A Self-Instructional Video and Manual for a Simplified Approach to Sharpening Periodontal Scalers and Curettes
Preface

The method for sharpening periodontal scalers and curettes described in this manual is based upon a teaching strategy designed and developed by:

Sherry Burns, R.D.H., M.S.
Author and Creator, It’s About Time
and
Educational Consultant
Hu-Friedy Mfg. Co., LLC

Hu-Friedy’s Self-Study Manual for Sharpening Scalers and Curettes is approved by the Department of Continuing Education, University of Missouri-Kansas City School of Dentistry for Continuing Dental Education credit. This Continuing Dental Education Activity was planned and produced in accordance with the ADA/CERP standards.

This program is approved for two Continuing Education credits (two contact hours) when successful completion of the post-test is submitted.

The views and techniques expressed in this self-study program do not necessarily reflect the views or opinions of the University of Missouri-Kansas City School of Dentistry.

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Time to Sharpen Again...

This self-study manual describes a new approach to sharpening periodontal scalers and curettes which will put you on the cutting edge in no time. The traditional techniques have relied upon “degrees of angulation” to achieve the correct position of the stone in relation to the blade while sharpening. This alternative method utilizes the simple visual imagery of the hands of the clock to establish the correct positions while holding the instrument stationary and moving the stone.

This manual is designed to be used independently or in combination with the videotape “It’s About Time To Get On The Cutting Edge.” The simplified approach to sharpening and testing the Sickle Scaler, Universal Curette, and Gracey Curette is thoroughly described and illustrated. Participants may receive two hours of Continuing Dental Education Credit upon successful completion of the post-test included in this manual and submission to the University of Missouri-Kansas City (see insert).

Learning Objectives:
Upon completion of this self-instructional manual, the participant will be able to:

1. List the benefits achieved when utilizing scalers and curettes with sharp cutting edges.

2. Distinguish a “dull” cutting edge from a “sharp” edge.

3. Characterize the Arkansas Stone, the India Stone, and the Ceramic Stone according to:
   a. Shape
   b. Abrasive grit size
   c. Preferred lubricant

4. Describe how the traditional “degrees of angulation” correspond with the clock positions in this strategy.

5. Identify the essential grasp of both the instrument and the sharpening stone as defined in this technique.

6. Describe the sharpening procedure for Sickle Scalers, Universal Curettes, and Gracey Curettes as outlined in this technique.

7. Define the procedure for determining when a “sharpened” blade actually is sharp.
**Why Sharpen:**
Instruments should be kept sharp and true to their original design. Dental procedures are most effective when using sharp instruments because they reduce fatigue, improve deposit removal, save time, improve tactile sensitivity, and minimize patient discomfort.

**When to Sharpen:**
Repeated use of an instrument wears away minute particles of metal from the blade causing the cutting edge to take on a rounded shape resulting in a dull, ineffective blade.

When the blade is dull, the clinician loses the ability to “feel” the sharp edge “grabbing” onto a surface. It may then seem that the blade is “sliding” over the surface or deposit which causes the clinician to work harder to remove deposits. This could result in burnishing rather than removing the deposit.

For best results, instruments should be sharpened lightly after each use rather than reconditioning or recontouring after repeated use. Remember that consistent sharpening on a regular basis is preferable to an extensive amount of sharpening or reconditioning all at once.

**How to Determine Sharpness:**
The hard Plastic Test Stick can be used to determine the sharpness of the instrument. It is designed specifically for this purpose. When the proper testing procedure is followed, a sharp edge will bite into or “grab” the test stick and produce a metallic clicking sound. A dull edge will slip or slide over the surface of the test stick.

Another way to test the sharpness of an instrument is to inspect the blade visually. Hold the instrument under a light (and if possible, under magnification) and rotate the instrument until the edge is facing the light. A dull cutting edge will reflect light when it has become rounded from use.

**How to Compare:**
Use new instruments (master samples) to compare with the dull instruments. A master set will provide the original pattern for maintaining the blade design and proper contour of the cutting edges.

**When to Replace Instruments:**
Thoroughly inspect each blade after sharpening to determine if the original shape has been significantly altered, or if the strength and integrity has been compromised.
Time to Get Started...

Sharpening Stones
There are several types of sharpening stones. The following are recommended for frequent honing and sharpening of the blade.

Compositions
Arkansas Stone—The Arkansas Stone is a natural stone with a fine grit. Oil lubrication is suggested when using this stone, however it can be used dry as well. The oil serves as a vehicle to float the metal particles as they are ground away from the blade and prevents those shavings from becoming imbedded in the stone. The buildup of these shavings in the oil is referred to as “sludge.”

Ceramic Stone—The Ceramic Stone is a hard synthetic stone available in either fine or medium grit. This stone is excellent for routine sharpening of dental instruments and uses water as lubrication. When sharpening with a Ceramic Stone there will be an accumulation of metal filings rather than “sludge.”

