

# Corneal Suturing



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I have no financial relationships or interests to disclose

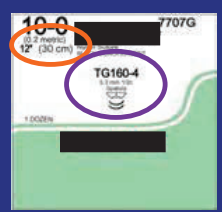
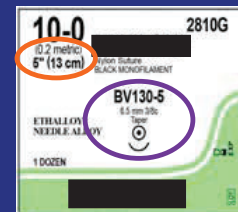
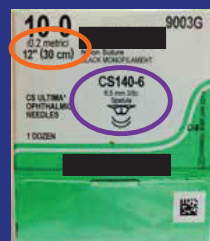
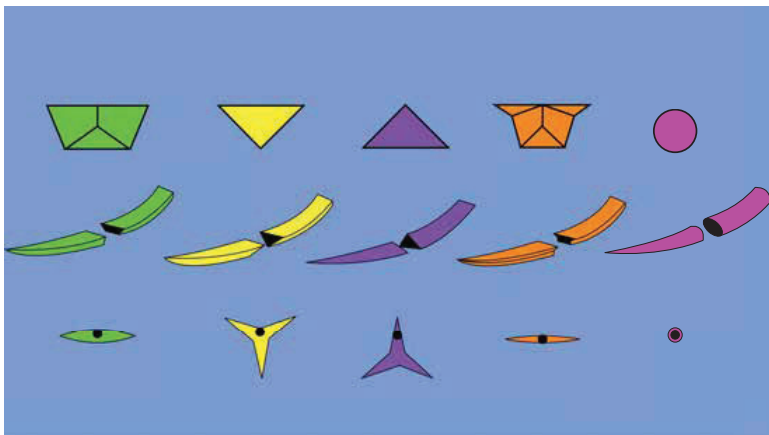
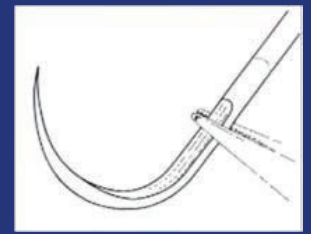
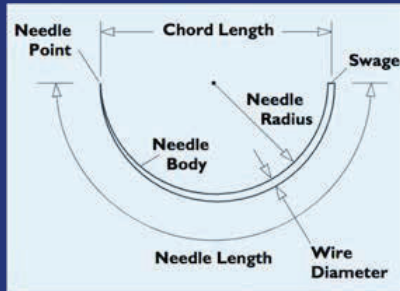


## Conditions Requiring Corneal Suturing

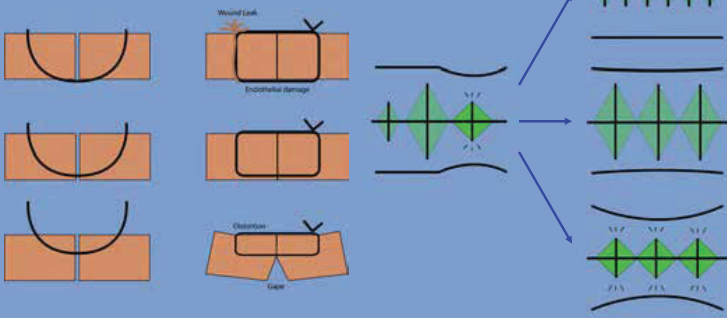
- Keratoplasty
  - Vertical wound
  - Minimal edema
  - Tissue usually comes together without tension
  - Sutures symmetric and perpendicular to wound
  - 10-0 or 11-0 usually used
- Corneal trauma
  - Shelved or irregular wound
  - More edema
  - Can have tissue loss so may have tension on closure
  - Sutures modified based on location
  - 9-0 or 10-0 usually used



