



Panoramic Radiography: State-of-the-Art 2018

Gordon's Clinical Observations: Panoramic radiography has been in use for about 60 years, and digital panoramic systems have been available for about 25 years. However, some dentists do not use panoramic radiography and others have not upgraded to digital. The panoramic image shows the entire mouth at a glance to both dentist and patient and is an invaluable diagnostic and educational tool. How do the current devices compare? Can the panoramic device be upgraded to cone beam? Is digital better than analog? *The CR clinical and science teams answer these questions for you in this report.*

Extraoral radiography is in the middle of a major shift from film to digital to 3D imaging. Digital 2D panoramic radiographs are state-of-the-art, and digital 3D cone beam computed tomography (CBCT) imaging is rapidly increasing. The following trends are evident from the CR clinician survey (*n=1,115*):

- **Digital:** Digital panoramic systems significantly outnumber film-based systems and phosphor plate scanners (*77% versus 15% and 8%, respectively*).
- **New:** Most panoramic systems are relatively new—*42%* are less than 5 years old and another *26%* are less than 10 years old.
- **CBCT:** *24%* of panoramic systems reported were part of CBCT 3D imaging systems.



Panoramic radiographs are easy for patients to understand and improve patient education

Panoramic radiographs are helpful in a general practice and especially beneficial for accomplishing oral surgery, endodontics, and orthodontics. CBCT is particularly advantageous for more complex procedures, including: implants, impactions, endodontics, obstructive sleep apnea, etc. As clinicians look to upgrade their panoramic imaging capabilities, they should strongly consider CBCT systems or those with the capability to upgrade to CBCT when desired. **The following report explains the advantages of digital panoramic radiography, lists popular models, and provides clinical tips for utilizing this technology.**

Continued on Page 2

Are You Curing Through Crowns Effectively?

Gordon's Clinical Observations: Most resin cements and some resin-modified glass ionomer (RMGI) cements are “dual cure” and can be partially cured with a curing light or allowed to self cure. How do these curing methods compare? Other than gold alloy and PFM crowns, most crowns have some degree of translucency. Should we be attempting to light cure cements through these materials or waiting for them to auto cure? Should we be doing both? *This report provides the answers to these questions.*

Versatile dual-cure cements allow quick and convenient polymerization using a curing light (*light cure*), yet polymerize chemically even in the absence of light (*auto cure*). This auto-cure component is critical because light is blocked or diffused by the crown, greatly reducing light intensity affecting the cement. **This report shows you what happens to light passing through translucent restorations and the effect on underlying cement.**

Continued on Page 3

First Look: Is Using the Patient's Centrifuged Blood a Viable Grafting Technique for Bone Defects?

Gordon's Clinical Observations: This concept has been used for over fifteen years with well documented clinical outcomes, but it has not been incorporated into most practices. The technique appears to be very logical and relatively simple, since all the ingredients of the graft are from the patient. Should this concept replace using autogenous (*bone from the patient being grafted*), allografts (*human cadaver bone*), alloplast (*synthetic materials*), or xenografts (*usually bovine or porcine bone*)? *CR clinical specialists (lead author Dr. George Bailey, Periodontist) evaluated one of the popular systems (Intra-Lock L-PRF IntraSpin System), and you will be very interested in the results!*

Although long-term research is ongoing, empirical clinical observations by experienced practitioners have been very positive and deserve your consideration. **CR clinical specialists and scientists have prepared a concise overview of this subject that will help you decide whether you want to do the procedure yourself or refer to another practitioner.**

Continued on Page 4

Products Rated Highly by Evaluators in CR Clinical Trials

The following four products were rated excellent or good by CR Evaluator use and science evaluations.