India Stone—The India Stone is a synthetic stone composed of aluminum oxide crystals with a fine or medium grit. Oil lubrication is required when sharpening with this stone.

Shapes
Conical Stone—The conical stone is an Arkansas Stone used for finishing or removing any wire edges after sharpening.

Cylindrical Stone—The cylindrical stone can be an Arkansas or Ceramic Stone and is used for finishing or removing any wire edges after sharpening.

Flat Stone—The flat stone typically is rectangular but comes in various sizes. It can be an Arkansas, Ceramic or India Stone.

Wedge Stone—The wedge stone is a rectangular-shaped stone with rounded edges and commonly is an Arkansas or India Stone.

Stone Grits
There are many grits available for the sharpening stones. Be sure to use the proper grit for sharpening dental instruments. The grits recommended for light or frequent sharpening are:

Arkansas—Fine
Ceramic—Fine or Medium
India—Fine or Medium
Coarser stones are intended mainly for recontouring and should not be used for light sharpening. Using a coarser stone may remove too much metal from the surface of the blade. If a coarser stone is used it should be followed by a finer grit stone.

**Stone Care**

After each use, stones should be wiped with a clean cloth to remove metal particles. They can be scrubbed and/or ultrasonically cleaned to remove any lubricant before sterilization. Alternate the areas used for sharpening to prevent “grooving” in the stone.

**Stone Lubrication**

Oil lubrication is preferred for Arkansas and India Stones. Ceramic Stones may be lubricated with water or used dry.

**Work Area**

Your work area should be spacious and well-lit. The table should be steady and high enough so that you can place your elbow on the table and hold the instrument at eye level.

**Other Materials**

Before beginning the sharpening process, assemble the required materials. In addition to the instruments to be sharpened and the proper sharpening stones, you will need the following items:

1. **Safety Glasses**—required when sharpening. Safety glasses should cover the eyes completely and have side panels for maximum protection.
2. **Gloves**—should fit comfortably.
3. **Cotton Tipped Applicators**—to spread oil or water lubrication.
4. **Gauze**—to wipe away sludge or shavings from the surface of the stone and the blade.
5. **Magnifying Glass**—to view the blade.
6. **Plastic Test Stick**—to test the cutting edge for sharpness.
7. **Clock**—to determine the proper positioning of the instrument, stone and test stick. You may use the clock drawing provided in this manual.
Time to Get on the Cutting Edge...

*basic principles of sharpening*

**Anatomy of an Instrument**
All scalers and curettes have three common components:

- **Handle**—for grasping the instrument.
- **Shank**—connects the handle to the working end and allows the working end to adapt to tooth surfaces.
- **Working End**—consists of a blade that has one or two cutting edges.

**Instrument Labeling**
When the design name and number are stamped along the length of the handle, each working end is identified by the number closest to it. If the design name and number are stamped around the instrument handle, the first number (on the left) identifies the working end at the top and the second number identifies the working end at the bottom of the handle.

**Terminal Shank**
The terminal shank is the area of the instrument between the blade and the first angle. This is the key feature for each scaler or curette. Proper alignment of the terminal shank will automatically place the blade in the correct position for sharpening when using the clock approach.

**Degrees of Angulation**
The traditional reference to “degrees of angulation” will be simplified by using the analogy of the hands of a clock. (See page 23 for more details). These approaches are complementary and appropriate for learning sharpening techniques (refer to page 23).
Instrument Grasp
Your grasp on the instrument is important throughout the sharpening process. Hold the instrument in your nondominant hand with a secure palm grasp. Brace your index finger or thumb near the top of the instrument to counterbalance the pressure caused by grinding the lower blade. Using the clock as a guide, hold the instrument vertically with the blade to be sharpened at six o’clock.

Stone Grasp
Grasp the lower half of the stone in your dominant hand. Hold the stone upright at twelve o’clock by placing your thumb on the edge toward you and your fingers on the edge away from you. This grasp stabilizes the stone and assists in maintaining a consistent vertical motion. Move your entire arm in a fluid up-and-down motion when sharpening.

Stone Lubrication
When using an Arkansas or India Stone, spread oil on the entire surface of the stone. When using the Ceramic Stone, use water lubrication on the surface of the stone.
The Sickle Scaler

Design of the Sickle Scaler
The sickle scaler has two cutting edges which are formed by the junction of the facial surface with the two lateral surfaces converging to a pointed tip. This triangular cross section results in an almost pointed back. The facial surface of the blade is positioned at a 90 degree angle to the terminal shank. This is important to note because it affects the positioning of the stone and instrument while sharpening.

When sharpening either the straight or curved sickle scaler you will restore the cutting edges by grinding against the lateral surfaces of the blade and finishing the facial surface. Excessive sharpening of the facial surface is not recommended because it will weaken the blade.

