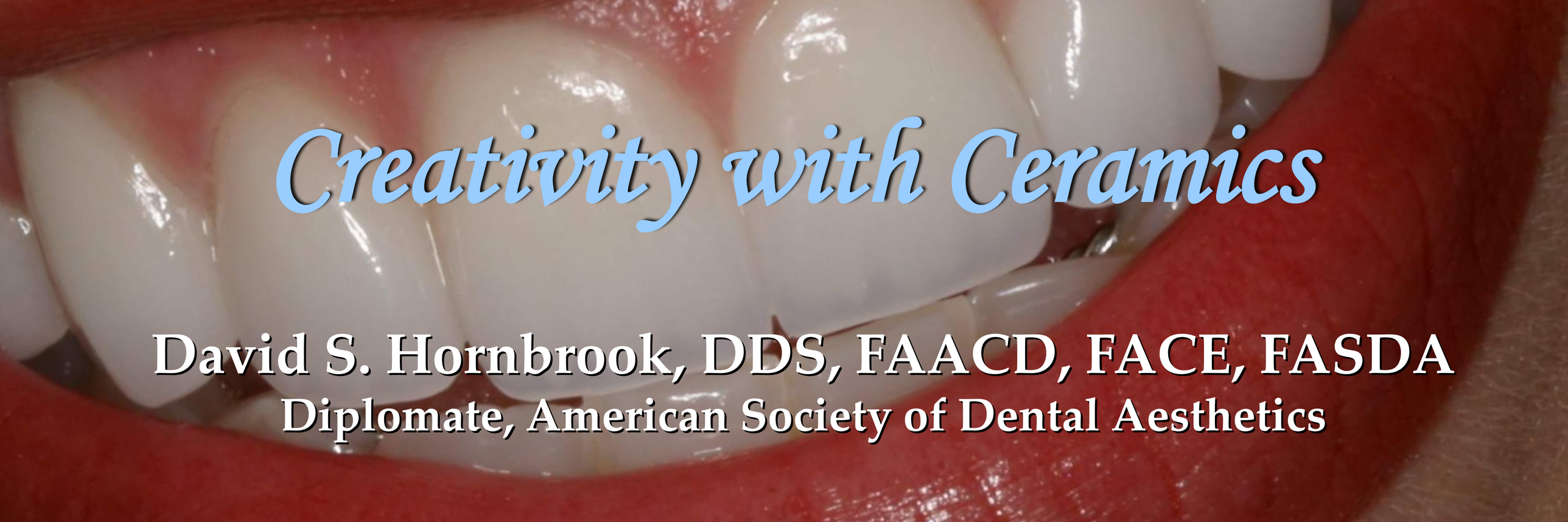


Creativity with Ceramics

David S. Hornbrook, DDS, FAACD, FACE, FASDA
Diplomate, American Society of Dental Aesthetics

OCCLUSION DEMYSTIFIED

TEST
your knowledge...

What came first the decay or the abfraction? How often have you restored cases that look like this and didn't determine the cause?

Is this erosion, parafunctional wear, or bulimia?

What is the long-term effect of an anterior open bite on the posterior tooth anatomy?

Some think this is acid reflux and others think it is occlusal abfraction. What is your diagnosis?

How many times have you restored cases like this and never knew how to address the underlying cause?

Did reviewing the cases on the left make you wonder about the patients you saw today? Do you have a system your whole team understands to diagnose, treat and present to patients based on occlusal disease?

If not, this program is a 3 day investment in expertise, profitability, and peace of mind. It is for those practicing real world dentistry, desiring to improve aesthetics, eliminate failures and predictably restore patients in ideal position. EXPAND your proficiency.

WHAT YOU WILL LEARN

- The science behind tooth contacts and muscle harmony
- The 5 steps to functional success with every patient
- Hands on clinical records, recording bites and facebows for case planning
- How to accurately diagnose wear, severe wear and post treatment triggers
- Understand the 3 most critical factors in your new patient exam
- Deprogramming methods; when to use and why
- Diagnosing the asymptomatic patient
- How to avoid "red flags" that will compromise the outcome of a case
- How to establish Occlusal Vertical Dimension, when to make changes and why
- Hands on critical case finishing that will prevent post-treatment challenges
- Successful treatment planning and model evaluation
- Evaluation and deliberate occlusal equilibration, "stop chasing dots"

March 3-5, 2017
Salt Lake City, UT

October 6-8, 2017
San Diego, CA

Dr. David Hornbrook

Dr. Mark Montgomery

Tuition: $1495
$250 discount for dentists in practice less than 5 years

Space is limited

20 CE credits

HORN BROOK Dental Education

Register on our website or call 800.509.9251 for details!

WWW.DAVIDHORNBROOK.COM

UVDL UTAH VALLEY DENTAL LAB

3 Day, Hands-on Program *March 22-24, Salt Lake City*

- *Smile design*
- *Taking the correct bite*
- *Use of facebows and articulators*
- *Review of restorative materials*
- *Splint therapy and pain control*
- *Sequencing full mouth rehabilitations*
- *…and much more*

Limited enrollment

www.davidhornbrook.com

Functional Anterior Aesthetics Program

BRING YOUR *OWN* PATIENT

Give them the smile of their dreams!

The Goal

The goal is to provide attendees with a unique hands-on, live-patient educational experience and the opportunity to explore various case scenarios. The combination of clinical, communication, marketing, and management skills addressed in this course will not only increase the enjoyment of dentistry, but will also create a level of clinical success and confidence never dreamt possible.

Five Day, Live Patient Course

This program consists of two weekends, 4 weeks apart where clinicians provide their own patient, and with the guidance of a clinical mentor, perform hands-on preparation and cementation of approximately 8-10 anterior all ceramic restorations.

LIMITED ATTENDANCE !

TUTION:

$ 3995 per doctor includes one assistant
$ 500 discount for dentists in practice less than 5 years
$ 395 per additional team member
40 CE credits

YOU WILL LEARN:
The Nuances of Anterior Smile Design

- A complete understanding of adhesive dentistry: New materials and techniques for success
- Avoiding sensitivity and eliminating microleakage with bonded restorations
- Case planning, both aesthetically and functionally, of anterior restorative dentistry
- Preparation steps that follow a predictable and systematic approach
- Understanding functionally why things work, while others fail
- A series of easy to understand principles of how posterior dentition can affect long term anterior success
- A thorough understanding of the new restorative materials and their applications
- Veneer provisionalization that's amazingly fast and aesthetic
- Laboratory communication to ensure success
- Cementation principles designed for predictable placement of multiple units
- Creative marketing to attract the "aesthetic" patient

Dr. David Hornbrook

Dr. Mark Montgomery

Only *ONE* opportunity to attend this course in 2017 !

