

HAND SCALING, ULTRASONIC SCALING, AND POLISHING THE TEETH

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SAFETY FIRST!



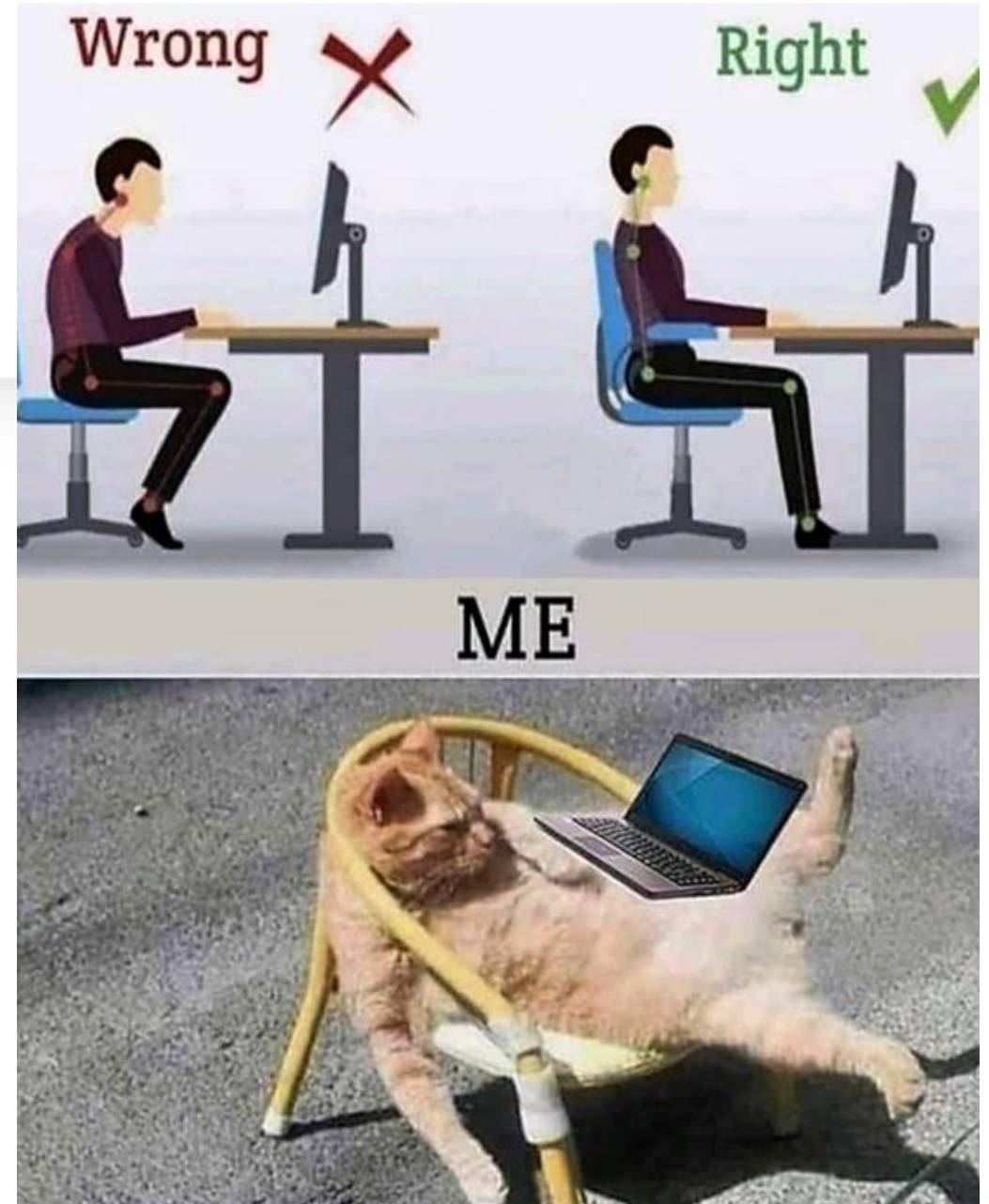
IT IS
IMPORTANT
TO WEAR THE
APPROPRIATE
PPE

- Gloves
- Eye protection
- Face mask
- Separate top and cap
- Hearing protection
- Dosimetry badge



ERGONOMICS

- Matching job requirements and environment to the worker to minimize the risk of injury and discomfort while maximizing efficiency and quality of work.





ERGONOMICS

EXAMPLES OF **ERGONOMIC DOMAINS** IN VETERINARY MEDICINE

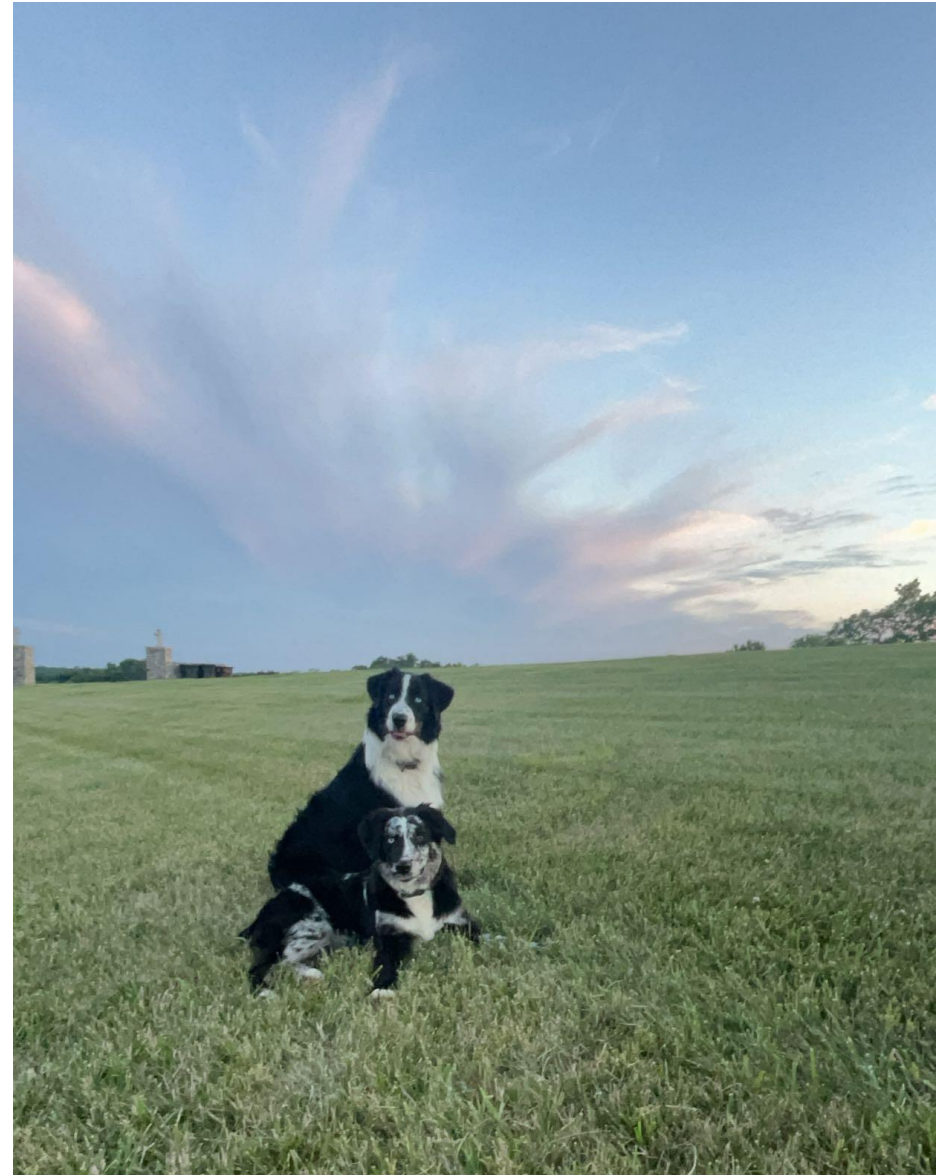
- **Physical:** humans interacting with patients and objects; lifting, standing, sitting, typing, doing surgery or other procedures
- **Cognitive:** mental workload and mental tasks
 - Includes divided attention — e.g. a technician simultaneously watching a surgical patient, recovering animals, electronic monitors and co-workers
- **Environmental:** temperature, noise, lighting, airflow
- **Organizational:** systems, management style, communication.