The position of the stone, instrument and test stick will vary depending upon whether you are right-handed or left-handed. For the remainder of this manual, each sharpening and testing procedure has been divided into two sections: right-handed and left-handed.

Sharpening the Sickle Scaler · For Right-handers

Instrument Position:
Hold the instrument vertically in your nondominant hand. The blade to be sharpened will be at the bottom with the tip pointed toward you. Brace the top shank with your index finger or thumb and place your elbow directly in front of you on the table. Now position the terminal shank at twelve o’clock.

Stone Position:
Place the lubricated side of the stone against the right lateral surface of the blade. Initially place the stone at twelve o’clock and then tilt the top of the stone to slightly less than one o’clock.

Stone Movement:
Initiate grinding in a fluid up-and-down motion. Start at the heel third of the blade and continue to the middle third and finally to the tip third. You should see a buildup of sludge along the entire facial surface of the blade. If you are using a Ceramic Stone you will see a buildup of metal filings instead of sludge. Wipe the sludge or metal filings from the surface of the blade and the stone with the gauze.
Sharpening the Opposite Cutting Edge:
Rotate the instrument so that the tip is pointed away from you. Maintain the secure palm grasp and again brace the top shank with your index finger or thumb with the terminal shank at twelve o’clock. Place the stone toward one o’clock. Repeat the grinding process maintaining the clock position. Then wipe the sludge or metal filings from the surface of the blade with the gauze.

Finishing the Curved Sickle Scaler:
With the tip toward you hold the terminal shank at twelve o’clock. Place the conical stone on the face of the instrument with the stone pointed at three o’clock and nine o’clock. Lightly rotate the conical stone along the face from the heel to the tip to remove any wire edges. The stone can be used either lubricated or dry.

Finishing the Straight Sickle Scaler:
With the tip toward you hold the terminal shank at twelve o’clock. Place a flat stone on the facial surface of the instrument at the three o’clock and nine o’clock position. Lightly move the stone from side to side to remove any wire edges.

Sharpening the Sickle Scaler · For Left-handers

Instrument Position:
Hold the instrument vertically in your nondominant hand. The blade to be sharpened will be at the bottom with the tip pointed toward you. Brace the top shank with your index finger or thumb and place your elbow directly in front of you on the table. Now position the terminal shank at twelve o’clock.

Stone Position:
Place the lubricated side of the stone against the left lateral surface of the blade. Initially place the stone at twelve o’clock and then tilt toward eleven o’clock.

Stone Movement:
Initiate grinding in a fluid up-and-down motion. Start at the heel third of the blade and continue to the middle third and finally to the tip third. You should see a buildup of sludge along the entire facial surface of the blade. If you are using a Ceramic Stone you will see a buildup of metal filings instead of sludge. Wipe the sludge or metal filings from the surface of the blade and the stone with gauze.
Sharpening the Opposite Cutting Edge:
Rotate the instrument so that the tip is pointed away from you. Maintain the secure palm grasp and again brace the top shank with your index finger or thumb with the terminal shank at twelve o’clock. Place the stone toward eleven o’clock. Repeat the grinding process maintaining the clock position. Then wipe the sludge or metal filings from the surface of the blade with the gauze.

Finishing the Curved Sickle Scaler:
With the tip toward you hold the terminal shank at twelve o’clock. Place the conical stone on the face of the instrument with the stone pointed at three o’clock and nine o’clock. Lightly rotate the conical stone along the face from the heel to the tip to remove any wire edges. The stone can be used either lubricated or dry.

Finishing the Straight Sickle Scaler:
With the tip toward you hold the terminal shank at twelve o’clock. Place a flat stone on the facial surface of the instrument at the three o’clock and nine o’clock position. Lightly move the stone from side to side to remove any wire edges.
It’s Time to Test...

Testing the Sickle Scaler

Test Stick Position:
To test the cutting edge hold the test stick in your nondominant hand between your thumb and index finger about one half inch from the top of the stick. The position for the test stick is twelve o’clock.

Instrument Position for Right-handers:
In your dominant hand, hold the instrument with a modified pen grasp. Bring the instrument around behind the test stick with the tip pointed toward you. Place the cutting edge to be tested against the left side of the test stick and fulcrum on the right side. Be sure not to rest your ring finger on the top of the test stick. Tilt the terminal shank toward one o’clock which is representative of the same angle that is used for scaling.

Instrument Position for Left-handers:
In your dominant hand, hold the instrument with a modified pen grasp. Bring the instrument around behind the test stick with the tip pointed toward you. Place the cutting edge to be tested against the right side of the test stick and fulcrum on the left side. Be sure not to rest your ring finger on the top of the test stick. Tilt the terminal shank toward eleven o’clock which is representative of the same angle that is used for scaling.

