Tissue Management

hemostasis and sulcular fluid control

for total control
As a young dentist, I frequently encountered crown and bridge restorations with defective margins. Early on, I noticed the difficulty of accurately capturing the margin in the impression and I discovered that this inaccuracy was the most common cause for crown failure. The presence of blood and sulcular fluid in the sulcus added to the difficulties in the already complicated preparation. With retraction cords and liquids alone, the problem remained unsolved. I eventually came to the realization that hemostasis and retraction should be completed in two separate steps, using tools specifically designed for each process.

For hemostasis, I developed Astringedent solution using the hemostatic properties of iron sulfate. The Dento-Infusor® tip, a disposable 19-gauge metal tip with a padded swab end, delivers the solution directly to the sulcus and forces the solution into the cut capillary orifices. This creates an “active” hemostatic effect; the sulcus does not resume bleeding even when touched with the cord or exposed to hard air/water spray.
Astringedent led to the creation of ViscoStat, a viscous 20% ferric sulfate equivalent solution. ViscoStat has a level of effectiveness equal to Astringedent and has the added benefit of binders and coating agents for unsurpassed kindness to soft and hard tissues.

My first invention came in response to a daily frustration I experienced when at Loma Linda University in California. Time and time again, taking impressions resulted in a poor representation of preparation margins. One of the biggest irritations was the retraction cord, which was twisted or braided like a lasso and never stayed where I needed it. In addition to being difficult to place, the mere removal of the cord often caused the sulcus to bleed as much as before.

The solution to the problem lay a lot closer than you would expect. The material from which my wife’s pantyhose were made had many of the desired properties. Knitted cord was the solution. I developed an absorbent, knitted retraction cord and produced it under the name Ultrapak.

The development of these superior tissue management products eliminated my frustration in crown preparations. I also invite you to experience the time-saving Tissue Management System from Ultradent and learn how it can improve the quality and predictability of your procedures.

Sincerely,

Dan E. Fischer, DDS
President
Ultradent Products, Inc.
Making accurate impressions is the essential element in determining successful crown and bridge dentistry. More premature crown failures are caused by faulty marginal fit than by all other factors combined. The poor impressions that cause faulty marginal fit are most often due to the presence of fluids in the impression site.

Ultradent’s hemostatic solutions were designed to provide rapid, quality hemostasis. The clean, dry field achieved through this “profound” hemostasis will virtually ensure a quality impression the first time. This saves the clinician time by eliminating costly impression retakes. High-quality impressions also save the clinician money by eliminating the additional lab fees incurred when restorations must be refabricated.

The products in Ultradent’s complete line of hemostatics have been formulated to meet all tissue management needs including crown, bridge and veneer preparation and cementation. These products are also optimal for eliminating sulcular fluid contamination during composite or amalgam placement. Astringedent® and ViscoStat® may be used in place of formocresol for vital pulpotomies.
**ViscoStat plus®**
- Viscous 22% ferric chloride solution
- Contains special additives for kindness to hard and soft tissues
- Leaves dentin smear plugs intact even after 8 minutes of exposure
- Easiest to wash off

**Astringedent®**
- Aqueous 15.5% ferric sulfate equivalent
- ADA accepted
- Percent acidity of 10
- May be used in place of formocresol for vital pulpotomies
- “Highly recommended as effective and easy to use for control of bleeding, tissue management and pulpotomies. Rating +++++” 1

**ViscoStat®**
- Viscous 20% ferric sulfate equivalent
- Contains special additives for kindness to hard and soft tissues
- Leaves dentin smear plugs intact even after 8 minutes of exposure
- May be used in place of formocresol for vital pulpotomies

**Astringedent X®**
- Aqueous 12.7% iron; derived from an equivalent aqueous solution containing ferric subsulfate and ferric sulfate
- Stops difficult/problem bleeding as with pregnant patients, elderly patients, or patients taking blood-thinning medication
- More aggressive to tissues than ViscoStat Plus®, ViscoStat® or Astringedent®, but less acidic than other iron subsulfate solutions.
- Diluted Astringedent X® does not equal ViscoStat Plus®, ViscoStat® or Astringedent®
The Dento-Infusor® tip is the crux of Ultradent’s tissue management technique. Rubbing the Dento-Infusor® against the bleeding sulcus with moderate pressure infuses hemostatic solutions into the capillaries. This scrubbing action also removes coagulum from the cut surface so that it is easily rinsed away with an air/water spray. The continuous infusion of the hemostatic agent into the tissues also accelerates retraction.
The blunt, bent 19 gauge metal cannula of the Dento-Infusor® has a brush-padded end. Most dentists prefer the versatility and thinness of the metal Dento-Infusor® tip for tissue management during crown preparations.

