PRACTICAL CLINICAL COURSES

A Service of the Gordon J. Christensen
Career Development Program

V3104
Occlusal Splints – Predictable Therapy for Frequent Use

Gordon J. Christensen, DDS, MSD, PhD

Materials Included

Terminology Confusion Clarification
C.E. Instruction Sheet
Products List
Patient Handout on Occlusal Splints
Clinician Responsible
Goals & Objectives
Overview
References
AGD Post Test

TERMINOLOGY CONFUSION CLARIFICATION

The glossary of Prosthodontic terms defines CENTRIC OCCLUSION as the "occlusion of opposing teeth when the mandible is in centric relation. This may or may not coincide with maximum intercuspal position."

The glossary definition is not the one most dentists have learned, and it may be confusing on the video you are viewing. Previous definitions of CENTRIC OCCLUSION have indicated that this position is the location where the patient chews, regardless of where it is in regard to centric relation.

In this video please interpret the phrase CENTRIC OCCLUSION, which is the older phrase that most dentists use, to mean the MAXIMAL INTERCUSPAL POSITION or MIP, which is the best fit of the teeth regardless of the condylar position.

It is my plan to eventually eliminate the phrase centric occlusion and replace it with the phrase maximal intercuspal position or MI.

Sorry for the confusion!

Thank you!

Gordon Christensen

Gordon J. Christensen

PRACTICAL CLINICAL COURSES

PROCEDURE FOR RECEIVING ACADEMY OF GENERAL DENTISTRY AND STATE CREDIT FOR CE VIDEOS

1. Complete the enclosed Post-Test. For each **CE Video Purchased,** one test is included. If additional tests are needed, the following fees will apply: $25 per test per dentist (limit 1 additional dentist per video purchased); $10 per test per auxiliary (dental assistants, hygienists, lab technicians - no limit on auxiliary tests). Fees can be paid either by check or credit card when tests are submitted to Practical Clinical Courses.

2. Complete the demographic information located at the end of the test.
   Type of Credit:
   a. If the applicant selects "AGD," PCC will send notification to both the applicant and the Academy of General Dentistry. (The AGD will also notify applicant of credits earned by printout information.)

   b. If the applicant selects "State," PCC will send a certificate of verification to the applicant. The applicant must then submit this certificate to his/her state board to obtain credit.

   c. If the applicant selects "Both," PCC will complete a. & b. above.

3. Return the **Post-Test portion** via mail, fax, or email. Our contact information is as follows:

Practical Clinical Courses
3707 N Canyon Road
Suite 3D
Provo, UT 84604
Fax: (801) 226-8637
info@pccdental.com

4. Practical Clinical Courses will correct the Post-Test. **Passing scores are 70% or higher.**

Gordon J. Christensen

PRACTICAL CLINICAL COURSES

Sources of Products Discussed in

V3104 Occlusal Splints – Predictable Therapy for Frequent Use

Presented by: Gordon J. Christensen, DDS, MSD, PhD & Karen Preston, CDA, RDH, BS

1. **ACCUFILM II**
   Parkell
   155 Schmitt Blvd.
   P.O. Box 376
   Farmingdale, NY 11735
   (800)243-7446
   (631)249-1134
   www.parkell.com

2. **ARTICULATOR 2240Q**
   Whip Mix Corporation
   361 Farmington Avenue
   P.O. Box 17183
   Louisville, KY 40217
   (800)626-5651
   (502)637-1451
   www.whipmix.com

3. **BRUX GUARD**
   Dental Concepts LLC
   650 From Road
   1 Mack Center Drive
   Paramus, NJ 07652
   (201)576-9700
   www.dentalconcepts.com

4. **COE-SEP TINFOIL SUBSTITUTE**
   GC America, Inc.
   3737 West 127th Street
   Alsip, IL 60803
   (800)323-3386
   (708)597-0900
   www.gcamerica.com

5. **6 INCH COTTON ROLLS**
   Available through Local Dental Suppliers

6. **DELAR RELEASE SURFACTANT**
   DeLar Corporation
   P.O. Box 226
   Lake Oswego, OR 97034
   (800)669-7499
   (503)635-6820
   www.delar.com

7. **DIAL CALIPER**
   Almore International, Inc.
   P.O. Box 25214
   Portland, OR 97298
   (800)547-1511
   (503)643-6633
   www.almore.com

8. **DRY TIPS**
   Microcopy
   3120 Moon Station Road
   P.O. Box 2017
   Kennesaw, GA 30144
   (800)235-1863
   (770)425-5715
   www.neodiamond.com

9. **ECLIPSE**
   Dentsply International
   570 West College Avenue
   P.O. Box 872
   York, PA 17405-0872
   (800)877-0020
   (717)845-7511
   www.dentsply.com

