass ionomer:
 - a. are both acceptable for all classifications of preps.
 - b. are only for Class V situations.
 - c. should be used primarily in only small Class I and II preps.
 - d. do not wear appreciably on occlusal surfaces.

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