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143RD

CHICAGO DENTAL SOCIETY
MIDWINTER MEETING

The respected leader in scientific dental meetings

SCIENTIFIC PROGRAM: FEBRUARY 21 – 24, 2008
EXHIBIT DATES: FEBRUARY 22 – 24, 2008

COURSE C59
PREPARATION DESIGN AND THE NEW DENTAL CERAMICS

DAMON C. ADAMS, DDS
ROBERT S. WISLER, CDT

SATURDAY, FEBRUARY 23, 2008

CHICAGO DENTAL SOCIETY **MIDWINTER MEETING COURSE EVALUATION**

SPEAKER: _____ DATE: _____

SUBJECT: _____ NUMBER OF ATTENDEES: _____

PLEASE RATE YOUR SPEAKER AS TO:	**Excellent**	**Good**	**Fair**	**Poor**	**N/A**
SUBJECT SELECTED	4	3	2	1	0
TIMELINESS OF SUBJECT	4	3	2	1	0
COMPREHENSIVENESS	4	3	2	1	0
MEETING YOUR EXPECTATIONS	4	3	2	1	0
CONTENT LEVEL	4	3	2	1	0
DELIVERY	4	3	2	1	0
VOICE QUALITY	4	3	2	1	0
HOLDING YOUR INTEREST	4	3	2	1	0
APPROPRIATE AUDIOVISUALS	4	3	2	1	0
EFFECTIVE AUDIOVISUALS	4	3	2	1	0
OVERALL EVALUATION OF SPEAKERS	4	3	2	1	0
OVERALL EVALUATION OF THE PROGRAM	4	3	2	1	0
SHOULD THIS SPEAKER BE INVITED FOR FUTURE MEETINGS?	YES	NO			

WHAT TOPICS INTEREST YOU FOR THE FUTURE? _____

COMMENTS (use reverse if you need additional space): _____

_____

_____

NAME (REQUESTED BUT NOT REQUIRED—PLEASE PRINT): _____

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Chicago Dental Society
Aloysius F. Kleszynski, DDS
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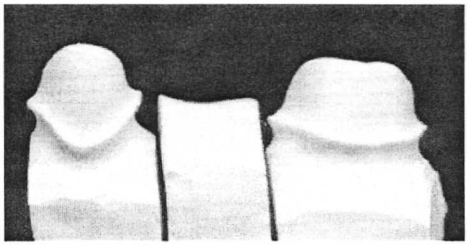
Chicago, IL 60611-5585

Preparation Design and the New Dental Ceramics

What your dental technicians really want...but may be afraid to ask!



Dr. Damon C. Adams and Robert Wisler, C.D.T.

Sponsored by the National Association of Dental Laboratories and the Chicago Dental Society 2008 Midwinter Meeting

Preparation Design and the New Dental Ceramics

What your dental technicians really want...but may be afraid to ask!

Presenters: **Dr. Damon C. Adams and Robert Wisler, CDT**

3 PACE/CERP CEU's
A lecture designed for the doctor-technician team

While many other things are changing rapidly in dentistry, preparation design will always be of major importance to achieving the best aesthetics and expected longevity for your restorations. This dynamic seminar provides doctors and their technicians with a unique opportunity to acquire an excellent understanding of some of the keys to better preparation design.

Dr. Adams and Mr. Wisler will candidly focus on specific preparation requirements and evaluation techniques needed to produce predictable, consistent restorative results, while reducing team stress and increasing mutual doctor-laboratory profitability.

In this course you will learn:

- **How to simplify the classifications of all-ceramics in order to accomplish the right prep for the right material**
- **Preparation requirements for the latest and most proven pressed, aluminum oxide and zirconium oxide all-ceramic systems**
- **The most common preparation challenges along with their technical solutions**
- **Introducing and using the *Preparation Checklist*: Taking a look in the rear view mirror *...from a technician's perspective!***
- **How should the laboratory technician deliver feedback to help us improve our preparations?**

