

Dentin substitute- biocompatible restorative for chamber obturation?

- Pulpally Compatible BioActive Base Materials:

- IRM
- ZOE
- Glass Ionomer
- Tempit
- BioDentine
- Theracal
- MTA



Future research?

Bargain Lasers!

NEW PREMIER DENTAL YAG LASER CENTAURI MEDICAL \$599

[Auctions](#) » [Dental](#) » [Dental Laser](#) » [BIOLASE](#) » No. 20234: BIOLASE Waterlase C100 Dental Laser



Starting Bid: U.S.\$3000.00 - *Reserve not met*, [Bid Now](#), [Click Here](#)

This item will not be sold if the Reserve price is not met.

~~(Purchase It! U.S.\$8995.00)~~ [Learn more](#)

[Purchase This Item](#) or [Make an Offer by Bidding Below](#).

Time Left: 10 days 22 hours 39 minutes 16 seconds

Location: USA

Bid Closes: Apr 07 - 8:30pm EDT

Manufacturer: BIOLASE

Model: Waterlase C100

What You Are Bidding On:

This item is new, in unopened box.

Includes 1 year of warranty and installation in the USA provided by the manufacturer.

Official Retail- 57,900\$!!



• E Bay. Great prices!

Affordable New Diode Lasers



Diodes- silicon chips coated with Gallium/Aluminum/Arsenic
Emits at 810 or 980 nanometers



The image shows a KaVo GENTLEway 300 dental ultrasonic scaler. It is a white and grey device with a color LCD screen displaying a red background and a list of indications. The screen has two tabs: "Indication list" and "Alphabetical List". The "Indication list" is active, showing a scrollable list of dental procedures. Below the screen are buttons for "Program", "i", "Cancel", and "OK". On the front panel, there are two large colored knobs (red and yellow), a warning symbol, a black rotary switch, and a red connector. A handpiece is attached to the side of the unit via a white cable.

The 980nm wavelength provides the best combination of clean cutting and excellent hemostasis in a wide range of soft tissue indications.

Diode laser Therapy

Tight Upper lip



Diode laser Therapy



Apply for two minutes

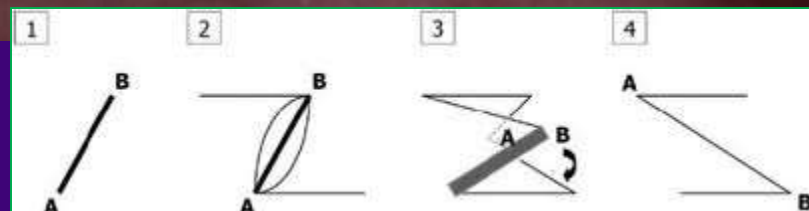
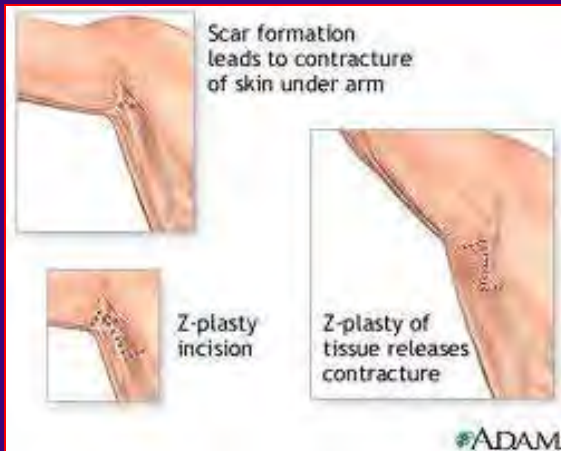
Diode laser Therapy

Activated Tip- use AccuFilm



Diode laser Therapy

Release pattern



Diode laser Therapy

Tissue Re-Contouring

Common problem with orthodontic appliances



Diode laser Therapy

Laser Tissue Re-Contouring

**Nitrous
Oxide
Analgesia
20% TAC**



Diode laser Therapy

Laser Biopsy

**Must
inform
pathologist**



Diode laser Therapy



2.0 watts continuous initiated tip

Diode laser Therapy



No Sutures, No Bleeding

Diode laser Therapy



Vitamin E

Diode laser Therapy



Frenectomy Ankyloglossia

Diode laser Therapy

**Prior to
surgery-
unable to
lift tongue**



Post Op

Diode laser Therapy

Gingival Recession



A clinical photograph of a patient's lower anterior teeth. The gingiva (gum tissue) is significantly recessed, exposing the roots of the teeth. A metal orthodontic bracket is visible on the upper teeth. A red, cloud-shaped callout bubble points to the lower lip frenum, which appears tight and is causing the recession. The text 'Tight frenum' is written in black inside the bubble.