ERGONOMICS IN VETERINARY DENTISTRY

Technicians should become familiar with ergonomic principles and practices

- This will include all equipment in the dental operator.
 - Larger, lighter handheld instruments
 - Making sure instruments are sharp and not damaged
 - Held in neutral wrist posture
 - Placement of equipment and items in the dental operator
 - "Line of light" light should be parallel to line of sight
 - Loups to decrease tilting the head forward/posture

NOW LET'S
DISCUSS WHAT
YOU WILL NEED
FOR CLEANING
THE TEETH!



HAND
SCALERS
AND
CURETTES

How do we know the difference?



Scalers

Scalers have three sharp sides and a sharp tip!

Use supragingivally
only!



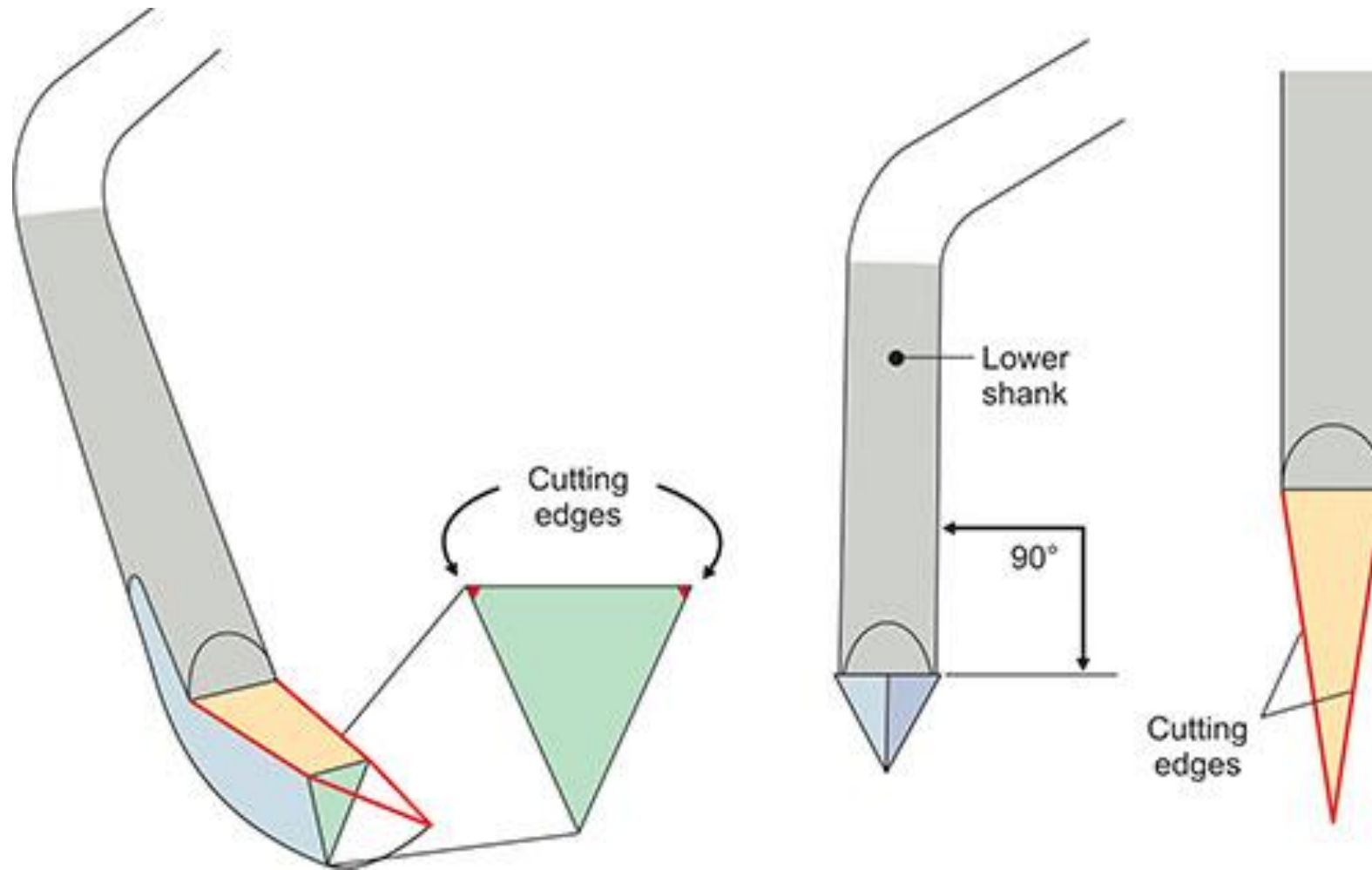
Morris 0-00



Jacquette



Sickle



SCALER

Curette

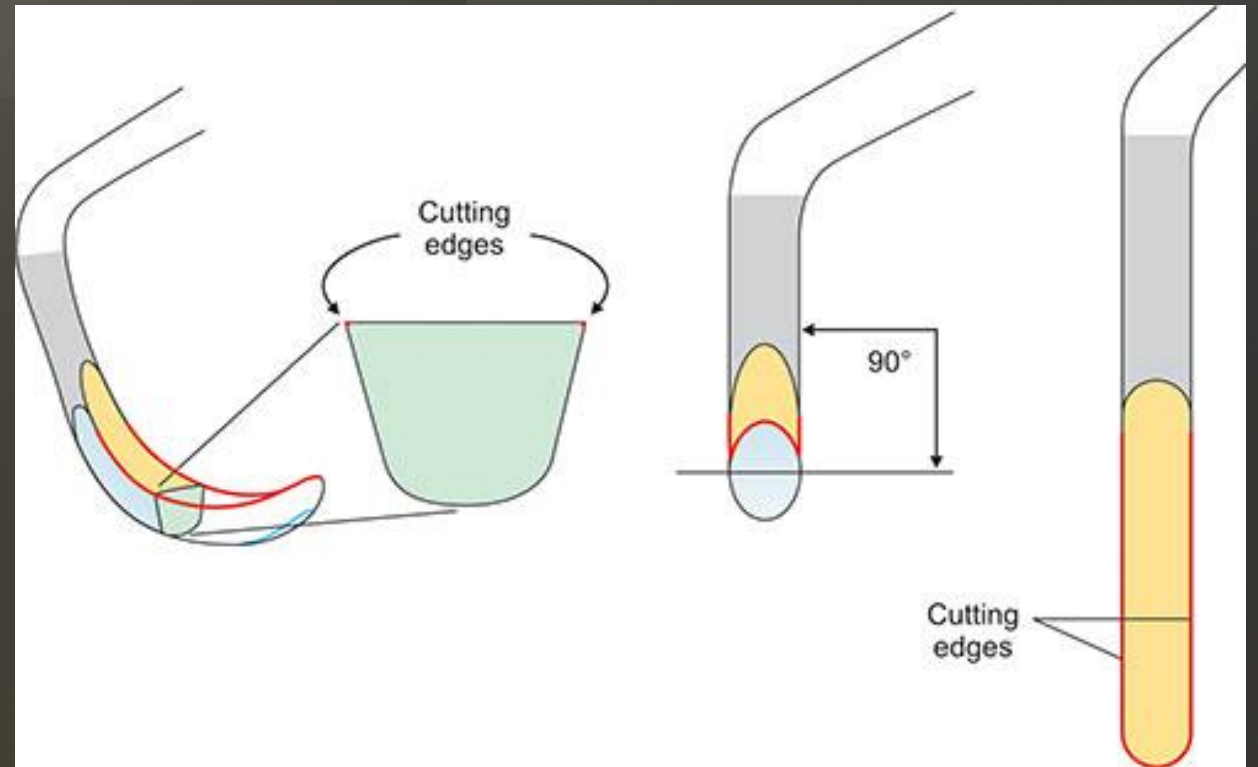
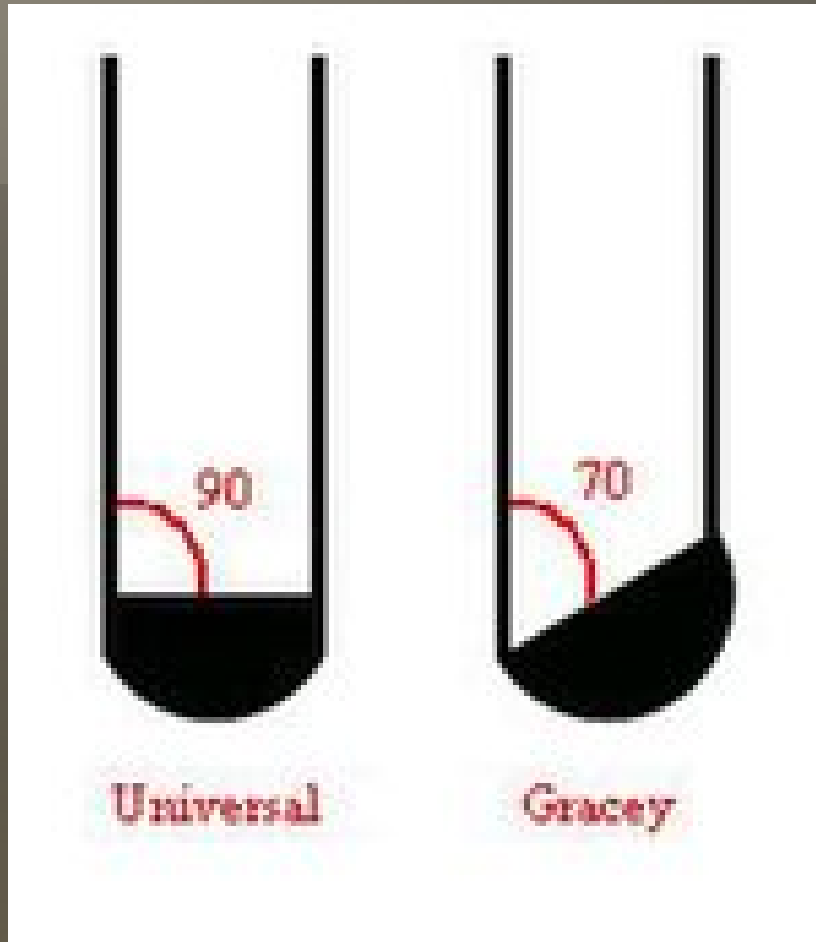
CURETTES HAVE
TWO SHARP
SIDES AND A
ROUNDED TOE



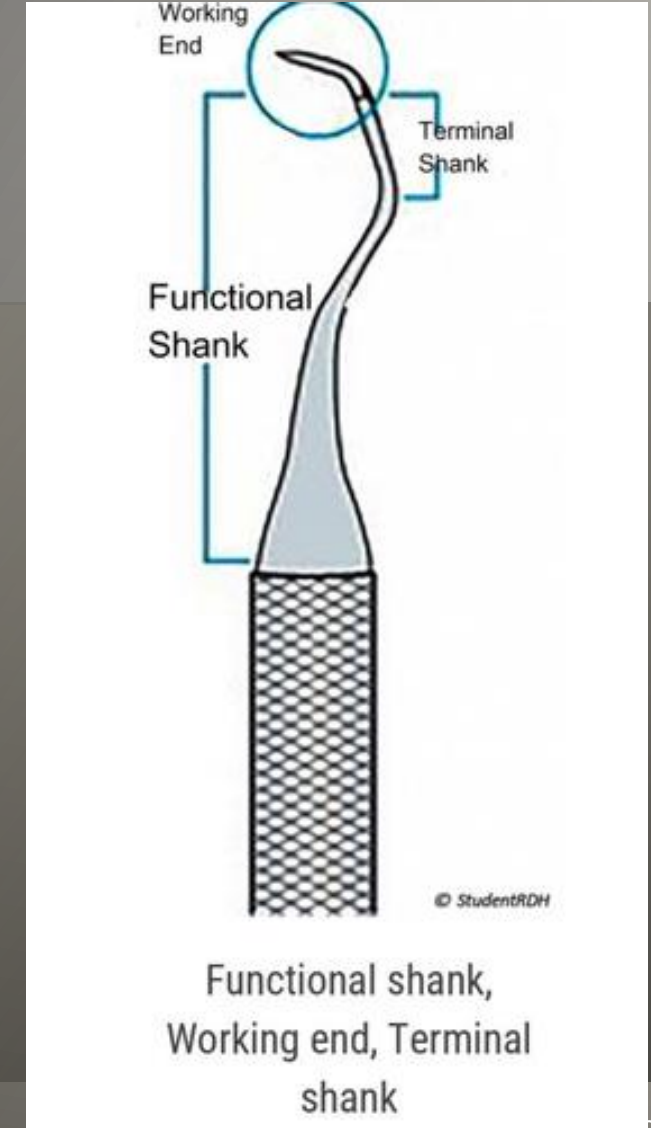
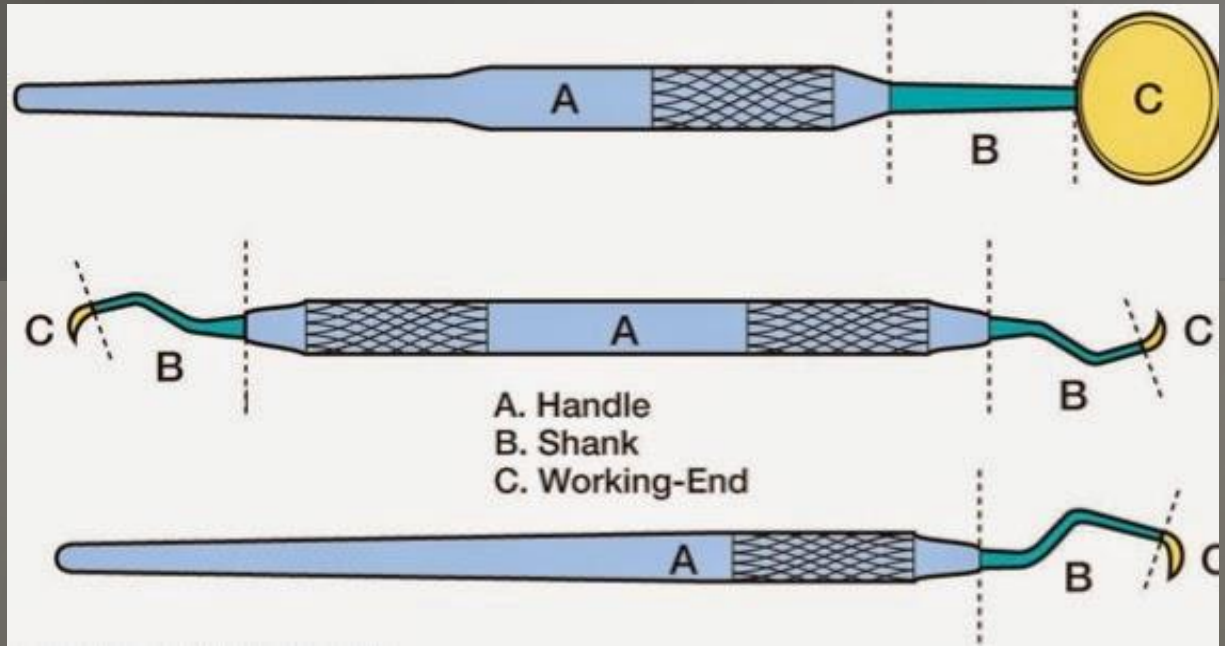
USED BOTH
SUPRAGINGIVAL
AND
SUBGINGIVAL



