

...
**FACING YOUR
 FEARS:**
How to SLAY
CLASS II COMPOSITES
 making your everyday dentistry reliable. predictable. successful.

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...
many thanks

VOCO THE DENTALISTS **PULPDENT** **PAPERPLANE** THERAPEUTICS **CURION** dentistry curated

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INTRODUCTION

- Clinician/Educator
- Former Owner, Current Associate
- Faculty: University Level & Independent

Dr. Lauren Yasuda Rainey

UNIVERSITY OF THE PACIFIC School of Dentistry
 Tufts School of Dental Medicine
 DR. LAUREN YASUDA RAINÉY
 BKKLEAR CERTIFIED MASTER TRACK
 catapult education

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The vendors have paid me an honorarium to present this educational program to you.

The techniques, opinions and materials presented today are those of the speaker solely, and do not represent the opinions of JDIQ, the Ordre des dentistes du Quebec, or the vendors present.

While I utilize the materials presented in this program, I recognize that similar results may be accomplished with a variety of products.


I do not own stock or have a financial interest in the vendors represented, who have provided honorarium support today.

**DISCLOSURES
 and THANK YOU**


Journées Dentaires Internationales Québec
 Ordre des dentistes du Québec

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OBJECTIVES




marginal staining prevention



cracked & chipped marginal ridges



recurrent caries management



food traps, weird anatomy & open contacts

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\$60 MILLION

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COMPOSITES

- polymerizable resin
- filler
- resin-filler interface



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RESIN

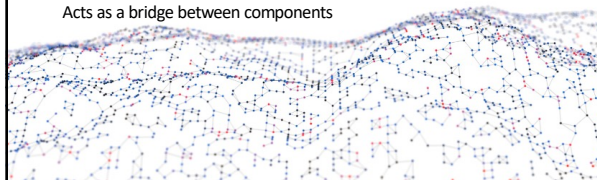
Polymerizable monomers that firm up when exposed to visible light

FILLER

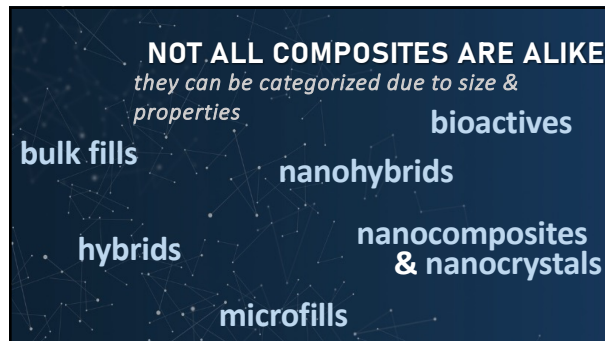
- Enhance the modulus of elasticity
- Provides radiopacity
- Reduces polymerization shrinkage

FILLER-RESIN INTERFACE

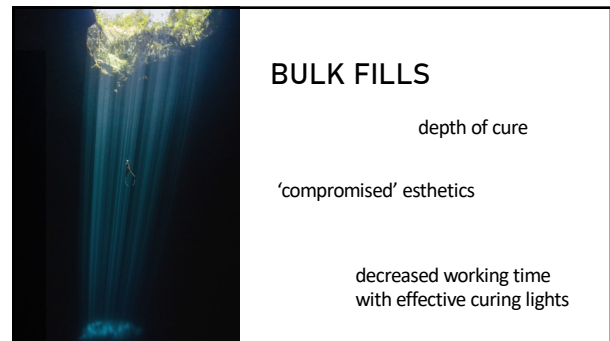
Acts as a bridge between components



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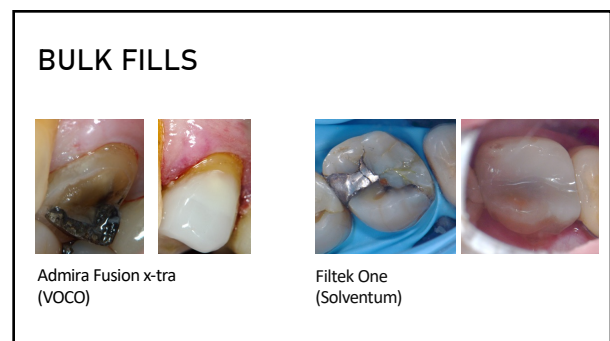
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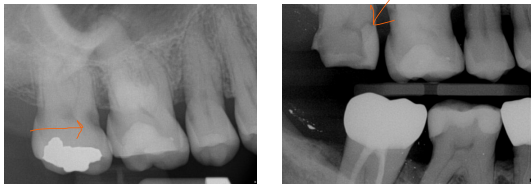


