

# Needle manipulation



Endoscopy in reproductive medicine  
2010



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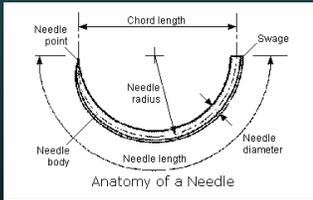
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# Needle's anatomy



Anatomy of a Needle



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# Needle shapes

Shape: Straight  
Applications: gastrointestinal tract, nasal cavity, urethra, oral cavity, pharynx, skin, tendon, vessels

Shape: Half-curved  
Applications: skin (rarely used)

Shape: 1/4 Circle  
Applications: eye (primary application), microsurgery

Shape: 3/8 Circle  
Applications: aponeurosis, biliary tract, dura, eye, fascia, abdominal tract, muscle, myocardium, nerve, perichondrium, perosteum, peritoneum, pleura, tendon, urogenital tract

Shape: 1/2 Circle  
Applications: biliary tract, eye, gastrointestinal tract, muscle, nasal cavity, oral cavity, pelvis, peritoneum, pharynx, pleura, respiratory tract, skin, subcutaneous fat



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### Needle shapes



1/2 Circle  
Shape: 5/8 Circle  
Applications: anal (hemorrhoidectomy), cardiovascular system, nasal cavity, oral cavity, pelvis, urogenital tract (primary application)



5/8 Circle  
Shape: Compound Curved  
Applications: eye (anterior segment)



Compound Curved

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### Needle holders



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### Rotation of wrist & fingers



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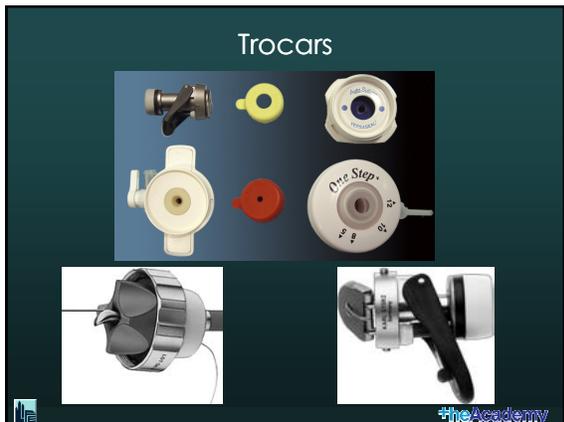
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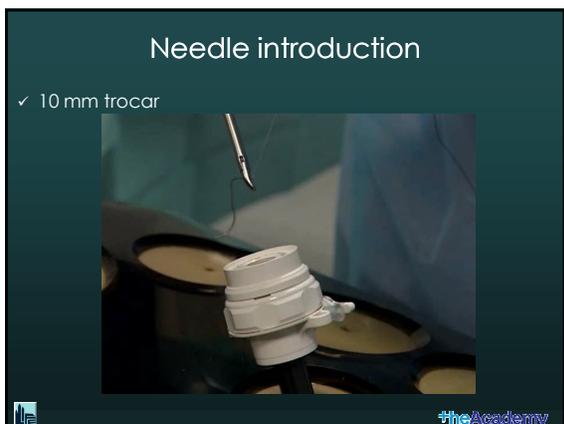
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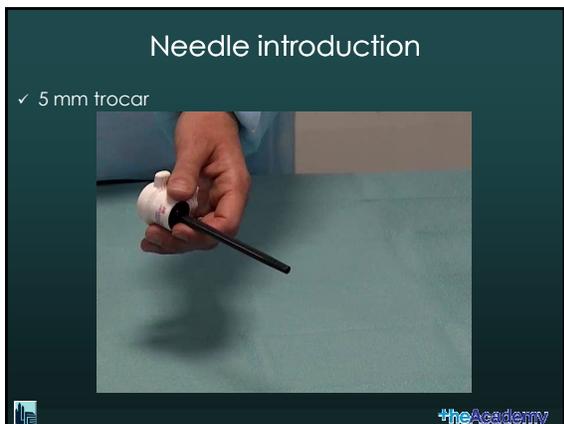
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### Needle extraction

- ✓ 10mm trocar
- ✓ 5 mm trocar:
  - Straiten the needle using 2 needle holders



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### Loading the needle

- ✓ Lay on tissue
- ✓ Koh technique
- ✓ Wattiez technique
- ✓ twist



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### Loading the needle

- ✓ [Lay on tissue](#)
- ✓ Koh technique
- ✓ Wattiez technique
- ✓ twist



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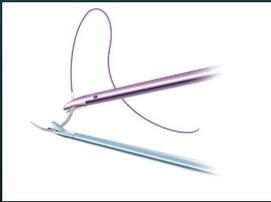
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### Loading the needle

- ✓ Lay on tissue
- ✓ **Koh technique**



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### Loading the needle

- ✓ Lay on tissue
- ✓ Koh technique
- ✓ **Wattiez technique**



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### Beware of errors !!

- ✓ **errors**



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## Loading the needle

- ✓ Lay on tissue
- ✓ Koh technique
- ✓ Wattiez technique
- ✓ **twist**



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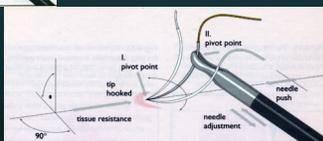
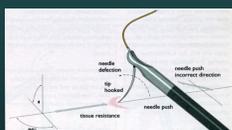
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## Suture

- ✓ Needle deflection v/s Needle rotation



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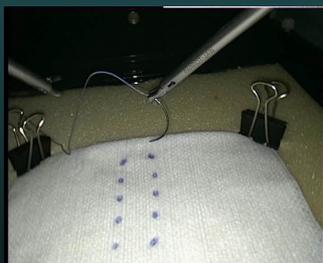
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## Suturing

- ✓ Z line running suture
  - Master rotation principle
  - Train one hand at a time



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### Suturing

- ✓ Creek running suture
  - Master using both hands
  - Ambidexterity



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### Exercises

- ✓ Needle insertion through trocars
- ✓ Loading the needle
- ✓ Suturing WITHOUT KNOTTING
  - Z line
  - Creek line



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