Testing the Cutting Edge:
Press the cutting edge laterally into the test stick and release. Test the entire length of the blade. A sharp edge will bite into or grab the test stick but will not slide over the side of the test stick. When the edge is removed, it produces a metallic sound. If the cutting edge slides over the side of the test stick it may indicate the blade is still dull, the terminal shank is not positioned correctly, or the stone was not positioned properly while grinding. Shaving the test stick will dull the blade.

Testing the Opposite Cutting Edge:
To test the opposite cutting edge rotate the tip away from you positioning the terminal shank in front of the test stick and repeat the same process. Be sure to test the entire length of the blade.
The Universal Curette

Design of the Universal Curette
The Universal Curette blade has two parallel cutting edges that meet at a rounded toe. The cutting edges of the curette are formed at the junction of the lateral surfaces with the facial surface. The facial surface of the blade is positioned at a 90 degree angle to the terminal shank. This is important to note because it affects the positioning of the stone and instrument while sharpening.

Sharpening the Universal Curette - For Right-handers

Instrument Position:
Hold the instrument vertically in your nondominant hand. The blade to be sharpened will be at the bottom with the toe pointed toward you. Brace the top shank with your index finger or thumb and place your elbow directly in front of you on the table. Now position the terminal shank at twelve o’clock.

Stone Position:
Place the lubricated side of the stone against the lateral surface of the blade. Initially place the stone at twelve o’clock and then tilt the top of the stone to slightly less than one o’clock.

Stone Movement:
Initiate grinding in a fluid up-and-down motion using your entire arm. Start at the heel third of the blade then continue to the middle third and finally the toe third. Remember to maintain a continuous up-and-down motion as you grind using long strokes with moderate pressure. You should see a buildup of sludge along the entire facial surface of the blade. If you are using a Ceramic Stone you will see a buildup of metal filings instead of sludge. Wipe the sludge or metal filings from the surface of the blade and stone with the gauze.

Sharpening the Opposite Cutting Edge:
Rotate the instrument so that the toe is pointed away from you. Maintain the secure palm grasp and again brace the top shank with your index finger or thumb. Repeat the grinding process keeping the terminal shank at twelve o’clock and the top of the stone positioned slightly toward one o’clock.
**Rounding the Toe:**
To maintain the rounded shape of the curette toe, rotate the instrument so that the toe is pointing at three o’clock. Position the stone at three o’clock and tilt upward toward the two o’clock position. Move the stone in a consistent up-and-down motion, overlapping the strokes and rotating around the toe to maintain the rounded shape.

![Image of Rounding the Toe](image)

**Finishing:**
Hold the terminal shank at twelve o’clock with the toe pointed toward you. Position the Conical or cylindrical stone along the face of the instrument at three o’clock and nine o’clock. Lightly rotate the stone along the face from the heel to the toe to remove any wire edges. Repeat the sharpening process for the other end of the instrument.

![Image of Finishing](image)

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**Sharpening the Universal Curette · For Left-handers**

**Instrument Position:**
Hold the instrument vertically in your nondominant hand. The blade to be sharpened will be at the bottom with the toe pointed toward you. Brace the top shank with your index finger or thumb and place your elbow directly in front of you on the table. Now position the terminal shank at twelve o’clock.

![Image of Instrument Position](image)

**Stone Position:**
Place the lubricated side of the stone against the lateral surface of the blade. Initially place the stone at twelve o’clock and then tilt the top of the stone toward eleven o’clock.

![Image of Stone Position](image)

**Stone Movement:**
Initiate grinding in a fluid up-and-down motion using your entire arm. Start at the heel third of the blade then continue to the middle third and finally the toe third. Remember to maintain a continuous up-and-down motion as you grind using long strokes with moderate pressure. You should see a buildup of sludge along the entire facial surface of the blade. If you are using a Ceramic Stone you will see a buildup of metal filings instead of sludge. Wipe the sludge or metal filings from the surface of the blade and stone with the gauze.
The Universal Curette

Sharpening the Opposite Cutting Edge:
Rotate the instrument so that the toe is pointed away from you. Maintain the secure palm grasp and again brace the top shank with your index finger or thumb. Repeat the grinding process keeping the terminal shank at twelve o’clock and the top of the stone toward eleven o’clock.

Rounding the Toe:
To maintain the rounded shape of the curette toe, rotate the instrument so that the toe is pointing at nine o’clock. Position the stone at nine o’clock and tilt upward toward the ten o’clock position. Move the stone in a consistent up-and-down motion, overlapping the strokes and rotating around the toe to maintain the rounded shape.

Finishing:
Hold the terminal shank at twelve o’clock with the toe pointed toward you. Position the conical or cylindrical stone along the face of the instrument at three o’clock and nine o’clock. Lightly rotate the stone along the face from the heel to the toe to remove any wire edges. Repeat the sharpening process for the other end of the instrument.
It’s Time to Test...