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BULK FILLS



Activa BioActive Bulk Flowable
(Pulpdent)

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BIOACTIVES

the ability to react with
living cells & tissues

reduces the
susceptibility to
loss of minerals

recharge ions

forms an apatite-like
material in the
presence of saliva

may* be placed in a
damp environment

adapt to changes
in oral pH

Spagnuolo, B. Bioactive Dental Materials: The Current Status. Materials (Basel) 2022 Mar; 15(6): 2056. * Depending on the specific material, check the IFU

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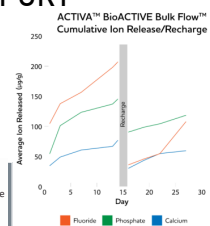
REMINERALIZATION SUPPORT

Microleakage defense
through ion exchange

Bioactivity allows for ion exchange
between saliva and tooth structure

Continuous apatite formation
through ion exchange may decrease
microleakage

Source: Pulpdent testing



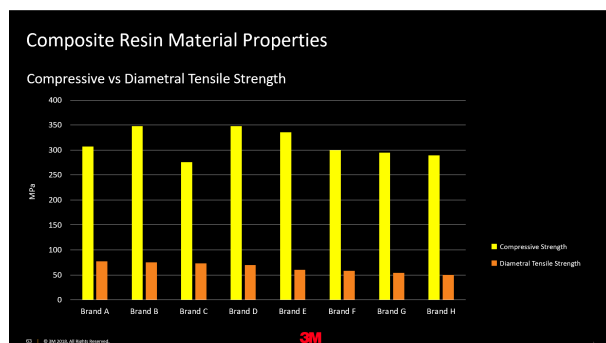
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Brittle materials

- glass
- ceramic
- graphite
- diamond



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Esthetic DENTISTRY

“Despite the wide choice of restorative materials with dissimilar properties, preparation design should be similar for all options, with sealed dentin, detailed and overgingival margins, and a recommended minimum restoration thickness of 1 to 1.5 mm.”

Rozza, Giovanni Tommaso, et al. "Evidence-based concepts and procedures for bonded inlays and onlays. Part II: Guidelines for cavity preparation and restoration fabrication." *J Esthet Dent* 10.3 (2018): 390-413.

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A critical look at posterior composite restorations

Alison W. Lutz, PhD, DDS

The Journal of the American Dental Association
Volume 114, Issue 3, March 1987, Pages 357-362

“Problems with posterior composite resins include a high rate of occlusal wear, a high incidence of microleakage and recurrent caries, difficulties in obtaining suitable proximal contacts with adjacent teeth, isthmus fracture in two- and three-surface restorations, postoperative sensitivity, and lack of radiopacity...”

JADA
The Journal of the American Dental Association
Volume 114, Issue 3, March 1987, Pages 357-362

This isn't new!

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OBJECTIVES

- marginal staining prevention
- cracked & chipped marginal ridges
- recurrent caries management
- food traps, weird anatomy & open contacts