May 5-7 Prep Weekend
June 2-4 Seat Weekend
Location: Salt Lake City, UT
Phone: 800.509.9251
Register now @ WWW.DAVIDHORNBROOK.COM

6 day, Live-patient Aesthetic Preparation, Provisionalization, and Cementation

- March 19-31 Prep Weekend
- May 3-5 Seat Weekend

Salt Lake City, Utah

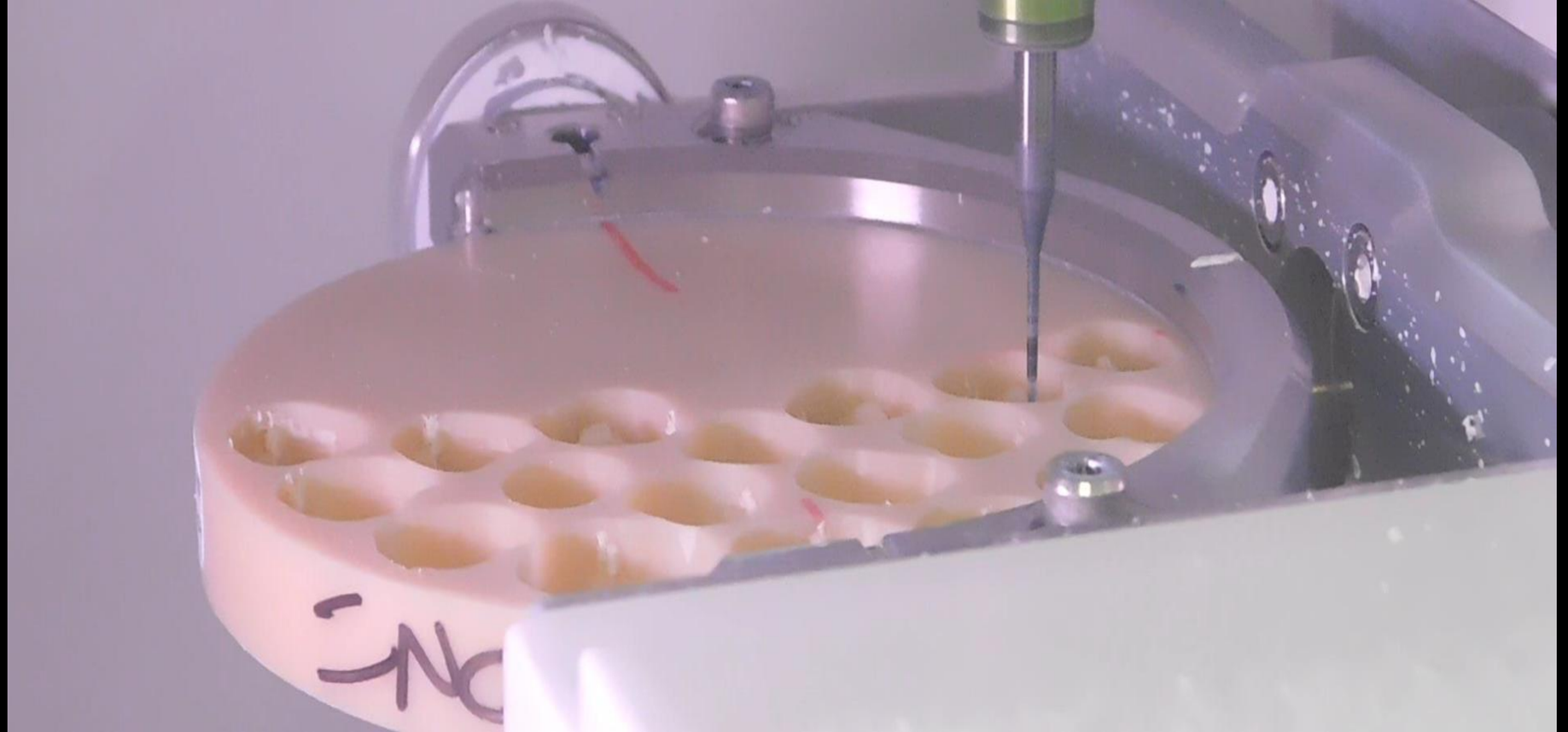
www.davidhornbrook.com

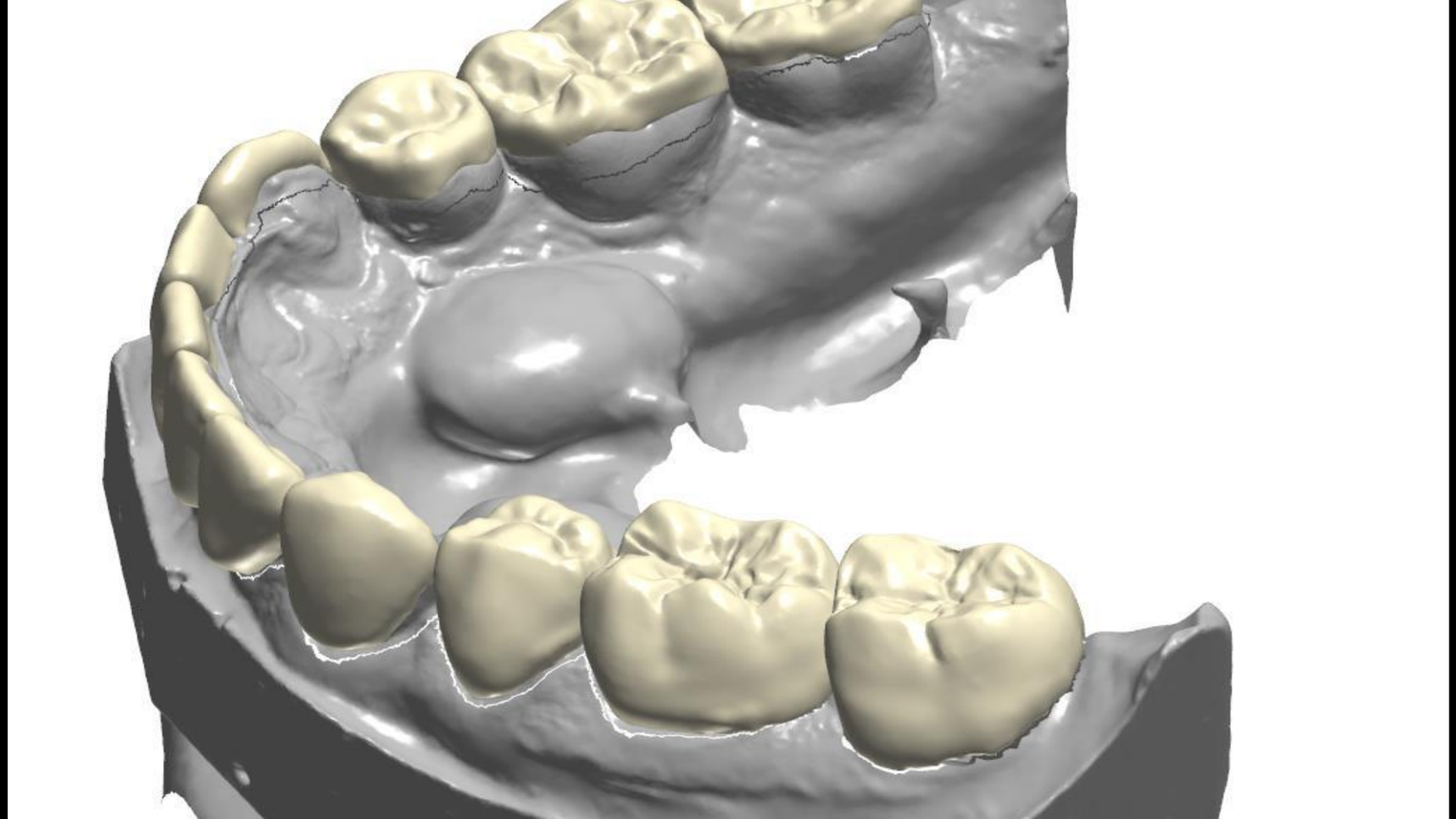
- *Private Practice, San Diego, CA*
- *International educator on Esthetic and restorative material updates*
- *Clinical Director of Education and Technology*
  Utah Valley Dental Lab

