03AS9290

Managing the "Unmanageable" Sulcus: Achieving the impossible with basic tissue management and Aquasil Ultra Smart Wetting® impression material

Jeff T. Blank, DMD

Please Share This Valuable Information With All Doctors, Hygienists, and Assistants in the Office

Introduction:

Though opinions may vary, it is quite possible that most dentists would agree that the art of impression making could be the most important aspect of a successful restorative dental practice. For the culmination of proper tissue management, cutting a perfect preparation, gaining proper laboratory support, and ultimately delivering a perfectly fitting, properly functioning prosthesis all depend on an accurate impression. Even the slightest inaccuracy in recording the precise dimensions of the preparation, the architecture of the margins, the position of the soft tissue, and the relationship of the prepared teeth to the adjacent and opposing dentition can lead to catastrophic results. In an industry where profit margins are shrinking, time is money. And time wasted on poor field management and inaccurate impression techniques and materials lead to frustration for the doctor, and patient.

Each day, clinicians work in a remarkably difficult environment that as a routine is "wet." This moisture of course is mediated largely by the presence of saliva, but is also generated by crevicular fluid and hemorrhage products found in the gingival sulcus following routine crown and bridge preparations. To deny the presence of moisture in the sulcus, even when extreme care has been taken to assure an optimum field is nonsensical. Most dentists will agree that by the time a crown is warranted, insults to periodontal health such as longstanding overhangs, open margins, rough or irregular emergence contours around direct fillings, recurrent or new decay are commonplace, and the resultant breakdown of periodontal tissues is widespread. While certainly it is admirable to attempt to achieve optimal periodontal health prior to making an impression for every fixed prosthesis, in reality what is often needed to correct the gingival problem is in fact the placement of a well-fitting, properly contoured prosthesis itself.

In addition to controlling moisture in the form of crevicular fluid, hemorrhage, and saliva, dentists must also create an open, retracted sulcus that extends apically beyond the margins of the preparation, and laterally to prevent the soft tissue margin from collapsing onto the prepared tooth, occluding access the sulcular area. The amount of retraction possible is highly variable, almost as variable as the clinical scenarios faced each day by restorative clinicians. Deep subgingival preparations, thin marginal tissue, bulky fibrous papilla, as well as the level of osseous crest and tissue attachments complicate the art of impression taking.

It is extremely important that clinicians not only understand the nuances of proper tissue management and retraction, they must also understand the capabilities of the actual impression material selected to make the impression. Impression materials vary significantly in terms of physical properties, handling capabilities, and vast differences can exist in the performance of these materials. Particularly in difficult, less than ideal clinical presentations.

The purpose of this article is to highlight not only basic tissue management skills, but discuss the key physical properties of a successful impression material and how both benefit the practitioner in an everyday clinical setting.

The Basics of Tissue Management:

Many clinicians have espoused appropriate, often highly regimented techniques and materials to manage tissues during crown and bridge procedures. In ideal circumstances, these methods can control moisture in the gingival crevice and open the sulcus to permit the creation of an optimum impression with practically any impression material. The work of Loe, Albers, Gendusa, Donovan, Kois, Nemetz, Wilson and many others have served as the keystones for proper tissue management during crown and bridge impressions. Preoperative recordings of crestal bone height, and determination and preservation of biological width are requisites for predictable post-delivery tissue height and the establishment of a healthy periodontium. While a full discussion on these important concepts is not germane to this paper, the techniques shown in the examples presented here employ these ideals. What is relevant to this discussion is demonstrating a predictable way to manage less than ideal soft tissue problems found routinely in common crown and bridge impression taking.

While many modern all-ceramic systems permit esthetic "invisible" supragingival margin placement, it is still necessary to place some margins subgingivally due to the presence of existing restorations or decay, or to hide the margin of the more opacious ceramic or metal/ceramic restorations. To deny the frequency by which most practitioners are required to place margins in the gingival sulcus is not practical.