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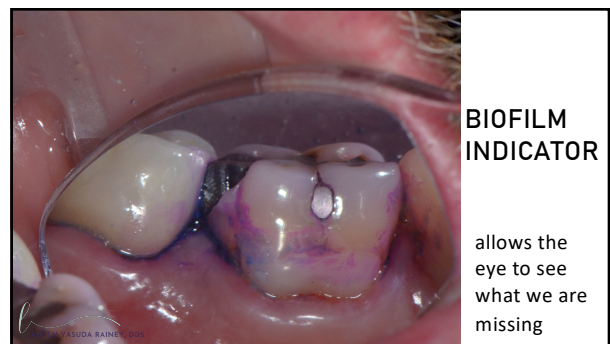
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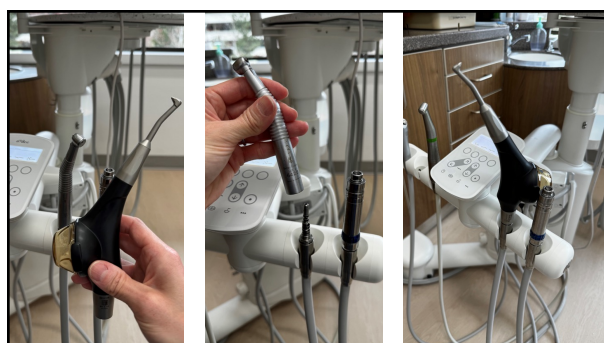
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Mohs Hardness Scale			
Mineral Name	Scale Number	Common Object	
Diamond	10		
Corundum	9	Masonry Drill Bit (8.5)	aluminum oxide
Topaz	8		
Quartz	7	Steel Nail (6.5)	
Orthoclase	6	Knife/Glass Plate (5.5)	enamel
Apatite	5		
Fluorite	4	Copper Penny (3.5)	dentin
Calcite	3	Fingernail (2.5)	aluminum trihydroxide
Gypsum	2		
Talc	1		

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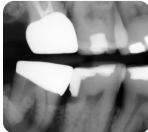
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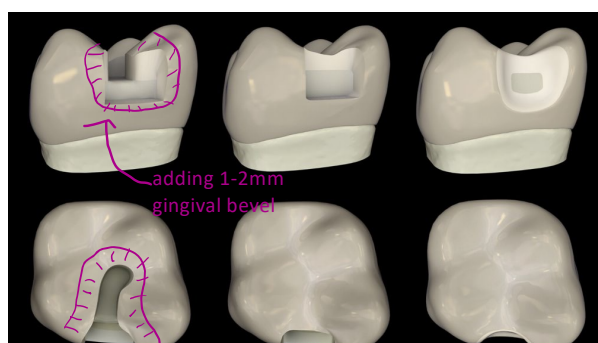


food traps, weird anatomy & open contacts

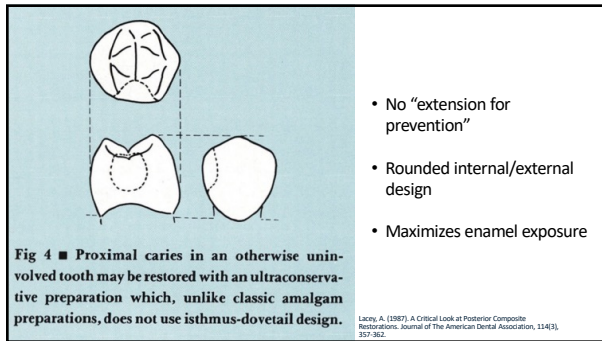
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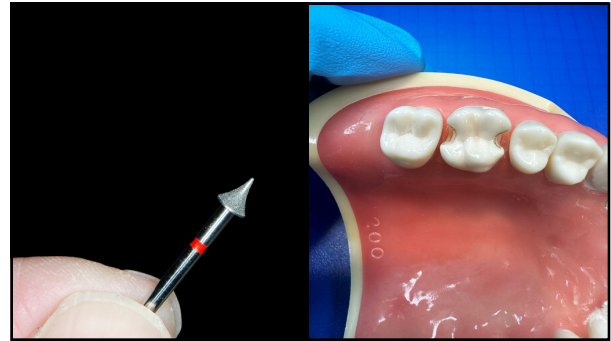
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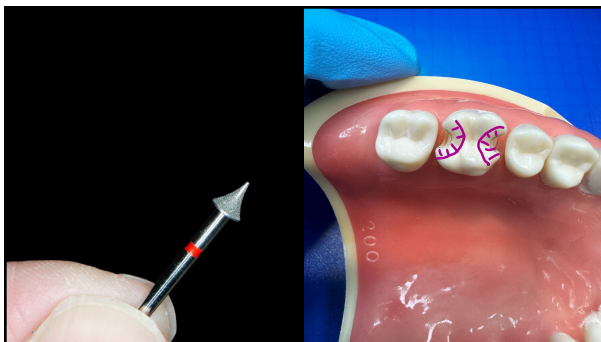
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49