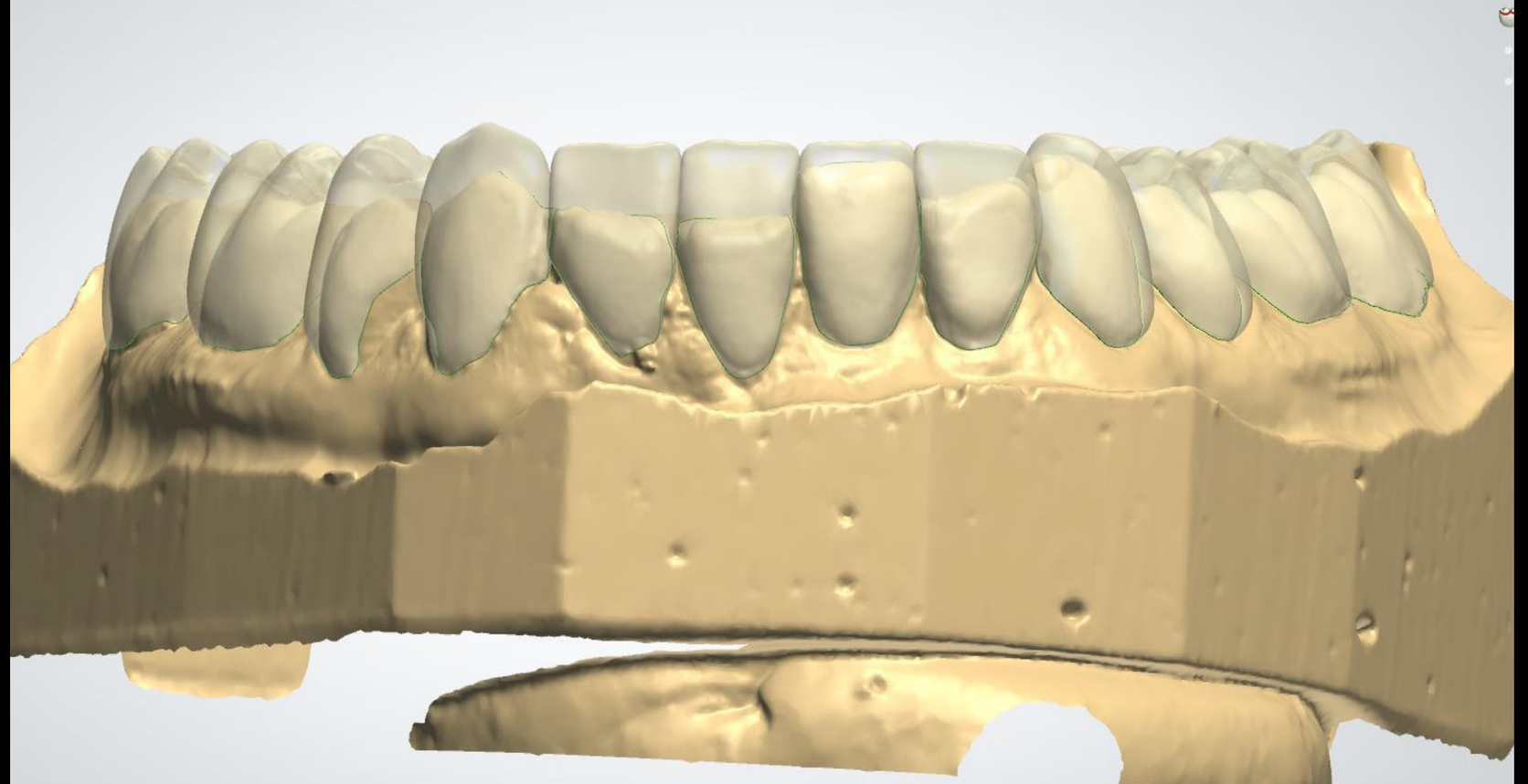
MiYO (Jensen)

Monolithic ZrO2

PMMA (milled resin)