A Brief Historical Outline of Dental Materials

700 BC	*The first known use of gold dental fillings (Etruscans)*
1800's	Gold leaf fillings
	Porcelain denture teeth
1855	Adhesive gold foil fillings
1882	*Gold inlays using lost wax technique (Dr. Philbrook Dennison)*
1890's	*Amalgam (Popularized by Dr. G.V. Black)*
Early 1900's	First use of all-porcelain crowns (not successful)
1940's	Porcelain facings
	Acrylic facings
	First use of acrylic resin for anterior teeth
Late 1950's	Development of glass-ceramics (Corning Glass)
1960's	*Introduction of the PFM crown (Using copings made of HNOB and NOB, then later BM, to the most recently developed substructures made of Titanium) Aluminous Jacket Crowns popularized (McClean)*
1962	Composites (with silica filler and AE technique) introduced (Bowen)
1975	UV-cured composites
1980	Light-cured composites. Dicor crown system introduced (A short-lived castable ceramic crown.)
1988	*Reinforced gold coping system introduced (Captek: Metal "composite" or hybrid coping consisting of a platinum-palladium substructure with a HNOB yellow gold supra-structure)*
1990	*Pressed (leucite reinforced) ceramic coping systems (Pressed/stained or layered leucite reinforced porcelain supra-structure)*
1991	*Aluminum oxide coping systems (A metal oxide coping using a hand-painted slip that is sintered (heated) then glass infiltrated, followed by a layered/fired aluminous porcelain supra-structure)*
1995	*Alumina-magnesia (A metal oxide coping using a hand-painted slip that is sintered (heated) then glass infiltrated, followed by a layered/fired aluminous porcelain supra-structure)*
1997	*CAM Aluminum oxide coping (A CAD/CAM system relying on a densely sintered metal oxide, using a layered/fired aluminous porcelain supra-structure)*
1997	*Lithium disilicate pressed ceramic coping systems (Utilizes a lithium oxide enriched, fluorapatite layered porcelain supra-structure*
1999	*Zirconium oxide coping system (A metal oxide coping using a hand-painted slip that is sintered (heated) then glass infiltrated, followed by a layered/fired lithium disilicate or fluorapatite porcelain supra-structure)*
2000	*CAD/CAM Zirconium oxide copings (A CAD/CAM system relying on a densely sintered metal oxide, using a layered/fired lithium disilicate or fluorapatite porcelain supra-structure)*
2003	*Yttrium stabilized CAD/CAM Zirconium oxide copings (Yttrium limits/heals fracture propagation)*
2003	*CAD/CAM Electro-layered Alumina, Alumina-magnesia, and Zirconia copings*

Classification of Coping Systems

There are 3 basic types of coping systems used for indirect all-porcelain and porcelain-to-metal dental restorations:

1) *Metal* coping systems used in PFMS
2) *Pressable ceramic* coping systems
3) *Oxide* coping systems (alumina and zirconia)

1) Metal coping systems used in PFM's

- HNOB copings
- NOB copings
- BM copings
- Titanium copings
- Hybrid metal coping (Captek: Platinum/Palladium/HNOB gold)

2) Pressable ceramic coping systems

- Leucite reinforced copings (IPS Empress, IPS Empress Esthetic, Authentic, Cerpress, Finesse Pressable) (Authentic and Finesse Pressable can also be used for pressed-to-metal applications.)
  Indications: Crowns, veneers, inlays, onlays
  Cementation: Silane. Bond only with dual-cured or light-cured resin cements (veneers)

- Lithium disilicate copings (IPS Eris, OPC 3G, e.max Press)
  - CAD (IPS e.max CAD)

  Indications: Crowns, 3u anterior bridges (*Observe manufacturer minimum dimension requirements*!)
  Cementation: Silane. Strongest when bonded with dual-cured resin cements.
  May be conventionally cemented (*no silane*) with glass ionomer, or resin ionomer cements. Preparation must have adequate retention/resistance form if conventionally cementing.)

3) Aluminum oxide, zirconium oxide and lithium disilicate coping systems

- Aluminum oxide
  - Hand painted slip that is sintered and glass infiltrated (In-Ceram Alumina)
  - Electrolayered, sintered, glass infiltrated (Wol-Ceram Alumina)
  - CAD/CAM (Procera Alumina,)

  Indications: Crowns, 3u anterior bridges (watch manufacturer minimum dimension requirements)
  Cementation: No silane, Cementation with dual-cured resin cements or conventional cements such as a glass ionomer or resin ionomer

- Alumina-Magnesia
  - Hand-painted slip that is sintered and glass-infiltrated (In-Ceram Spinell
  - Electrolayered, sintered, glass-infiltrated (Wol-Ceram Spinell)

  Indications: Anterior esthetic crowns, inlays, onlays.
  Cementation: No silane, Cementation with dual-cured resin cements or conventional cements such as a glass ionomer or resin ionomer

- Zirconium oxide (Crowns and 3-6u bridges)
  - Hand-painted slip that is sintered and glass-infiltrated (In-Ceram Zirconia)
  - Electrolayered, sintered, glass-infiltrated (Wol-Ceram Zirconia)
  - CAD/CAM (Procera Zirconia, Lava, inVizion)
  - CAD Yttrium-stabilized (IPS e.max ZirCAD)
  - CAD/CAM Yttrium-stabilized (CEREC inLab InCeram YZ, Cercon)

  Indications: Crowns, 3u-6u bridges (watch manufacturer maximum span requirements)
  Cementation: No silane. Cementation is accomplished with dual-cured resin cements or conventional cements such as a glass ionomer or resin ionomer.

- Lithium disilicate
  - CAD/CAM (IPS e.max CAD LT)

  Indications: Crowns. Once milled to full contour, it is crystallized in 30 min firing cycle. It can be crystallized, stained and glazed in one firing cycle. Conventional cementation or resin bonded.

