

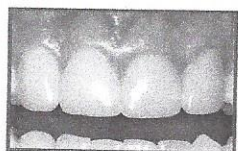
## Products Dentists Can't Live Without: 2014

**Gordon's Clinical Bottom Line:** Experienced clinicians have favorite products that they "Can't Live Without." *However, popularity of a product may not indicate it is the best product. If you are looking for new product ideas in any of the 16 areas of dentistry listed, the brands identified in this survey and CR's statement in each section are sure to be useful for you and your patients!*

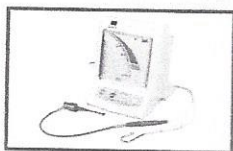
Since 1980, CR has periodically conducted comprehensive surveys to determine preferences in clinical dentistry. The 2014 survey simply requested the top three products dentists could not live without for 16 areas of dentistry. Trends and new developments can be identified by comparing results from this survey with previous surveys. Special thanks to the respondents who completed and submitted the survey, requiring over 114 answers! As with all surveys, results reflect biases of the respondents, who, as Clinicians Report Evaluators and subscribers, represent dentists who are actively seeking information on dental products and techniques. The following summarizes notable developments from the 1,147 survey respondents:

- **Dental Anesthesiology:** Articaine local anesthetic was listed as a top product dentists couldn't live without in several of the areas. *Overall, 59% report using articaine as their primary anesthetic.*
- **Electric Handpieces** were noted by dentists in operative dentistry and prosthodontics sections, yet only 35% report owning them. This is an area where more dentists could benefit by purchasing this technology.
- **Endodontic Therapy:** Most dentists who provide endodontic treatments are utilizing handpiece driven files with significant growth in the use of reciprocation. *Overall, 63% use rotary or reciprocating systems with Dentsply Tulsa as the leader with both technologies.*
- **Esthetic Dentistry:** IPS e.max (lithium disilicate) used by 56% is a relatively new ceramic that is replacing IPS Empress as the previous anterior esthetic ceramic of choice and is being used by many in posterior teeth.
- **Implants:** 3M ESPE's mini implant was the most noted small diameter implant brand (63%), and Locator Implant Attachments by Zest (52%) was the attachment most used for removable prosthetics.
- **Posterior Single-Unit Crown Material:** For the first time, all-ceramic type crowns made of all-zirconia (BruxZir) or lithium disilicate (IPS e.max) were a first choice (48%) compared to PFM (porcelain fused to metal, 33%) as the single-unit crown material of choice.
- **Practice Management:** 96% of dentists noted having office management software. Most popular brands continued to be Dentrix (30%) and EagleSoft (20%).
- **Preventive Dentistry:** 59% reported using fluoride varnish as the in-office fluoride treatment used most.
- **Radiography:** Digital radiography (81%) was reported in several areas, and cone beam technology was listed as can't live without for endodontics, implants, orthodontics, and surgery.
- **Resin-based Composite:** Filtek Supreme Ultra by 3M ESPE was the most noted restorative brand in three sections primarily because of its handling, ease of finish, initial polish, and esthetics. Herculite Ultra by Kerr performed very well in a CR in-depth clinical study.

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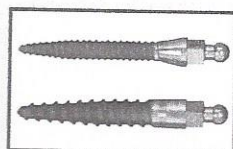
IPS e.max by Ivoclar Vivadent  
anterior esthetic ceramic



Root ZX by J. Morita  
most used apex locator



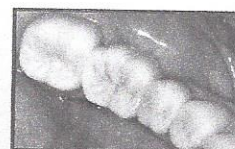
Cone beam technology  
valued in several specialties



Mini Implants by 3M ESPE  
most placed mini implant



Varnish America by MPL  
CR highest rated brand



BruxZir by Glidewell  
bridge and single unit crown

## Taking the Pain Out of Dental Injections

**Gordon's Clinical Bottom Line:** You know how patients fear "shots." Local anesthetic injections do not have to be painful. It has been proven that one of the most adequate ways to develop a practice and keep patients coming to you is to have painless injections. There are several successful ways to deliver local anesthetic in a relative painless way. *For this report, CR Evaluators (including oral surgeons, prosthodontists, general dentists, and others) have collected information from many sources to help readers to achieve painless injections.*

**A brief history of anesthetics in dentistry and medicine:**

- **Tooth pain** can be excruciating.
- **In the mid-1800s**, dentists Horace Wells and William Thomas Green Morton brought nitrous oxide and ether into dentistry.
  - **Local anesthetics** were introduced by William Halsted MD in 1884 by injecting cocaine.
  - **Painful dental experiences** were reduced or eliminated.
- **Novocaine** was introduced in 1904 by Alfred Einhorn and appeared in 1905 in an article by Professor Heinrich Braun.
- **Numerous other types and brands of local anesthetics** followed in subsequent years.