The Blue Max Dento-Infusor® tip and the Blue Mini Dento-Infusor® tips offer all-plastic alternatives to the metal Dento-Infusor®. These tips are softer than the metal Dento-Infusor® and are ideal for sulcular fluid control during adhesive procedures.

The Blue Mini Dento-Infusor® tip has a more acute angle than the other Dento-Infusor® tips. It also has a smaller tip in order to reach tight areas such as lingual interdental papilla of anteriors and other small interproximal spaces. Because the Blue Mini Dento-Infusor® tip has a smaller tip end than the other Dento-Infusor® tips, not as much tissue is infused with each stroke.
Ultrapak® cord is made of 100% cotton knitted into thousands of tiny loops forming long, interlocking chains. These loops allow the cord to hold and carry significantly more hemostatic agent to the tooth preparation. Upon packing, the loops compress, expressing hemostatic astringent to underlying tissues. Ultrapak®’s knitted design exerts a gentle, continuous, outward force on the sulcular tissue, providing excellent tissue displacement as the knitted loops seek to open.
Because Ultrapak® compresses upon packing, choose a size of cord that initially appears one size too large.

**Sizes #0, #00 and #000**
- Excellent for controlling fluids during bonding procedures
- Great as the bottom cord in a double-cord technique

**Sizes #1, #2 and #3**
- Often used with posterior preparations
- Performs well as an upper cord in a double-cord technique
- Effective when soaked in hemostatic and placed prior to crown preparation; if a bur comes in contact with Ultrapak® during crown preparation, Ultrapak® will not tangle around the bur.
Ultradent is the first manufacturer to help dentists achieve “profound” hemostasis. When one of the Ultradent hemostatic solutions is used in conjunction with a Dento-Infusor® tip, this “profound,” dependable hemostasis is realized. Bleeding will not recommence even with the sulcus is exposed to firm air/water spray or when it is touched by the impression material.
Infuse hemostatic solution into cut capillary tips by expressing fluid from syringe while rubbing firmly with the Dento-Infusor® tip.

Place an Ultrapak® knitted cord soaked in hemostatic solution.

An accurate impression is virtually guaranteed.

Subgingival preparation

ViscoStat rubbed firmly against the sulcus with metal Dento-Infusor® tip.

A firm air/water spray removes residual coagulum and tests tissue for quality, “profound” hemostasis.

Ultrapak® knitted cord soaked in ViscoStat® is packed with Fischer’s Ultrapak Packer® and left for one to three minutes. Remove, air/water wash, dry.

The clean, dry field is ideal for taking a quality impression.
Sulcular fluid control is extremely important with sensitive bonding and luting procedures. A #00 or #0 cord soaked in an Ultradent hemostatic solution and packed prior to bonding veneers is an invaluable aid. Gingival tissue is displaced laterally and apically from the margins, thus preventing contamination from sulcular fluid.
Several Class V restorations were performed on these anterior teeth two months prior. Inadequate tissue management or inadequate removal of hemostatic and/or blood contaminants have resulted in microleakage on maxillary right central incisor.

With microleakage, blood pigments move into the space between preparation and restoration. Pigments in the blood stain the interface.

First, isolate tissues with Ultrapak® cord soaked in hemostatic solution. Then, firmly air/water spray to rinse excess hemostatic from the cord, tissues and tooth surfaces to prevent contamination and resultant leakage.

Replaced Class V restoration three months post-op.

**Lesson:** Hemostatics and/or blood can contaminate dental surfaces and compromise adhesion. Always scour and/or etch the surface clean before applying dentin bonding agents.
1.2 ml Plastic Syringes

1.2ml plastic syringes have snug, luer lock threads to prevent tips from popping off. Smooth, rounded edges and contours are ideal for intraoral requirements.

PrepQuick®

PrepQuick 2% glycolic acid cleans and conditions for bubble-free impression making.

Fischer’s Ultrapak Packers®

Fischer’s Ultrapak Packers have thin, slightly serrated heads that sink into the knitted cord without snagging it. The packers are available with heads angled at 45 to the handle eliminating the need to flip the instrument end for end.
### Tissue Management Ordering Information

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
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<tbody>
<tr>
<td>1190</td>
<td>ViscoStat Plus Tissue Management Kit</td>
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<tr>
<td>1281</td>
<td>ViscoStat Plus Dento-Infusor Kit</td>
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<tr>
<td>1280</td>
<td>ViscoStat Plus IndiSpense Refill</td>
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<tr>
<td>1279</td>
<td>Preprinted ViscoStat Plus syringes</td>
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<td>ViscoStat Tissue Management Kit</td>
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<td>ViscoStat Dento-Infusor Kit</td>
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<tr>
<td>122</td>
<td>Metal Dento-Infusor tips (20 pack)</td>
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<tr>
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<tr>
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<td>Blue Max Dento-Infusor tips (20 pack)</td>
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<tr>
<td>128</td>
<td>Blue Mini Dento-Infusor tips (20 pack)</td>
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<td>Ultrapak Cord #000</td>
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<td>181</td>
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**Contents:**
- **1190 ViscoStat Plus Tissue Management Kit**
  - 1 - 30ml Indispense syringe
  - 1 - Ultrapak knitted cord kit (#00, 0, 1 & 2)
  - 1 - Fischer’s Ultrapak Packer
  - 20 - Dento-Infusor tips
  - 20 - 1.2ml empty syringes