Product	Empress	Eris	Captek	PFM	Procera	Lava	belleglass NG
Ideal Applications	When esthetics is the primary objective *Not indicated in cases with occlusal pathology disease*	When esthetics is the primary objective *Not indicated in cases with occlusal pathology disease*	An esthetic high gold porcelain fused to 'composite' metal *Not indicated in cases with significant occlusal pathology*	Traditional *PFM's* ***Gold and PFMs are indicated in cases with dynamic occlusal pathology***	Esthetically masks most (not all) dark underlying tooth shades including metal posts *Not indicated in cases with occlusal pathology*	When esthetics and strength are necessary *Not indicated in cases with occlusal pathology*	When posterior esthetics is the primary objective *Not indicated in cases with occlusal pathology disease*
Primary Applications	Veneers, crowns, inlays and onlays	Single crowns & 3 unit bridges when most distal abutment is 2nd biscuspid	*Single crowns *3 Unit bridges	Single crowns through long span bridges	Single crowns Bridges (ZO)	*Single crowns Bridges Up to 4 splinted crowns (Cantilever bridges and M-type bridges*)	*Posterior inlays and onlays with selected anterior applications *and* belleGlass to Captek
Preparation Requirements	*Modified shoulder margin design *(1.0mm min. at the margin); *1.5-2.0mm incisal/occlusa reduction; 1-1.5mm lingual reduction; 1.0-1.5mm axial reduction *(Note: All products listed on this chart require rounded internal line angles)*	*Modified shoulder margin design *(1.0mm min. at the margin); *1.5-2.0mm incisal/occlusal reduction 1.0-1.5mm lingual reduction; 1-1.5mm axial reduction	*Chamfer margin design is preferred *(.8mm min. at the margin); 1.5-2.0mm incisal/occlusal reduction; 1.0-1.5mm axial wall reduction	*Any margin design *Traditional 1.5-1.7mm axial wall reduction; *1.5-2.0mm incisal/occlusal reduction	*Chamfer or modified shoulder design *(1.0mm min. at the margin) 1.5-2.0mm incisal/occlusal reduction 1.5 lingual reduction 1.5-1.8mm axial reduction	Chamfer or modified shoulder margin design *(1.0mm min. at the margin); 1.5-2.0mm incisal/occlusal reduction; 1.5 lingual reduction; 1.5-1.8mm axial reduction*	*Shoulder margin design *(1.0mm min. at the margin); *1.5-2.0mm reduction incisal/occlusal .0.8-1.0mm Chamfer design when used with Captek or as laminates
Cementation Guidelines	Adhesive bonding with resin cements only (Silane)	Adhesive bonding and resin cement *or* conventional cements (Silane)	Conventional cementation with any cement	Conventional cementation with any cement	Conventional cementation or resin cement (No silane)	Conventional cementation or resin cement (No silane)	Adhesive bonding and resin cement only (Silane)
Flexural Strength	50Mpa *(All FS listed on this chart is before seating)*	300 Mpa	>1000 Mpa	1200-1400 Mpa	600+ Mpa (AO) 1100Mpa (ZO)	1100 Mpa	200 Mpa
Enamel Wear	Comparable to natural ename	Comparable to natural enamel	Comparable to natural enamel with d.SIGN porcelain	Comparable to natural enamel with d.SIGN porcelain	Comparable to natural enamel	Comparable to natural enamel	Comparable to natural enamel
Restoration Composition	Leucite reinforced core *pressed* (Stained *or* layered porcelain technique)	Lithium disilicate core *Pressed* and stained or layered porcelain	88% composite gold (22k) coping with layered fluorapatite porcelain	HNOB White or yellow gold with layered fluorapatite porcelain	Aluminum oxide or zirconium core with layered porcelain	Zirconium oxide cores with layered porcelain	Barium Borosilicate (74%) Bis-GMA (26%)
Years of Clinical Use	17 Years	10 Years	19 Years	40+ Years	14 Years (AO) 5 Years (ZO)	7 Years	5 Years (bG NG) 11 Years (bG)

Aluminum oxide/Zirconium oxide/CAD Lithium disilicate All-Ceramic Prep Checklist

⎫ **Create a uniform and distinct *360° chamfer margin* (0.7mm-1.0mm whenever possible) with an appropriately sized 856 diamond bur (Axis Dental Corp) The most commonly used sizes are -014 for very small teeth, -016 for most anteriors, and -018 or -021 in the posterior.**

Note: Some clinicians find it easier to prepare a uniform *360° modified shoulder* preparation (1.2mm) utilizing an 846KR-016 diamond bur (Axis Dental Corp)

⎫ **1.5 (circumferential) axial reduction is ideal**

⎫ **2.0mm posterior (occlusal) reduction is ideal for aesthetics and function for any all-ceramic restorations**

- **1.5mm would be the minimum clearance needed**
- **Minimal axial wall height remaining after preparation should be 3-4mm**