Testing the Universal Curette

Test Stick Position:
To test the cutting edge hold the test stick in your nondominant hand between your thumb and index finger about one half inch from the top of the stick. The position for the test stick is twelve o’clock.

Instrument Position for Right-handers:
In your dominant hand, hold the instrument with a modified pen grasp. Bring the instrument around behind the test stick with the toe pointed toward you. Place the cutting edge to be tested against the left side of the test stick and fulcrum on the right side. Tilt the terminal shank toward one o’clock. Testing must be done at exactly the same angle that the blade is used for scaling.

Instrument Position for Left-handers:
In your dominant hand, hold the instrument with a modified pen grasp. Bring the instrument around behind the test stick with the toe pointed toward you. Place the cutting edge to be tested against the right side of the test stick and fulcrum on the left side. Tilt the terminal shank toward eleven o’clock. Testing must be done at exactly the same angle that the blade is used for scaling.

Testing the Cutting Edge:
Press the cutting edge laterally into the test stick and release. Test the entire length of the blade. A sharp edge will bite into or grab the test stick but will not slide over the side of the test stick. When the edge is removed, it produces a metallic sound. If the cutting edge slides over the side of the test stick it may indicate the blade is still dull, the terminal shank is not positioned correctly, or the stone has not been positioned properly while grinding. Shaving the test stick will dull the blade.

Testing the Opposite Cutting Edge:
To test the opposite cutting edge rotate the toe away from you positioning the terminal shank in front of the test stick and repeat the same process. Be sure to test the entire length of the blade. Repeat the testing process for the other end of the instrument.
The Gracey Curette

Design of the Gracey Curette

The Gracey Curette differs from the Universal Curette and Sickle Scaler. The facial surface is angled downward at a 70 degree angle creating only one functional edge to be sharpened, the lower edge. The cutting edge on a Gracey instrument is not curved to one side as it may seem but is straight as it comes forward off the shank. This is important to remember when sharpening this instrument in order to maintain the original blade design.

The Gracey instruments are paired designs and the blades are identified by a number. Each double-ended Gracey has an odd and an even number which identifies the blades. For example, the Gracey 11/12 has the 11 blade on one end and the 12 blade on the opposite end.

Blade Positioning for Right-handers:
For all odd-numbered Gracey blades, point the toe of the blade toward you when sharpening. For all even-numbered Gracey blades, point the toe of the blade away from you. This positions the lower cutting edge on the right side of the blade.

Blade Positioning for Left-handers:
For all odd-numbered Gracey blades, point the toe of the blade away from you. For all even-numbered blades, point the toe of the blade toward you. This positions the lower cutting edge on the left side of the blade.

Sharpening the Gracey Curette · For Right-handers

Instrument Position—Odd-Numbered Blade:
Begin with the odd-numbered end of the Gracey. Hold the instrument in your nondominant hand vertically with a firm palm grasp so that the blade to be sharpened will be at the bottom with the toe pointed toward you. Focus only on the terminal shank of the instrument and tilt the terminal shank toward eleven o’clock. Remember to brace the top shank of the instrument with your index finger or thumb.
**Stone Position:**
Position the stone against the right lateral surface at twelve o’clock and tilt the top of the stone to slightly less than one o’clock.

**Stone Movement:**
Initiate grinding in a fluid up-and-down motion starting at the heel third of the blade then continuing to the middle third and finally the toe third. Failing to sharpen the entire length of the blade is a common sharpening error. Be sure to use a consistent movement along the entire blade. You should see a buildup of sludge along the entire facial surface of the blade. If you are using a Ceramic Stone you will see a buildup of metal filings instead of sludge.

**Rounding the Toe:**
Maintain the terminal shank at the eleven o’clock position. Slowly rotate the instrument so that the toe is pointing at three o’clock. The face of the instrument should be parallel to the table surface. Position the stone at three o’clock and tilt the stone upward to the two o’clock position. Move the stone in a consistent motion, overlapping the strokes and rotating around the toe to maintain the rounded shape. Wipe the sludge or metal filings from the surface of the blade and stone with the gauze.

**Finishing:**
Hold the terminal shank at eleven o’clock with the toe pointed toward you. Position the conical or cylindrical stone along the face of the instrument at three o’clock and nine o’clock. Lightly rotate the stone along the face from the heel to the toe to remove any wire edges.

**Sharpening the Even-Numbered Blade:**

**Instrument Position:**
Position the instrument so that the even-numbered blade is at the bottom and the toe is pointed away from you. Maintain the secure palm grasp and again brace the top shank with your index finger or thumb. Repeat the grinding process keeping the terminal shank at eleven o’clock.
Rounding the Toe:
Rotate the instrument so that the toe is pointing at three o’clock. The face of the instrument should be parallel to the table surface. Position the stone at three o’clock and tilt the stone upward to the two o’clock position. Move the stone in a consistent motion, overlapping the strokes and rotating around the toe to maintain the rounded shape. Wipe the sludge or metal filings from the surface of the blade and stone with the gauze.