LOCATOR R-Tx: Newest version of locator for removable overdentures provides several important advantages

Monday Morning Millionaire (edition 2): How to Beat Wall Street at Its Own Game

EndoPoint: Endodontic apex location files with unique insulator for accessing depths through metal and PFM crowns

Gum Health Ultra-Slim Floss Tip: Toothbrush with slim handle design and “floss-tip” bristles

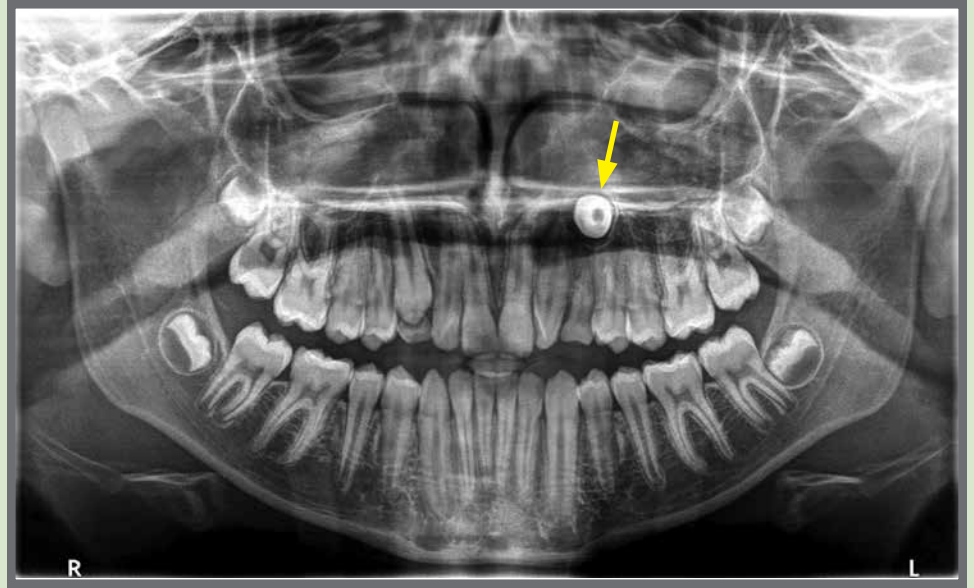
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Panoramic Radiography: State-of-the-Art 2018 *(Continued from page 1)*

Advantages of Digital Panoramic Radiography

The clinical value of panoramic radiographs is well established, but the survey indicated that **25%** of general dentists currently do not have a panoramic system in their practice. Key advantages include:

- **Large area** shows structures and relationships not visible in intraoral radiographs. Allows assessment of underlying and possibly unsuspected conditions, periodontal status, orthodontic needs, TMJ, etc.
- **Easy for patients to understand** which facilitates patient education.
- **Easy comparison of both sides of mouth** which facilitates screening of sinuses, condylar heads, third molars, inferior alveolar canals, mental foramina, fractures, etc.
- **Simple patient positioning**, standing or seated, and useful for those with limited opening.
- **Significantly lower radiation dose** than intraoral full-mouth series.
- **Digital panoramic sensors** improve image clarity, quality, and speed while further reducing radiation dose compared to film (*analog*) systems.



Example panoramic radiograph of a twelve year old patient. Arrow indicates an impacted canine which was missed on intraoral radiographs.

Current Panoramic Models

- **Popular systems:** The survey revealed numerous models from 25 different companies in current use. Most popular companies were **20%** Planmeca, **17%** Sirona, **12%** Gendex, **9%** Carestream, **9%** Panoramic Corporation, **8%** Instrumentarium Dental, **4%** Vatech, **3%** Soredex, **3%** Belmont, and **2%** Siemens.
- **Overall performance:** **88%** of clinicians rated image quality and ease of use of their model between excellent and good, indicating a relatively high overall performance level for panoramic systems.
- **Change:** Digital imaging technology is rapidly evolving and continued advancements are expected. Cost will vary with hardware and software options chosen; installation requirements; training; and discounts negotiated. For many models, the exact price was not forthcoming, and clinicians are cautioned to work closely with sales representatives to accurately determine total cost.

The following tables show example models (listed alphabetically) of digital panoramic systems currently available from some of the popular companies identified in the survey. Numerous additional brands are available.