## Anatomy of a Needle



## How Deep, How Long, How Tight?



## Penetrating Keratoplasty

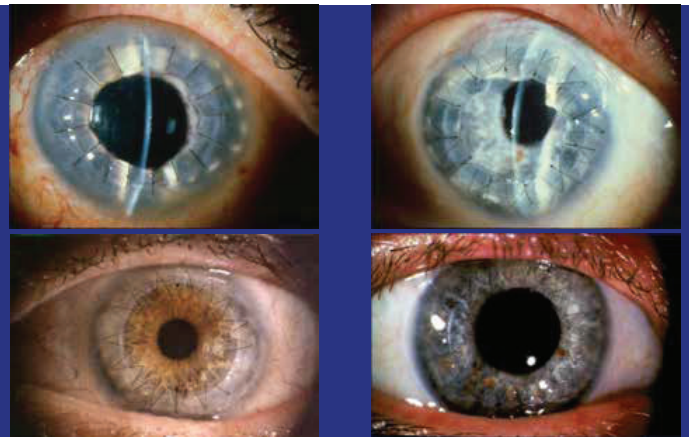
- 10-0 or 11-0 monofilament polyamide (nylon) or polypropylene (prolene)
- Spatulated side-cutting needles most common
- Reverse cutting may be used
- Regular cutting easier but more likely to cheese-wire
- 3/8, 1/2 or compound curve
- Interrupted or running

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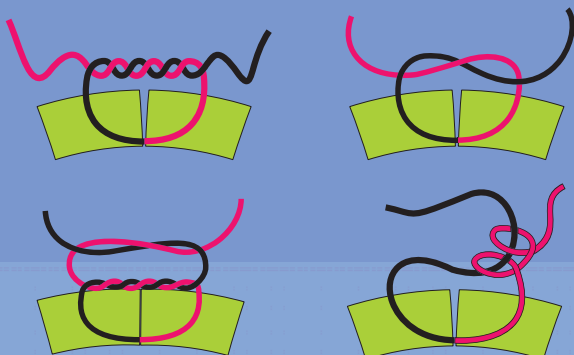
## Interrupted vs Running



- |                            |                                  |
|----------------------------|----------------------------------|
| • Slow going               | • Faster                         |
| • Better scarring          | • Theoretically less astigmatism |
| • More forgiving           | • Less forgiving                 |
| • Suture break no big deal | • Suture break more of issue     |



## Square vs Slip Knots



## Corneal Lacerations

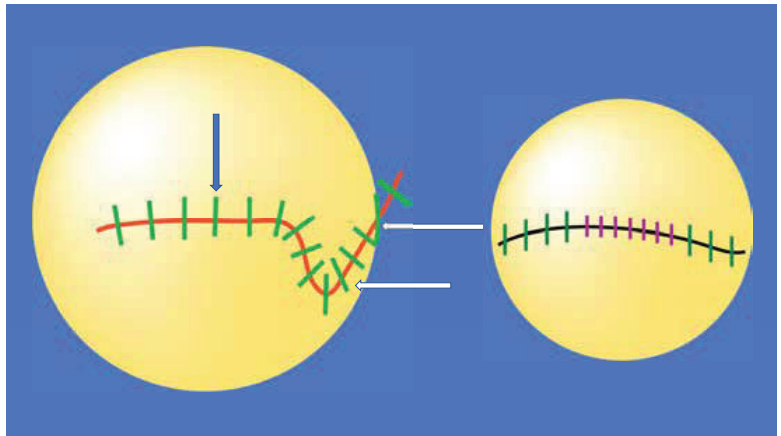
- 10-0 nylon for cornea and 9-0 nylon for sclera+/-limbus
- Spatulated side-cutting needles
- Always interrupted
- Tighter than usual as tissue edematous
  - Sutures will loosen when tissue deturgesces
- Perpendicular to laceration except
  - Limbus-to-limbus
  - May slant near visual axis or near triangle flap

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## Other Considerations

- Flat A/C with iris to wound
  - Make shallow sutures and replace with deeper once chamber stable
- Divide in halves vs Zipper closure
  - More stability with halves
  - Less replacement with zipper
- Peripheral vs Central sutures
  - Longer in periphery – will steepen central cornea
  - Shorter in center – will not flatten center

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## Stellate Lacerations