10. **IVOCAP**
    Ivoclar Vivadent, Inc.
    175 Pineview Drive
    Amherst, NY 14228
    (800)533-6825
    (716)691-0010
    www.ivoclarvivadent.us.com

11. **IVOCAP ELASTOMER**
    Ivoclar Vivadent, Inc.
    175 Pineview Drive
    Amherst, NY 14228
    (800)533-6825
    (716)691-0010
    www.ivoclarvivadent.us.com

12. **IWANSON SPRING CALIPER**
    Henry Schein, Inc.
    135 Duryea Road
    Melville, NY 11747
    (800)582-2702
    (631)843-5500
    www.henryschein.com

13. **JELTRATE**
    Dentsply Caulk
    38 West Clarke Avenue
    P.O. Box 359
    Milford, DE 19963-0359
    (800)532-2855
    (302)422-4511
    www.caulk.com

14. **LAB BURS E-CUTTERS #351E & #251E**
    Brasseler U.S.A.
    One Brasseler Blvd.
    Savannah, GA 31419
    (800)841-4522
    (912)925-8525
    www.brasselerusa.com

15. **MADAME BUTTERFLY SILK**
    Almore International, Inc.
    P.O. Box 25214
    Portland, OR 97298
    (800)547-1511
    (503)643-6633
    www.almore.com

16. **METAL TRAYS - COE**
    GC America, Inc.
    3737 West 127th Street
    Alsip, IL 60803
    (800)323-3386
    (708)597-0900
    www.gcamerica.com

17. **MOUNTING STONE**
    Whip Mix Corporation
    361 Farmington Avenue
    P.O. Box 17183
    Louisville, KY 40217
    (800)626-5651
    (502)637-1451
    www.whipmix.com

18. **MYNOL XX-THIN ARTICULATING PAPER**
    Ada Products Company
    2350 West Florist Avenue
    Milwaukee, WI 53209
    (800)471-4411
    (414)228-9550
    www.adaproducts.net

19. **NALGENE VACUUM CHAMBER**
(Catalog #01-060A)
(Use with Welch DuoSeal Vacuum Pump)
Fisher-Scientific
Corporate Headquarters
2000 Park Lane Drive
Pittsburgh, PA 15275
(800)766-7000
(412)490-8300
www.fishersci.com

20. **NSK**
Brasseler U.S.A.
One Brasseler Blvd.
Savannah, GA 31419
(800)841-4522
(912)925-8525
www.brasselerusa.com

21. **NTI TENSION SUPPRESSION SYSTEM**
NTI-TSS, Inc.
2303 Blue Smoke Trail
P.O. Box 340
Mishawaka, IN 46546
(877)550-2992
(574)258-5963
www.HeadacheHope.com

22. **ORTHODONTIC RESIN**
Dentsply Caulk
38 West Clarke Avenue
P.O. Box 359
Milford, DE 19963-0359
(800)532-2855
(302)422-4511
www.caulk.com

23. **ORTHODONTIC RESIN SEPARATOR**
Dentsply Caulk
38 West Clarke Avenue
P.O. Box 359
Milford, DE 19963-0359
(800)532-2855
(302)422-4511
www.caulk.com

24. **SNAP STONE**
Whip Mix Corporation
361 Farmington Avenue
P.O. Box 17183
Louisville, KY 40217
(800)626-5651
(502)637-1451
www.whipmix.com

25. **VACUUM MIXER**
Whip Mix Corporation
361 Farmington Avenue
P.O. Box 17183
Louisville, KY 40217
(800)626-5651
(502)637-1451
www.whipmix.com

26. **WELCH DUOSEAL VACUUM PUMP**
(Model 1400)
(Use with Nalgene Vacuum Chamber)
Welch-Ilmvac
5621 West Howard Street
Niles, IL 60714
(847)676-8800
www.welchvacuum.com

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

Practical Clinical Courses, 3707 North Canyon Road, Suite 3D, Provo, UT 84604
Toll Free (800) 223-6569 or Utah Residents (801) 226-6569

Occlusal Splints For Temporomandibular Disorders (TMD), Bruxism, Or Clenching

1. **Purpose**: The purpose of splint therapy is to allow your lower and upper jaw to come together without tooth contact, and to reduce muscle pain. Many situations cause the malfunction of your lower jaw. Examples are accidents, surgery, developmental defects, peculiar oral habits, many fillings placed over numerous years, naturally occurring malocclusion (poor bite), orthodontics, psychological stress, clenching or bruxing (grinding teeth), and other conditions.

2. **Rationale for Splint Use**: You will receive a plastic bite splint (occlusal splint). This treatment has been used for many years to keep the teeth from contacting during chewing and to allow the lower jaw to return to a comfortable hinge position without interference and guidance from the teeth. When the splint has been worn for a few days the jaw functions freely.