TABLE 1: Basic Panoramic Systems
Costs typically range from \$15,000 to \$40,000

Panoramic Model	Company	Cephalometric Option
Bel-Cypher Pro	Belmont	No
Envision P	Panoramic Corp	Yes
GXDP - 300 (<i>Gendex</i>)	Kavo	No
I-MAX	Owandy/Ashtel	No
OP 2D	Kavo	No
OP 200D (<i>Instrumentarium</i>)	Kavo	Yes
PaX-i	Vatech	Yes
ProOne	Planmeca	No
Veraview IC5 HD	J Morita	No

TABLE 2: Panoramic systems with ability to upgrade to CBCT
Costs typically range from \$20,000 to \$70,000

Panoramic Model	Company	Extraoral Bitewings	Upgrade Options	
			Cephalometric	CBCT 3D
CS 8100	Carestream	Yes	Yes	Yes
GXDP-700 (<i>Gendex</i>)	Kavo	Yes	Yes	Yes
I-MAX TOUCH	Owandy/Ashtel	Yes	Yes	Yes
OP 3D Pro for 2D	Kavo	Yes	Yes	Yes
Orthophos SL 2D	Dentsply Sirona	Yes	Yes	Yes
Panoura 18S	ImageWorks Corp	Yes	Yes	Yes
ProMax 2D S3	Planmeca	Optional	Yes	Yes
Veraviewepocs 2D	J Morita	Yes	Yes	Yes

Current digital panoramic systems are significantly improved over earlier models. They feature a variety of imaging modes to meet specific screening needs; auto- and semi-automatic selection of parameters for optimum image clarity; and alignment guides and open designs for easy and accurate patient positioning.

Panoramic Radiography: State-of-the-Art 2018 *(Continued from page 2)*

Clinical Tips

- **Screening:** Panoramic radiographs and intraoral bitewing radiographs are now used more frequently than full-mouth-series for comprehensive exams. Panoramics are also indicated for screening developing dentition, periodontal involvement of teeth, etc. However, panoramics should not be used for routine screenings, and some have suggested an interval of 3–5 years as appropriate.
- **Patient positioning:** Proper position and settings are crucial for best image quality. Current systems have a variety of aids, including side entry, open design, guide lights, and automated settings that make patient positioning relatively easy for consistent images. Clinicians noted, however, that acceptable images were occasionally not possible for some patients.
- **Caries:** Panoramic radiographs can show moderate to large caries. Most current systems now have settings that minimize overlap in the pre-molar and molar regions (“*Extraoral Bitewing*”) that can aid caries screening. However, intraoral radiographs generally show small details better than panoramics. All current digital radiographs (*intra- and extraoral*) fail to show the full extent of caries, especially incipient lesions (see *Clinicians Report January 2015, November 2011, and March 2011*).
- **Phosphor plates:** Film-based 2D panoramic systems can be converted to digital by using phosphor plates in the film cassette in lieu of film (example: *ScanX Classic by Air Techniques*). The image on the plate is scanned into the computer and saved in the patient’s file. Associated costs are usually less than purchasing an entirely new digital system.
- **Try before buying:** Examine different systems at a convention, dealer showroom, or a colleague’s office. Look for ease of use, intuitive controls, ease of patient positioning, and image quality.

CR CONCLUSIONS: Panoramic radiographs are a well proven adjunct to intraoral radiography and are gradually replacing full mouth series as the preferred method for obtaining an overall view of oral structures and conditions. Clinicians starting in practice are strongly encouraged to incorporate panoramic radiography. Digital panoramic sensors have lowered the radiation dose while improving image quality, speed, and ease of use. If adding or replacing a panoramic system in your practice, strongly consider a system with CBCT imaging capabilities, or the ability to upgrade to CBCT at some point in the future.