- **Articaine appeared in 1972** and is currently the most commonly used and a highly effective local anesthetic. It was cleared by the FDA in 2000.

With the exception of penetration of a needle into soft tissue and delivery of solution after penetration causing tearing of tissue, dental/oral pain can be almost totally eliminated during treatment.

**Can injections be painless?** This report concludes that the answer is usually YES! The slight but upsetting pain of dental injections can be nearly completely eliminated using the concepts in this article. There are a few infrequent exceptions such as a direct needle hit on a nerve.

*Continued on page 6*



## Taking the Pain Out of Dental Injections (Continued from page 1)

Some dentists have a reputation of providing "painless injections," while others are well known to produce significant pain on delivery of local anesthetic. What is the difference? There appears to be no single concept or procedure that makes the injection painless. However, a combination of concepts and techniques can solve the challenge. The following are methods to produce painless injections.

### Techniques for Reducing or Eliminating Pain of Local Anesthetic Injection

- **Diversion techniques** include manually vibrating or moving the soft tissue as the needle is inserted and while the solution is delivered. This well-proven technique stimulates the larger faster conducting A-fibers to inhibit the stimuli from smaller C-fibers (*afferent*) conveying pain. Addition of calming and reassuring words also reduces apprehension.
- **Gentle, non-abusive needle penetration:** Needle entry should be gentle with very light and non-abusive penetration. Gentle penetration and quick needle retraction after injection reduce pain.
- **Slow delivery** can be easily accomplished by placing minimal force on the syringe and timing the injection for at least one minute. Bloating the tissue by forceful and fast delivery is painful.
- **Needles with restricted lumen size** limit the volume of anesthetic solution that can be delivered through the needle. This concept of slow flow needles does not allow rapid and forceful injection of solution, thus reducing pain.
- **Hypnosis** prior to injection has long been used to calm patients having any form of potentially painful dental/medical procedures. However, learning hypnosis techniques requires some education to learn how to do it.

*The American Society of Clinical Hypnosis and The International Medical and Dental Hypnotherapy Association can provide information on courses.*

- **Heated anesthetic:** Studies have shown that warming the anesthetic cartridge from room temperature of about 21°C to body temperature of about 37°C reduces pain perception. Do not store cartridges in warmer.

*Example anesthetic warming device: Anesthetic Cartridge Warmer and Dispenser by Premier Dental.*

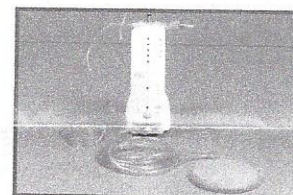
- **Most topical anesthetics** are benzocaine about 20 percent, and they are relatively effective. Anecdotal reports support EMLA (a 5% emulsion preparation, containing 2.5% each of lidocaine/prilocaine) and Profound from Steven's Pharmaceutical (10% prilocaine, 10% lidocaine and 4% tetracaine).

*Well-accepted brands evaluated by CR are: The Best Topical Ever by Nueva Vista Dental (10% lidocaine, 10% tetracaine, 2.5% prilocaine, 2% phenylephrine). OneTouch Advanced by Hager Worldwide (14% benzocaine, 2% butamben, 2% tetracaine hydrochloride), and BeeGentle by Cao Group (20% benzocaine topical varnish).*

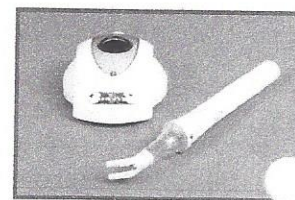
- **Proper use of topical anesthetics is essential.** Many dentists place the topical anesthetic and immediately inject solution, not allowing the topical anesthetic to work adequately. At least two minutes should elapse with the topical anesthetic in place on wiped mucous membrane to allow the chemicals to anesthetize the superficial tissues. Rinse off after topical effect noted.
- **Infiltration anesthetic delivery using articaine** instead of mandibular block techniques can reduce injection pain from mandibular second pre-molars forward. However, half the volume of articaine is indicated in relation to lidocaine (2 ampules lidocaine = 1 ampule articaine).
- **Use of nitrous oxide** before injecting anesthetic relaxes patients and can reduce the pain of injections.
- **For palatal injections**, use sustained pressure on the blunt end of a "Q-tip" or mirror handle and slow delivery while injecting or intrapapillary injection from facial.
- **Topical adhesive patches** containing 2% lidocaine have been shown to be effective.