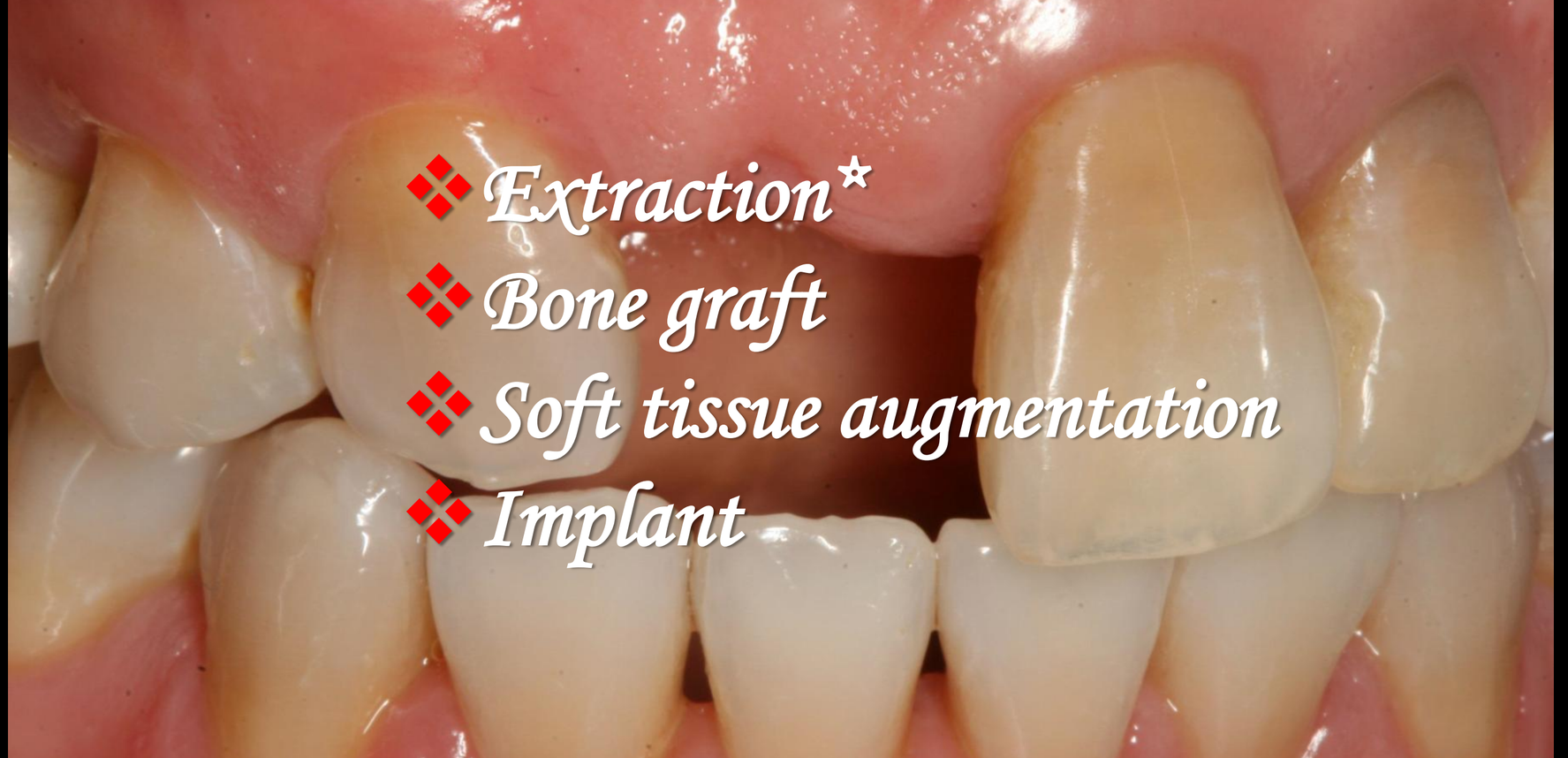





$ 89 per segment

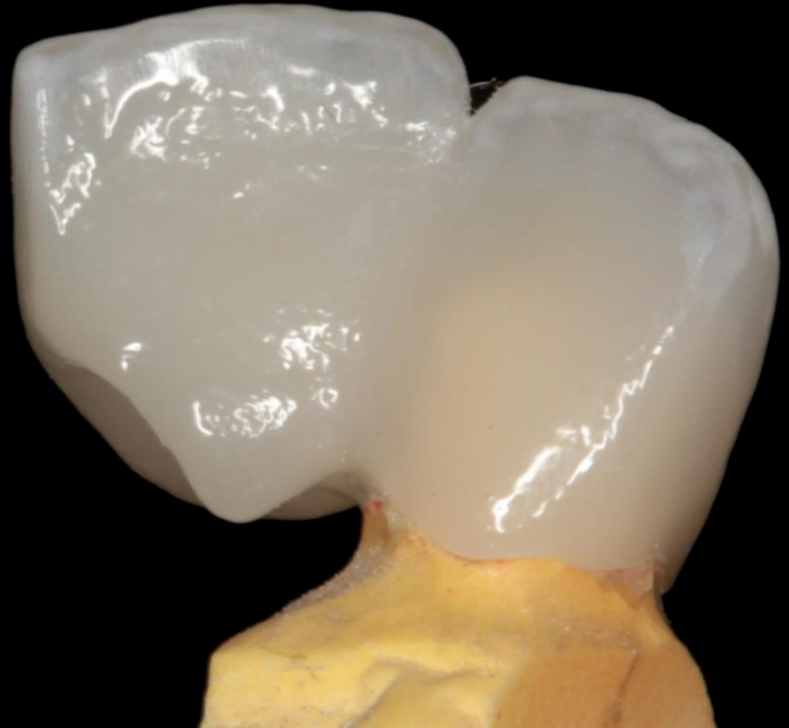
- *Congenitally missing lateral*
  - *Tooth to be extracted*

$ 89.00


Extraction*
Bone graft
Soft tissue augmentation
Implant


Dial Caliper
0.05mm
TOKYO
SHIZAI
0
1
2
3
4
5
6
7
8
9

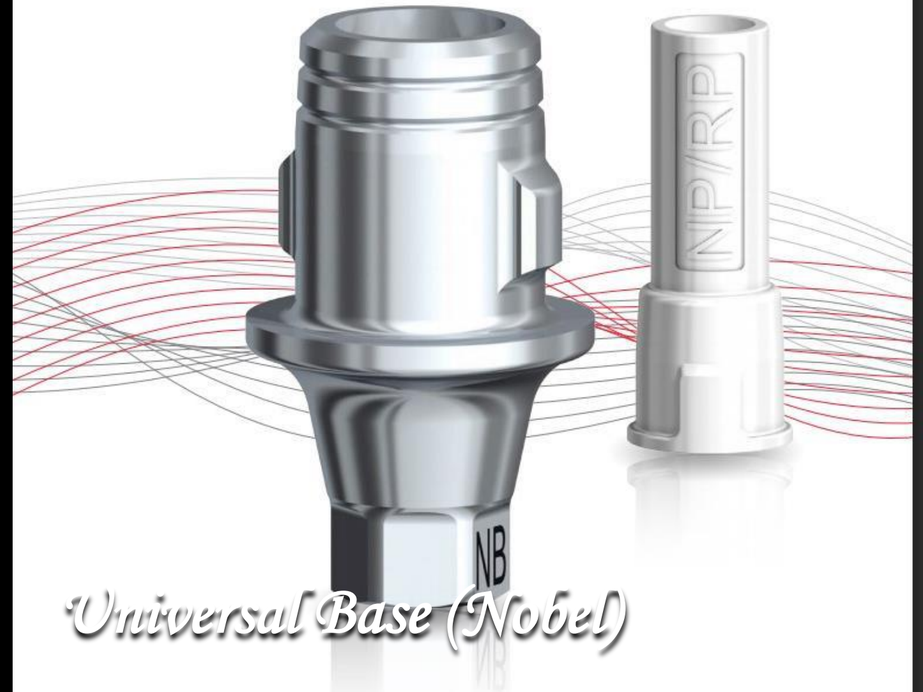

Spot etch and use flowable resin



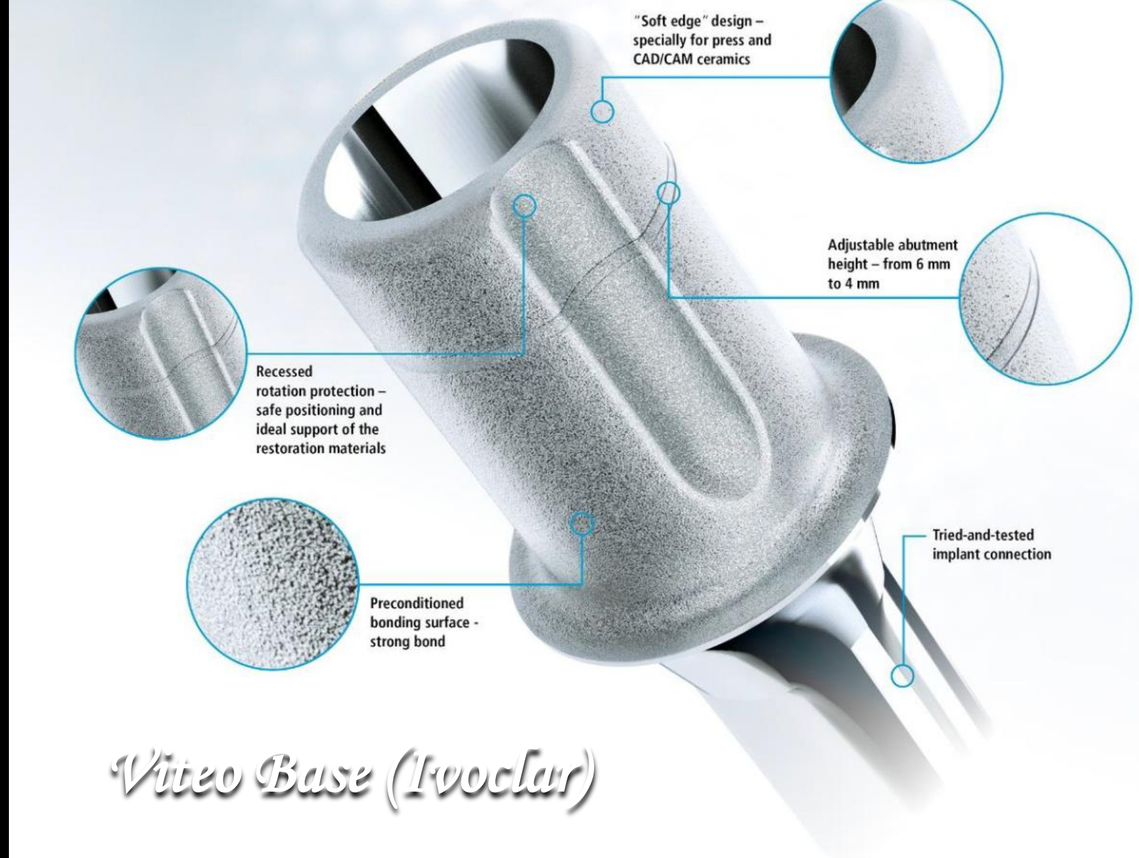

Monolithic ZrO2 Abutments

UCLA Abutment with pressed Lithium Disilicate (2005)