Are You Curing Through Crowns Effectively? *(Continued from page 1)*

Advantages of Dual-Cure Cements

Although one or more surfaces are often light cured, it is difficult to guarantee that light intensity alone will polymerize cement beneath translucent restorations. Dual-cure cement *ensures polymerization* and compensates for variability in material, crown design, and light intensity. **Dual-cure cements are recommended when cementing translucent ceramic crowns.**

Dual-cure cements offer the following advantages:

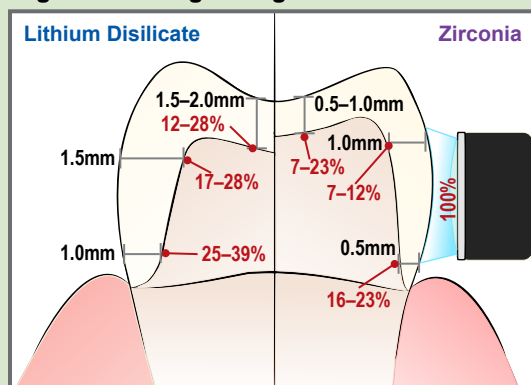
- **Tack light cure:** After seating crown, a brief light cure (*1–2 seconds for resin cements; 5+ seconds for RMGI cements*) will “gel” the excess cement, which can then be easily picked off using a scaler or other instrument. Provided it is only cured briefly, tack curing facilitates quick and thorough cement removal. *Further research is needed to see if this negatively affects margin integrity.*
- **Light cure:** After removing excess cement, again light cure crown margins. This quickly polymerizes cement, anchoring the restoration. Light cure also improves cement’s material properties (*hardness, strength, resistance to moisture, etc.*) compared to auto cure. *Further research is needed to see if the higher polymerization stress negatively affects margin integrity.*
- **Auto cure:** Chemical auto cure ensures cement polymerizes beneath the restoration regardless of the light intensity reaching the cement. *Typical auto-cure times recommended by manufacturers are 5–7 minutes, during which time the restoration should not be disturbed.*
- **Variety of cements for clinical applications:** A variety of dual-cure cements are available for various clinical applications.

Curing through Ceramic Restorations

The ability to cure through ceramic restorations varies significantly by material. Some factors which influence cement polymerization beneath translucent restorations include: material thickness, opacity, shade, and curing light output.

- **Material Thickness:** Light intensity reaching the cement decreases with material thickness. Even a thin layer of ceramic (*0.5mm*) can reduce light intensity by 44–84% depending on the material (see *Figure A*).
- **Opacity:** Translucent materials (example: *lithium disilicate*) transmit more light than opaque materials (example: *full-strength zirconia*).
- **Shade:** Lighter shades transmit more light than darker shades. Example: a darker shade (A3.5) decreases light intensity by 32% compared to a lighter shade (A2) of full-strength zirconia, 1mm thick.

Figure A: Curing through Translucent Crown



Only a fraction of the light intensity leaving the curing light actually reaches the cement and is highly dependent on the opacity and thickness of the ceramic material. Note how a thin layer of opaque material (*zirconia on right*) can reduce light intensity more than a thicker layer of translucent material.

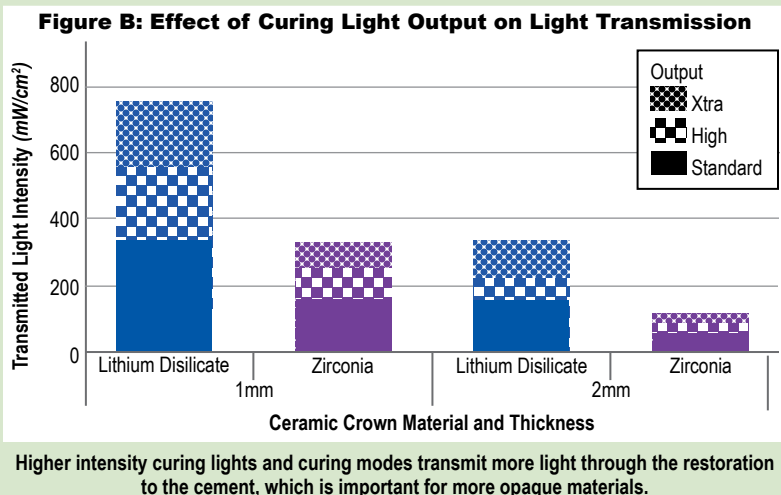
Are You Curing Through Crowns Effectively? (Continued from page 3)

Curing through Ceramic Restorations (Continued)

- **Curing Light Output:** Higher intensity curing lights transmit more light through the restoration. Example: The highest setting on the VALO Grand (*Ultradent*), when used on 1mm of ceramic, increased light transmission by 105–125% over the standard mode (see Figure B).
- **Curing Times and Cement Polymerization:** CR research found that resin cements beneath light shades of translucent materials (*lithium disilicate*) up to 2mm thick and light shades of more opaque materials (*zirconia*) up to 1.5mm thick generally were able to polymerize in 10 seconds using a moderate to high intensity light (1000–1500 mW/cm²). Use of higher intensity curing light resulted in quicker polymerization.