### Devices Designed to Reduce or Eliminate Pain on Local Anesthetic Injection

- **CompuDent** (initially named the Wand) delivers computer-controlled local anesthetic that limits the force and speed of injections.
- **DentalVibe** has a soft forked tip that provides vibrations to the injection site and sound to mechanically and audibly distract the patient's attention away from the penetration of the needle and the anesthetic delivery. The vibration is initiated before the injection begins.
- **VibraJect** clips onto any conventional anesthetic delivery syringe. It contains a battery which is activated to produce the desired diversionary vibration. This simple device allows you to use your familiar injection syringes and is an addition to them. The vibration is simultaneous with the injection.
- **Onset with Mixing Pen** buffers *lidocaine* anesthetic solution, raising the pH, by mixing sodium bicarbonate with the anesthetic solution. However, it requires additional steps to prepare the anesthetic. The result is almost immediate onset and reduction in the pain of injections.



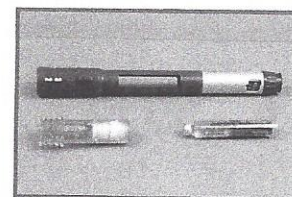
CompuDent (originally named the Wand) by Milestone Scientific



DentalVibe by BING Innovations



VibraJect by VibraJect



Onset with Mixing Pen by Onpharma

## CR Conclusions:

Painless injections are a well-proven positive influence on the attraction of dental patients and practice success. Clinicians are advised to evaluate whether they are or are not providing painless injections. **CR Evaluators and clinicians state that proper anesthetic delivery techniques often satisfy the need for painless injections.** Anesthetic delivery devices can be an adjunct to non-abusive techniques. To provide less painful injections, the previously described techniques and products can greatly reduce or eliminate the pain of almost all local anesthetic delivery.





Gordon J. Christensen

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## CR BUYING GUIDE

# The BEST Products of 2014

CR is the original and only independent dental product testing organization with funding only from dentists!

**Gordon's Clinical Bottom Line:** Many years ago CRA, now renamed Clinicians Report, initiated publication of an annual guide of the *best evaluated products* from the previous twelve months. In 2014, many publications list products that appear to be the best of the year when in fact they are only another list of new products. The products presented in this report, as always, have been through rigorous non-manufacturer paid testing with competitive products and are among the best of the last twelve months. Classic products that have withstood the test of time and predictability are also listed in most of the categories.

— Please Read —

Please read the following product category descriptions carefully. Products listed in this Buying Guide have been evaluated by the CR in-house science team and CR Evaluators. Each product in this report is color-coded to identify why it has been included in this 2014 listing.

- **Proven classic products** are listed alphabetically and in red. These products have been determined by research and long-term clinical use. They are often used for new product comparisons. *Some categories do not have classics listed.*
- **Highly rated new products** were identified by in-house science evaluations and CR Evaluator use during 2014. Only products with an overall grade of 3.0 or higher (4.0 highest) and an Evaluator recommendation of 70% or greater were included.

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## — This is Not an All-Inclusive List of Successful Dental Products —

See also *Clinicians Report* May 2014:  
"Products Dentists Can't Live Without"

### ANESTHETICS AND ACCESSORIES

**Classics: Local Anesthetics**

- Articaine, Various
- Lidocaine, Various
- Mepivacaine, Various

**Classics: Local Anesthetic Delivery Aids**

- CompuDent, Milestone Scientific
- Dentalvibe, BING Innovations
- VibraJect, Vibraject

**Orabloc (Pierrel)**  
4% articaine hydrochloride with epinephrine local anesthetic has **lower price and longer shelf life.**  
\$42.99/Box of 50 (86¢ Cartridge)