3. **Wearing Splint:**

   - **Temporomandibular Disorders**: If your condition is temporomandibular disorder, you should wear the splint at all times including while eating, unless directed otherwise. If you remove the splint to eat, your treatment will not be as effective. Many fillings placed in your mouth over the years or other conditions have caused your teeth to meet in a position your jaws cannot tolerate. The splint eliminates tooth-to-tooth contact. Your symptoms will gradually disappear while you are wearing the splint; and your natural teeth, bridges, and/or fillings will be adjusted to the new bite by us. This procedure is called *occlusal equilibration*. After equilibration, you will wear your splint only at night. After a period of time, you will not wear the splint at all. The described treatment usually requires a few weeks to several months.

   - **Bruxism And Clenching**: If your condition is bruxism (grinding of teeth) or clenching, you should wear your splint at night when you cannot control your jaw movements or during time of psychological stress. During the daytime, make sure your splint is placed in water to avoid warping.

4. **Cleaning the Splint And Teeth**: Food will accumulate around and under the splint. At least one time each day, brush and floss your teeth very thoroughly. Brush and rinse the inside and outside of the splint, and then return it to your mouth. Dental decay will initiate if you are not careful about cleanliness of your mouth and splint. If you have a high dental decay potential, fluoride-containing rinses or gels are useful when placed into your splint once per day.

5. **When The Splint Is Out Of The Mouth**: If the splint is out of your mouth for any reason, your teeth may not meet in harmony. This situation is to be expected because of muscle and jaw relaxation while you were wearing the splint. Occlusal equilibration will eliminate this improper meeting of the teeth (malocclusion). If the splint is out of your mouth, place it in a container of water to prevent it from warping. You may desire to soak it occasionally in a commercially available denture cleanser. As an alternative, you may soak it in a solution made by adding a few drops of Clorox to a cup of water.

Please call if you have any questions. Thank you.

PROGRAM

V3104 Occlusal Splints – Predictable Therapy for Frequent Use

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. List four types of occlusal splints.
2. Describe the difference between preventive and therapeutic splints.
3. Describe how an occlusal splint reduces or eliminates the occlusal tooth wear of bruxism.
4. Discuss the percentage of patients having bruxism or clenching.
5. List five treatments, other than occlusal splints or occlusal equilibration, for occlusal diseases or conditions.
6. List six situations for which occlusal splints are useful.
7. Discuss how long is required for a patient to become accustomed to an occlusal splint.
8. Describe the characteristics of bruxism.
9. Describe the characteristics of clenching.
10. Discuss the approximate percentage of TMD patients who can be successfully treated with occlusal splints.
11. Discuss the reasons for use of a splint before an occlusal rehabilitation.
12. Discuss how occlusal splints may be used after an occlusal rehabilitation.
13. Discuss how occlusal splints may be used for orthodontic reasons.
14. Discuss how occlusal splints may be used after periodontal treatment.
15. Describe the characteristics of a full-occlusal resin splint.
16. Describe the characteristics of an anterior repositioning splint.
17. Describe the characteristics of a partial occlusal coverage splint.
18. Describe the characteristics of a soft occlusal splint.
19. Discuss making occlusal splints in the laboratory vs. in the clinic.
20. List the steps in making and seating a laboratory-made or clinically-made splint.

OVERVIEW

V3104 Occlusal Splints – Predictable Therapy for Frequent Use

Occlusal splints have been used for over 100 years for both preventive and therapeutic purposes. However, it has been estimated that far more splints are needed than are placed. It has been estimated that about one-third of the world population has bruxism or clenching, and these patients should have occlusal splints. When combined with temporomandibular dysfunction patients, pre- and post-restorative patients, and those needing splints for orthodontic or periodontal reasons, as high as 40% of patients could need occlusal splints.

There are several types of occlusal splints used commonly. Some of the types are:

1. Full occlusal coverage hard resin splints
2. Anterior repositioning splints
3. Partial occlusal coverage splints
4. Soft splints, made in the laboratory
5. Thermoplastic soft resin splints made in the clinic
6. Splints that are hard on the outside and soft on the inside

Preventive occlusal splints are most commonly used to reduce or eliminate tooth wear caused by bruxing or clenching. Therapeutic splints are most commonly used to treat temporomandibular joint dysfunction. Therapeutic and preventive splints have similar characteristics including: canine rise, incisal guidance, at least one centric stop on every opposing tooth, and a maxillo-mandibular centric relation occlusion (CRO) relationship. Occasionally, for various reasons including bruxing, splints are made with both a long-centric and a wide centric occlusal relationship. Splints used for orthodontic treatment have various different characteristics.