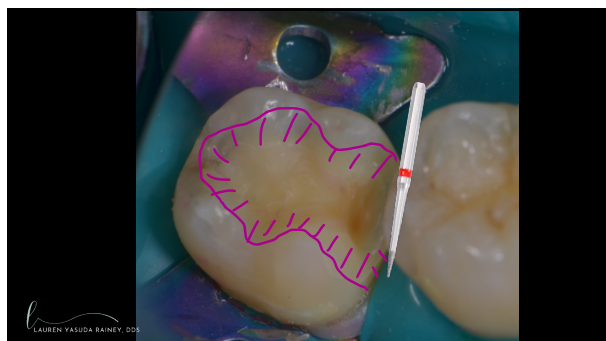
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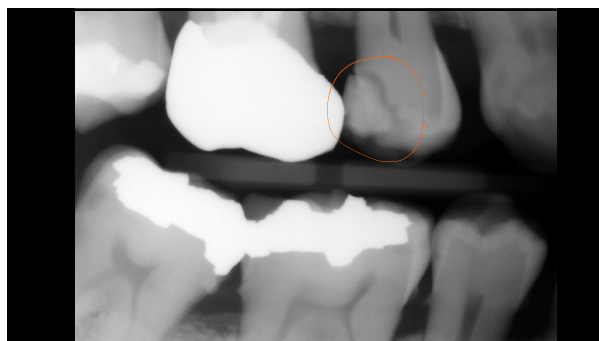
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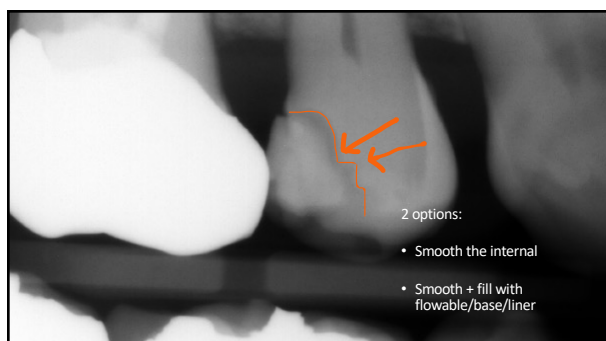
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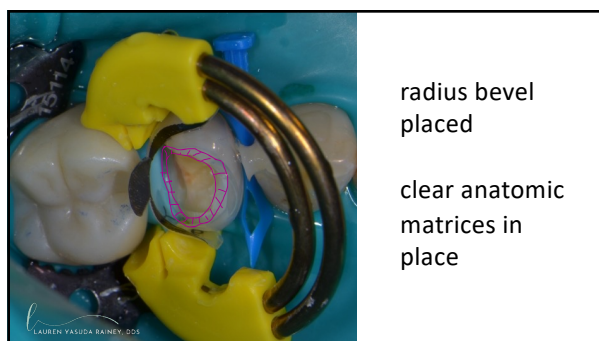
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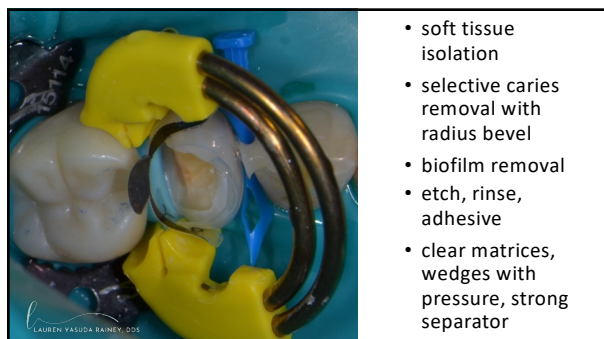
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radius bevel
placed