"H" Abutment



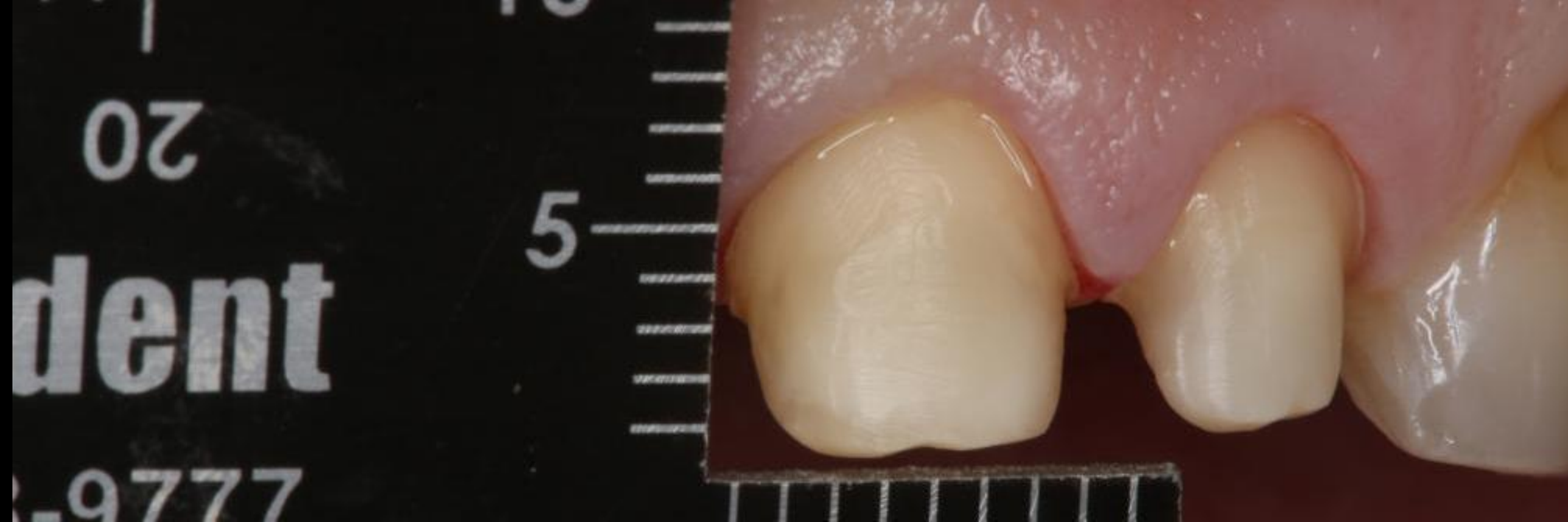
Universal Base (Nobel)



Vitео Base (Ivoclar)

Gingival Shade Guide
(Ivoclar)


ZL G pink
G 1
G 2
G 3
G 4
G 5
IPS e.max Ceram
Gingiva
IG 1
IG 2
IG 3
IG 4
ivoclar vivadent:
E 22 aubergine
E 21 berry
rose


20
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dent
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®

Pan

(800)-3


Titanium base
"H" Abutment
Lithium disilicate /ZrO2

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Infection Control

March 2015
Volume 36, Issue 3

Case Report Using the "H" Abutment: Achieving Esthetics, Strength, and Predictability for the Anterior Implant

David Hornbrook, DDS

Abstract:

Replacing an anterior tooth using a dental implant has long been a challenge for most clinicians. Implant abutment selection is a crucial aspect of maximizing esthetics, strength, and customization. The author has experienced significant success in this regard over a period of more than 7 years using a lithium-disilicate "H" ("Hybrid") abutment. In this case presentation, a procedure is described for providing these highly esthetic abutment-supported restorations, which may offer significant advantages over traditional options.

With the introduction of new materials, the trend in dentistry over the past decade has been to eliminate the use of metal to achieve improved esthetics as well as conserve tooth structure. This search for the ideal restorative has also influenced the options available for anterior implant restoration. The replacement of an anterior tooth using an implant has been a challenging obstacle for most clinicians.[1] While a metal


Figure 1


Figure 2


Figure 3


Figure 4

Inside Dentistry

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July 2017
Volume 13, Issue 7

Overcoming Obstacles to Provide an Esthetic Anterior Implant

A treatment plan for success

David Hornbrook, DDS

One of the most challenging restorative situations faced by dentists is replacing a missing anterior tooth with an implant while providing lifelike esthetics and harmony with the surrounding natural dentition or adjacent all-ceramic restorations.[1] The challenges involved include placing the correct implant, managing soft tissue contours before and after the implant is placed, utilizing provisionalization that corrects gingival embrasure defects, choosing an implant abutment that provides a dentin shaded preparation, and selecting a definitive restoration. While a metal abutment (either stock or custom) provides long-term durability and strength, it can compromise the esthetic value of the final restoration and limit the restorative options available. This is especially true when the implant restoration is placed adjacent to natural teeth or additional all-ceramic restorations.[2,3,4]

Case Presentation

A 35-year-old female presented for a clinical exam with the desire to replace her missing central incisor and improve the appearance of her smile. At the time of presentation, she was utilizing a flipper to replace the missing tooth (**Figure 1**). She reported that she experienced trauma to the front of her mouth as a teenager, which resulted in the fracture of her maxillary right central incisor and the need for endodontic treatment on her maxillary left central and lateral incisors. The fractured right central was endodontically treated and restored with a metal post and a porcelain-fused-to-metal crown. In her early 20s, a vertical fracture of the root was diagnosed, so her treating dentist extracted the tooth and fabricated a maxillary flipper. She also reported that her mother was given tetracycline while she was pregnant, which resulted in tetracycline banding and staining on her remaining teeth, and that her maxillary right canine suffered from bony impaction (**Figure 2** and **Figure 3**). Periodontal and temporomandibular joint disorder exams were within normal limits, and there were no other dental or health complications assessed that would delay or compromise further treatment. The patient's goal was to replace her