The "Double Cord" Technique: A Requisite for Subgingival Margins

This author advocates the use of a double cord technique when faced with the clinical requirement of a subgingival margin placement. In this technique, as described by Kois, Nementz, Donovan and others, a small knitted cord is soaked in a plain buffered aluminum chloride solution (Hemodent, Premier Dental) and gently placed into the junctional epithelium superior to the crestal connective tissue fibers. This procedure is performed after "roughing-out" the supragingival preparation, but prior to subgingival preparation. Assuming a normal bony crest, anywhere from 1 – 3 mm of apical retraction should occur with this initial cord placement. Once the tissues have reached their ultimate retracted position, the preparation is completely to the height of the retracted gingival margin. This can be accomplished effectively with full visualization of the margin without lacerating the marginal tissues. The assumption is that once this cord is removed, the tissues will migrate back to their original, more coronal preoperative height, and the margin will become subgingival upon normal healing. The preparation is completed and the margins defined.

In order to assure lateral retraction of the gingival margin prior to placement of the impression material, a second larger knitted cord saturated in a buffered aluminum chloride is placed on top of the first cord. This cord is left in place for approximately 3-5 minutes, and then removed just prior to the placement of the impression. During the impression, the first cord remains in the sulcus, and serves to provide a barrier to continued flow of crevicular fluid or hemorrhage products.

Ultimately an ideal environment is created with a laterally retracted sulcus greater than .5mm in width, and more than .5mm of apical retraction sufficient enough to record an appropriate amount of unprepared tooth structure apical to the margin.

The Role of an ideal Impression Material:

While achieving an ideal retracted sulcus is a noble goal, even the most meticulous technique can yield a less than ideal environment. In these circumstances, the physical characteristics of the impression material are critical.

One physical characteristic of primary importance is hydrophilicity. The hydrophilicity or "wettability" of an impression material is its ability to develop surface contact with the moist hard and soft tissues and permit the material to penetrate into the sulcus. Impression materials that show good wettability typically provide better definition of margins in less than dry sulci, and a greater ability to displace moisture and air. If an impression material cannot displace water, blood, saliva or air during an impression, the positive imprints of the coalesced artifacts lead to voids or "bubbles" in the impression. The presence of voids can render the impression useless, and increase the likelihood of retakes.

Hydrophilicity can be accurately measured by determining the contact angle, or the degree of arc formed as water is brought in contact with an impression material as visualized in a stereomicroscope. Those materials that possess lower contact angles produce little to no "beading" of water on the surface are considered more hydrophilic than materials that demonstrate more "beading" or higher contact angles. Clinically, it is considered optimal for an impression material to be as hydrophilic as possible right from the start of the mix; however, there are no good means for measuring contact angle on "unset" impression material. Most modern impression materials use synthetic rubber polymers such as silicone rubber base or traditional linear polyvinyl siloxane. On their own, these materials are hydrophobic (water repelling) and require the use of chemical additives called surfactants to increase their hydrophilicity. Surfactants are hydrophilic additives that are often mixed with hydrophobic materials to make them more "wettable." The type of surfactants used in modern impression materials is highly proprietary and are not equal in performance. Though it may seem logical to simply increase the amount of surfactant in order to make the impression material more wettable, saturating the various chemistries with surfactant diminishes other important physical characteristics of the polymers such as tear strength.

Tear strength is a measure of an impression materials ability to resist separation or tearing upon removal from the mouth or stone model. High tear strengths are favorable as this predicts the higher likelihood that the impression material will remain intact with no pieces of separated material remaining in the sulcus or tight recesses in the stone model upon removal. A medium must be reached such that the impression does not become so rigid that it cannot be removed from the mouth without causing pain or dislodging existing dental restorations or periodontally compromised teeth, or fracturing delicate intricacies of working casts upon separation from the stone model.

Other physical properties such as resistance to deformation and percent strain in compression also estimate the rigidity of the material. While also influenced by the saturation of certain surfactants, these qualities reflect the chemical coupling of the polymer used and the ability for these materials to crosslink and remain stable over time. This is where the chemical polymer configuration is extremely crucial, and at least one manufacturer has created an entirely unique quadrafunctional polymer which offers significant advantages over previously existing chemistries.