⎫ **1.8mm-2mm incisal reduction**

⎫ **1.0mm minimum (whenever possible) anatomic (anterior) lingual reduction Use a 379-021 or 379-023 football diamond bur (Axis Dental Corp) to create a concave surface for optimal functional harmony**

⎫ **Smooth anatomic contours with rounded line angles throughout**

⎫ **Avoid any proximal boxes or grooves**

⎫ **Aesthetic cores (as well as compomer, resin ionomer or composite resin block-out), should be placed at the chair during the preparation appointment prior to impressing**

⎫ **Remember to prepare all teeth utilizing *multi-plane reduction* for the creation of a restoration with natural, anatomic contouring and optimal aesthetics**

Burs can also be purchased from SS White, Premier, etc. Other companies may use a different numbering system. Their sales representatives can help you translate any of the above bur numbers.

Preparation Evaluation Checklist

) **Adequate posterior-occlusal reduction? (Molars, bicuspids)**
_ **Yes**
_ **No**
PFM (*1.5-2.0mm*)
Gold (*1.0-1.5mm*)
All-ceramic (*2.0mm*)
Indirect composite (*1.5-2.0mm;measured from the bottom of the central groove to the pulpal floor. 2.0mm reduction if covering a cusp?*)

) **Adequate anterior-lingual reduction?**
_**Yes**
_ **No**

PFM (*1.0mm metal; 1.5-2.0mm metal/porcelain*)
All-ceramic (*1.0-1.5mm*) *(Certain materials can be done at a min. of 0.6mm)*
Indirect composite (*1.5-2.0mm*)

) **Was occlusal and/or lingual reduction done *anatomically*?**
_ **Yes**
_ **No**

) **Adequate axial reduction?**
_ **Yes**
_ **No**
PFM (*1.5-1.7mm*)
All-ceramic (*1.0-1.5mm*)
All-ceramic or indirect composite laminate veneer (*.3mm-.6mm "feldspathic technique, .7mm-1.0mm pressed porcelains*)

) **Was buccal/lingual axial reduction done *anatomically*? (*This includes posterior teeth!*)**
_ **Yes**
_ **No**

) **Adequate Draw? (*7-10 degrees fro PFM, gold, all-ceramics; 8-12 degrees porcelain/indirect composite inlays and onlays*)**
_ **Yes**
_ **No**

) **Rounded line angles? (*All types of laboratory fabricated restorations*)**
_ **Yes**
_ **No**

) **Are the margins clearly visible on the solid model? (*Double cord technique used for tissue packing?*)**
_ **Yes**
_ **No**

) **Iatragenic damage to (adjacent) interproximal tooth surfaces?**
_ **Yes**
_ **No**

The following apply to <u>all-ceramic</u> preparations:

) **Modified shoulder margins (1.0-1.5mm) and chamfer margins (0.7mm-1.0mm) within minimum depth recommendations?**
_ Yes
_ No

) **Was axial reduction done as uniformly as possible? (Did prep depth and material prescribed reflect the underlying stump shades, depending on the material prescribed?)**
_ Yes
_ No

) **Blockout (major undercuts) and cores placed chair side and not left for the laboratory to do?**
_ Yes
_ No

) **Were boxes and retention grooves *avoided* in all-ceramic preps, especially those requiring scanning? Smooth-anatomic occlusal reduction?**
_ Yes
_ No

) **If the case was a multiple unit anterior veneer/crown case, was a diagnostic wax-up, doctor/patient approved provisional index/model utilized? Were pre-op study models and photos supplies to the lab?**
_ Yes
_ No

) **Did the doctor perform the diagnostic preps for the wax-up or was a duplicate model of the preps done by the lab for the diagnostic wax-up given back to the doctor for reference?**
_ Yes
_ No

The following apply to <u>all-ceramic veneers</u>:

) **Chamfer margins evident throughout?**
_ Yes
_ No

) **Is there an adequate interproximal 'elbow' for optimal aesthetics?**
_ Yes
_ No

) **Uniform, *anatomic* facial reduction?**
_ Yes
_ No

) **If closing a diastema: Chamfer margins carried *through the interproximal onto the lingual surface and margin placed at a minimum of 0.5mm below the gingival crest.***
_ Yes
_ No

The following is an actual example of excellent technician-to-doctor communication and preparation feedback:

(The names have been changed by request.)

Date: 9/10/07

From: John Jones, C.D.T.
To: Dr. T. Smith

Subject: Example Procera® Preps Enclosed for Shelly T.

Dear Dr. Smith,

It was nice to talk with you yesterday about this case. Thanks for being open to our technical feedback! Working together as a team, we should be able to accomplish all your aesthetic and functional goals for your patient.