**Tight
frenum**

Muco-gingival defect

Diode laser Therapy

Frenotomy- incision
of frenum, releases
tension

Frenectomy-
removal of frenum

Frenuloplasty-
alteration of
frenulum

1.0 to 2.0 watts



Diode laser Therapy



No Bleeding
Normal tissue

Diode laser Therapy

Immediate Post Surgery

**Vitamin
E
applied**



Diode Laser Therapy

Periodontal treatment of Downs Syndrome



Diode Laser Therapy

Apthous Ulcers De-Sensitization

- 1.5 watts for 90 seconds
- Start at 5.0 mms away and move closer to 1.0 mms away
- Stop if gets warm



Diode laser Therapy

Post Laser Treatment

**No
Longer
Painful**



Diode Laser Therapy

Short lateral Incisors with obvious vertical discrepancy
Pre-operative prior to Esthetic resin Based Composite
space closure and laser guided tissue re-contouring



Cosmetic Corrections

Diode laser Therapy

Post operative intra-oral photograph – one week later



Minimally Invasive Government

Ronald Reagan

“As government expands, liberty contracts.”

“Government's view of the economy could be summed up in a few short phrases: If it moves, tax it. If it keeps moving, regulate it. And if it stops moving, subsidize it. “



STA- “Single Tooth Anesthesia”



- The state-of-the-art STA System from Milestone Scientific facilitates a wide variety of anesthetic injections, including palatals and the STA-Intraligamentary (PDL) — bypassing more difficult and painful traditional methods.
- It will accommodate all standard 1.8 ml local anesthetic cartridges and a variety of luer lock needle sizes. The onboard computer can automatically purge air from the system as well as automatically aspirate. Coupled with the lightweight, ergonomically-designed convenience of the system handpiece, improved visibility and fingertip accuracy take hold.

MID Update

STA- “Single Tooth Anesthesia”



- Allen KD, Kotil D, Larzelere RE, Hutfless S, Beiraghi S. Comparison of a computerized anesthesia device with a traditional syringe in preschool children. *Pediatr Dent.* 2002 Jul-Aug;24(4):315-20.

significantly reduced disruptive behaviors

STA- “Single Tooth Anesthesia”

- **Ashkenazi M, Blumer S, Eli I.** Effectiveness of computerized delivery of intrasulcular anesthetic in primary molars. *JADA*. 2005;136:1418-1425.

- The effectiveness of CDS-IS anesthesia is equivalent, and even superior, to that of the mandibular block or mandibular buccal infiltration

STA- “Single Tooth Anesthesia”

- The “clutter” effect of technology
- Hard to hide all the gadgets



MID Update

STA- “Single Tooth Anesthesia”

- Small size
- Auditory signals
- Visual signals
- Easy to load
- Does both modes- STA and infiltration



MID Update

STA- “Single Tooth Anesthesia”

- Watch for proper pressure and position
- “PDL” and you are in the right spot



MID Update

STA- “Single Tooth Anesthesia”