Another important physical property of impression materials is the rate of viscosity build. All impression materials are two component, catalyst/based chemistries that begin as a fluid and gradually turn to a stable solid over a period of time. The rate of this reaction, or rate of viscosity build, determines several important handling properties of the material. First, the time measured from the start of mix until the time the impression can be removed from the mouth is termed the Mouth Removal Time (MRT). In order for an impression material to be useful in dentistry, the clinician must have enough working time to get the impression material dispensed around the preparation(s) prior to it "setting" to a point that it will no longer flow. Given the varied times required from impressing single preparations to more sophisticated full arch preparations, most impression materials must allow anywhere from 3 – 5 minutes of MRT. The more advanced materials are now offered in what is commonly called "regular" and "fast set" materials and offer clinician greater choice in balancing patient comfort with adequate working time depending on the clinical situation.

The rate of viscosity build is also critical when more than one viscosity of material is used. While some clinicians prefer to use a single viscosity of material (monophase technique) to record the intricacies of the preparation, sulcus, and the surrounding dentition, other dentists (the author included) prefer to use a lower viscosity material in the sulcus and around the preparation, and a higher viscosity material to record the rest of the dentition and oral anatomy (dual phase or tray/wash technique). In the latter, the rate of viscosity build of both materials used must be matched exactly for a successful impression. If the lower viscosity material has begun to "set" prior to the placement of the unset more rigid tray material, the two viscosities do not flow properly and dragging, pulling, or folding of the materials occurs. These irregularities may be obvious upon inspection of the impression, but can go unnoticed by the clinicians. In either case, the result is either a retake of the impression, or an improperly fitting restoration. Both of which are inconvenient and often costly to correct.

Combining Tissue Management with a Unique Impression Material:

The following case presentations are illustrated to demonstrate less than optimal clinical scenarios in which bleeding and crevicular flow are were difficult to manage. The purpose of of this demonstration is to highlight the advantages of utilizing a new quadrafunctional polyvinylsiloxane impression system.

Case Presentation 1:

A 27 year old male in perfect medical health presents for a full coverage fixed crown on tooth #12. The preoperative radiograph shown in Figure 1 shows the deep radicular decay on distal proximal surface apical to a large amalgam. Endodontic therapy was performed and a composite core was placed. Since the composite core extended subgingivally and the crown margin must be placed apical to this restoration, it was apparent that a double cord technique would be required to apically retract the tissues prior to final margin placement. This single, smaller braided cord was placed according to the guidelines illustrated earlier in the article, and the margins were defined without additional injury to the marginal tissues.

Figure 1

Due to the longstanding presence of bacterial irritants present in the demineralized defect, periodontal breakdown had begun, and the tissues failed to respond favorably to these efforts to completely stop hemorrhaging and crevicular flow. A second, larger braided cord was place to lateral retract the tissues, and a 2% ferric chloride astringent material was applied to the affected areas. The result was less than ideal, and upon removal of the second cord, minor amounts of hemorrhage persisted (Figure 2).

The decision was made to test the performance of Aquasil Ultra Smart Wetting® Impression Material (Dentsply/Caulk) a new quadrafunctional polyvinyl siloxane impression material in this difficult environment.

Figure 2

Aquasil Ultra is defined by the manufacturer as a "Smart Wetting" impression material designed to minimize the problems of voids, bubbles, pulls and drags. In laboratory testing,[1] Aquasil Ultra demonstrated the highest tear strength of 23 leading materials, and contact angles as low as 5 degrees – an impressive 8 – 10 times lower than top competitors. Owed in part to its quadrafunctional chemistry balanced with a proprietary surfactant, this material is designed primarily with these less than optimal clinical scenarios in mind. Available in an unprecedented 5 viscosities and two different mouth removal times (3 minute and 5 minute MRT), this material offers greater choices to suit every impression technique. As mentioned earlier in this article, it is the author's preference to use a dual phase (wash/tray) technique for cases such as the one depicted here. Aquasil Ultra is the first impression material to offer both a Low Viscosity (LV) and Extra Low Viscosity (XLV) material. Both can yield extraordinary results in capturing the intricate architecture of the margins, and each are sufficiently hydrophilic to displace the type of moisture found in difficult cases such as this. The rate of viscosity build in each of the 5 viscosities has been carefully calibrated to minimize pulls, drags and folds.