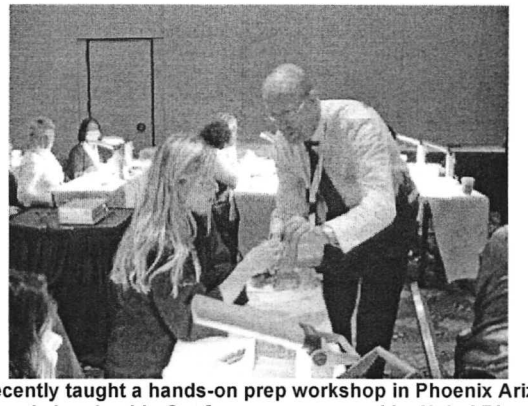
Important points to consider if you decide to go ahead with the prep revisions:

- **One of the burs utilized for the prep revision on the enclosed model was the 856-018 (Axis Dental Corp). It was used for margins and re-contouring.**
- **Please compare both the original and revised model to see the areas of the margins that need a heavier chamfer. This is critical for aesthetics and natural contours in the cervical 1/3. It is important to create adequate reduction for both the Procera coping and the layering porcelain.**
- **We anatomically contoured the prep on the facial of #8, 9, (centrals) and #10 (left lateral)**
- **We also placed anatomic anatomy on the lingual aspects of all preps with a 379-023 (Axis Dental Corp) football diamond in order to optimize the anatomic contours and to insure proper occlusal function in the final crowns.**

If you have any questions or concerns, please call me.

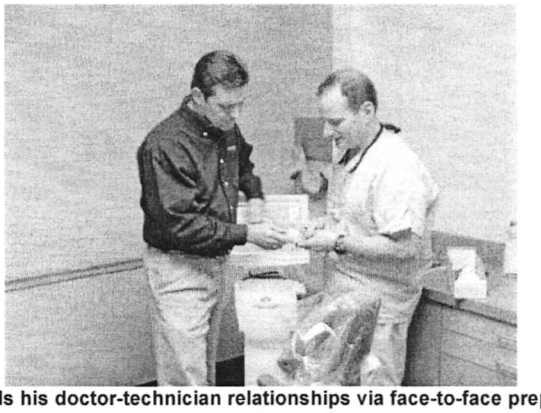
Thanks for your work!
John

<u>Important Note!</u>
Please realize that the accuracy and appropriateness of these suggestions/study preparations cannot be used as the sole determinants for specific treatment. We have limited patient information at our disposal in the lab and our suggestions for any prep revisions must be considered in that light. We realize that our doctors have final authority over prep design considerations and are solely responsible for their decisions.



Dr. Adams recently taught a hands-on prep workshop in Phoenix Arizona for the *Women's Leadership Conference* sponsored by Nobel Biocare.

Dr. Damon C. Adams, a graduate of the University of Michigan, is an Assistant Clinical Professor in the Dental Residency Program at the University of Toledo, College of Medicine. He lectures internationally emphasizing doctor-technician relationships and techno-clinical perspectives. He also facilitates hands-on preparation workshops designed to optimize the utilization of all-ceramic systems. In addition to his years in private practice, he has had the opportunity to serve as a doctor-technician liaison for many dental laboratories throughout North America for over 13 years. Dr. Adams is a Contributing Editor for ***Dentistry Today*** and is listed in ***Dentistry Today's Leaders in Continuing Education (2004-2008).*** In addition, he serves on the Advisory Board for ***Spectrum Dialogue (Palmeri Publications)***.
Dr. Adams is a member of the ADA, AGD, AACD and the National Association of Dental Laboratories. He is also a Fellow in the International College of Dentists. (Contact information can be found at www.adamsdentalseminars.com)



Robert (on left) builds his doctor-technician relationships via face-to-face preparation feedback.

Robert S. Wisler graduated from Ferris State University's Dental Technology program in 1979 and became a Certified Dental Technician in 1982. He spent the first 10 years of his career as an "in house" technician for three general dentists that specialized in crown and bridge and implants. Robert now owns and operates Alpha Dental Studio, Inc., in Farmington Hills, Michigan, a Certified Dental Laboratory His laboratory employs twelve PTC-trained technicians, each working under a microscope, in a state-of-the-art, KAVO and CAD/CAM-equipped laboratory. He is a student of occlusion based in the OBI and Kois disciplines; a 'sustaining member' of the AACD and is enhancing his laboratory's quality systems through DAMAS certification. Promoting continuing education for his technicians, hosting seminars for doctors and speaking to students at local dental schools, allow Robert to share his passion for excellence in dental technology.

