

# **PRACTICAL CLINICAL COURSES**

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Career Development Program

## **V3186**

### **Opening Vertical Dimension of Occlusion (and Adjunctive Occlusal Procedures)**

Gordon J. Christensen, DDS, MSD, PhD

#### **Materials Included**

C.E. Instruction Sheet  
Products List  
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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**V3186 Opening Vertical Dimension of Occlusion**  
**(and Adjunctive Occlusal Procedures)**

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

1. **Access Blue**  
Centrix, Inc.  
770 River Road  
Shelton, CT 06484  
(800)235-5862  
(203)929-5582  
[www.centrixdental.com](http://www.centrixdental.com)
2. **AccuFilm II**  
Parkell, Inc.  
300 Executive Drive  
Edgewood, NY 11717  
(800)243-7446  
(631)249-1134  
[www.parkell.com](http://www.parkell.com)
3. **Blu-Mousse**  
Parkell, Inc.  
300 Executive Drive  
Edgewood, NY 11717  
(800)243-7446  
(631)249-1134  
[www.parkell.com](http://www.parkell.com)
4. **Caliper**  
Local Dealer or  
Architect Supplier
5. **Laboratory Occlusal Splints**  
Various Laboratories
6. **Madame Butterfly Silk**  
Almore International, Inc.  
P.O. Box 25214  
Portland, OR 97298  
(800)547-1511  
(503)643-6633  
[www.almore.com](http://www.almore.com)
7. **NTI-tss 2.0**  
Chairside Splint  
(877)468-4877  
[www.chairsidesplint.com](http://www.chairsidesplint.com)
8. **Occlusal Indicator Wax**  
Kerr Corporation  
1717 West Collins  
Orange, CA 92867  
(800)537-7123  
(714)516-7400  
[www.kerrdental.com](http://www.kerrdental.com)
9. **OptraGate**  
Ivoclar Vivadent Inc.  
175 Pineview Drive  
Amherst, NY 14228  
(800)533-6825  
(716)691-0010  
[www.ivoclarvivadent.us.com](http://www.ivoclarvivadent.us.com)
10. **QuickSplint**  
Orofacial Therapeutics  
6824 El Cajon Blvd.  
San Diego, CA 92115  
(800)760-0526  
(858)866-6602  
[www.quicksplint.com](http://www.quicksplint.com)
11. **Shimstock**  
Almore International, Inc.  
P.O. Box 25214  
Portland, OR 97298  
(800)547-1511  
(503)643-6633  
[www.almore.com](http://www.almore.com)
12. **Sideless Triple Tray**  
Premier Dental  
1710 Romano Drive  
Plymouth Meeting, PA 19462  
(888)670-6100  
(610)239-6000  
[www.premusa.com](http://www.premusa.com)
13. **Triad TruTray**  
Dentsply Sirona  
221 West Philadelphia Street  
Suite 60W  
York, PA 17401  
(844)848-0137  
(717)845-7511  
[www.dentsplysirona.com](http://www.dentsplysirona.com)
14. **TrollFoil**  
TrollDental  
661 Hayward Avenue North  
Oakdale, MN 55128  
(800)537-8765  
(203)775-4342  
[www.trolldental.com/us](http://www.trolldental.com/us)
15. **T-Scan**  
Tekscan, Inc.  
307 West First Street  
South Boston, MA 02127-1309  
(800)248-3669  
(617)464-4500  
[www.tekscan.com](http://www.tekscan.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**

### **V3186 Opening Vertical Dimension of Occlusion (and Adjunctive Occlusal Procedures)**

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

1. List and discuss the current clinical terminology that defines occlusal positions and movements.
2. Define “normal” occlusion.
3. List 6 pathologic conditions of occlusion and their potential influence on vertical dimension of occlusion (VDO).
4. List the major factors that are known to reduce VDO.
5. Discuss grinding occlusion and its effect on VDO.
6. Discuss clenching bruxism and its effect on VDO.
7. Discuss gastroesophageal reflux and its effect on VDO.
8. Discuss diet and how it influences VDO in some cases.
9. Relate the wear resistance of restorative materials and the effect on VDO.
10. Discuss how periodontal disease can negatively influence VDO.
11. Discuss multiple tooth extractions and loss of VDO.
12. Describe the technique for locating VDO for an edentulous patient.
13. Describe the technique for locating VDO for a dentulous patient.
14. Describe speech tests and muscle tests for approximating VDO.
15. Define TENS and its use in locating VDO.
16. Discuss the importance of occlusal splints in locating VDO.
17. Discuss methods to transfer VDO from the patient to working casts.
18. List ten factors that influence the mesial-distal of tooth position.
19. List potential problems if VDO is opened too far.
20. List potential problems if VDO is not opened far enough.

## OVERVIEW

### **V3186 Opening Vertical Dimension of Occlusion (and Adjunctive Occlusal Procedures)**

Locating proper vertical dimension of occlusion (VDO) when rehabilitating patients is a challenging task, and is often done incorrectly. Such improper positioning can cause serious patient discomfort, muscle dysfunction, and potential destruction of the rehabilitation.