- Buccal line angles

for Ma

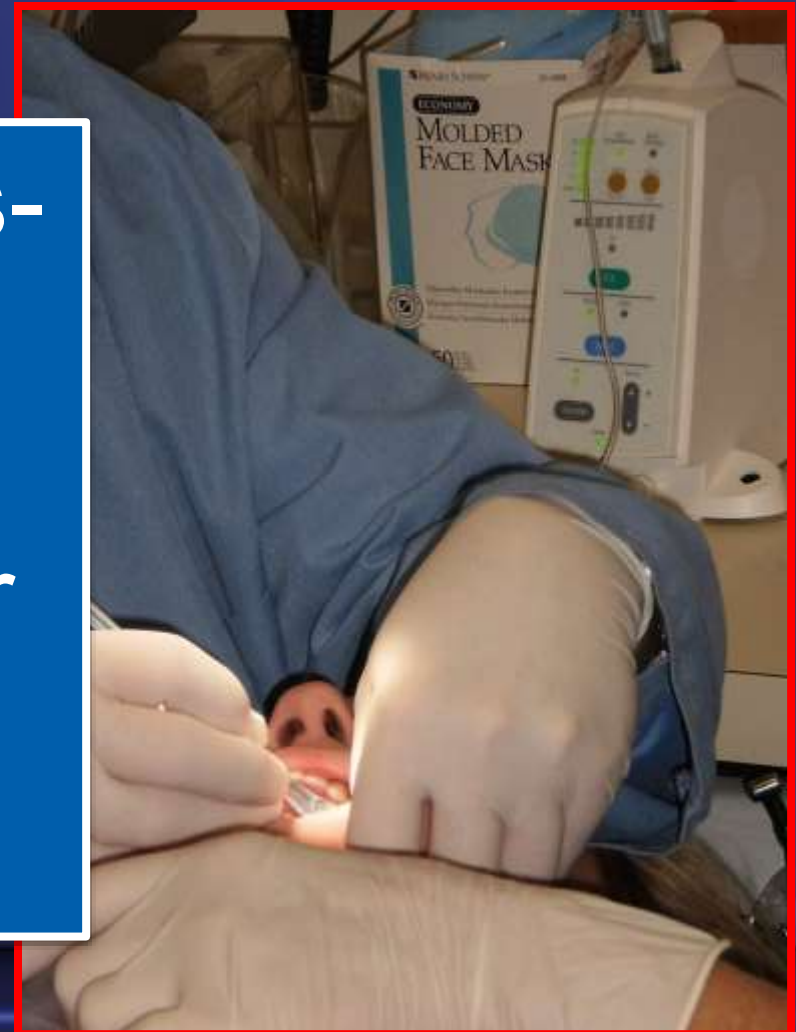
- Lingual angles

Mand

- Premolar Incisor angle

Primary molars-
furcation

Then tried it –
and it works for
permanent
teeth also!



MID Update

STA- “Single Tooth Anesthesia”



Pertot WJ, Dejou J. Bone and root resorption. Effects of the force developed during periodontal ligament injections in dogs. Oral Surg Oral Med Oral Path. 1992; 74:357-365.

MID Update

Office Based Anesthesia

Why OBA?

- economical
- procedural convenient for surgeon
- control of scheduling
- less threatening environment



Outpatient surgery in pediatric dentistry

- Mobile Anesthesia
 - Anesthesia for the dental office

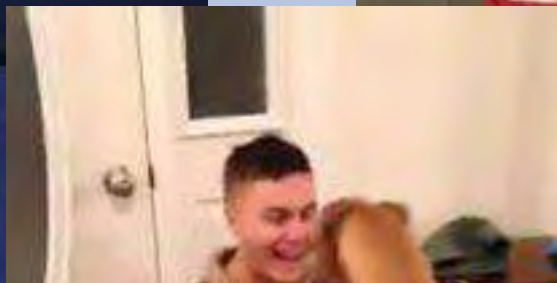


Outpatient surgery in pediatric dentistry

- Mobile Anesthesia
- BIS monitoring
- Provides objective evaluation of brain activity level ¹

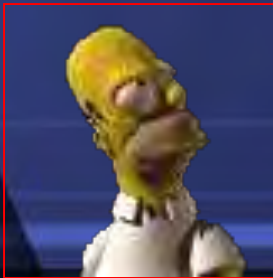


Bower et al, Gastrointestinal Endoscopy, Vol 52, No 2, 2000



Minimally Invasive Dentistry

**Thank
You !**



Esthetic Pediatric Crowns

- Zirconium
- eMax
 - Durable
 - Learning curve
 - Bonding
 - Expense
 - Long term results?



**“e.max LITHIUM
DISILICATE IS THE
MOST ROBUST
CERAMIC SYSTEM
TESTED TO DATE.”***

e.max[®]
IPS

Poor Design Example
(unsupported porcelain)



Better Design
(Lava system technique)



Esthetic Pediatric Crowns

Bonding Indirect Esthetic Restorations

- Adhesives: TE or SE
- Luting Cements: L/C, S/C, D/C
- Materials: Porcelain, Al, Li_2Si , Zr,
- Primers: Ceramic Primers

Esthetic Pediatric Crowns

Bonding to Zirconia



Porcelain

Zr

Luting Cement

Sandblast?

Primer?

Luting Cement?

Esthetic Pediatric Crowns

The Zirconia “Shift”

- Cad/Cam TechnologyDental
- Practice/Laboratory Economics
- High Clinical Strength
- Versatility in its Dental Application

Esthetic Pediatric Crowns

Clinical Reliability of Zirconia “High Strength”

- Flexural Strength 900-1100 mpa (5x > than current ceramics; 2x as strong as Alumina; 3x as Emax Lithium Disilicate)
- Fracture Toughness 8-10 mpa; 2x > Alumina
...Transformational Toughening

Esthetic Pediatric Crowns

- Advantages
- Strength
- Esthetics compared to SSC



What are lithium disilicate restorations?

- Lithium disilicate is a strong, all-ceramic material available in ingots for pressing (e.g. **IPS e.max® Press**) and in blocks that can be milled with several different CAD/CAM milling machines (e.g. **IPS e.max® CAD**).
- Available in many shades, both chromatic (dentin) and bleach
- Wide variety of uses including limited-size bridges, anterior and posterior full contour crowns, inlays and onlays, and veneers.
- Ivoclar Vivadent's patented lithium disilicate material is unique, combining high strength, high esthetics and ease of use into one product.
- IPS e.max is a lithium disilicate glass ceramic that has optimized translucency, durability and strength for full anatomical restorations.
- The opalescence, translucency and light diffusion properties of IPS e.max lithium disilicate were all designed to replicate natural tooth structure for beauty and undetectable restorations.



eCEMENT™ is an adhesive cementation system that is easy-to-use, efficient and highly effective for ALL lithium disilicate (e.g. IPS e.max®) restorations.