Figure 1


Figure 2

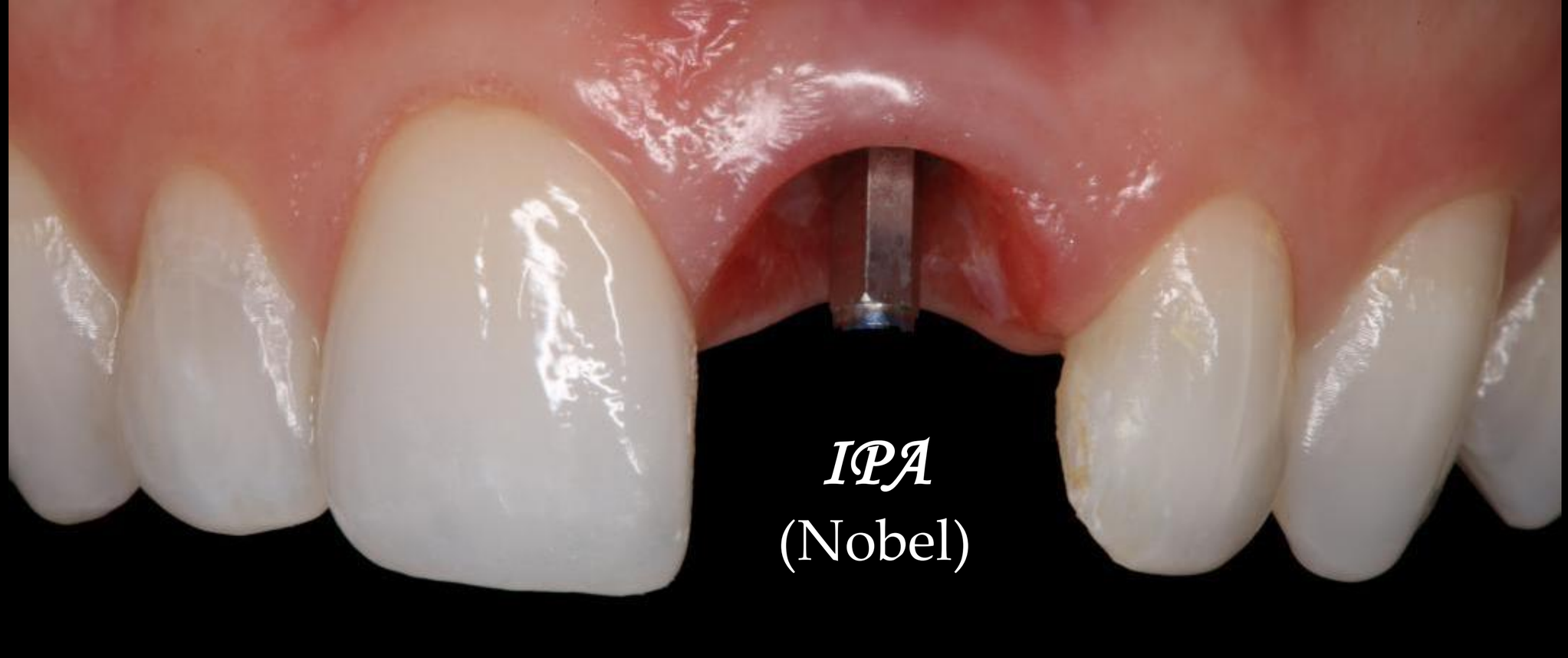

Figure 3


Figure 4


Figure 5


Screw-retained?
Custom abutment/bonded crown?

PMMA Provisional over "H" Abutment



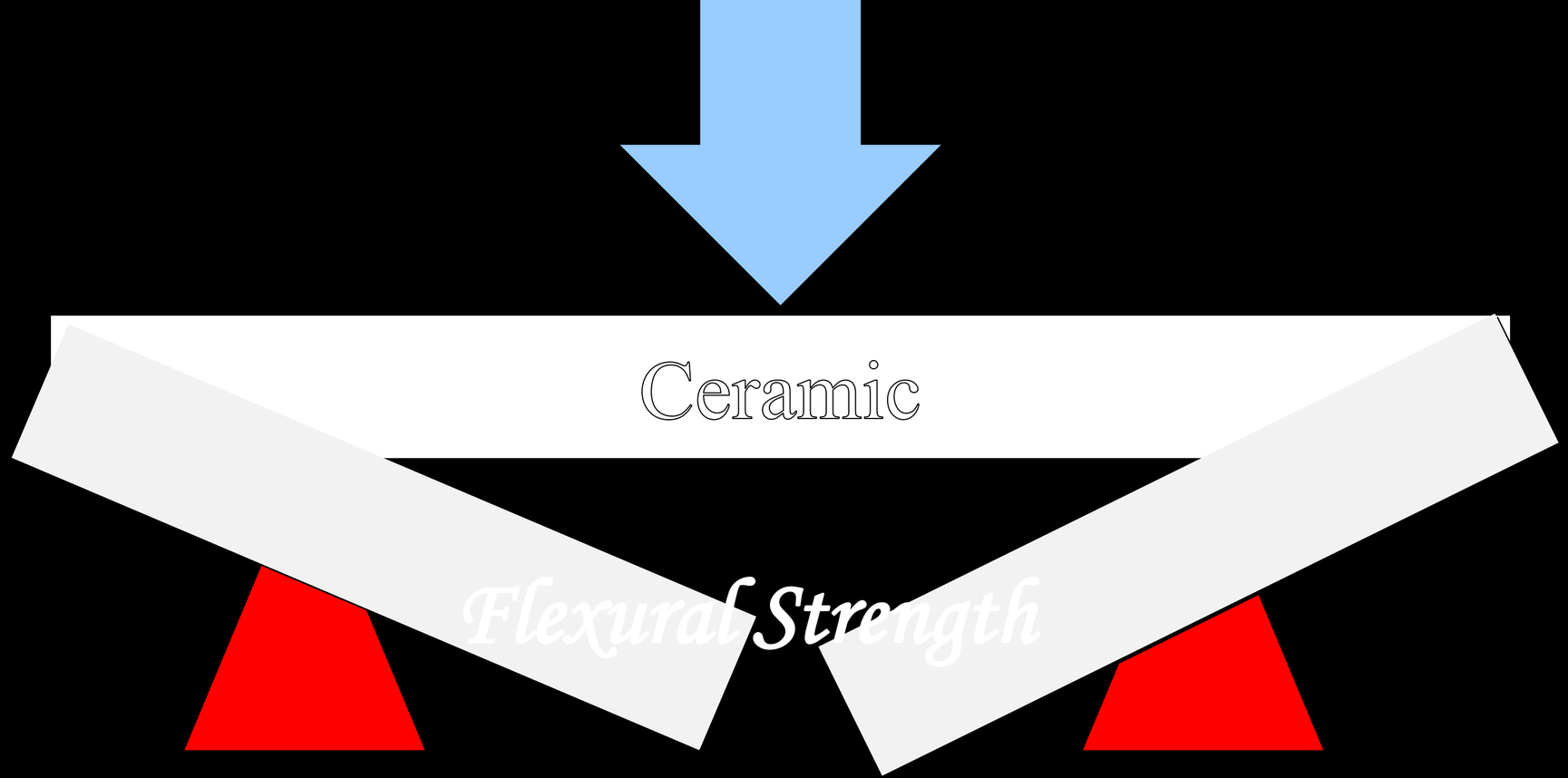
IPA
(Nobel)

ZrO_2

By definition, "a non-metallic, crystalline ceramic dioxide"

ZrO2 in Dentistry

- Tetragonal
  - High Strength
  - Opaque
- Cubic
  - Moderate strength
  - Translucent