CURETTE

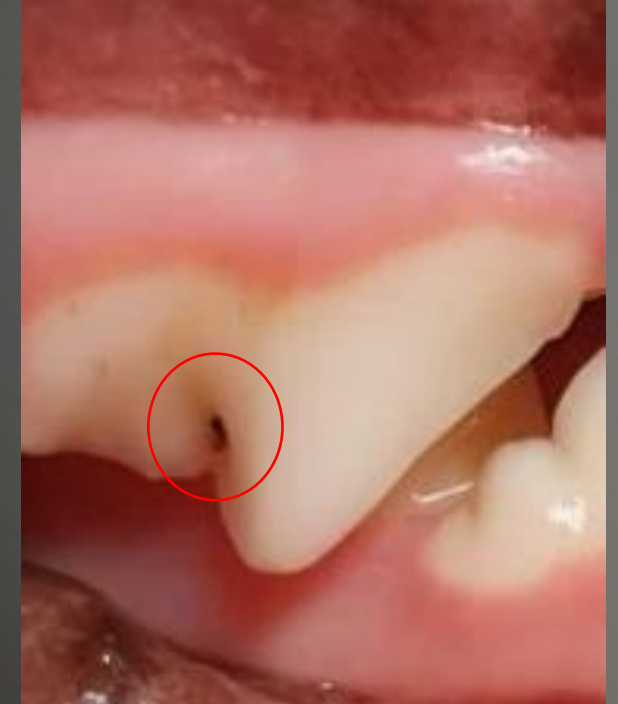


UNDERSTANDING INSTRUMENT DESIGN



WHEN TO USE HAND INSTRUMENTS?

- A complete prophylaxis requires the use of hand scaling instruments.
 - After ultrasonic scaling, calculus and plaque are often left behind.
 - ✓ In developmental grooves of the upper fourth premolars and molars
 - ✓ Interdental spaces
 - ✓ The lingual surface of the mandibular premolars
 - ✓ In the sulcus in interdental spaces



MODIFIED PEN GRASP

- The thumb and index finger hold at the junction of the handle and the shank.
- The middle finger is placed on the shank of the instrument.
 - The middle finger is used for tactile senses.
- The handle should sit at about the first knuckle of the index finger.
- The ring finger is used as a fulcrum
 - The middle finger and ring finger should always touch be in contact with the ring finger (fulcrum)



**Do not
squeeze the
instrument!**

USING AND HAND INSTRUMENTS

- Keep your fulcrum as close to the tooth being worked on as possible
 - More effective working stroke
 - Greater power
- Everyone grab a pen and paper so you can practice this technique!
 - Draw small circles by rotating only the fulcrum (ring finger) and moving your wrist

No flexing you fingers

USING HAND INSTRUMENTS

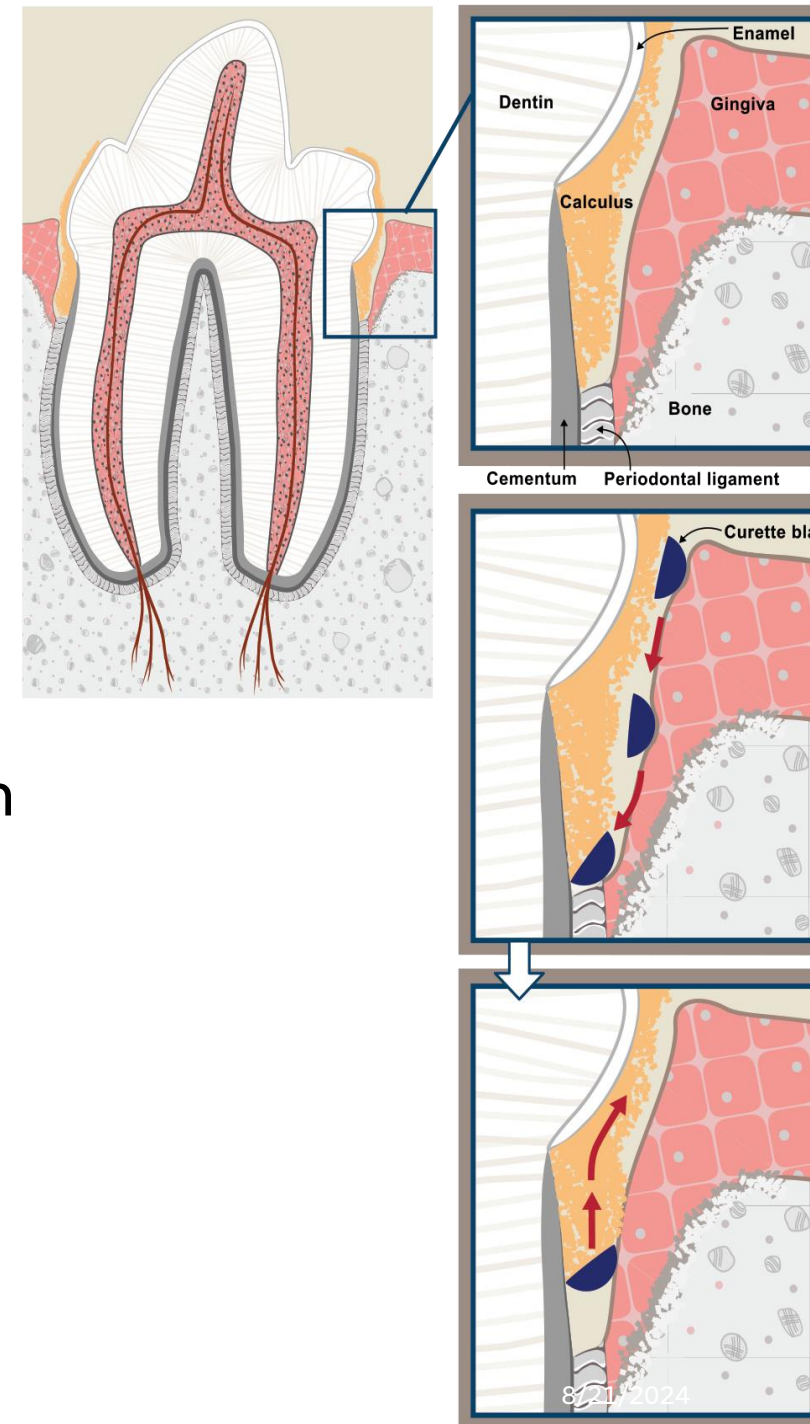
- Curettes and scalers need to fit the curvature of the tooth.

- If it does not try flipping it around to the mirror image on the other side or switching to another instrument.



USING HAND INSTRUMENTS FOR SUBGINGIVAL CALCULUS

- Insert the curette into the sulcus
- The face of the instrument should face the tooth root surface in a “closed position”.
- Move the instrument over the calculus and reposition angle so the cutting surface is on the calculus ledge to the “open position”.
- Use small oblique strokes to remove calculus



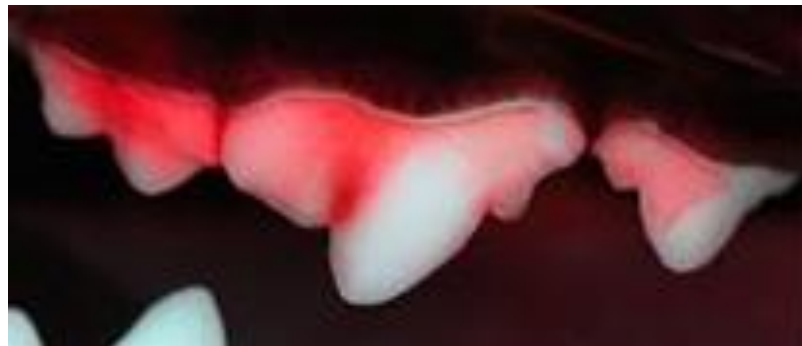
DETECTING ANY
MISSED PLAQUE
OR CALCULUS

1. Explorer



2. Blow air on the
tooth surface

3. Disclosing solution



HAND INSTRUMENT MAINTENANCE

How often should you be sharpening your hand instruments?