*eCEMENT™ is a trademark of BISCO, Inc. IPS e.max® is a registered trademark of Ivoclar Vivadent AG.
There is no sponsorship, affiliation or connection between BISCO and Ivoclar Vivadent AG.



Lithium Disilicate Kids Crown

About Lithium Disilicate

Lithium Disilicate glass-ceramic offers accuracy of fit, shape and function as you expect From your E-max ceramic, as well as **outstandingly high strength of 400Mpa**.

Advantage



Which one do you prefer, Metal or Ceramic?



Prism's features :

- Excellent Light Transmittance
- Excellent Strength(1,200MPa)
- Excellent Color Reproducibility
- Excellent fitness
- Exhaustive Quality Control

Product

UPPER

U17-A U16-A U13-A U12-A U11-A
 U17-B U16-B U13-B U12-B U11-B
 U17-C U16-C U13-C U12-C U11-C
 U17-D U16-D U13-D U12-D U11-D
 U17-E U16-E U13-E U12-E U11-E
 U17-F U16-F

U21-A U22-A U23-A U26-A U27-A
 U21-B U22-B U23-B U26-B U27-B
 U21-C U22-C U23-C U26-C U27-C
 U21-D U22-D U23-D U26-D U27-D
 U21-E U22-E U23-E U26-E U27-E
 U27-F U26-F



L47-A L46-A L43-A L42A L41A
 L47-B L46-B L43-B L42-B L41-B
 L47-C L46-C L43-C L42-C L41-C
 L47-D L46-D L43-D L42-D L41-D
 L47-E L46-E L43-E L42-E L41-E
 U47-F U46-F

L31-A L32-A L33-A L36-A L37A
 L31-B L32-B L33-B L36-B L37-B
 L31-C L32-C L33-C L36-C L37-C
 L31-D L32-D L33-D L36-D L37-D
 L31-E L32-E L33-E L36-E L37-E

LOWER

U37-F U36-F



U 11 - A

UPPER N Size

No Size A < B < C < D < E < F

Esthetic Pediatric Crowns

- Great esthetics
- Bondable
- Durable



Esthetic Pediatric Crowns

- Temporary crown in place
- Made with Super T
- Highly polished and great tissue response

Just ate
Cheetos!



Esthetic Pediatric Crowns

- Post endodontics
- Alternative to SSC – in teens
- Should have bondable margins
- Accurate preparation and impressions



Esthetic Pediatric Crowns

- Apply ZPRIME plus for zirconium, PMMA crowns, metal, and a lot more
- Porcelain primer, hydrolyzed silane for eMax
- Before try-in



Esthetic Pediatric Crowns

- Clean tried in crown with phosphoric acid semi-gel and rinse extremely well
- Re-apply primer



Esthetic Pediatric Crowns

- Exposed margins and no bleeding
- Apply ALLBOND Universal and dry, light cure
- Cement crown with Duo Link Universal or use eCEMENT kit



Esthetic Pediatric Crowns

- Cemented restoration with complete marginal integrity



Esthetic Pediatric Crowns



- Premolar
eMax
crown

Esthetic Pediatric Crowns

- Deep margins
- Failed amalgam restoration with crown fracture
- First molar has SSC and opposing arch has super erupted



Esthetic Pediatric Crowns

Porcelain
primer
premolar
crown before
try-in.



Esthetic Pediatric Crowns

- Temporary crown with Super T
- Food present in distal embrasure- oral hygiene issues