Clinical Tips

- **Use higher intensity light and/or longer curing times** when curing through thicker, more opaque, and/or darker shades of ceramic.
- **Caution:** Use steady stream of air to cool the crown surface to avoid overheating the pulp!
- **When in doubt**, and the amount of light reaching the cement is in question, allow cement time to auto cure (5–7 minutes).
- **Examine curing lights** regularly. Resin debris, damage to lens/filament, and misalignment decrease effectiveness. Use a radiometer to measure output.
- **RMGI cement** may be tack cured to remove excess; however, manufacturers generally recommend that crowns be allowed to auto cure.
- **Veneers:** Dual-cure cements are generally **not** recommended for veneers, because auto cure may be undesirable. Instead, use light-cure only veneer cement which allows veneers to be tacked in place, yet still removed and adjusted if necessary. Once properly positioned, cement beneath thin veneers is easily polymerized using a curing light.



Example Cementation Technique for Dual-cure Cements

1. Seat crown and hold firmly in place.
 2. Tack cure facial surface and remove excess.
 3. Tack cure lingual surface and remove excess.
 4. Floss to remove excess cement interproximally.
 5. Light cure (*each surface*).
10 second cure (*standard mode*) was generally* sufficient for the following materials:
 - Lithium disilicate, up to 2mm
 - Zirconia, up to 1.5mm
- * Use high intensity light, a longer cure time (while cooling tooth), or allow cement time to auto cure if restoration is thick, opaque, darker shade, or ability to light cure is suspect.

CR Foundation expresses gratitude to Oral Arts Dental Laboratories of Huntsville, Alabama, for providing research samples.

CR CONCLUSIONS: Dual-cure cements provide both the assurance of auto cure under opaque crown materials, and a quick and convenient light-cure option. The amount of light reaching the cement beneath translucent crown materials was dependent on material thickness, opacity, shade, and curing light output. Use a higher power curing light, or curing mode, for more effective curing, or a longer curing time when curing thick, opaque, or darker ceramics. **Cool the tooth with air stream to avoid overheating the pulp.** Cement beneath thick, opaque restorations should be allowed time to auto cure (5–7 minutes).

First Look: Is Using the Patient's Centrifuged Blood a Viable Grafting Technique for Bone Defects? (Continued from page 1)

Background and Basic Principles

What is Leukocyte-Platelet Rich Fibrin (L-PRF)?

The L-PRF/IntraSpin technique uses the patient's own blood. The technique is FDA cleared. By centrifuging, the blood concentrates platelets/leukocytes into a fibrin clot 2 to 5 times that found in whole blood. Those cells produce growth factors in a similar way to using stem cells to enhance healing.

What is the significance of this technique compared to standard grafting procedures?

By concentrating platelets and leukocytes and developing them into a dense fibrin clot, it has been suggested that the body can better defend against infection and inflammation. Through the production and continuous release of many growth factors, enhanced healing is observed. Using the patient's own blood is generally more acceptable to patients when compared to using the other standard dental grafting concepts. It can also be used in conjunction with autograft, allograft, or xenograft material for enhanced healing.