Finishing:
With the toe of the even-numbered Gracey blade pointed toward you, hold the terminal shank at one o’clock. Position the conical or cylindrical stone along the face of the instrument at three o’clock and nine o’clock. Lightly rotate the stone along the face from the heel to the toe to remove any wire edges.

Sharpening the Gracey Curette · For Left-handers

Instrument Position—Even-Numbered Blade:
Begin with the even-numbered end of the Gracey. Hold the instrument vertically in your nondominant hand with a firm palm grasp so that the blade to be sharpened will be at the bottom with the toe pointed toward you. Focus only on the terminal shank of the instrument and tilt the terminal shank toward one o’clock. Remember to brace the top shank of the instrument with your index finger or thumb.

Stone Position:
Position the stone against the left lateral surface at twelve o’clock and tilt the top of the stone toward eleven o’clock.

Stone Movement:
Initiate grinding in a fluid up-and-down motion starting at the heel third of the blade then continuing to the middle third and finally the toe third. Failing to sharpen the entire length of the blade is a common sharpening error. Be sure to use a consistent movement along the entire blade. You should see a buildup of sludge along the entire facial surface of the blade. If you are using a Ceramic Stone you will see a buildup of metal filings instead of sludge.
Rounding the Toe:
Maintain the terminal shank at the one o’clock position. Rotate the instrument so that the toe is pointing at nine o’clock. The face of the instrument should be parallel to the table surface. Position the stone at nine o’clock and tilt the stone upward to the ten o’clock position. Move the stone in a consistent motion, overlapping the strokes and rotating around the toe to maintain the rounded shape. Wipe the sludge or metal filings from the surface of the blade and stone with the gauze.

Finishing:
With the toe pointed toward you, hold the terminal shank at one o’clock. Position the conical or cylindrical stone along the face of the instrument at three o’clock and nine o’clock. Lightly rotate the stone along the face from the heel to the toe to remove any wire edges.

Sharpening the Odd-Numbered Blade:
Instrument Position:
Position the instrument so that the odd-numbered blade is at the bottom and the toe is pointed away from you. Maintain the secure palm grasp and again brace the top shank with your index finger or thumb. Repeat the grinding process keeping the terminal shank at one o’clock.

Rounding the Toe:
Rotate the instrument so that the toe is pointing at nine o’clock. The face of the instrument should be parallel to the table surface. Position the stone at nine o’clock and tilt the stone upward to the ten o’clock position. Move the stone in a consistent motion, overlapping the strokes and rotating around the toe to maintain the rounded shape. Wipe the sludge or metal filings from the surface of the blade and stone with the gauze.

Finishing:
With the toe pointed toward you, hold the terminal shank at eleven o’clock. Position the conical or cylindrical stone along the face of the instrument at three o’clock and nine o’clock. Lightly rotate the stone along the face from the heel to the toe to remove any wire edges.
It’s Time to Test...

Testing the Gracey Curette—A New Time Zone

Test Stick Position:
The position for the test stick and the terminal shank of the Gracey instrument is twelve o’clock.

Instrument Position for Right-handers:
In your dominant hand, hold the instrument with a modified pen grasp. For odd-numbered Gracey ends the toe will be pointed toward you. Bring the instrument around behind the test stick with the cutting edge to be sharpened against the left side of the test stick and fulcrum on the right side. For even-numbered Gracey ends the toe will be pointed away from you and you will bring the instrument in front of the test stick. Hold both the terminal shank and the test stick at the twelve o’clock position. Be sure not to rest your ring finger on the top of the test stick. Place your ring finger against the side of the test stick opposite the cutting edge to act as a fulcrum while testing. Testing must be done at exactly the same angle that the blade is used for scaling.

Instrument Position for Left-handers:
In your dominant hand, hold the instrument with a modified pen grasp. For even-numbered Gracey ends the toe will be pointed toward you. Bring the instrument around behind the test stick with the cutting edge to be sharpened against the right side of the test stick and fulcrum on the left side. For odd-numbered Gracey ends the toe will be pointed away from you and you will bring the instrument in front of the test stick. Hold both the terminal shank and the test stick at the twelve o’clock position. Be sure not to rest your ring finger on the top of the test stick. Place your ring finger against the side of the test stick opposite the cutting edge to act as a fulcrum while testing. Testing must be done at exactly the same angle that the blade is used for scaling.

Testing the Cutting Edge:
Press the cutting edge into the test stick and release. Test the entire length of the blade. A sharp edge will bite into or grab the test stick. When the edge is removed it produces a metallic sound. If the cutting edge slides over the side of the test stick it may indicate the blade is still dull, the terminal shank is not positioned correctly, or the stone has not been positioned properly while grinding.
Suggested Readings:


Glossary of Terms:

**Burnishing**
To polish or smooth over a deposit instead of removing it. This occurs during scaling with the use of dull instruments.