clear anatomic
matrices in
place

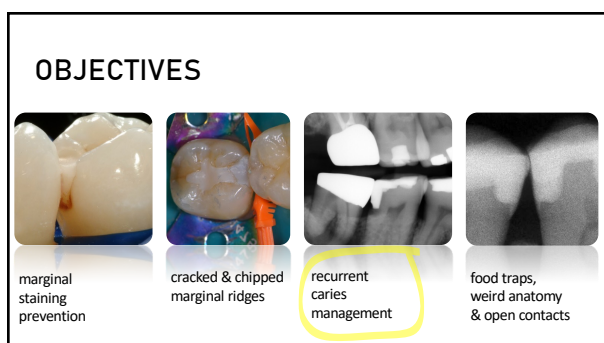
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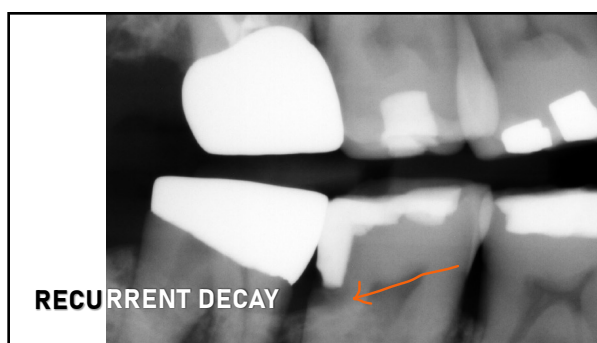
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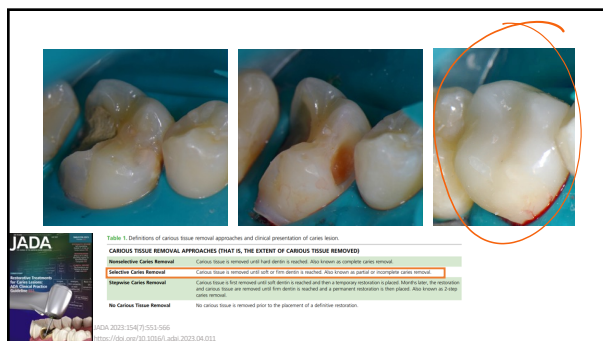
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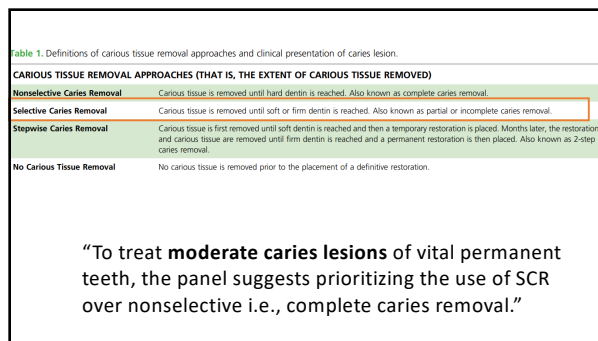
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SELECTIVE CARIES RETENTION/REMOVAL

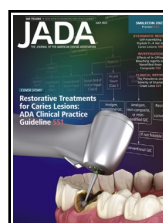
Decreased need for explorers or spoons

Allows for selective caries removal

Caries removal at the DEJ is critical



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In summary, advanced caries treatment recommendations:

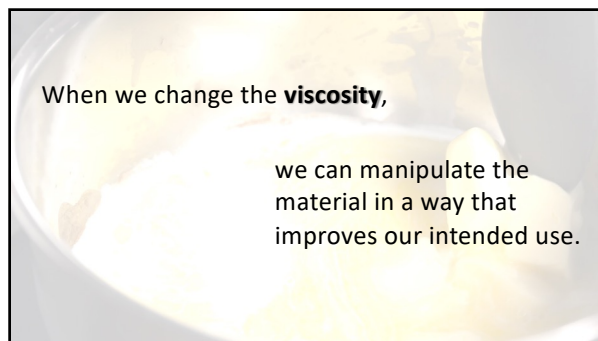
(CI I II V): amalgam, resin composite, or RMGI