In this case, Aquasil Ultra LV was chosen because the sulcus was well defined and opened sufficiently to allow the flow of a traditional wash consistency. As compared to the Extra Low Viscosity (XLV) material, Aquasil Ultra LV is thick enough to displace the thick fibrous papilla present in this case.

The impression process begins with the expression of Aquasil Ultra LV into a hand-held syringe with disposable tip. While many practitioners are comfortable with attaching the convenient "wash" tip directly to the gun, the author prefers a shorter, more compact delivery system. This transfer occurs simultaneously with an assistant dispensing Aquasil Ultra Heavy Body tray material into a tray. Coordination of these two steps is very important. As discussed earlier, it is imperative to begin the start times of the dual-phase technique at the same time in order to synchronize the start times for the viscosity build of each system. As with any dual phase impression material, failure synchronize the polymerization start times of both the wash and tray material increases the potential for pulls, drags, and folding.

The tray material selected for this case was Aquasil Ultra Heavy Body DECA™, a newly released tray material dispensed conveniently from the automated Pentamix® delivery system (Figure 3). This system allows you to fill the tray with the simple push of a button eliminating the "muscle" required by the dental personnel when using typical cartridge/gun delivery systems. While cartridge delivery is popular for lower viscosity materials, dental personnel appreciate the ease and convenience of these automated systems when dispensing heavy bodied materials, especially when filling a large full arch tray.

Figure 3

The decision concerning which type of tray (custom tray, stock full arch tray, or triple tray) is largely based on the clinical scenario. The author has had ongoing success with triple trays when limited to 1 – 2 units where the adjacent dentition is intact, good centric occlusion stops are present, and the patient can participate and tolerate a closed-mouth impression. When any of these 3 requirements are compromised, the other tray techniques are suggested.

The clinical protocol (Figures 4-7) with a dual cord, dual phase impression technique is as follows: The doctor removes the second larger cord used for lateral expansion of the sulcus, leaving the smaller first cord in place completely submerged below the margin. The prep is thoroughly rinsed and the sulcus inspected. The doctor begins syringing the Aquasil Ultra LV into the sulcus while the assistant is loading the tray with Aquasil Ultra Heavy Body DECA™. In this particular case presentation, note in Figure 6 that a mild degree of hemorrhage began flowing upon syringing the Aquasil Ultra LV.

Figure 4

Figure 5

Figure 6

Figure 7

It is in these types of clinical scenarios that the physical properties of an impression material are most important. The wettability of Aquasil Ultra Smart Wetting® impression material permits the literal displacement of the hemorrhage and crevicular fluid found in this sulcus. The optimum viscosity at each stage of the impression allow the material to flow into this sulcus without pulls, drags or voids.

Figure 8

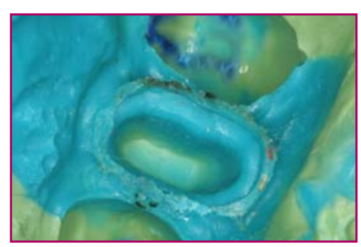

Figure 9

Figures 8, 9 depict the final impression. Note that with Aquasil Ultra's significant tear strength, even those areas where the retraction methods fail to widen the sulcus and only thin flanges of the impression material can penetrate are captured and do not break away from the impression. In this less-than-optimum working field, Aquasil Ultra possessed the required properties to make what could be an impossible impression… possible.

Case Presentation 2:

This final case presentation depicts a common scenario in restorative dentistry: The unmanageable sulcus. In this case, the patient was taking blood thinner medication to control longstanding peripheral circulation problems, and therefore had a propensity for longer clotting times even with mild trauma to tissues. Though the double cord technique was employed and copious amounts of astringent were used, the sulcus remained wet (Figure 10). Postponing the impression after achieving ideal periodontal health would be fruitless as the cause of this bleeding was induced by medication and not poor hygiene. The decision was made to attempt to capture this impression by capitalizing on the Smart Wetting® technology found only in Aquasil Ultra.