**Dominant/Nondominant Hand**
For right-handers, your dominant hand is your right hand and nondominant is your left hand.

For left-handers, your dominant hand is your left hand and nondominant is your right hand.

**Fulcrum**
The finger rest used to stabilize the dominant hand during instrumentation or testing the blade for sharpness.

**Modified Pen Grasp**
The instrument is held with the thumb and index finger placed on opposite sides of the handle. The middle finger is placed on the shank to guide the movement of the blade and the ring finger serves as the fulcrum.

**Secure Palm Grasp**
The instrument is held securely in the palm of the hand with the index finger or thumb near the top of the instrument to stabilize the instrument when sharpening.

**Sludge**
The accumulation of metal filings that becomes suspended in the oil on the surface of the sharpening stone.

**Terminal Shank**
The section that extends between the blade and the first angle (or bend) in the shank.

**Wire Edge**
A particle of metal that adheres to the cutting edge after grinding.
Chart of Angles

**Not Enough Angulation**
When the internal angle is greater than 80°, the blade becomes bulky and is difficult to adapt to the tooth.

**Too Much Angulation**
When the internal angle is less than 70°, the blade becomes weak and also dulls quickly.

**Correct Angulation**
When the stone is correctly placed against the blade, the internal angle of approximately 70° is maintained.

Clock Face Positions

**Sickle Scalers & Universal Curettes**
- **Terminal shank at 12:00**
  Top of stone at 4 minutes after 12:00 for right-handers

**Gracey Curettes**
- **Terminal shank toward 11:00**
  Top of stone at 4 minutes after 12:00 for right-handers

**Terminal shank at 12:00**
Top of stone tilted at 4 minutes before 12:00 for left-handers

**Terminal shank toward 1:00**
Top of stone at 4 minutes before 12:00 for left-handers
Instructions for Earning Continuing Education Credit

Please submit completed post-test* and registration form along with a $20 (US$) processing fee to:
Continuing Education Department
School of Dentistry
University of Missouri-Kansas City
650 E. 25th Street
Kansas City, Missouri 64108

Please make checks payable to the University of Missouri-Kansas City. Please allow 5-6 weeks for delivery of results. Participants must score at least 70% to earn two hours of Continuing Education Credit.

*Photocopies of the post test cannot be accepted.

Individuals must notify the State or Provincial Dental Board of credit received. It is the responsibility of each individual to check the state’s licensure requirements related to continuing education credit through self-study or correspondence courses and the accepted number of hours permitted for such courses.

Registration Form
(Must accompany completed post-test and $20 [US$] processing fee)

Important: To ensure that you receive credit, the following information must be typed or printed legibly:

NAME

ADDRESS

CITY         STATE/PROV. ZIP CODE/POSTAL CODE

SOCIAL SECURITY#

OFFICE TELEPHONE NUMBER

SIGNATURE
Post-Test

Circle the letter beside the one response that best complete the statement according to the information contained in this manual.

1. A “dull” cutting edge:
   1. May contribute to patient discomfort
   2. May contribute to operator fatigue
   3. May contribute to effective treatment
   a. All statements are true
   b. Only 1 and 2 are true
   c. Only 2 and 3 are true
   d. Only 1 and 3 are true
   e. Only 3 is true

2. Which stone grit is recommended for removing “wire edges” after sharpening?
   a. Fine
   b. Medium
   c. Coarse

3. With the simplified sharpening strategy, the most frequently employed clock positions are:
   a. 3:00; 4:00; and 5:00
   b. 11:00; 12:00; and 1:00
   c. 6:00; 7:00; and 8:00
   d. 4:00; 8:00; and 10:00
   e. None of the above

4. Which part of the instrument must be precisely positioned in relationship to the clock during sharpening of the lateral surface of the blade?
   a. Handle
   b. Blade
   c. Shank
   d. Terminal Shank
   e. None of the above
5. This sharpening method recommends grasping the sharpening stone:
   a. In the non-dominant hand
   b. In the dominant hand with the index finger braced against the top
   c. With fingers and thumbs firmly placed on all four surfaces
   d. With the thumb on the side of the stone facing you and the fingers on the opposite side away from you
   e. None of the above

6. When sharpening a Sickle Scaler according to the hands of the clock:
   a. The terminal shank is aimed straight up at 12:00
   b. The stone initially is placed against the lateral surface at 12:00
   c. Right-handers reposition top of stone toward 1:00; Left-handers reposition top of stone toward 11:00
   d. The stone grinds the blade in three sections, the heel third, middle third and tip third
   e. All of the above