(CL III, V): GIC, hybrid resin composite or RMGI

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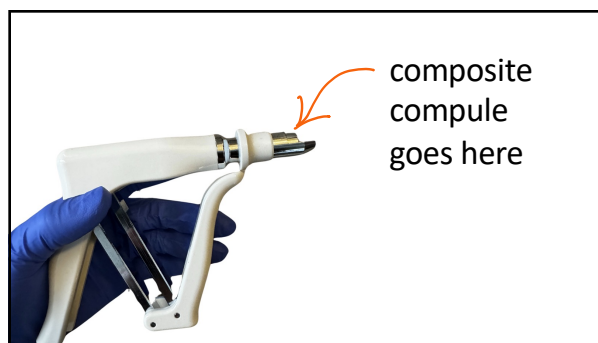
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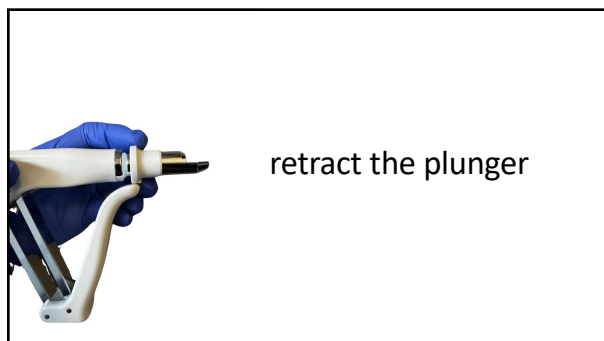
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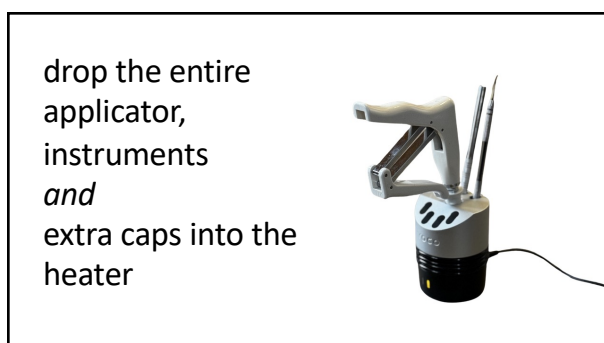
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84



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complete your
preparation



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you're ready to
restore!



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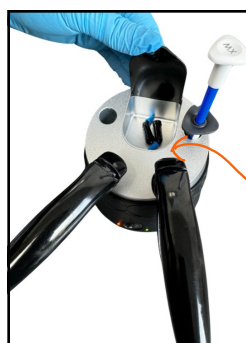


Load flowable
(with tip attached)

Load paste
composite into
applicators

Orange & Green lights
illuminated mean the
heater is at full
temperature, 155°F

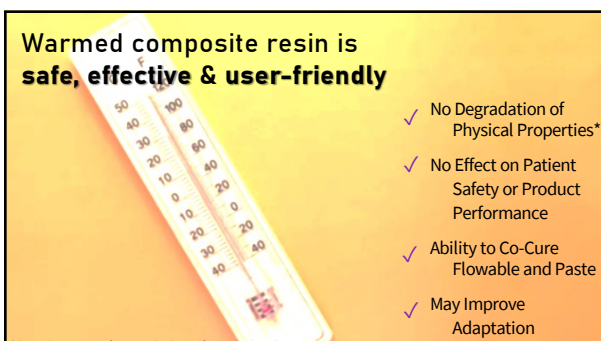
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Extra composite caps
can be heated inside
this trap door

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Warmed composite resin is safe, effective & user-friendly

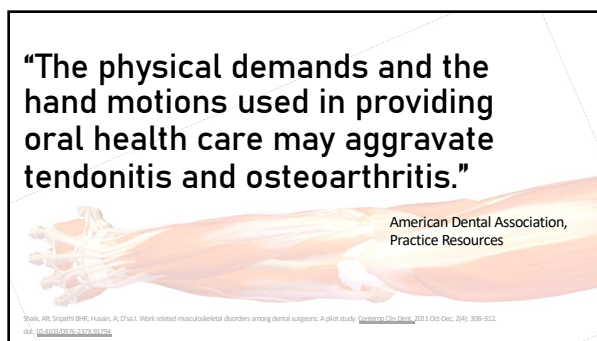


- ✓ No Degradation of Physical Properties*
- ✓ No Effect on Patient Safety or Product Performance
- ✓ Ability to Co-Cure Flowable and Paste
- ✓ May Improve Adaptation

*dependence on manufacturer, check IFU of individual products

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"The physical demands and the hand motions used in providing oral health care may aggravate tendonitis and osteoarthritis."