Fabrication of occlusal splints may be accomplished either in a dental laboratory or in the clinical office. Fabrication in a laboratory saves clinical time, but is accompanied with a laboratory bill and lack of clinical observation. Fabrication clinically requires clinical time, but eliminates a laboratory bill. Either method of fabrication can be acceptable, and selection of either laboratory or clinical fabrication is up to the individual practitioner.

Although there are many forms of splints, a typical centric-relation-occlusion splint has the following characteristics:

1. occludes with the opposing arch in centric-relation-occlusion
2. minimal thickness on the occlusal surface is 1.5 mm or more in the posterior area
3. canine rise and incisal guidance are present
4. knife-edge adaptation of resin at the juncture of the splint and the palate
5. only a thin veneer of resin is present on the facial surfaces of the molars and premolars
6. resin is not present on the facial surfaces of the anterior teeth
7. resin is thin over the incisive foramen area
8. smooth and well-polished

This presentation demonstrates all of the steps in fabrication of a clinically-made splint, shows several types of splints, and suggests uses for these splints.

REFERENCES

V3104 Occlusal Splints – Predictable Therapy for Frequent Use

1. CHRISTENSEN, G.J. "Abnormal Occlusal Conditions – A Forgotten Part of Dentistry". **JADA**. Vol. 126, December 1995. Pp. 1667-1668.

2. CHRISTENSEN, G.J. "Treating Bruxism and Clenching". **JADA**. Vol. 131, February 2000. Pp. 233-235.

3. CHRISTENSEN, G.J. "Now is the Time to Observe and Treat Dental Occlusion". **JADA**. Vol. 132, January 2001. Pp. 100-102.

4. CHRISTENSEN, G.J. "Is Occlusion Becoming More Confusing? A Plea for Simplicity". **JADA**. Vol. 135, June 2004. Pp. 767-770.

POST TEST

V3104 OCCLUSAL SPLINTS – PREDICTABLE THERAPY FOR FREQUENT USE

1. Occlusal splints may be used for (select one):
   - ☐ a. preventive reasons.
   - ☐ b. therapeutic reasons.
   - ☐ c. preventive or therapeutic reasons.
   - ☐ d. substitutions for full crowns.

2. Bruxing patients should have an occlusal splint with these characteristics:
   - ☐ a. centric-relation-occlusion.
   - ☐ b. reverse incisal guidance.
   - ☐ c. reverse canine rise.
   - ☐ d. long-centric and wide centric.

3. Clenching patients should have an occlusal splint with these characteristics:
   - ☐ a. centric-relation-occlusion.
   - ☐ b. reverse incisal guidance.
   - ☐ c. reverse canine rise.
   - ☐ d. long-centric and wide centric.

4. The most commonly made type of splint for TMD should have these characteristics:
   - ☐ a. centric-relation-occlusion.
   - ☐ b. reverse incisal guidance.
   - ☐ c. reverse canine rise.
   - ☐ d. long-centric and wide centric.

5. Anterior repositioning splints should be worn:
   - ☐ a. mornings only.
   - ☐ b. all of the time.
   - ☐ c. afternoons only.
   - ☐ d. during sleeping and stressed times.

6. Soft splints were recommended for:
   - ☐ a. interim or temporary use.
   - ☐ b. full-time use.
   - ☐ c. nights only.
   - ☐ d. days only.

7. Pre-rehabilitation splints should be worn:
   - ☐ a. at the anticipated vertical dimension of occlusion.
   - ☐ b. all of the time.
   - ☐ c. for about 6 weeks.
   - ☐ d. all of the above.

POST TEST (CONT'D)

V3104 OCCLUSAL SPLINTS – PREDICTABLE THERAPY FOR FREQUENT USE

8. Post-rehabilitation splints should be worn:
   - ☐ a. only when stressed.
   - ☐ b. all of the time.
   - ☐ c. when sleeping or stressed times.
   - ☐ d. with fluoride in them each night.

9. A significant potential negative influence observed with partial occlusal coverage splints is:
   - ☐ a. extrusion of teeth not contacting the splint.
   - ☐ b. breakage of the splint.
   - ☐ c. protrusion of the anterior teeth.
   - ☐ d. retrusion of the anterior teeth.

10. A SVED appliance is:
   - ☐ a. a full occlusal coverage splint.
   - ☐ b. a partial occlusal coverage splint.
   - ☐ c. an anterior repositioning device.
   - ☐ d. a soft splint.

PLEASE PRINT

Name_____

Name of video purchaser (if different from above)_____

Address_____

City/State/Zip _____

Phone No._____

Indicate which type of credit you wish to obtain ☐ AGD ☐ State ☐ Both

AGD No._____

State License No._____