After every use!

Why is it so important to keep your hand instruments sharp?

Dull instruments won't engage calculus appropriately, making hand scaling difficult and time consuming!

What you will need to sharpen instruments

- SHARPENING OIL
- INDIA STONE
- ARKANSAS STONE
- CONICAL STONE





- Terminal shank at 12:00
- Top of stone at 3 minutes after 12:00 for right handers

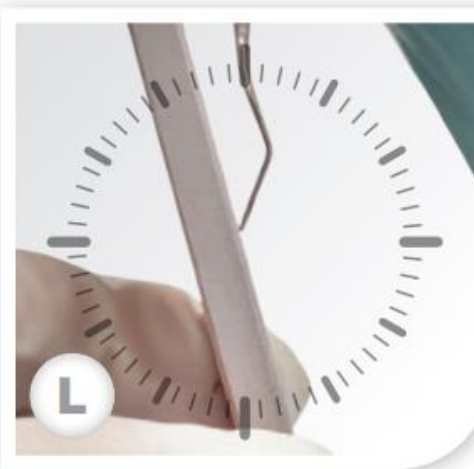


- Terminal shank at 12:00
- Top of stone at 3 minutes before 12:00 for left handers

GRACEY CURETTES

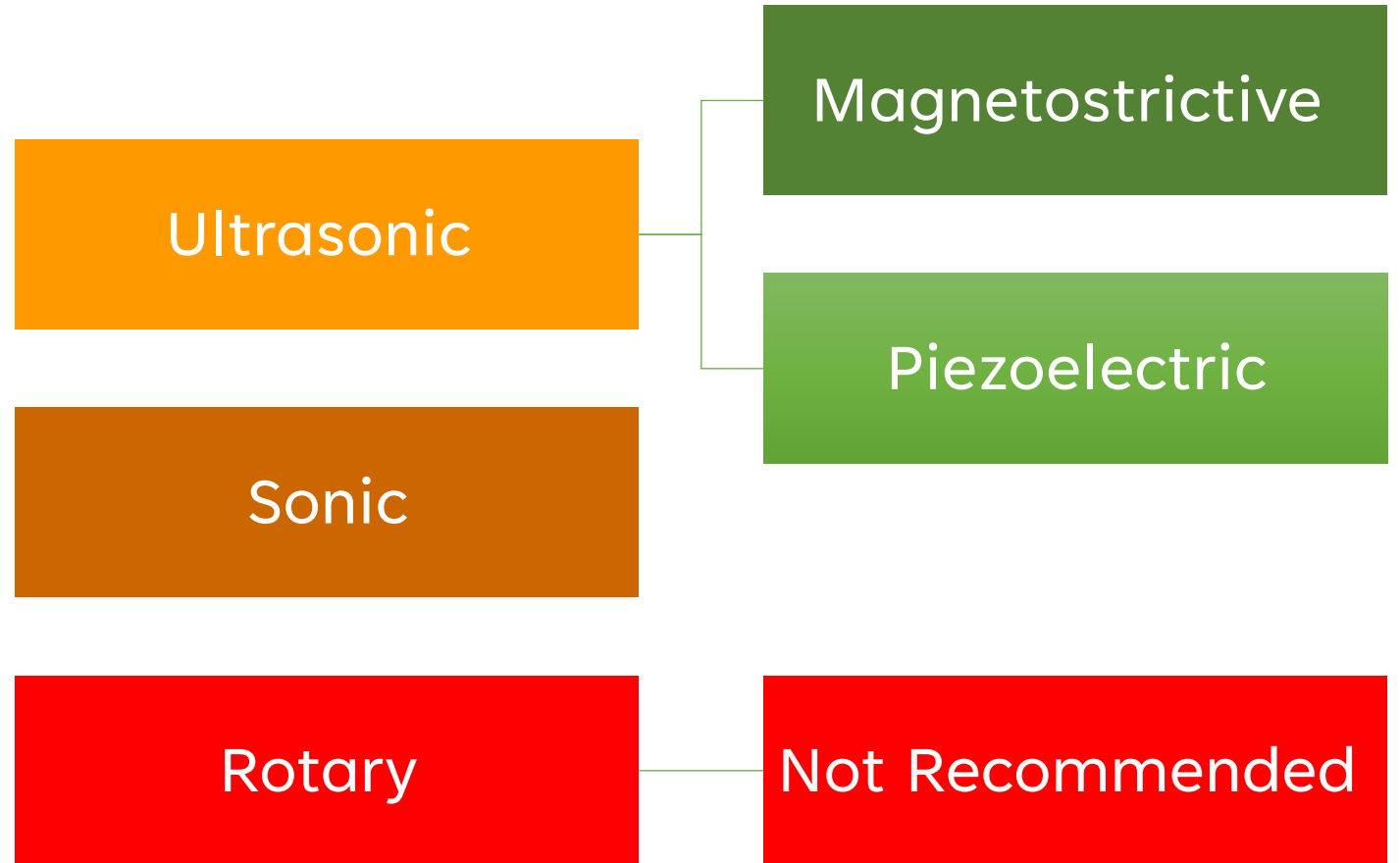


- Terminal shank toward 3 minutes before 12:00
- Top of stone at 3 minutes after 12:00 for right handers



- Terminal shank at 3 minutes after 12:00
- Top of stone at 3 minutes before 12:00 for left handers

POWER SCALERS



SONIC SCALER

- Air driven
- Less power than ultrasonic
- Less likely to cause heat damage
- Motion is elliptic-a figure of-eight motion
- All sides active



ULTRASONIC SCALER

- Piezoelectric
 - Precise and controlled vibration
 - Customizable frequency and power settings
 - Quieter than magnetostrictive



ULTRASONIC SCALERS

Magnetostrictive ultrasonic scalers

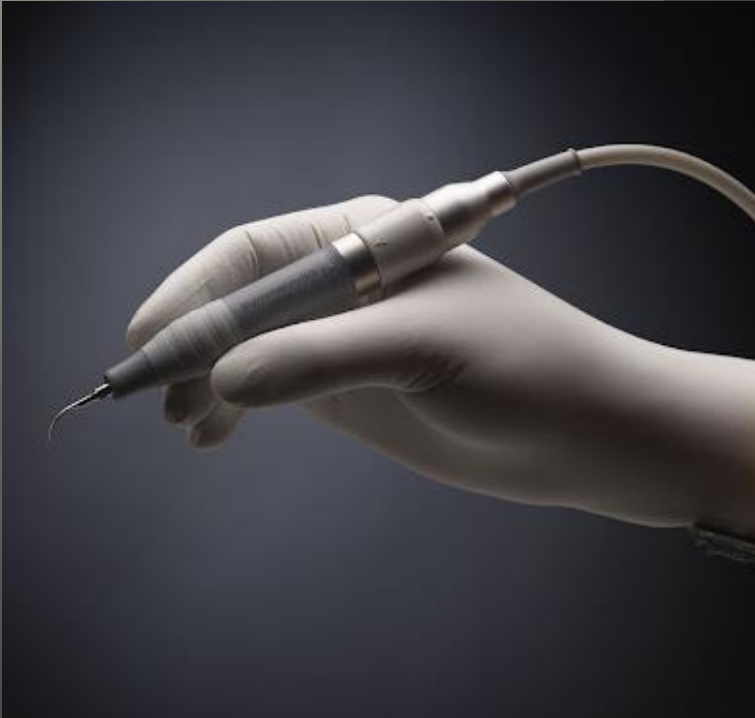


- Generally louder than piezoelectric
- Generates more heat

HOW TO USE A POWER SCALER

- Magnetostrictive
 - Strips/stacks
 - Works in an elliptical pattern (uneven pattern)
 - All sides of the tip are active (about 5-7 mm)
 - Ferroceramic rod
 - Circular-type motion
 - All sides of the tip are equally active (about 13 mm)
- Piezoelectric
 - Works in a linear pattern
 - Lateral sides are active (about 3 mm from the tip)