American Dental Association,
Practice Resources

Shuk, M, Sagar, B-R, Hsu, A, O'Leary, J. Work related musculoskeletal disorders among dental surgeons: A pilot study. <https://doi.org/10.1186/1745-6215-2011-201>. Dec Dec; 2010; 10:1012. doi: 10.1186/1745-6215-2011-201

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EXTRUSION FORCE

The force required to extrude a material under conditions of homogenous deformation.



The amount of force needed to push the composite out of the tip.

Chandra, T., Jones, J.J. The extrusion force and the mean strain rate during the extrusion of strain rate sensitive materials. *Metall Trans A*, 2019; 2019: 2019. <https://doi.org/10.1007/s11661-019-04127-7>

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OBJECTIVES



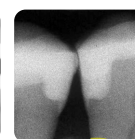
marginal staining prevention



cracked & chipped marginal ridges

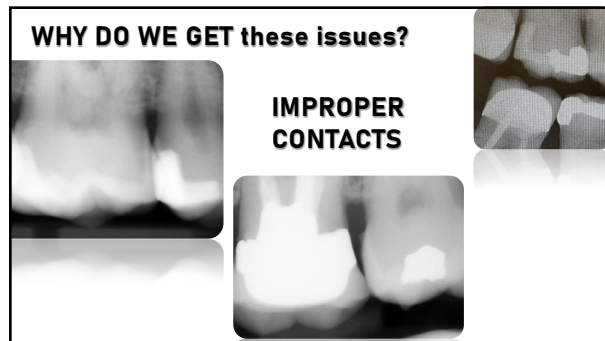


recurrent caries management

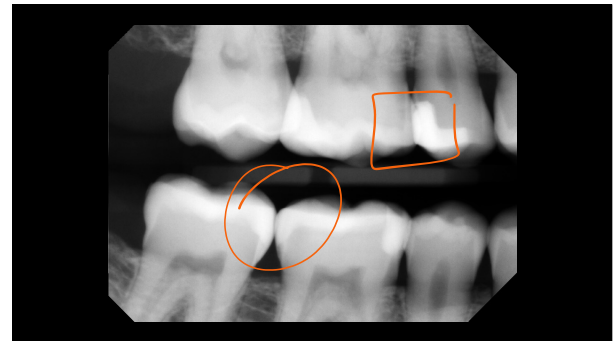


food traps, weird anatomy & open contacts

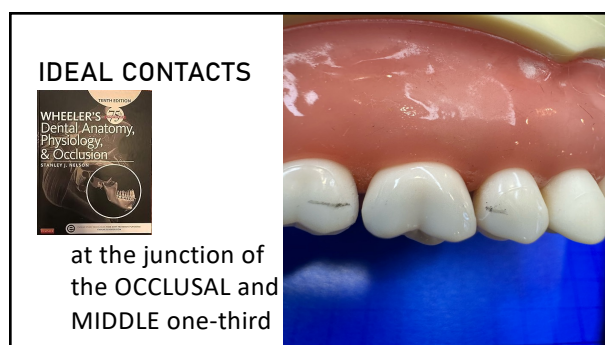
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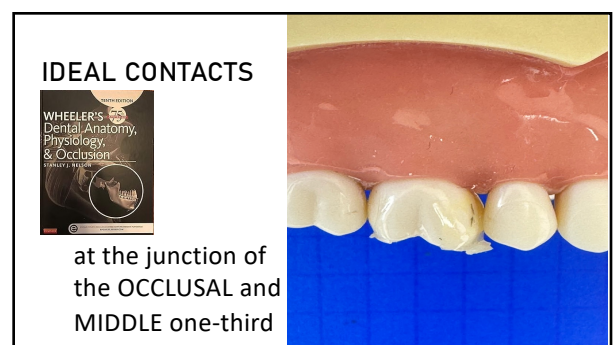
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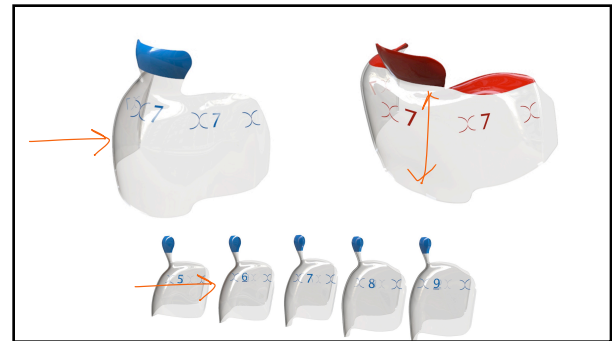
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100