- **1281 ViscoStat Plus Dento-Infusor Kit**
  - 1 - 30ml Indispense syringe
  - 20 - Dento-Infusor tips
  - 20 - 1.2ml empty syringes

- **1280 ViscoStat Plus IndiSpense Refill**
  - 1 - 30ml IndiSpense syringe

- **1279 Preprinted ViscoStat Plus syringes**
  - Contents: 20 - empty 1.2ml syringes

- **649 ViscoStat Tissue Management Kit**
  - Contents: 1 - 30ml IndiSpense syringe
  - 1 - Ultrapak knitted cord kit (#00, 0, 1 & 2)
  - 1 - Fischer’s Ultrapak Packer
  - 20 - Dento-Infusor tips
  - 20 - 1.2ml empty syringes

- **647 ViscoStat Dento-Infusor Kit**
  - Contents: 1 - 30ml IndiSpense syringe
  - 20 - Dento-Infusor tips
  - 20 - 1.2ml empty syringes

- **645 ViscoStat IndiSpense Refill**
  - Contents: 1 - 30ml IndiSpense syringe

- **1278 Preprinted ViscoStat syringes**
  - Contents: 20 - 1.2ml amber syringes

- **122 Metal Dento-Infusor tips (20 pack)**
- **125 Metal Dento-Infusor tips (100 pack)**
- **126 Blue Max Dento-Infusor tips (20 pack)**

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**Astringedent Tissue Management Kit**
- **011**
  - Contents: 1 - 30ml bottle Astringedent
    - 20 - Dento-Infusor tips
    - 20 - 1.2ml empty syringes
    - 1 - Ultrapak knitted cord kit (#00, 0, 1 & 2)
    - 1 - Fischer’s Ultrapak Packer

**Astringedent Dento-Infusor Kit**
- **001**
  - Contents: 1 - 30ml bottle Astringedent
    - 20 - Dento-Infusor tips
    - 20 - 1.2ml empty syringes

**Astringedent 30ml bottle**
- **111**
  - Contents: 1 - bottle

**Astringedent 60ml bottle**
- **121**
  - Contents: 1 - bottle

**Astringedent IndiSpense Tissue Management Kit**
- **699**
  - Contents: 1 - 30ml IndiSpense syringe
    - 20 - Dento-Infusor tips
    - 20 - 1.2ml empty syringes
    - 1 - Ultrapak knitted cord kit (#00, 0, 1 & 2)
    - 1 - Fischer’s Ultrapak Packer

**Astringedent IndiSpense Dento-Infusor Kit**
- **698**
  - Contents: 1 - 30ml IndiSpense syringe
    - 20 - Dento-Infusor tips
    - 20 - 1.2ml empty syringes

**Astringedent IndiSpense Refill**
- **686**
  - Contents: 1 - 30ml IndiSpense syringe

**Astringedent X 30ml bottle**
- **112**
  - Contents: 30ml Astringedent X

**Astringedent X IndiSpense**
- **690**
  - Contents: 30ml Astringedent X

**Buffered Aluminum Chloride (30ml bottle)**
- **114**
  - Contents: 1.2ml syringes

**Astringedent Spot Remover (70 ml bottle)**
- **160**
  - Contents: 1 each of Ultrapak cord #00, #0, #1 and #2
  - 1 - Ultrapak cord organizer (Each bottle contains 244 cm of cord)

**Ultrapak Cord #000**
- **137**
  - Contents: 244 cm knitted cord

**Ultrapak Cord #00**
- **136**

**Ultrapak Cord #0**
- **131**

**Ultrapak Cord #1**
- **132**

**Ultrapak Cord #2**
- **133**

**Ultrapak Cord #3**
- **134**

**Fischer’s Ultrapak Packers – 45° to handle**
- **170**
  - Regular
- **171**
  - Small
- **173**
  - Large

**Fischer’s Ultrapak Packers – 90° to handle**
- **174**
  - Small
- **172**
  - Regular

**Ultradent Slide Packers**
- **834**
  - Small
- **833**
  - Regular

**PrepQuick Kit**
- **516**
  - Contents: 4 - 1.2ml syringes
  - 20 - Inspiral Brush tips

**PrepQuick Refill**
- **517**
  - Contents: 4 - 1.2ml syringes

**Tissue Management Instructional Video**
- **181**