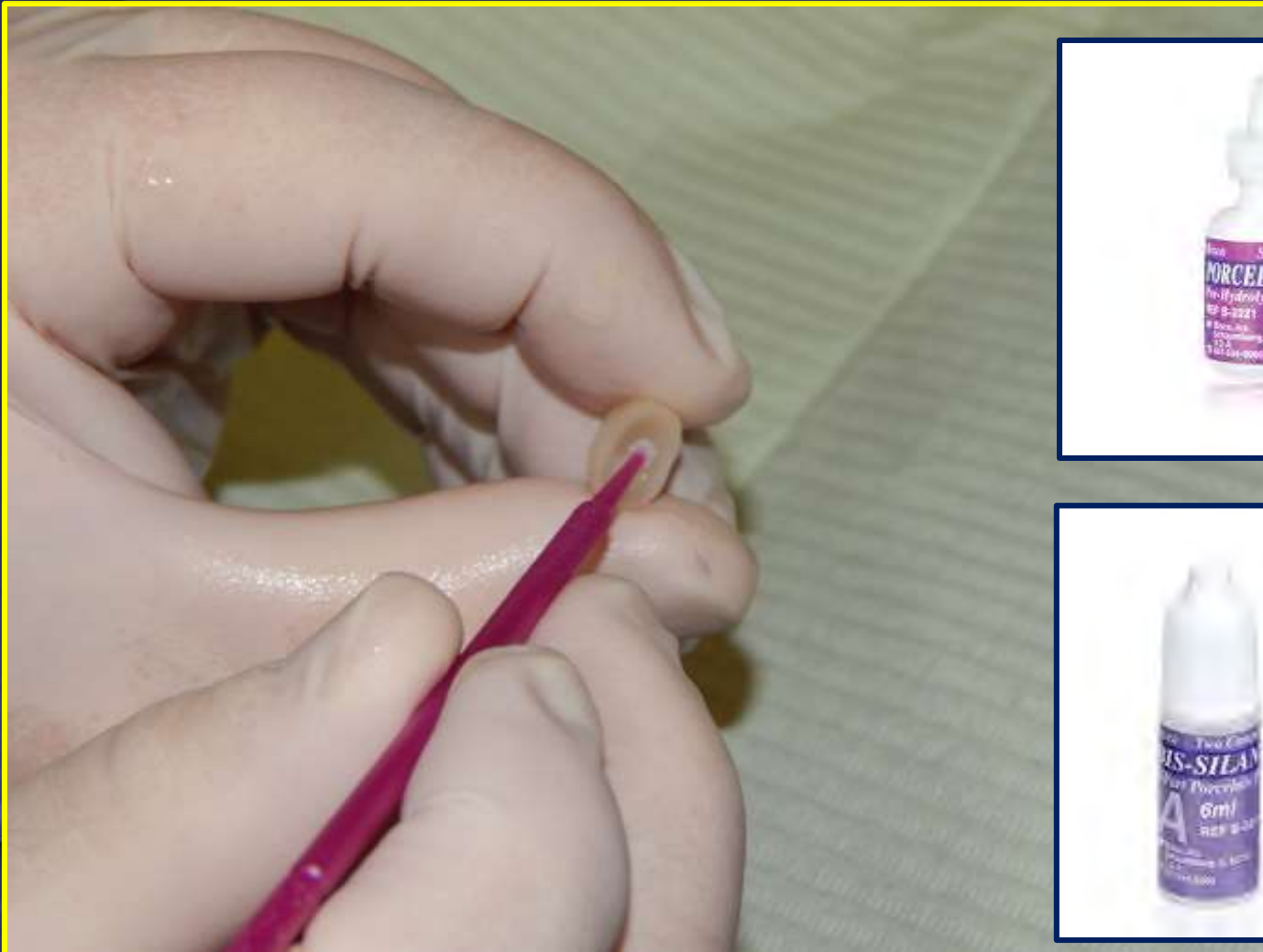
Esthetic Pediatric Crowns

- After achieving hemostasis the eMax crown is tried-in



Esthetic Pediatric Crowns

- Tried-in crown cleansed with etchant and re-primed



Esthetic Pediatric Crowns

- ALLBOND Universal applied in two coats, scrubbed for 10-15 seconds and after drying, light cured for 10 seconds.



Esthetic Pediatric Crowns

- DuoLink Universal or eCEMENT injected into crown



Esthetic Pediatric Crowns

- Crown cemented
- Held in place and excess removed with micro-brush



Esthetic Pediatric Crowns

- Micro brush removes gross excess and crown tacked cured with LED light



Esthetic Pediatric Crowns

- Crown held with instrument and crown cement tack cured with LED light for 3-5 seconds



Esthetic Pediatric Crowns

- Floss removes inter proximal flash along with hand instruments before polymerization in completed