A sampling of Dr. Adams' past and future engagements

Chicago Dental Society Midwinter Meeting
Maryland State Dental Association
California Dental Association
Star of the South (Houston)
New Jersey Dental Association
Arizona Dental Association
The University of Delaware
Women's Leadership Conference (2006 Phoenix/Nobel Biocare)
International Dental Congress (Toronto)
New Mexico Dental Association
Pacific Dental Conference (Vancouver)
AGD Annual Meeting
Medical and Dental University of New Jersey
Northern Ontario Dental Association
Idaho State Dental Association
Collegio Cirujanos de Dentistas de Puerto Rico
The Schuster Center
University of Toronto
Sioux Falls District Dental Society
GV Black Dental Society
Holiday Dental Conference
Michigan Dental Association
Utah Dental Association
DentalEd (Australia)
Seattle Study Club (Nassau, Bahamas)
Shaw Laboratories (Toronto, London, Ottawa, Kingston)
Mobile Area Dental Society
Esthetic Dental Arts Laboratory
Expertec Dental Laboratory
Toronto Academy of Dentistry
Illinois State Dental Society
University of Texas School of Dentistry (San Antonio)
Thayer Dental Laboratory
HO Eliason Dental Laboratory
Global Dental Seminars (Calgary)
Detroit Dental Reviews
California Dental Laboratory Association
Mid-West Spring Technical Meeting
Atlanta Dental Consultants Annual Conference
Professional Dental Laboratory, Inc.
Shiawassee District Dental Society
Accudent Dental Laboratory
Saginaw District Dental Society
Oral Designs, Inc.
Muskingum Valley District Dental Society
Kalamazoo Valley District Dental Society
Dani Dental Studio (Phoenix)
Baylor School of Dentistry
Stern Empire Dental Laboratory
Continental Dental Laboratory
YDL Dental Laboratory
West Michigan District Dental Society
Northland Dental Study Club
Alpha Dental Studio, Inc
Precision Dental Laboratories
Bourque Dental Laboratory
DH Baker Dental Laboratory
ABCKO Dental Laboratory
PDS Dental Laboratory, Inc.
W. Ohio Academy of Dental Practice Administration
Seattle Study Club (Traverse City)
Hortin Dental Laboratory
Kingston Ontario Dental Study Club
Muskegon District Dental Society
Oral Designs Dental Laboratory

Recent articles by Dr. Adams with techno-clinical perspectives:

Where Have All the Technicians Gone?
Dentistry Today, March 2003 (Reprinted in Spectrum, September/October 2004)

The Indirect Composite Resin Restoration: An Under Utilized Choice?
Dentistry Today, 2004;23(1):62-67

Indirect Composites: An insurance dilemma with a marketing solution!
Dental Economics; July 2004

The Treatment Planning Consultation: The Doctor-Technician Partnership
Dentistry Today, 2004;23(7)92-95

Can You Find the Hidden Wealth in Your Dental Laboratory?
Dental Practice Management, Summer 2004

Where Have All the Technicians Gone?
Spectrum September/October 2004

The 10 Most Common All-Ceramic Preparation Errors: A Doctor-Technician Liaison's Perspective
Dentistry Today, 2004:23(10)94-99

The Total Team Concept!
Dental Practice Management, October 2004

Hidden Wealth: Find it in your dental lab...rub elbows!
Dental Economics, November 2004

Point of Care: The 'J' Margin v. Aluminum/Zirconium Oxide Coping Systems
The Journal of the Canadian Dental Association, November 2004

Superior Doctor-Technician Relationships
The Journal of Dental Technology, February 2005

Anterior Application of an Indirect Composite: A Doctor-Technician Liaison's Perspective
Dentistry Today, April 2005

Choosing a Quality Dental Laboratory
Dental Practice Management, Summer 2005

Do You Utilize a Total Team Concept?
Dental Economics, October 2005

Choosing the Right Dental Laboratory for Your Practice
Dentistry Today, October 2005

Impression Distortion: Just a Technical Problem? A Doctor-Technician Liaison's Perspective
Dentistry Today, December 2005

Sustaining Doctor-Technician Relationships
Dentistry Today, May 2006

The Most Common All-Ceramic Preparation Challenges (Part 1 and Part 2)
Spectrum, Vol. 5 No.2, Vol 5 No. 3, 2006

To Silanate...or not to silanate? That is the question!
Spectrum, Vol.. 5 No. 4, 2006

Impression Tips to Reduce Stress and Increase Profits
Dentistry Today, October 2006

Articulators: Should we challenge the status quo?
Dentistry Today, December 2006

Laboratory Perspectives on Continuing Education: It takes a Team!
Dentistry Today, July 2007

Profit Killer: A Techno-Clinical Perspective (Part 1 and Part 2)
Spectrum Dialogue, Vol. 6 No. 5, and Vol. 6 No. 7, 2007

Ensuring Optimal Success With the Lava System (Part 1 and Part 2)
Dentistry Today, October and November, 2007
Selected articles can be read at www.adamsdentalseminars.com