7. Universal Curettes are:
   a. Unable to be sharpened due to the acute angles in the shank
   b. Positioned with the terminal shank at 12:00 as with Sickle Scalers
   c. Positioned with the terminal shank at either 11:00 (for left-handers) or 1:00 (for right-handers)
   d. Placed at a 4:00 position to contour the heel third
   e. None of the above

8. To properly position Gracey Curettes:
   a. The terminal shank will be at 12:00
   b. Read the labels on the handle to determine the bends and angles in the shank
   c. The toe of the blade will always be aimed at 11:00
   d. All of the above
   e. None of the above

9. To test the sharpness of a Gracey Curette with a Plastic Test Stick:
   a. Tilt the terminal shank toward 1:00
   b. Tilt the terminal shank toward 3:00 or 9:00
   c. Tilt the terminal shank at 7:30–9:00
   d. Place the terminal shank at 12:00 parallel with the side of the test stick
   e. None of the above

10. To round the toe of a Gracey or Universal Curette:
    a. The same clock positions are used for sharpening the lateral surface
    b. The toe of the instrument is pointed toward you
    c. The stone is positioned toward 2:00 for right-handers and 10:00 for left-handers
    d. The toe does not need to be sharpened because it is never used
    e. None of the above
**Right-handers**

**A Timely Approach to Instrument Sharpening**

**Sickle Scalers & Universal Curettes**

1. Position instrument vertically with blade to be sharpened at 6:00.
2. Stabilize entire length of instrument with a firm grasp.
3. Balance upper shank with index finger or thumb.
4. Point tip or toe of blade toward you to sharpen right cutting edge and away from you to sharpen opposite cutting edge.
5. Hold terminal shank at 12:00.
6. Place side of stone against right lateral surface.
7. Tilt top of stone toward, **not beyond**, 1:00.
8. Move stone up and down in three distinct sections of the blade: heel third, middle third, anterior third.
9. For curettes, rotate the instrument blade toward 3:00.
10. Aim the stone at 2:00.
11. Use continuous and overlapping up-and-down motions to “round” the toe.

**Take Time for Tips & Toes**

**Sickle Scalers & Universal Curettes**

1. Position instrument vertically with blade to be sharpened at 6:00.
2. Stabilize entire length of instrument with a firm grasp.
3. Balance upper shank with index finger or thumb.
4. Point tip or toe of blade toward you to sharpen right cutting edge and away from you to sharpen opposite cutting edge.
5. Hold terminal shank at 12:00.
6. Place side of stone against right lateral surface.
7. Tilt top of stone toward, **not beyond**, 1:00.
8. Move stone up and down in three distinct sections of the blade: heel third, middle third, anterior third.
9. For curettes, rotate the instrument blade toward 3:00.
10. Aim the stone at 2:00.
11. Use continuous and overlapping up-and-down motions to “round” the toe.

**Gracey Curettes**

1. Position instrument vertically with blade to be sharpened at 6:00.
2. Check the blade identification number:
   - Aim the toe of all ODD-numbered Graceys toward you.
   - Direct the toe of all EVEN-numbered Graceys away from you.
3. Stabilize entire length of instrument with a firm grasp.
4. Counterbalance top shank with index finger or thumb.
5. Tilt terminal shank toward 11:00.
6. Hold stone against right lateral surface and tilt toward 1:00.
7. Move stone up and down in three distinct sections of the blade: heel third, middle third, and anterior third.
8. Repeat steps #9, 10, and 11 to “round” the toe.
A Timely Approach to Instrument Sharpening

Sickle Scalers & Universal Curettes

1. Position instrument vertically with blade to be sharpened at 6:00.
2. Stabilize entire length of instrument with a firm grasp.
3. Balance upper shank with index finger or thumb.
4. Point tip or toe of blade toward you to sharpen left cutting edge and away from you to sharpen opposite cutting edge.
5. Hold terminal shank at 12:00.
6. Place side of stone against left lateral surface.
7. Tilt top of stone toward, not beyond, 11:00.
8. Move stone up and down in three distinct sections of the blade: heel third, middle third, anterior third.
9. For curettes, rotate the instrument blade toward 9:00.
10. Aim the stone at 10:00.
11. Use continuous and overlapping up-and-down motions to “round” the toe.

Gracey Curettes

1. Position instrument vertically with blade to be sharpened at 6:00.
2. Check the blade identification number:
   - Aim the toe of all EVEN-numbered Graceys toward you.
   - Direct the toe of all ODD-numbered Graceys away from you.
3. Stabilize entire length of instrument with a firm grasp.
4. Counterbalance top shank with index finger or thumb.
5. Tilt terminal shank toward 1:00.
6. Hold stone against left lateral surface and tilt toward 11:00.
7. Move stone up and down in three distinct sections of the blade: heel third, middle third, and anterior third.
8. Repeat steps #9, 10, and 11 to “round” the toe.

Take Time for Tips & Toes

Left-handers