Figure 10

Figure 11

Because the sulcus was ill-defined and the friable tissues were collapsing onto the margin, the author employed the use of Aquasil Ultra XLV as the wash viscosity. Compared to traditional wash impression materials, Aquasil Ultra XLV has a more honey-like consistency that flows more readily into thin areas of poor retraction. With its proprietary surfactants, low contact angle even in blood-soaked fields, and quadrafunctional polymer coupling, Aquasil Ultra XLV is ideally suited for this hostile environment.

Note in Figure 11 that Aquasil Ultra XLV is literally displacing the blood and crevicular fluid out of the sulcus as it is syringed around the preparation. The author admits that this is nearly a hopeless situation for most impression materials. However, Figure 12 depicts the final result when Aquasil Ultra XLV wash material was combined with Aquasil Ultra Heavy Body DECA™ tray material.

Note that with the exception of the inclusion of actual hemorrhage product into one small area of the impression, Aquasil Ultra Smart Wetting® impression material was able to completely capture not only the entire margin, but a sufficient flange extension into this poorly managed sulcus without tearing, bubbles, drags or voids.

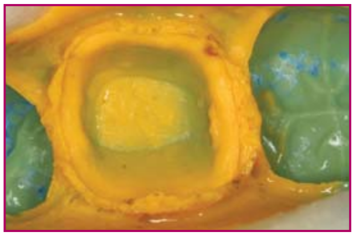

Figure 12

Conclusion:

The purpose of this article was to demonstrate helpful tips on successfully impressing the "unmanageable" preparation. By combining the unique physical properties of the newly released Aquasil Ultra Smart Wetting® impression material with basic techniques for managing hemorrhage and crevicular fluid flow, dentists can simply relax, and count on a perfect impression. Even under the most hostile clinical scenario.

1. Data is on file at Dentsply Caulk

COURSE SPONSOR

Sullivan-Schein Dental is course sponsor. Sullivan-Schein Dental's ADA CERP recognition runs from November 2001 to December 2004.

COURSE CREDITS

All participants scoring at least 80% on the examination will receive a certificate verifying 3 CEUs. The formal continuing education program of this sponsor is accepted by the AGD for Fellowship/Mastership credit. The current term of acceptance extends from December 2001 to December 2004. Participants are urged to contact their state dental boards for continuing education requirements.

PARTICIPANT FEEDBACK

If any participant wishes to communicate with the author of this course, please fax questions to: Sullivan-Schein Dental by fax at 1-800-781-6337. Be sure to provide us with the following information: name, address, e-mail address, telephone number, and course completed.

COURSE EVALUATION

We encourage participant feedback pertaining to all courses. Please be sure to complete the attached survey included with the answer sheet.

RECORD KEEPING

Sullivan-Schein Dental maintains records of your successful completion of any CE Seminars. Please contact our offices at Sullivan-Schein Dental, Attn.: CEHP, 26600 Haggerty Rd., Farmington Hills, MI 48331, by mailing a note requesting a copy of your continuing education credits report. This report, which will list all credits earned to date, will be generated and mailed to you within five business days of receipt.

IMPORTANT INFORMATION

The opinions of efficacy or perceived value of any products or companies mentioned in this course and expressed herein are those of the author(s) and do not necessarily reflect those of Sullivan-Schein Dental. Completing a single continuing education course does not provide enough information to make the participant an expert in the field related to the course topic. It is a combination of many educational courses and clinical experiences that allows the participant to develop the skills, broad-based knowledge and expertise related to the subject matter.

COURSE FEE/REFUND POLICY

The cost for this course is $55.00. Any participant who is not 100% satisfied with this course can request a full refund by contacting:

Sullivan-Schein Dental,
Attn: CEHP, 26600 Haggerty Rd.,
Farmington Hills, MI 48331.