Product and Manufacturer List

1. Rotofix® Facebow, Splitex®, Artex® Articulation Systems (Jensen Industries) 800-243-2000
2. *Simulation of Occlusion in Restorative Dentistry* (M. Oliver Ahlers, dentaConcept®) (Call Jensen Industries at 800-243-2000)
3. Bite registration materials: Affinity™ Quick Bite (Clinician's Choice); Futar®D (Kettenbach); Nogenol™ BRPaste (GC)
4. Bite Registration Trays (metal) and self-adhesive Bite Tabs™ for facebow bite forks (Panadent) 909-783-1841
5. Mini Burner (Degussa Ney) Lincoln Dental @ 800-289-6678, or check with local dental supplier.
6. White Inlay Wax (Corning) Lincoln Dental @ 800-289-6678, or check local dental supplier.
7. Protemp™ 3 Garant (3M ESPE)
8. Protemp™ Crown Temporization Material (3M ESPE)
9. TempTray® and Template™ Ultra Quick Matrix Material (30:30 sec. silicone) (Clinician's Choice) 800-265-3444
10. MiniSTAR®and Biostar® vacuform systems (Great Lakes Ortho) 800-826-7626
11. Cameras and photo supplies: The Digital Solution (Lester Dine Corp) 800-998-7765; Norman Camera 800-900-6676
12. Digital Doc® ICON intraoral camera system (Patterson Dental)
13. Clinical photography guidelines by Dr. Yvonne Rausch (Office: 407-898-0212 Fax: 407-898-9921)
14. Heliomolar®, Tetric® EvoCeram (Ivoclar Vivadent)
15. Filtek® Supreme Plus (3M ESPE)
16. Vident Automatic Glazing Furnace (E71-001)
17. 3D Master® Shade Guide (Vita); Bleachedguide 3D-Master (Vita)
18. RiteLite (LED) Shade Matching Light (AdDent 203-778-0200)
19. Vita Easyshade® (Vident) 800-828-3839
20. Shade Vision®System (X-Rite) 800-248-9748
21. ViperSoft® shade software (Sullivan Schein) 877-847-3746
22. Vivastyle® Bleaching Kits and Shade Guide (Ivoclar Vivadent)
23. Procera®, NobelRondo™, Replace® Select Tapered Implant System, Easy Abutment®, NobelDirect™, TiUnite™, NobelPerfect™, Nobel Esthetics™, NobelGuide™, (Nobel Biocare) 800-993-8100
24. Improv® temporary cement for implants (Alvelogro) 888-898-2583
25. Accufilm®II (SO17 Parkell) 800-243-7446
26. Coe Spacer Trays (GC); Directed Flow Trays (3M ESPE); Quad Tray Extreme aluminum dual-arch trays (Clinician's Choice); Bite Relator™ stainless steel dual-arch trays (Temrex); Originate® Trays (Axis)
27. Imprint® III, Impregum® Soft (3M ESPE)
28. BFC (Better Faster Cheaper) Syringe (HO Dental Company 866-430-3718)
29. Perma Block® cellulose-based intra-oral blockout material (Preat Corp 800-232-7732)
30. *Making Better Impressions* (Great for staff training. *Free* from 3M ESPE 800-634-2249) Impression technician-doctor case feedback sheets are also available from 3M ESPE for dental laboratories.
31. GingiKnit® braided cord (Van R), KnitTrax® (Pascal) or UltraPak® Knitted Cord (Ultradent); Quick-Stat ferric sulfate gel in syringes (Vista Dental) or ViscoStat® Wintermint ferric sulfate gel in syringes(Ultradent); GelCord® aluminum sulfate gel in syringes (Pascal) or Viscostat® Clear aluminum chloride gel in syringes (Ultradent 800-552-5512)
32. Hu-Friedy Plastic Filling Instrument (As a cord packer) or Fisher's Ultrapak® Packer (Variuos styles available, Ultradent)
33. Astringedent® (Ferric Sulfate) Spot Remover; Aqua "Check"® Water Indicator; ICB®Brushes; Consepsis®, Consepsis®V (viscous), Consepsis® Scrub; InterGuard®; EtchArrest®; Extend-A-Life® disposable diamond cleaning blocks (Ultradent) All-ceramic shoulder burs for IPS Empress® (Esthetic), IPS Eris®, IPS e.Max® (Ivoclar Vivadent); Authentic™ (Jensen), etc.: 846 KR, 847KR, M839-014, M839-016, 379-023 (Axis Dental Corp) These burs are also appropriate to develop porcelain butt joint margins in esthetic zones for PFM restorations.
34. All-ceramic chamfer burs for aluminum oxide systems like Procera®(Nobel Biocare)and zirconium oxide systems such as Lava® (3M ESPE), inVizion (Vita), eMax (Ivoclar Vivadent), or PFM show-no-metal restorations: 856 (-014, -016,-018), 379 (-018, -023) (Axis Dental Corp)
35. Axial Reduction Logic Set (0.6mm, 1.0mm, 1.5mm, 2.0mm) (LS-7544 Axis Dental Corp)
36. Indirect composite burs: H34-010, 845KR-018, 845KR-025, 846-014, 846KR-016, 375R-012, 961-018, H379-014, H274-016, 849L-009 (Axis Dental Corp)
37. Professional Stickbite (Centralink Innovations 888-883-3884)
38. Cosmetic Aligner (877-586-7396)
39. Facial Plane Relator (HO Dental Company 866-430-3718)
40. Peridex® Oral Rinse (4 oz bottles) (Omni Preventative Care, a 3M ESPE Company)
41. Vitremer Plus Glass Ionomer Restorative (3M ESPE), CompoGlass® Flow, (Ivoclar Vivadent)
42. CeraGlaze® Intral-Oral Porcelain Polishing Kit (LS-506) (Axis Dental Corp); PDQ® Ultimate Composite Polishing Kit (LS-509) (Axis Dental Corp); Diagloss Composite Polishing Set (LS-501) (Axis Dental Corp)