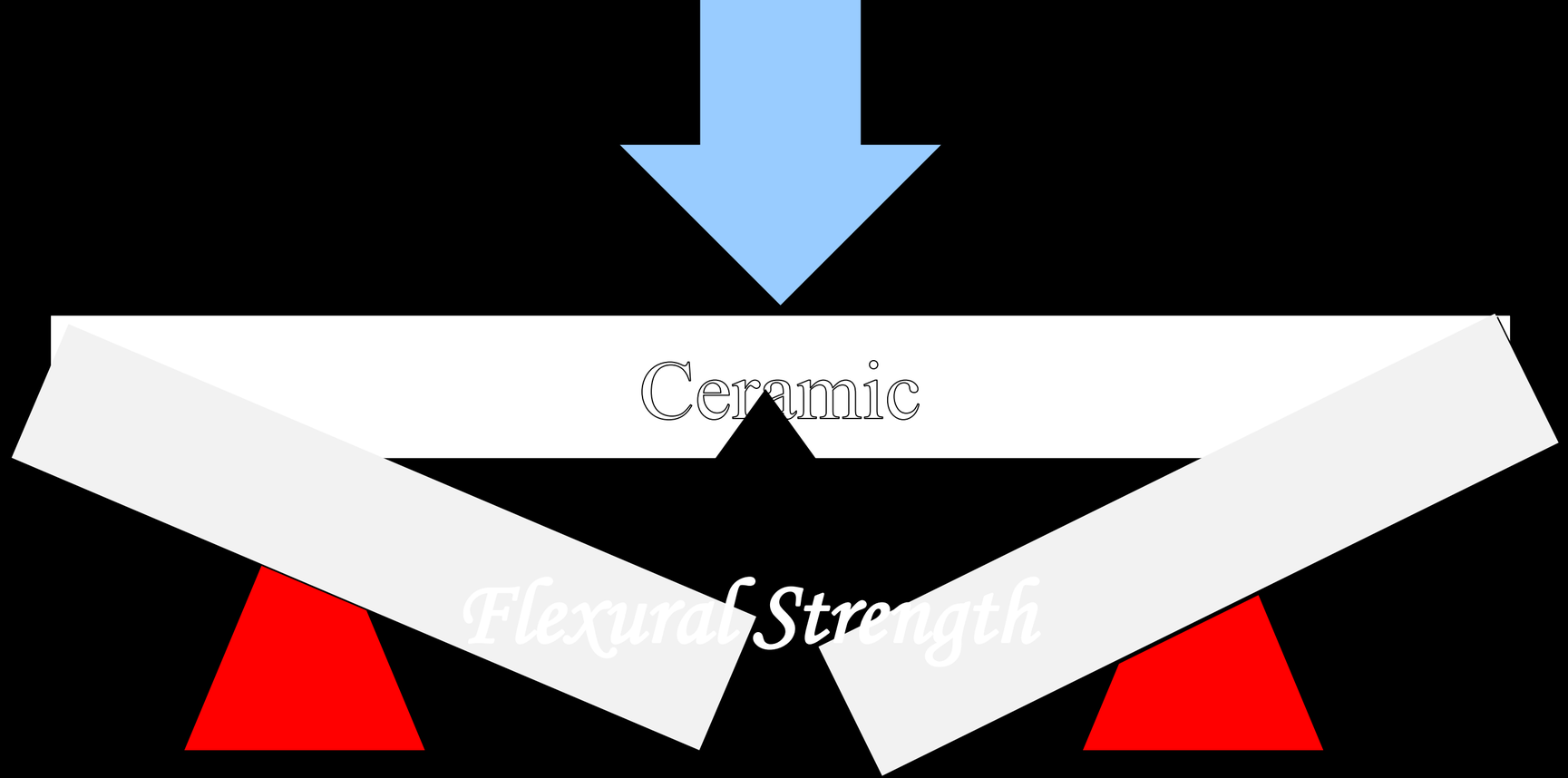

Ceramic
Flexural Strength

Flexural Strength

- Powder/liquid ceramic: 100 mPa
- IPS Empress: 200 mPa
- E.Max: 400 mPa
- ZrO2: 550-1500 mPa

Fracture Toughness

In materials science, fracture toughness is a property which describes the ability of a material containing a crack to resist fracture, and is one of the most important properties of any material for many design applications


Ceramic
Flexural Strength

Fracture Toughness

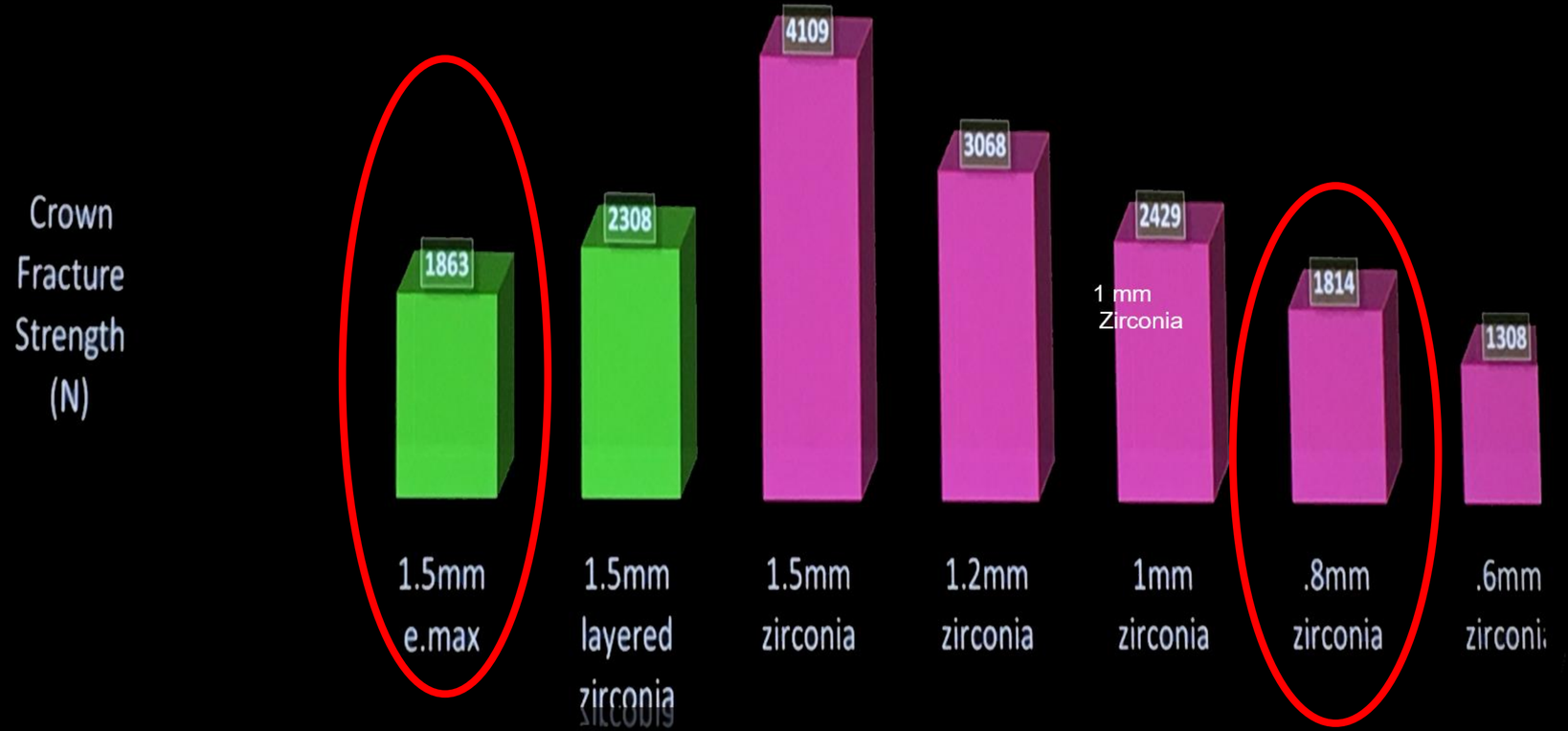
- IPS Empress: 1 K1c
- Composites/Hybrid ceramics: 1.5 K1c
- E.Max/Celtra Duo: 2.0-3.0 K1c
- Lava Esthetic: 3.5-5.0 K1c
- Tetragonal ZrO2: 5.0+ K1c (Lava Plus, Katana STML, Bruxzir, etc)

Tetragonal

- Monolithic crowns on destroyers
- Framework for bridges
- Monolithic or framework for All-on= “X”s”
- Implant abutments

Cubic/Tetragonal (HT, UT)

- Monolithic crowns (both anterior and posterior)
- Anterior 3-unit bridges
- Framework for anterior crowns