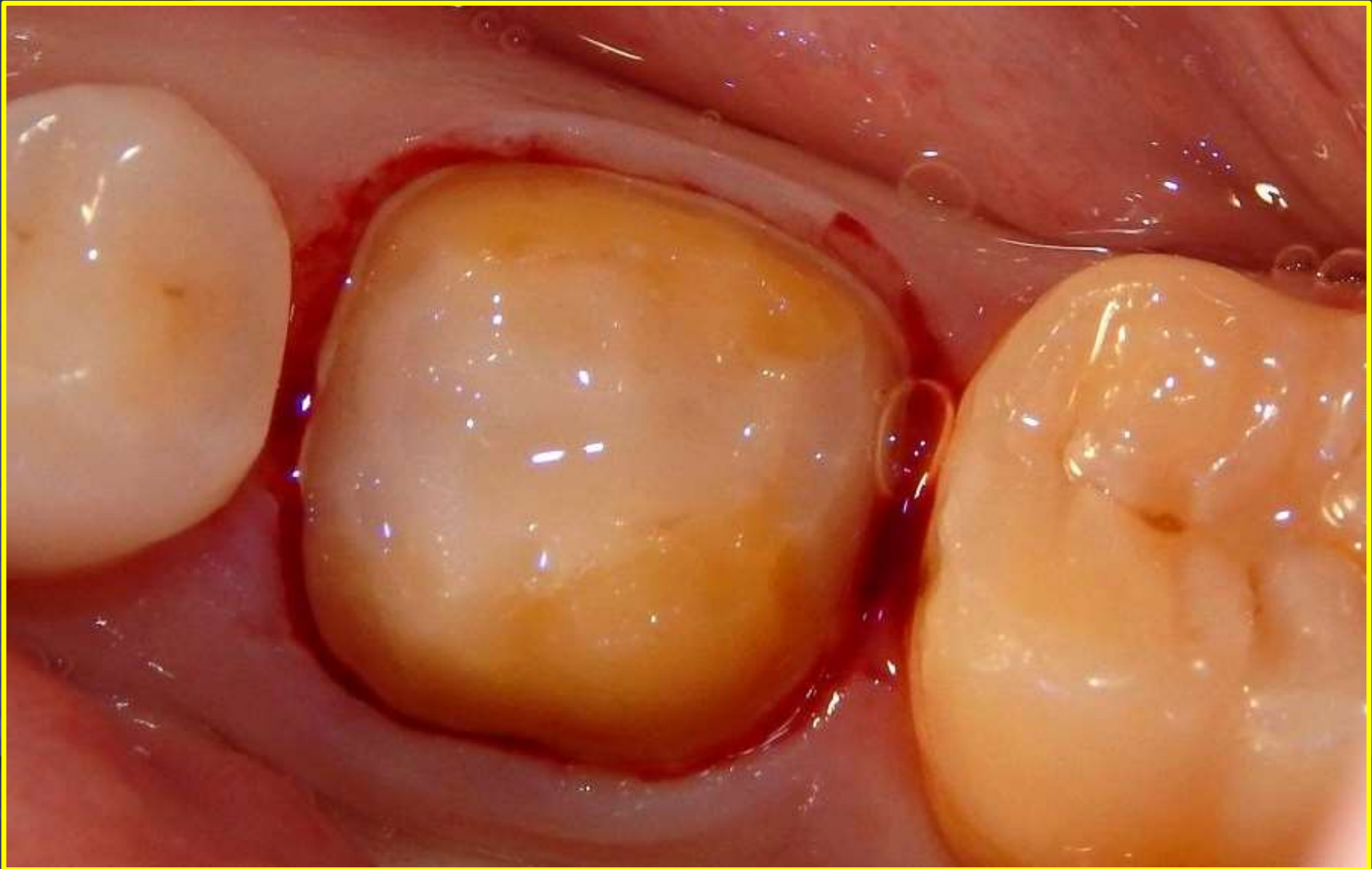
Esthetic Pediatric Crowns

- Endodontically treated molar
- Core build up



Esthetic Pediatric Crowns

- Crown preparation with distinct margins



Esthetic Pediatric Crowns

- Porcelain primer (Bisco) pre-hydrolyzed



Esthetic Pediatric Crowns

- Crown being tried in- after priming!



Esthetic Pediatric Crowns

- Crown cleansed with semi-gel etchant
- Re-primed (not necessary) and ALLBOND Universal