GRASPING THE POWER INSTRUMENT



- Hold the instrument lightly
- Balance the handpiece in your hand to decrease the amount of pull from the cord
 - The cord can be looped over your pinky to decrease drag
- The modified pen grasp is not as important when using the ultrasonic or sonic scaler
- Use your hand to guide the handpiece on each tooth

CLEANING TEETH WITH POWER SCALER

Water Flow

- Water flow is required to prevent overheating of the tooth surface
- Broad based tips (beaver-type) will need more water flow
- Smaller tips require less water flow
- Water should appear as a small halo around the tip (just higher than a drip)

Pressure

- Light touch should be applied while continuously moving
- Never stopping in one spot

Adaptation

- The side of the tip should be parallel to the tooth
- Never place the tip directly on the tooth
- This can cause heating of the pulp and damage the tooth surface

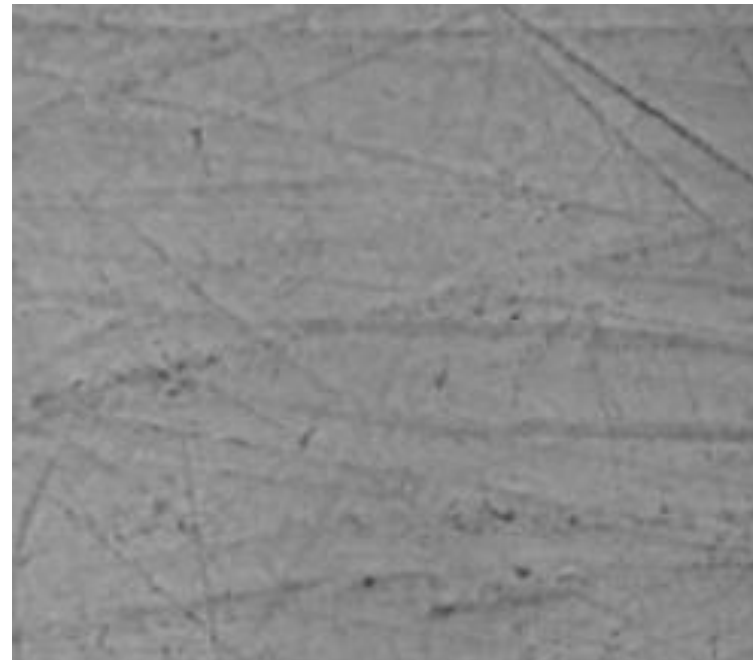
POWER SCALER TECHNIQUE

- Start by using sweeping cross strokes
- Continue by working in various directions (coronal to apical, oblique, circumferential)
- Remember to never press hard
 - This can cause overheating of the tooth or break the equipment
- A higher power setting may be used for a broad-based, beavertail-type tips.
- Decrease the power setting when using subgingival tips

POLISHING

Why polish the teeth after cleaning?

- ❖ Removes any plaque that may have been missed while scaling.
- ❖ Smooths small etches made in the tooth's surface.



POLISHING CONTINUED

○ Install the appropriate prophylaxis angle to your low-speed handpiece.

• I prefer disposable angles.

1. They can be thrown away instead of cleaned.
2. They come in an oscillating version.

• Whatever you choose make sure the polishing cup is soft.



POLISHING CONTINUED

- Apply a liberal amount of polishing paste.
 - This will help decrease the amount of heat generated during polishing.
 - This will help smooth the enamel etches.

Course Grit
Polishing Paste

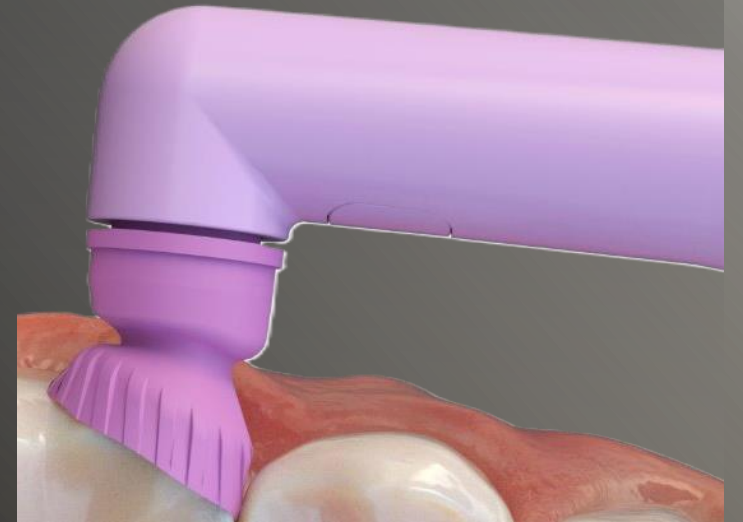


Medium Grit
Polishing Paste



POLISHING CONTINUED

- Keep your rpm low
 - Between 2000 and 4000 rpm
 - This can be tested by running the prophy angle and trying to stop it by gently pressing your finger against it. If you can stall it, then you are ok.
 - This will help decrease the amount of heat generated during polishing.





POLISHING CONTINUED

- Make sure you are polishing the entire tooth surface including the sulcus.
- Rinse the polishing paste off completely
 - This will keep it from getting trapped in pockets and preventing healing.

HOW MUCH TIME
SHOULD YOU
SPEND POLISHING
THE TEETH?

3-5
seconds
per tooth

ADDITIONAL INSTRUMENTS FOR SMALL ANIMAL VETERINARY DENTISTRY



PERIODONTAL PROBE

It is important to know what type of probe you have so you know how to measure a periodontal pocket.

"banded periodontal probe"

Probe length is available in 18mm, and each band represents 3mm



"notched periodontal probe"

Intermediate notches at
1,2,3,(skip 4) 5 (skip 6) 7,8,9,10

Shepherd's hook explorer

THIS IS THE
MOST COMMON
EXPLORER. THEY
ARE COMMONLY
MANUFACTURED
COMBINED WITH
THE
PERIODONTAL
PROBE.