DENTSPLY
CAULK

Aquasil Ultra

SMART WETTING® IMPRESSION MATERIAL *for Dynamic Mixing Machines*

2003 REALITY Five Star Award
REALITY'S CHOICES

DECA™

and

Aquasil Ultra

SMART WETTING® IMPRESSION MATERIAL

NEW improved delivery!

Compatible with Pentamix®, Pentamix® II and MixStar

Aquasil Ultra DECA Introductory Kit
Ea. **$169.99**
Specify:
Mono/LV **(222-1800-AE)**
Heavy/LV **(222-7556-AE)**

Contains: 1 ea. 380 ml Base and Catalyst Cartridge, 1 ea. 50 ml cartridge LV Wash material, 1 ea. 50ml Dispensing Gun, 1 ea. Tray Adhesive, 6 ea. mixing tips, 6 ea. intraoral tips, 10 dynamic mixing tips, 1 ea. Bayonet Locking Ring, 2ea. Reseal Caps.

Aquasil Ultra Smart Wetting® Impression Material Introductory Kit
Ea. **$104.99**
Specify:
Monophase & LV (Low Viscosity) **(222-2915-AE)**
Monophase & LV (Low Viscosity) Fast Set **(222-5612-AE)**
Rigid & LV (Low Viscosity) **(222-4653-AE)**
Rigid & LV (Low Viscosity) Fast Set **(222-6393-AE)**
Heavy & LV (Low Viscosity) **(222-0146-AE)**
Heavy & LV (Low Viscosity) Fast Set **(222-6473-AE)**

Contains: 4 Cartridge Materials 50mL each, 1 Cartridge Dispenser, 12 mixing tips, 6 Intraoral tips, 1 Tray Adhesive.

Ultra Wettable

Aquasil Ultra Impression Material is 8 times more wettable than Impregum®.

The contact angle of Aquasil Ultra Impression Material starts out less than Impregum®, and remains the lowest of all VPS materials.

Aquasil Ultra Impression Material is uniquely formulated to:

- **Minimize voids and bubbles**
- **Capture detail in a moist oral field**
- **Allow better adaptation to tooth structure and sulcus**

Ultra Forgiving

Aquasil Ultra Impression Material is designed to minimize pulls and drags.

We developed Aquasil Ultra Impression Material to provide prolonged flow characteristics during work time. This unique formulation gives you the assurance that the material will maintain a low viscosity during work time with the same MRT (mouth removal time).

Ultra Strong

Aquasil Ultra's wash material is at least 40% stronger than 23 other leading wash materials tested.

Superior tear strength in the wash material works to provide intact margins, no matter how thin. And separation from the mouth is easy, without tearing or distortion.

*Data on file.
Impregum, Pentamix®, Pentamix® II, Flexitime Magnum, P2 Magnum, and MixStar are not registered trademarks of DENTSPLY International.

Continuing Education Test Questions

Answer Sheet on Back Cover

1. In addition to controlling bleeding and crevicular fluid flow, dentists must create an open retracted sulcus that extends apical to the marginal position.

a. True

b. False

2. Preoperative procedures such as the determination of the osseous crest height and tissue attachments are not important prior to utilizing a double cord technique.

a. True

b. False

3. Modern dentists never have to place crown margins subgingivally.

a. True

b. False

4. With a double cord retraction technique, both cords are removed just prior to making the impression.

a. True

b. False

5. Assuming normal crest bone height and a healthy periodontium, the apically retracted gingival free margin predictably returns to its preoperative position with atraumatic cord placing procedures.

a. True

b. False

6. In the double cord technique, the second cord is placed for lateral expansion of the sulcus.

a. True

b. False

7. A minimum of 0.5mm of unprepared tooth structure apical to the margin must be captured in the impression to assure proper emergence profile of the fabricated restoration.

a. True

b. False

8. Retraction cords must be placed with force into the connective tissue attachment.

a. True

b. False

9. In the dual cord technique, gross initial preparation occurs prior to the placement of any cords.

a. True

b. False

10. In order to achieve a postoperative subgingival margin location, the final margin is prepared to the height of the retracted (1st cord) gingival margin.