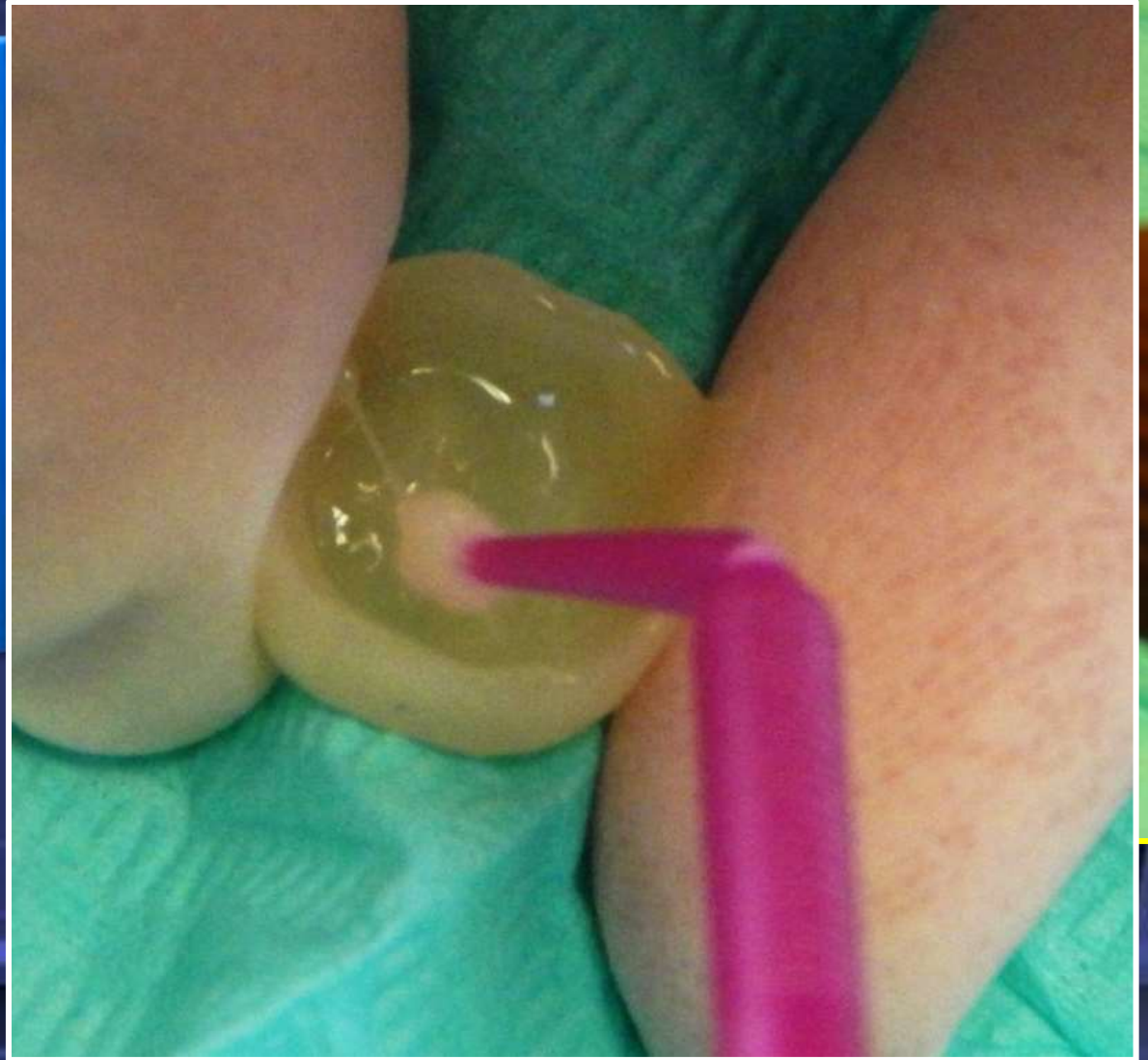
Esthetic Pediatric Crowns

- ALLBOND Universal applied to molar, two coats, scrubbed for 10-15 seconds dried and light cured



Esthetic Pediatric Crowns

- Duo Link Universal injected into crown
- Excess removed and smoothed into a complete void-less layer



Esthetic Pediatric Crowns

- Crown cemented and excess removed while maintaining crown stable and motionless



Esthetic Pediatric Crowns

- Cemented crown



Zirconium Crowns for Pediatric Dentistry

Z Prime DouLink (Bisco) sample for micro-tensile testing



Zirconium Crowns for Pediatric Dentistry

**Section of Z Prime,
Dou Link, AllBOND SE
sample**

**Section is further cut
with Buehler Diamond
saw into beams for
micro-tensile testing**



Zirconium Crowns for Pediatric Dentistry

Wafer of sample consisting of zirconium crown and self adhesive cement but without Z Prime.

De-bonded before sectioning into beams for micro-tensile testing.

Would not be acceptable for long term restoration.



Zirconium Crowns for Pediatric Dentistry

Rinse all debris and dried blood from the internal surface of the Crown. Air dry the internal surface of the crown prior to cementation. Also rinse and dry the prepared tooth surface for increased bond strength of the cement.

Fill the Crown with either Fuji Cem (yellow) glass ionomer cement (by GC America) or Rely-X unicem cement (by 3M). Seat the crown with firm finger pressure and hold it still for 1 minute until the cement has set. Then and only then should you remove the excess cement from the crown margins.