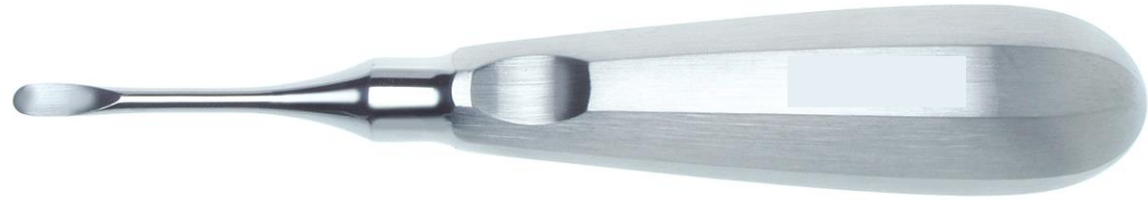


WINGED ELEVATOR

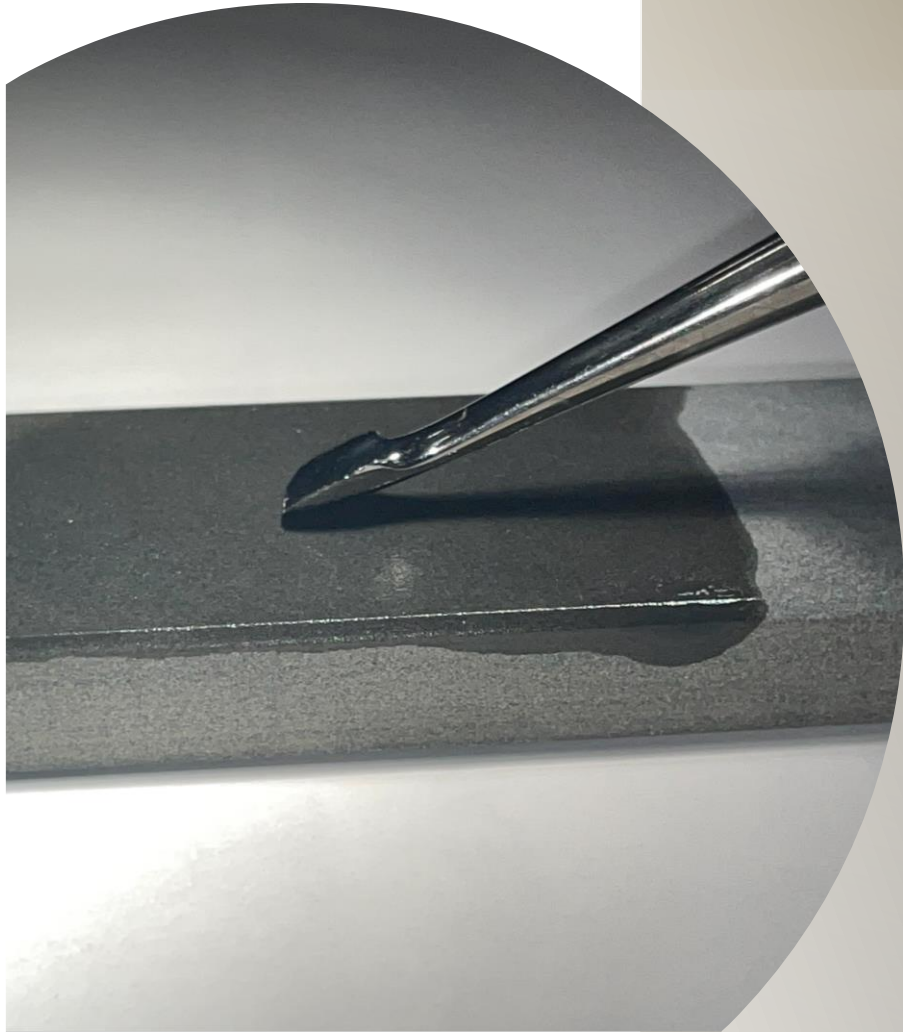
- Used for extractions by moving the tooth/root vertically and horizontally to break down the PDL (periodontal ligament) and make the tooth mobile enough to extract with extraction forceps.



LUXATOR



Luxators are used to slide into the periodontal ligament space and rock the tooth back and forth until it is mobile enough to extract with extraction forceps.



Sharpening elevators

Elevators should be sharpened on the flat surface. Stroke away and make sure to maintain the angle of the cutting surface. Use the conical stone to remove any metal burs (this is not used to sharpen the instrument.)

PERIOSTEAL ELEVATOR

The most periosteal elevator is used to raise a gingival flap to expose the alveolar bone.



TISSUE FORCEPS



Brown Adson tissue forceps

- Aggressive enough to not drop tissue but not so aggressive that tissue is getting damaged

SCALPEL HANDLE

Picking
a scalpel handle
to best fit
your veterinarians
needs/preferences.



SCALPEL BLADES



SCISSORS



Dean Scissors

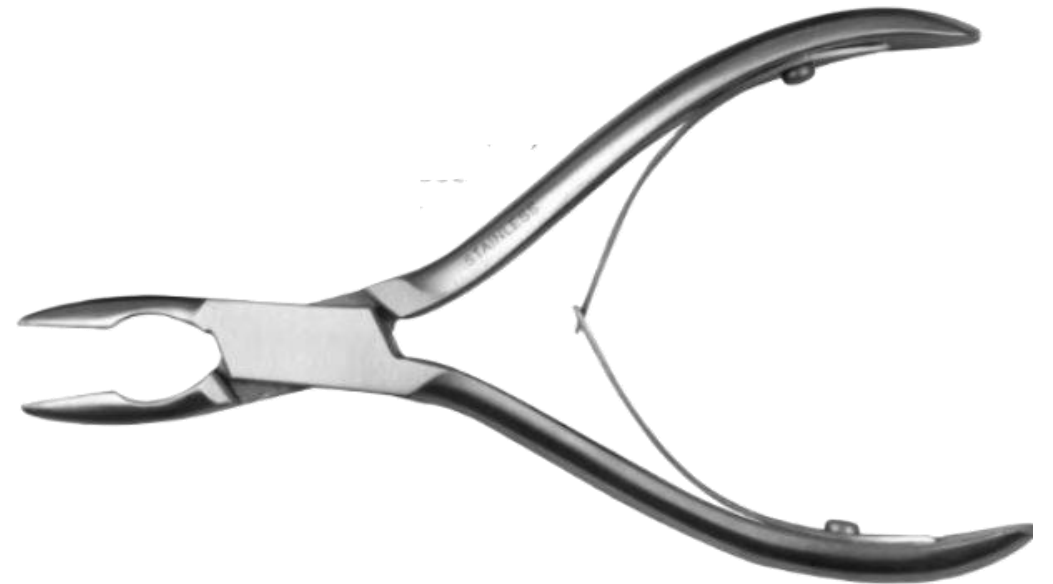
Scissors that can provide precise delicate work.



La Grange Scissors

RONGEUR FORCEPS

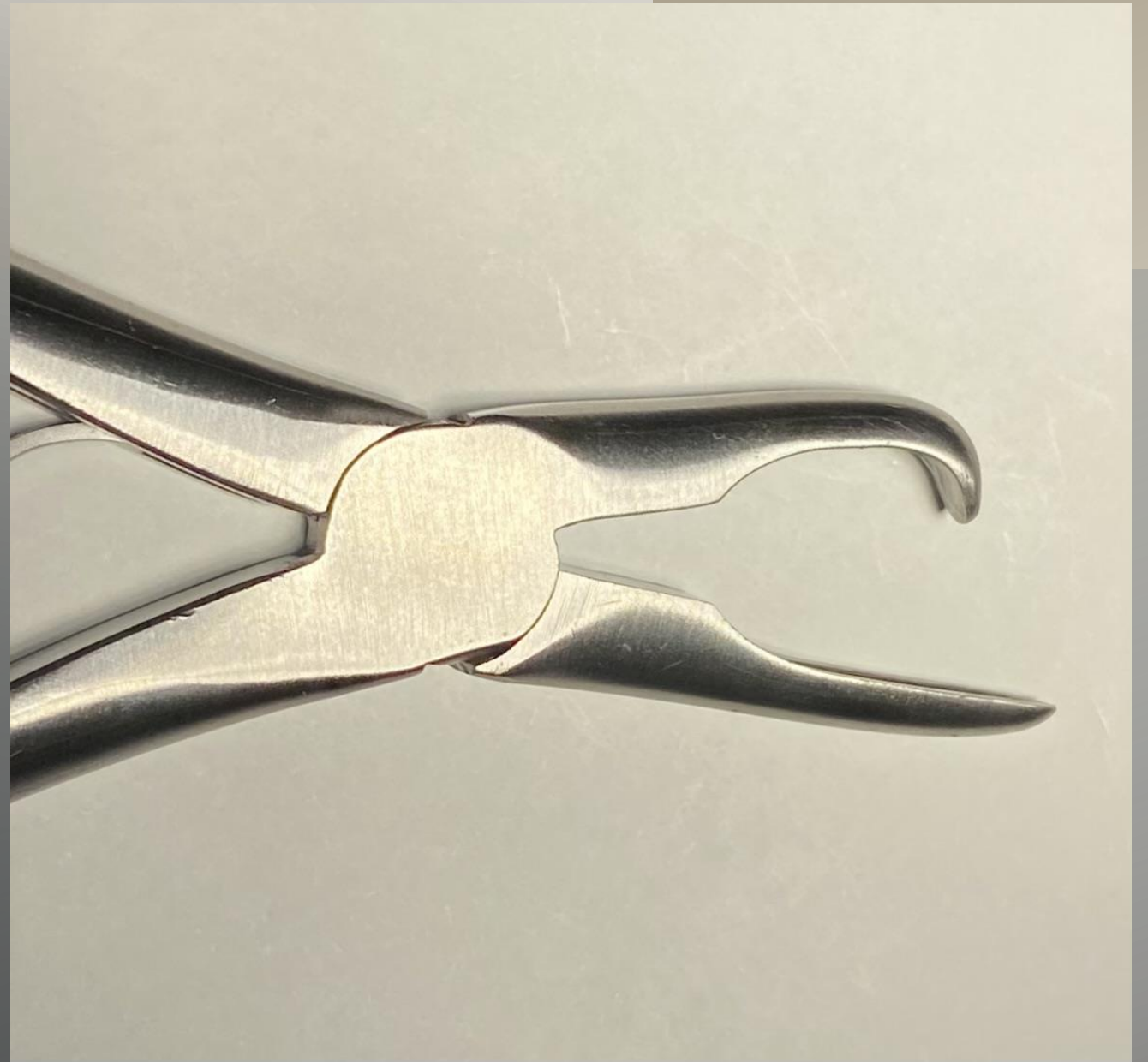
Used for removing the teeth. There are many different sizes and style options to choose from.