The following and other topics are included in this presentation:

- Occlusal terminology
- What is normal occlusion
- Six pathologic conditions of occlusion and their influence on VDO
- Major factors that reduce VDO
- Grinding bruxism
- Clenching bruxism
- Diet and its influence on VDO
- Gastroesophageal reflux disease, and its effect on VDO
- Wear of restorative materials and its effect on VDO
- Periodontal disease and its effect on VDO
- Multiple tooth extractions and the effect on VDO
- Diagnostic aids for occlusal examination and treatment
- Opening vertical dimension of occlusion
- Finding rest position
- Speech tests that help to locate VDO
- The effect of TENS on finding VDO
- The usefulness of mounted diagnostic casts
- Occlusal splints and their usefulness in treatment of VDO determination
- Testing muscle activity for determining VDO
- Identification of reasons for collapsed VDO and future prevention
- Interocclusal records
- Methods to transfer VDO to working casts
- Factors altering mesial-distal dimension and their effect on VDO

## REFERENCES

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1. Alhadj MN, Khalifa N, Abduo J, Amran AG, Ismail IA. Determination of occlusal vertical dimension for complete dentures patients: an updated review. *J Oral Rehabil.* 2017 Nov;44(11):896-907. doi: 10.1111/joor.12522. Epub 2017 Jun 10.
2. Remiszewski D, Bidra AS, Litt MD. Ability of General Dentists and Prosthodontists to Discern and Identify Incremental Increases in Occlusal Vertical Dimension in Dentate Subjects. *Int J Prosthodont.* 2017 Jul/Aug;30(4):327-33. doi: 10.11607/ijp.5152.
3. Hahnel S, Scherl C, Rosentritt M. Interim rehabilitation of occlusal vertical dimension using a double-crown-retained removable dental prosthesis with polyetheretherketone framework. *J Prosthet Dent.* 2017 Jun 20. pii: S0022-3913(17)30155-5. doi: 10.1016/j.prosdent.2017.02.017. [Epub ahead of print]
4. Ting J, Shuhui H, Hongqiang Y, Lu J. CAD/CAM Ceramic Overlays to Restore Reduced Vertical Dimension of Occlusion Resulting from Worn Dentitions: A Case History Report. *Int J Prosthodont.* 2017 May/Jun;30(3):238-41. doi: 10.11607/ijp.5146.
5. Alhadj MN, Daer AA. A proposed linear skeletal distance to predict occlusal vertical dimension: A cephalometric study. *J Prosthet Dent.* 2017 Apr 20. pii: S0022-3913(17)30059-8. doi: 10.1016/j.prosdent.2016.12.022. [Epub ahead of print]
6. Christensen GJ. Ask Dr. Christensen: WHAT CAUSES CHANGES IN OCCLUSION? *Dental Economics.* 2013 Jul;103(7):24-31.
7. Christensen GJ. Ask Dr. Christensen: TREATMENT OF CRACKED TEETH. *Dental Economics.* 2011 Apr;101(4):68-74.
8. Christensen GJ. The major part of dentistry you may be neglecting. *J Am Dent Assoc.* 2005 Apr;136(4):497-9.
9. Christensen GJ. Is occlusion becoming more confusing? A plea for simplicity. *J Am Dent Assoc.* 2004 Jun;135(6):767-70.

## REFERENCES (CONT'D)

### **V3186 Opening Vertical Dimension of Occlusion (and Adjunctive Occlusal Procedures)**

10. Christensen GJ. Now is the time to observe and treat dental occlusion. J Am Dent Assoc. 2001 Jan;132(1):100-2.
11. Christensen GJ. TREATING BRUXISM AND CLENCHING. J Am Dent Assoc. 2000 Feb;131(2):233-5.
12. Christensen GJ. ABNORMAL OCCLUSAL CONDITIONS: A FORGOTTEN PART OF DENTISTRY. JADA. 1995 Dec;126(12):1667-8.

## POST-TEST

### **V3186 Opening Vertical Dimension of Occlusion (and Adjunctive Occlusal Procedures)**

1. Reduced canine rise and reduced incisal guidance are present in:
  - a. secondary occlusal trauma.
  - b. grinding bruxism.
  - c. clenching bruxism.
  - d. primary occlusal trauma.
  
2. Which condition is associated with advanced periodontal disease?
  - a. Primary occlusal trauma
  - b. Grinding bruxism
  - c. Clenching bruxism
  - d. Secondary occlusal trauma
  
3. Rest position of the mandible is usually \_\_\_\_ mm from maximum intercuspation.
  - a. 0.5
  - b. 1.0
  - c. 1.5
  - d. None of the above
  
4. The sound "S" usually places the maxillary and mandibular teeth about \_\_\_\_\_ mm apart.
  - a. 5
  - b. 4
  - c. 1
  - d. None of the above
  
5. Which is incorrect relative to TENS (transcutaneous electrical nerve stimulation)?
  - a. Can assist in relaxing the muscles of mastication and finding VDO.
  - b. Requires about ½ hour of application to relax muscles.
  - c. Is not potentially harmful if used on a person with a pacemaker.
  - d. Does not require an expensive device.
  
6. Which is usually the most destructive condition relative to closing VDO?
  - a. Diet
  - b. Grinding bruxism
  - c. Primary occlusal trauma
  - d. Wear on ceramic restorations
  
7. When VDO is opened too much, the following occurs:
  - a. near total inactivation of both the masseter and temporalis muscles.
  - b. near total inactivation of the temporalis muscles.
  - c. near total inactivation of the masseter muscles.
  - d. none of the above.



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

**V3186 Opening Vertical Dimension of Occlusion  
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8. When VDO is closed too much, the following occurs:
  - a. near total inactivation of the temporalis muscles.
  - b. near total inactivation of the masseter muscles.
  - c. near total inactivation of both the masseter and temporalis muscles.
  - d. none of the above.
  
9. Which method is almost always necessary to determine the amount of opening of VDO that is tolerable to a patient?
  - a. Occlusal equilibration
  - b. TENS
  - c. Occlusal splint
  - d. Muscle manipulation
  
10. One of the easiest procedures to determine if occlusal contacts on a crown are too low or too high is:
  - a. mounted casts.
  - b. use of articulating papers.
  - c. spray-on articulating media.
  - d. TENS.
  - e. Kerr Occlusal Indicator Wax.

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