First Look: Is Using the Patient's Centrifuged Blood a Viable Grafting Technique for Bone Defects? *(Continued from page 4)*

Clinical Techniques

- 1. Blood Draw:** All of the procedures are accomplished chairside in the dental practice. The patient's blood is drawn in the same way as with routine blood testing.
- 2. Processed:** The blood sample is placed in a special centrifuge called IntraSpin designed to maintain cellular vitality at an optimum level (*Figure 1*). This is one difference from the other centrifuging techniques.
- 3. Fibrin Clot:** The fibrin clot produced after centrifuging is gently removed from the collection tube with forceps. This clot contains fibrin, leukocytes, platelets, and a small amount of serum. The bulk of the red blood cells are left in the tube. (*Figures 2 and 3*)
- 4. Xpression Tray:** The fibrin clot is placed in an "Xpression tray" which flattens the clot into a membrane of approximately 1mm thickness. (*Figures 4 and 5*)
- 5. Surgical Placement:** This is an evolving area, and clinicians using the system are adding to the clinical knowledge based on their individual empirical experiences. There are at least four ways that the centrifuged blood can be used as follows:
 - **Mincing:** The fibrin-clot membrane can be cut into small pieces with scissors or a scalpel. These small fibrin/leukocyte/platelet rich pieces can then be mixed with conventional bone graft materials for use in bone grafting sites.
 - **Membranes:** The fibrin-clot membrane produced after Xpression can be draped over the surgical area/bone graft material usually without using a typical collagen membrane.
 - **Plugs:** The fibrin clot can be directly compressed into plugs that are approximately 5x5mm in dimension. The plugs can then be directly placed in surgical sites.
 - **Blocks:** This is a mix of mincing technique above and Fibringen Plasma.
- 6. Post-Op:** Normal post-surgical instructions are given with antibiotic/analgesics prescribed as indicated. Suture removal occurs usually after one week or less.

Advantages and Limitations

Advantages:

- **Faster healing:** In almost all surgical applications, clinicians report that there is clinically accelerated soft-tissue and bone healing. This enhancement is not only in quantity of bone production, but more importantly, in bone quality. This is obvious in viewing the grafted bone site after entry and is confirmed by histology. (*Figure 6*)
- **Patient acceptance:** The technique is readily accepted by most patients who understand and desire the concept of "natural healing."

Limitations:

- **Additional skill necessary:** Requires clinicians to be familiar with phlebotomy techniques that may not be readily available in some dental practices.
- **Difficulty:** It is sometimes difficult to obtain adequate blood because of collapsing or small diameter veins. Occasionally requires multiple "sticks." The number of 9ml tubes is determined by the number of membranes and/or plugs needed.
- **Additional clinical time:** Adds approximately 20 minutes to each grafting procedure.
- **Continuing education:** Initial courses emphasize basic science principles with less emphasis on technique. Additional CE is desirable.
- **Confusing information:** The several similar centrifuging concepts are often confused with the L-PRF technique. They are different: PRP (*platelet rich plasma*), PRF (*platelet rich fibrin*), and I-PRF (*Injectable platelet rich plasma*). The L-PRF IntraSpin concept claims to have optimum effectiveness because of centrifugation with minimal vibrations, thereby maintaining viability of cells.
- **Long-term research:** Additional long-term research is necessary to compare the clinical characteristics of the several centrifugation techniques over time. However, only the IntraSpin System has been evaluated and cleared by the FDA. Health Canada is approved for CE Marking in Europe, and the concept has been evaluated by other regulatory bodies.

Figure 1



The L-PRF centrifuge

Figure 2



The centrifuged blood clot layered after centrifuge

Figure 3



Removal of the clot from the vial

Figure 4



The "Xpression" tray flattens the centrifuged clot into thin 1mm thick pieces.

Figure 5



Example flattened specimens 1mm thick

Figure 6



An example patient showing an excellent L-PRF grafted site after 4 months of bone growth and maturation

First Look: Is Using the Patient's Centrifuged Blood a Viable Grafting Technique for Bone Defects? *(Continued from page 5)*

Additional Questions

Why do I need this procedure?

Clinical observation and initial research is showing faster and more predictable soft-tissue and bone healing. Clinicians must decide if this advantage outweighs the extra time and education required.

How does bone quality and quantity compare with conventional grafting techniques?

Clinicians report dense, high quality bone is produced.

Is this clot a barrier similar to a collagen barrier?

No, it is not a barrier, but rather living tissue. In some situations, such as a missing buccal plate, collagen barriers are indicated.