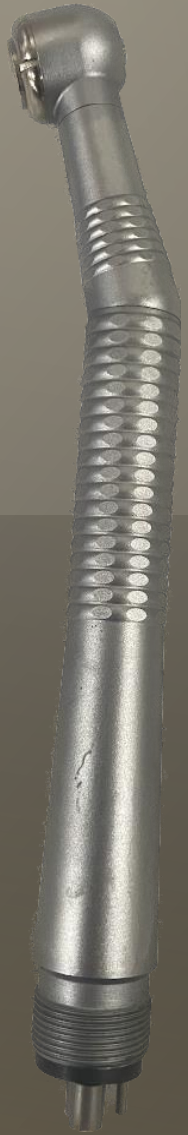


Calculus removal forceps

These are used for removing large deposits of calculus from the tooth surface.

Calculus removal forceps must be used properly to ensure you do not damage a tooth or the surrounding soft tissue.





HIGH-SPEED HANDPIECES







- ALWAYS CHECK THE MANUAL TO SEE IF/WHEN YOUR HIGHSPEED NEEDS TO BE LUBRICATED.
- MAKE SURE TO KEEP A SPARE TURBINE IN STOCK!



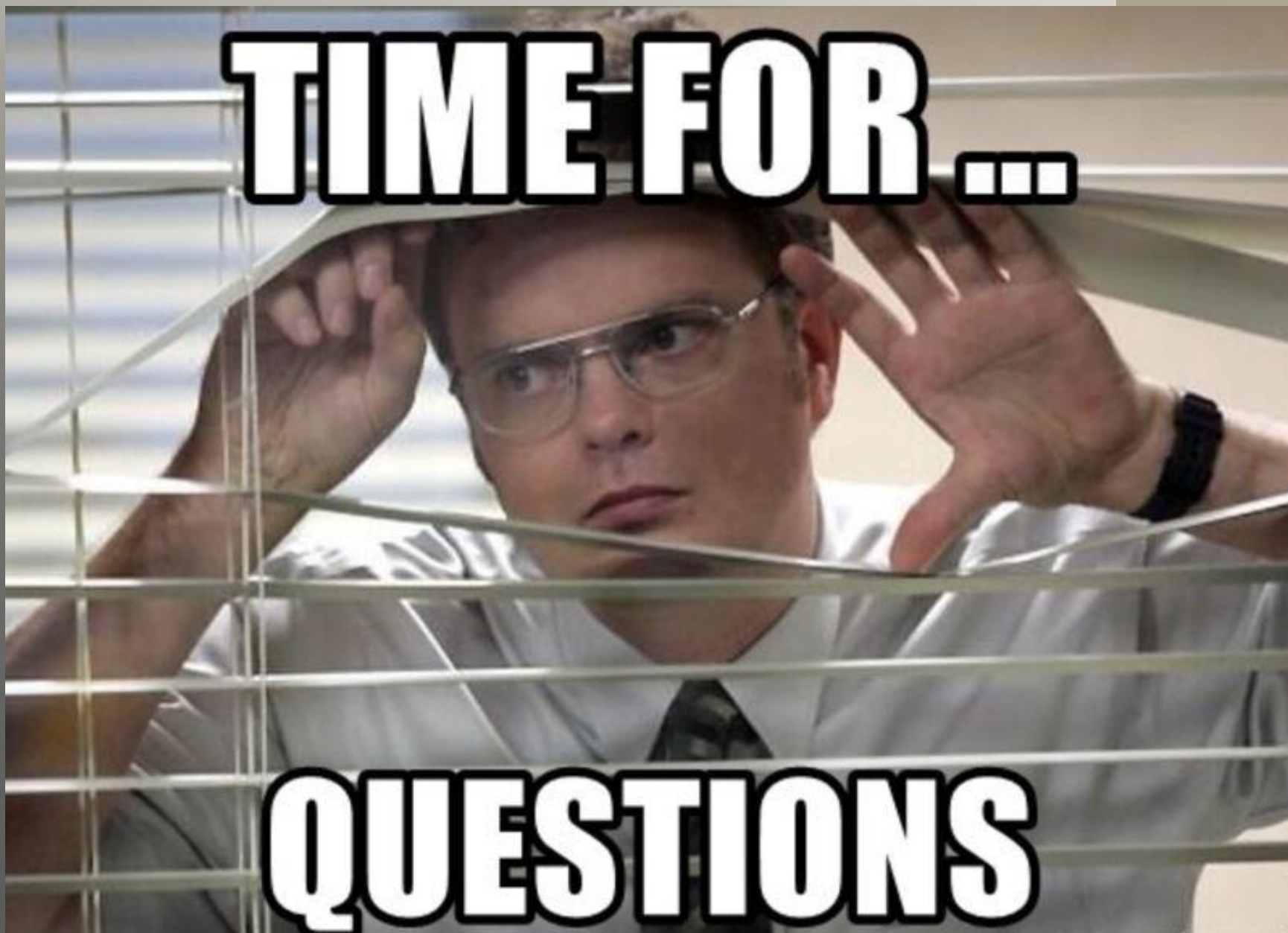
BURS

- Keep a variety of burs on hand
 - Understanding the use for each bur is essential



| Types of bur | Pear-shaped | Crosscut Fissure | Inverted-cone | Round | Diamond | Finishing |
|--------------|---|---|---|---|---|---|
| Description | Cross between round bur, crosscut bur and inverted-cone bur | Slightly tapered with a cutting surface on the side as well as the tip | Wider at the tip than the shank | Round bur with circular cutting surface | Wide variety of shapes, sizes and coarseness | These can come in small multi fluted burs or a stone |
| Use | Ideal use for cavity prep | Gaining access to root canals, sectioning teeth and cavity prepping | Ideal for cavity prep | Access into the pulp chamber or cavity prep and removing alveolar bone | Crown preparation, smoothing alveolar bone and smooth tooth surface | Finishing restoration, smoothing defects |
| Photo |  |  |  |  |  |  |

TIME FOR ...



QUESTIONS