Instrument Sharpening

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Objectives
- Explain the advantages of using sharp instruments
- State the purposes of sharpening instruments
- Discuss importance of maintaining design characteristics during sharpening
- Detect a dull cutting edge
- Sharpen any instrument without damage

Advantages of Sharp Instruments
- Calculus removal involves firm lateral pressure
- Metal worn away from working-end during use
  - cutting edge becomes rounded
- Discuss at least 5 advantages to keeping your instruments sharp

Goal of Instrument Sharpening
- Restore sharp cutting edge
  - Remove minimum amount of metal
  - Maintain original design characteristics
- What are some of the design characteristics you need to be aware of when sharpening an instrument?
  - Hint: consider differences between sickles, universals, and area-specifics

CROSS SECTIONS
When is an Instrument Dull?
- Performance during use
- Tactile evaluation
  - Acrylic test stick
- Visual evaluation
- Sound
- Compare to new instrument

Instrument Tip Breakage
- Consequences of broken tip
- Retrieving a broken tip
- Follow up

When do you sharpen?
- First sign of dullness
  - Before, during, or after each procedure
- Sterile vs. non-sterile instruments
  - Infection control
- Compare the advantages of routine instrument sharpening to infrequent sharpening

Equipment
- Dedicated sharpening work area (ideal)
- Stable work surface
- Good light source
- Magnification
- Sterile stones and test stick
- Lubricant
- Gauze & cotton swabs
- Safety glasses
  - Gloves and mask if instruments are contaminated

Sharpening Stones
- Abrasive particles
- Flat, wedge, round, cone
- Natural stone or synthetic
- Grain
  - Fine grain stones
    - Produce sharper edges
    - Edges stay sharper longer
- See table in Nield (p. 581) to compare types of sharpening stones

Lubricant
- Water or oil
- Reduce friction and heat
- Prevent metal shavings from sticking to stone
- Sharpening during treatment
  - Synthetic stone and water
### Sharpening Methods/Techniques

- **Manual sharpening**
  - Unmounted stones
    - Flat
    - Cylindrical

- **Power-driven sharpening**
  - Mandrel-mounted stones
    - Cylindrical, fit in handpiece

- **Sharpening machines**

- **Professional sharpening**

### Technique

- **Stationery flat stone:** moving instrument
  - Explorer

- **Moving flat stone:** stationery instrument
  - Sharpening by the “clock”

- **Sharpening periodontal file, chisel, hoe** (see Wilkins)

### Wire Edge

- Always finish with down stroke

- Use round stone lightly across face

- Wipe with gauze

### References