Do I need this in my practice?

If a practitioner does not graft bone defects frequently, conventional techniques or referring to another practitioner may satisfy grafting needs.

What is the cost of the surgical kit?

The entire kit containing enough instruments to accomplish the procedure is US\$3,950.

Where can I receive education and research information on the procedure?

Intra-lock Education: Customer Service, 877-330-0338

CR CONCLUSIONS: Centrifuging blood and using it for grafting bone defects is well known and is not new. The L-PRF technique claims superiority over previous procedures, and CR literature reviews of previous research and clinical evaluations appear to validate that claim. Additional long-term CR research is being established.



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At the completion of this test, participants should be able to:

- Evaluate current radiography system for possible upgrade
- Determine feasibility of grafting technique using patient's own blood
- Discuss curing cement through crown materials
- Evaluate new products and their potential clinical usefulness

Self-Instruction Test, February 2018, 1 CE Check the box next to the most correct answer.

- Which statement regarding current extraoral radiography systems is **true**?
 - ☐ A. Film-based systems (*analog*) are most popular, with less than half of systems incorporating digital sensors.
 - ☐ B. Most panoramic systems in use are older than 20 years.
 - ☐ C. 3D cone beam computed tomography systems are used by less than 5% of clinicians surveyed.
 - ☐ D. Some panoramic systems can be upgraded with cephalometric and 3D imaging capabilities.
- Which statement regarding panoramic images is **false**?
 - ☐ A. Images show structures and relationships not visible on intraoral radiographs.
 - ☐ B. Images are better than intraoral radiographs for visualizing small details, such as incipient caries.
 - ☐ C. Images are easy for patients to understand.
 - ☐ D. Images allow easier comparison of structures on both sides of the mouth.
- Which of the following factors affect the light intensity reaching the cement beneath a ceramic crown?
 - ☐ A. Ceramic thickness
 - ☐ B. Ceramic shade
 - ☐ C. Curing light output
 - ☐ D. All of the above
- Which of the following will **not** increase cement polymerization beneath a ceramic crown?
 - ☐ A. Use of a misaligned curing light with a damaged lens
 - ☐ B. Use of higher intensity curing mode
 - ☐ C. Use of longer curing time (*while cooling with air*)
 - ☐ D. Allowing dual-cure cement time to "auto cure"
- The Leukocyte-Platelet Rich Fibrin (*L-PRF*) grafting concept can be used for:
 - ☐ A. Membranes
 - ☐ B. Plugs
 - ☐ C. Mincing (*combining with conventional bone grafting materials*)
 - ☐ D. All of the above

- The (*L-PRF*) grafting concept uses as its basic constituent:
 - ☐ A. Porcine blood
 - ☐ B. Bovine blood
 - ☐ C. Hydroxyl apatite
 - ☐ D. The patient's own blood

- LOCATOR R-Tx:
 - ☐ A. Denture attachment housing allows the housing to pivot up to 30°.
 - ☐ B. Abutment is harder and more wear resistant.
 - ☐ C. New geometry allows patient to more easily align and properly seat overdenture.
 - ☐ D. All of the above

- Monday Morning Millionaire* is a book that helps dentists:
 - ☐ A. Get involved with professional investment groups.
 - ☐ B. Do their own investing for retirement or other future needs.
 - ☐ C. Learn how to "get rich quick" by increasing fees and complicated treatments.
 - ☐ D. All of the above

- EndoPoint locator files:
 - ☐ A. Apex location is accomplished with a special ceramic file that does not short out against metal.
 - ☐ B. Is a new apex location device, and files that do not short out.
 - ☐ C. Are designed with an electrical insulator down the shaft of the file, which prevents "shorting out" when touching metal.
 - ☐ D. Is a new apex location device that is not sensitive to fluid in the canal.

- Gum Health Ultra-Slim Floss Tip is a(n):
 - ☐ A. Automated toothbrush with excellent access bristles.
 - ☐ B. Manual toothbrush designed with longer, less densely packed bristles.
 - ☐ C. Toothbrush with medium bristles that are longer so they are less stiff.
 - ☐ D. Manual toothbrush with thin "floss-tip" bristles that clean well interproximally.