43. QwikStrip™ (Grip it and strip it!) (QS-ASST) (Axis Dental Corp)
44. Flexible Clearance Tabs™ (KerrLab)
45. PrepCheck™ (CommonSense Dental Products 888-853-5773)
46. Rely®X Fiber Post (3M ESPE), AesthetiPlus® Posts (Removable but *not* radiopaque) (Bisco), Hi X® self-cured resin post cement (Bisco); FRC Postec®Post System (Removable *and* radiopaque) (Ivoclar Vivadent)
47. Captek® (Precious Chemicals Company, Inc.) 800-921-2227
48. Monopaque® resin colored block-out resin (Ivoclar Vivadent), Pink Opaquer®(Cosmedent) 800-821-8728
49. Rubber Stimulator® (Butler GUM)
50. TDF (Trim , Define, Finish) Diamond Set (LS-302 Axis Dental Corporation)
51. Indirect Composites: Systemp®.inlay/onlay temp kit, Astropol® composite polishers, Proxyt® prophy paste for hygiene maintenance of any composite (F 579866, Med. 579867, C 579868), Vivastick® restoration pick-up sticks (Ivoclar Vivadent)
52. Systemp Link® DC resin crown and bridge temporary cement (Ivoclar Vivadent)
53. Rely®X Luting Plus, Rely®X Veneer, Rely®X Unicem (3M ESPE), MultiLink (Ivoclar Vivadent)
54. Odyssey® 2.4G wireless diode soft tissue laser; Odyssey Navigator soft tissue, battery operated laser (Ivoclar Vivadent)
55. Clearfil® Porcelain Repair Kit (Strong bonds *without* HF acid.) (Kuraray)
56. *Removable Partial Denture Design*, A. Krol (University of the Pacific School of Dentistry Bookstore) 415-929-6467 *Reality* Publications (Newsletter, technique, and product publications) 800-544-4999
57. *Fundamentals of Tooth Preparations,* Herbert T. Shillingburg (Quintessence Books) 800-621-0387
58. *THE DENTAL ADVISOR* (800-347-1330)
59. *Reality* (800-544-4999)
60. *Dental Insurance Today (Atlanta Dental Consultants* 800-344-2633)
61. *CRA Foundation Newsletter®* (801-226-2121)

Please note: Most burs mentioned can be also be purchased from SS White, Brasseler and Premier. Some companies use a different numbering system.

All-Ceramic Manufacturer Contacts

1) **IPS Empress and IPS Empress Esthetic (Ivoclar Vivadent)**
2) **IPS Eris (Ivoclar Vivadent)**
3) **IPS e.max Press, IPS e.max ZirPress, IPS e.max CAD, IPS e.max ZirCAD, emax CAD LT (Ivoclar Vivadent)**
4) **In-Ceram Alumina, In-Ceram Spinell, In-Ceram Zirconia, In-Ceram YZ (Vident)**
5) **Wol-Ceram Alumina, Wol-Ceram Spinell, Wol-Ceram Zirconia (XPdent and Vident)**
6) **Procera AllCeram, Procera Zirconia (Nobel Biocare)**
7) **Finesse All-Ceramic and Finesse Pressable (Dentsply Ceramco)**
8) **OPC, OPC 3G (Pentron Laboratory Technologies, LLC)**
9) **Cerpress SL (Dillon Co., INC)**
10) **Authentic (Jensen Industries)**
11) **Lava (3M ESPE)**
12) **Cercon (Dentsply Ceramco)**
13) **Cerec inLab (Sirona Dental Systems, LLC)**

3M ESPE	**800-364-3577**	www.3m.com
Nobel Biocare	**800-993-8100**	www.nobelbiocare.com
Ivoclar Vivadent	**800-533-6825**	www.ivoclarvivadent.us.com
Dentsply Ceramco	**800-487-0100**	www.ceramco.com
Dillon Co., INC	**800-535-2633**	www.leachdillon.com
Jensen Industries	**800-423-2000**	www.jensenindustries.com
Pentron	**800-551-0283**	www.pentron.com
Sirona	**800-659-5977**	www.sirona.com
Vident	**800-828-3839**	www.vident.com
XPdent	**800-328-3965**	www.xpdent.com

Lecture Notes