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OPTIMIZING
ADJACENT/OPPOSING
CONTACTS



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create the contacts
you like by adjusting
the *adjacent* contact



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LAUREN YASUDA RAINEY, DDS



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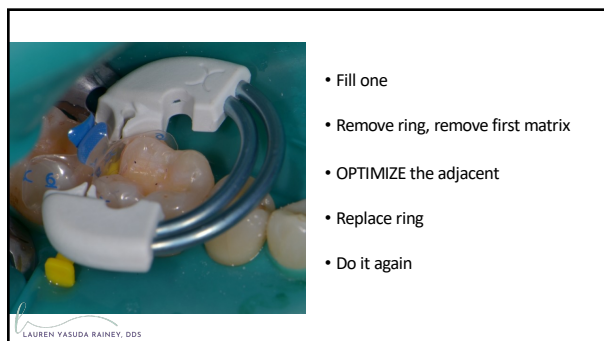


LAUREN YASUDA RAINEY, DDS

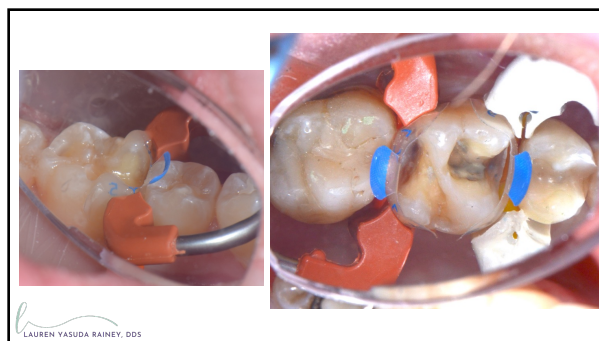
- Two rings of nitinol
- Feet that go over/above a wedge
- Ring sits 7-10° over the occlusal surface
- Ideal for stacking



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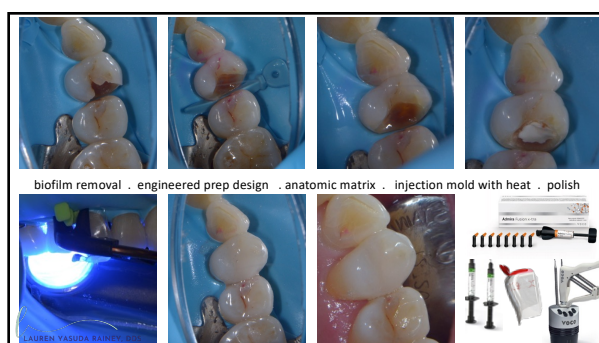
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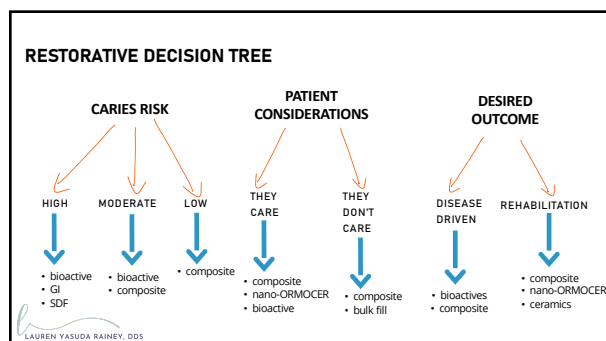
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150



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170



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