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DECEMBER 15, 2018

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ADA CERP® Continuing Education Recognition Program



Products Rated Highly by Evaluators in CR Clinical Trials *(Continued from page 1)*

Newest Version of Locator for Removable Overdentures Provides Several Important Advantages

LOCATOR R-Tx

Zest Dental Solutions



\$155/Complete kit

(abutment, denture attachment housing with insert, 4 retention inserts, and block out spacer)

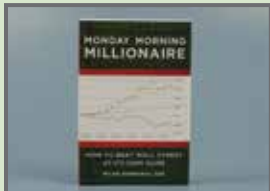
The popular Locator Attachment System by Zest uses familiar techniques and has been improved with the following new LOCATOR R-Tx design features:

- Denture Attachment Housing now allows the Housing to pivot up to 30° over the seated LOCATOR R-Tx Nylon Retention Inserts.
- Abutment coating consists of multiple layers of titanium carbon nitride and titanium nitride producing a smoother, harder, more wear resistant, and esthetic (*pink gingival color*) exterior.
- New dual engaging geometry allows the patient to more easily align and properly seat the overdenture.
- New retention insert design with zero, low, medium, or high retention values.
- Industry standard .050"/1.25mm hex drive mechanism simplifies placement and has smaller center cavity.
- Dual-sided tool for easy insertion and removal of the LOCATOR R-Tx Retention Insert

CR CONCLUSIONS: 100% of CR Project Directors stated they would incorporate LOCATOR R-Tx into their practice. 100% rated it excellent or good and worthy of trial by colleagues.

Monday Morning Millionaire: How to Beat Wall Street at Its Own Game

**Monday Morning
Millionaire (edition 2)**
Milan Somborac, DDS



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Advantages:

- Book is easy to read and understandable
- Content is concise and to the point
- Concepts are presented in a way that dentist can become "Do-It-Yourself Investors"

CR Note:

- Additional resources are available at www.mondaymorningmillionaire.com with a \$180 (Canadian) annual subscription

CR CONCLUSIONS: 82% of 17 CR Evaluators stated they would incorporate *Monday Morning Millionaire* into their practice. 82% rated it excellent or good and worthy of trial by colleagues.

Endodontic Apex Location Files with Insulator for Accessing Depths through Metal and PFM Crowns

EndoPoint

Common Sense Dental
Products



\$14.83/File

The EndoPoint locator file can help simplify endodontic apex location process using various electronic apex locators with this unique file that has an insulator down its shaft which prevents "shorting out" while accessing through metal restorations. It is available in 20mm and 26.5mm lengths. The maximum measurement is up to a 25mm canal. Design does not impede vision and placement. Files may be used with a variety of apex locators.

Advantages:

- Apex location did not "short out" when accessing through metal restorations
- File was easy to use
- Design is effective and convenient
- Provides extra length

Limitation:

- Greater variety of lengths desired by a few Evaluators

CR CONCLUSIONS: 75% of 20 CR Evaluators stated they would incorporate EndoPoint into their practice. 85% rated it excellent or good and worthy of trial by colleagues.

Toothbrush with Slim Handle Design and "Floss-Tip" Bristles

**Gum Health Ultra-Slim
Floss Tip**
Colgate Oral
Pharmaceuticals



\$0.79/Brush (professional)

Gum Health Ultra-Slim Floss Tip has unique soft "floss-tip" bristles to clean interproximal, sub-gingival, and tight spaces well. Toothbrush is designed with a flexible neck for light touch brushing. Handle also allows for an extended reach deeper into the oral cavity. Rubber on handle improves grip.

Advantages:

- Very soft bristles
- Bristles clean interproximal areas well
- Handle is comfortable

Limitation:

- A few Evaluators would prefer this brush have a larger handle

CR CONCLUSIONS: 86% of 22 CR Evaluators stated they would incorporate Gum Health Ultra-Slim Floss Tip into their practice. 86% rated it excellent or good and worthy of trial by colleagues.