All major distributors

See also *Clinicians Report* May 2014

**Onset with Mixing Pen**  
System to buffer *lidocaine* anesthetic solution, raising the pH, by mixing in sodium bicarbonate. **Results in reduction of injection pain and accelerated onset.**

\$633.30/Pen and four cartridges

OnPharma/OraPharma

See also *Clinicians Report* May 2014

### DIAGNOSIS AND TREATMENT PLANNING

See also *Clinicians Report* April 2014

#### Cameras: Clinical and Accessories

**Classics:**

- Single Lens Reflex and Point & Shoot
  - Clinipix
  - Dental Learning Centers
  - Lester A. Dine
  - PhotoMed



**Dental Duo Mirror**  
Mirror designed to speed and improve intraoral photography with convenient black contrast on back.  
\$75/Mirror

L.A.W. Dental Products

79% of CR Evaluators recommend this product.

See also *Clinicians Report* October 2014

#### Oral Cancer Screening

**Classics:**

- DOE SE, DentLight
- Identafi, DentalEZ Group
- VELscope Vx, LED Dental/DenMat



**OralID and CytID**  
Complete system for oral mucosal fluorescent screening with battery-operated device and swab cytology test kit.  
\$1,295/System  
\$7/Patient swab cytology

Forward Science

73% of CR Evaluators recommend this product.

See also *Clinicians Report* August 2014

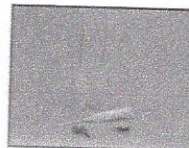
### ENDODONTICS

#### Apex Locators

**Classics:**

- Apex ID, Axis/Sybron Endo
- Foramatron D-10, Parkell
- Root ZX II and Root ZX Mini, J. Morita

#### Applicators



**Accudose (24-gauge Needle Tube)**  
Very small needle tubes for dispensing and precise application of low viscosity materials such as endodontic solutions.  
\$1.30/Needle

Centrix

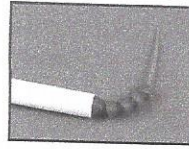
83% of CR Evaluators recommend this product.

See also *Clinicians Report* April 2014

#### Equipment: Instruments and Accessories

**Classics:**

- Endo-Express, Essential Dental Systems
- Endo-Eze, Ultradent
- EndoSequence, Brasseler USA
- Hyflex CM, Coltene
- ProTaper, ProTaper Next, and WaveOne Dentsply Tulsa
- TF Adaptive, Axis/Sybron Endo



**ROEKO Surgitip-endo**  
Highly useful root canal aspiration tips that effectively dries hard-to-reach canals.  
\$2.17 Each  
(\$43/Box of 20)

Coltene

91% of CR Evaluators recommend this product.

See also *Clinicians Report* July 2014



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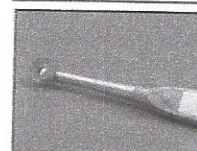
73% of CR Evaluators recommend this product.

See also Dental Hygiene Clinicians Report July/August 2014

### EQUIPMENT

**Curing Lights: Resin, LED****Classics:**

- Bluephase (*various LED*), Ivoclar Vivadent
- Demi Plus (*LED*), Kerr
- Fusion 4.0 (*LED*), DentLight
- Elipar S10 and Paradigm (*LED*), 3M ESPE
- Sapphire Plus (*plasma arc*), DenMat
- SmartLite Max (*LED*), Dentsply Caulk
- Valo Cordless (*LED*), Ultradent

**SmartLite Focus**

Easy-to-use compact resin curing light with collimated beam has excellent access. Swivel head requires attention to maintain proper alignment during curing.

\$1,000/Light

Dentsply Caulk

79% of CR Evaluators recommend this product.

See also Clinicians Report November 2014

**Headlamps****Classics:**

- Feather Light, Ultralight Optics
- LumaDent, LumaDent
- MicroLine Mini Headlight, PeriOptix/DenMat
- SurgiTel Micro LED (*neutral*), SurgiTel
- Various LED, Designs for Vision
- Various LED, Orascope

**Intraoral Cameras****Classics:**

- CS 1500, Carestream
- DEXcam, Dexis
- Iris, Digital Doc
- USBcam 4, Sirona Dental

**Magnification: Loupes****Classics:**

- Designs for Vision
- Orascope
- SurgiTel