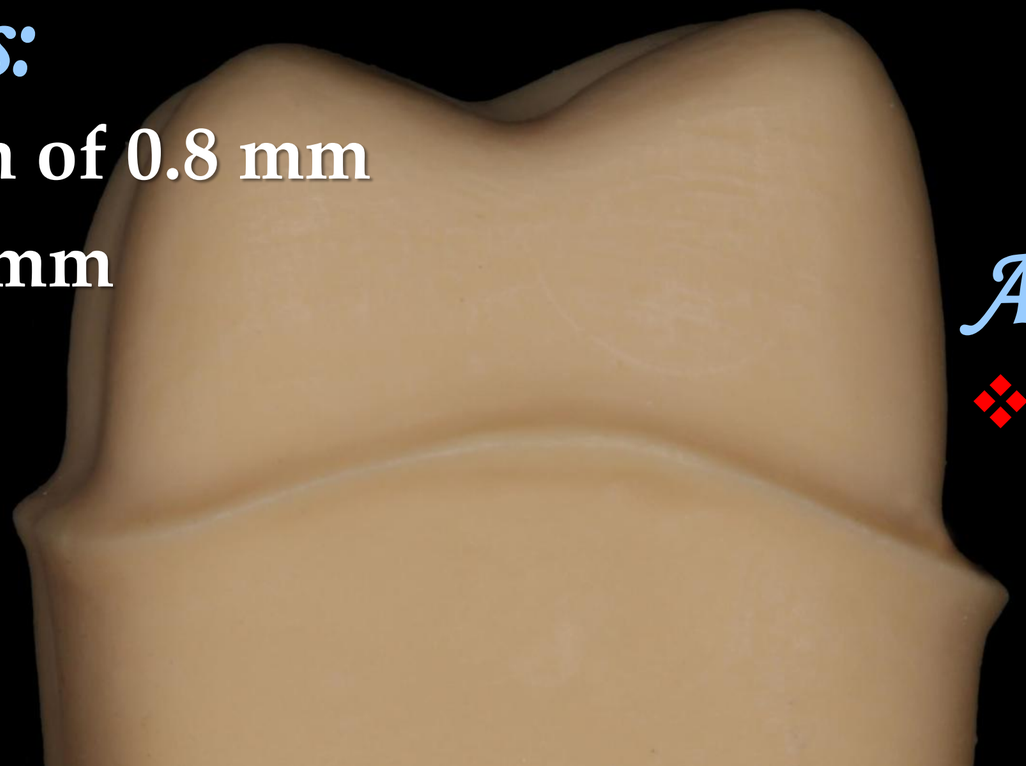


Data source: Dr. Burgess (UAB)

Preparation Requirements

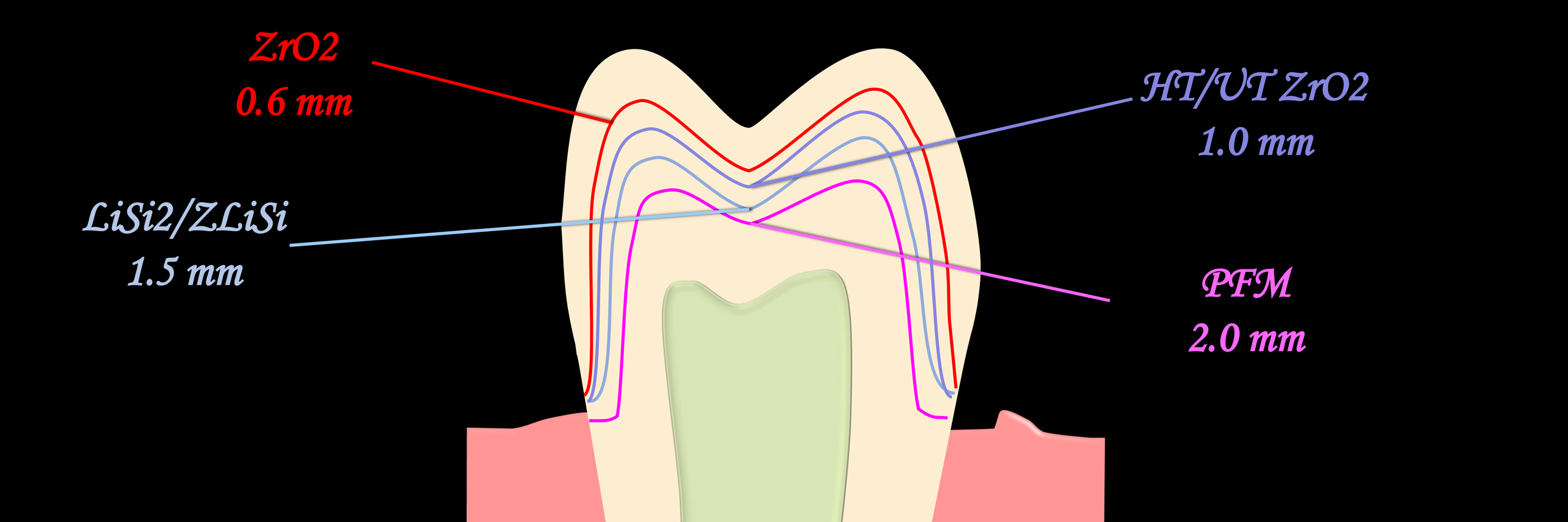
Occlusal thickness:

- Tetragonal: Minimum of 0.8 mm
- HT: Minimum of 1.0 mm



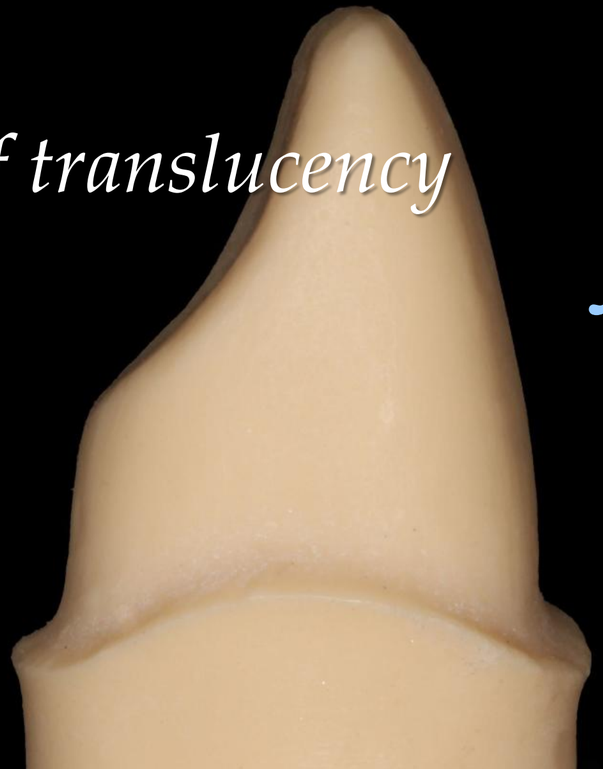
Axial thickness

- 0.6 mm


ZrO2
0.6 mm
HT/UT ZrO2
1.0 mm
LiSi2/ZLiSi
1.5 mm
PFM
2.0 mm

Incisal thickness

- Depends upon degree of translucency desired
- Minimum of 1.0 mm



Axial thickness

- Minimum of 0.6 mm

Key Points

- Marginal preparation
  - Butt joint
  - Deep Chamfer
  - Light Chamfer
- Internal line angles must be rounded

Thank You

david@hornbrook.com