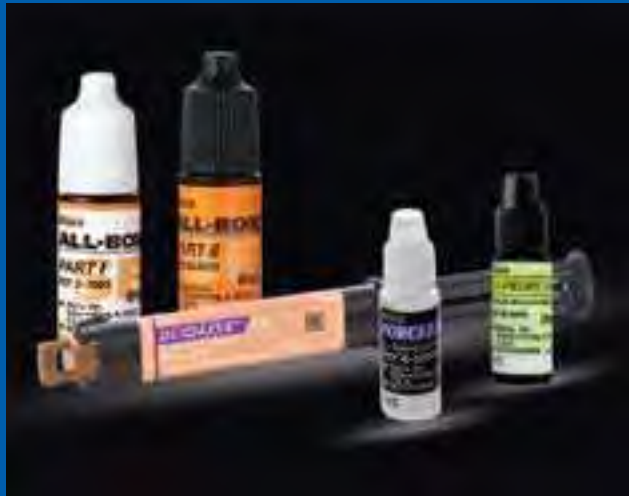


Zirconium Crowns for Pediatric Dentistry

**ALLBOND SE, Z Prime,
Duo Link**

AVE 31.9 MPa

SD 2.1 MPa



Zirconium Crowns for Pediatric Dentistry

Zirconium Crowned Primary Molars



Zirconium Crowns for Pediatric Dentistry

Buildup on pulpally treated first primary molar

Fuji II LC (GC) in chamber with Forendo (Pulpdent) and Tempit (Centrix) on radicular pulp.



Zirconium Crowns for Pediatric Dentistry

**Zprime (Bisco) of
crown before
preparation
Needs to fully dry**



Zirconium Crowns for Pediatric Dentistry

**Significant
preparation to allow
for zirconium
clearance**

**Try not to cause
“hemorrhage”**

**May be difficult in
tissue management**

**Second primary
molar restored**



Zirconium Crowns for Pediatric Dentistry

**ALLBOND SE,
ALLBOND DC or
ALLBOND
Universal obtains
hemostasis
Cured for 10
seconds after
applying for 20
seconds with light
scrubbing motion**



Zirconium Crowns for Pediatric Dentistry

**Load crown with
DUOLINK Universal
and cement**

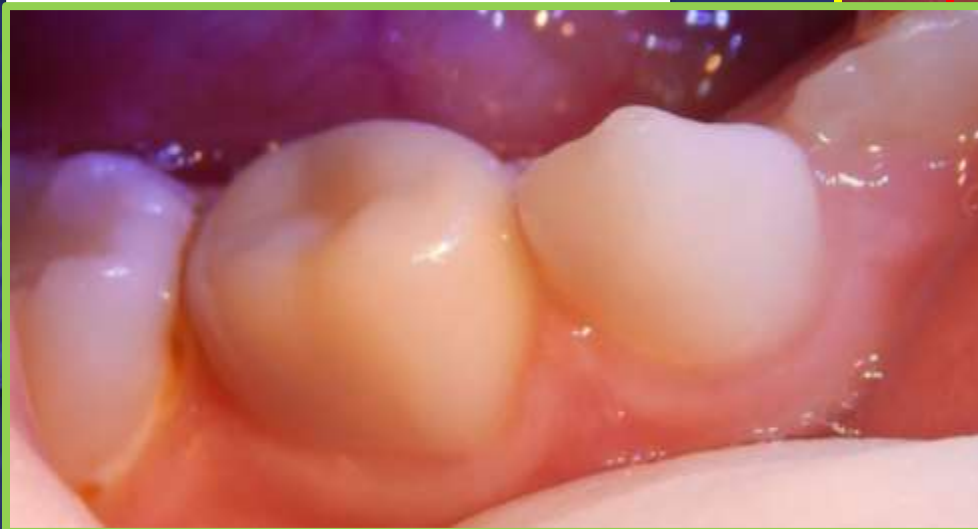
**Maintain position
for curing with light
(tack cure) initial
cleanup and then
power cure. Self
cure component
will complete set.**



Zirconium Crowns for Pediatric Dentistry

**Remove rubber
dam and clean up
flash**

**Old zirconium
crowns usually
appeared bulbous.**





Lithium Disilicate Kids Crown

About Lithium Disilicate

Lithium Disilicate glass-ceramic offers accuracy of fit, shape and function as you expect From your E-max ceramic, as well as **outstandingly high strength of 400Mpa**.

Advantage



Which one do you prefer, Metal or Ceramic?



Apple Kids features :

- Excellent Light Transmittance
- Excellent Strength(1,200MPa)
- Excellent Color Reproducibility
- Excellent fitness
- Exhaustive Quality Control

Product

UPPER

U17-A U16-A U13-A U12-A U11-A
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U17-E U16-E U13-E U12-E U11-E
U17-F U16-F

U21-A U22-A U23-A U26-A U27-A
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U47-F U46-F

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L31-D L32-D L33-D L36-D L37-D
L31-E L32-E L33-E L36-E L37-E

LOWER

U37-F U36-F



U 11 - A

UPPER

N

Size

No Size A < B < C < D < E < F

Esthetic Pediatric Crowns

- THANKS!!!
- Fixing the teeth doesn't always change the behavior...



Minimally Invasive Dentistry

**Thank
You !**