a. True

b. False

11. In the dual cord technique, cords must be left in the sulcus for a minimum of 15 minutes to allow retraction to occur.

a. True

b. False

12. Hydrophilicity (wettability) is typically measured by the contact angle, or the degree of arc formed as water is brought in contact with an impression material.

a. True

b. False

13. Most synthetic polymers used as the foundation for impression materials are naturally hydrophilic.

a. True

b. False

14. Quadrafunctional polymers (such as that found in Aquasil Ultra) have greater crosslinking sites and increase tear resistance compared to linear polymers.

a. True

b. False

15. Failure to synchronize the mixing start times can lead to the creation of pulls, drags, and voids.

a. True

b. False

16. Aquasil Ultra Smart Wetting® Impression Material is at least 8 times more wettable than any other current brand tested.

a. True

b. False

17. If bleeding or continued crevicular flow continue after meticulous attempts to achieve a dry sulcus, there is no impression material capable of capturing the impression in this hostile working field.

a. True

b. False

Managing the "Unmanageable" Sulcus: Achieving the impossible with basic tissue management and Aquasil Ultra Smart Wetting® impression material

Jeff T. Blank, DMD

CONTINUING EDUCATION ANSWER SHEET

Name:

Address: City:

State: Zip: Telephone: Office ( ) Home ( )

TO EXPEDITE RECEIVING CE CERTIFICATE, PLEASE PROVIDE E-MAIL ADDRESS:________________________________
OR CERTIFICATES SENT BY MAIL WILL BE PROCESSED WITHIN 6–8 WEEKS.

1. Completely fill in information and payment section. (Enclose payment)
2. Answer sheet must be completed in pen.
3. All test questions have only one answer.
4. After completing test, mail to: Sullivan-Schein Dental • Attn: CEHP • 26600 Haggerty Rd. • Farmington Hills, MI 48331

❑ If you wish to receive your score with your certificate, please check this box.

Please direct all questions or requests for more information pertaining to this course to: Sullivan-Schein Dental 1-800-686-4200 x3608.
Participants will receive confirmation of passing by receipt of a certificate.

Please select one of the following:

❑ Bill to my Sullivan-Schein Dental Account

____

❑ Check made payable to Sullivan-Schein Dental for $55.00 is enclosed

If paying by credit card, please complete the following information:

❑ MasterCard ❑ Visa ❑ Discover ❑ American Express

Account # ______________________ Exp. Date____________

All seminars are invoiced to a Sullivan-Schein Dental account.

3 CE CREDITS

Course Fee $55.00

CE HP
CONTINUING EDUCATION for the HEALTHCARE PROFESSIONAL
HENRY SCHEIN®

Course Evaluation

Please evaluate this course by responding to the following statements, using a scale of Excellent=4 to Poor=0.

1. The content was valuable:
   4 3 2 1 0
2. The questions were relevant:
   4 3 2 1 0
3. The course gave you a better understanding of the topic:
   4 3 2 1 0
4. Rate the overall value to you:
   4 3 2 1 0
5. Would you participate in a program similar to this one in the future on a different topic of interest:
   _____ Yes _____ No

Any additional comments:

____

____

____

ANSWER SHEET

1. Ⓐ Ⓑ	10. Ⓐ Ⓑ
2. Ⓐ Ⓑ	11. Ⓐ Ⓑ
3. Ⓐ Ⓑ	12. Ⓐ Ⓑ
4. Ⓐ Ⓑ	13. Ⓐ Ⓑ
5. Ⓐ Ⓑ	14. Ⓐ Ⓑ
6. Ⓐ Ⓑ	15. Ⓐ Ⓑ
7. Ⓐ Ⓑ	16. Ⓐ Ⓑ
8. Ⓐ Ⓑ	17. Ⓐ Ⓑ
9. Ⓐ Ⓑ	

For Internal Purposes Only:

JDE # ____________________ Order # ____________________

Check # ________________