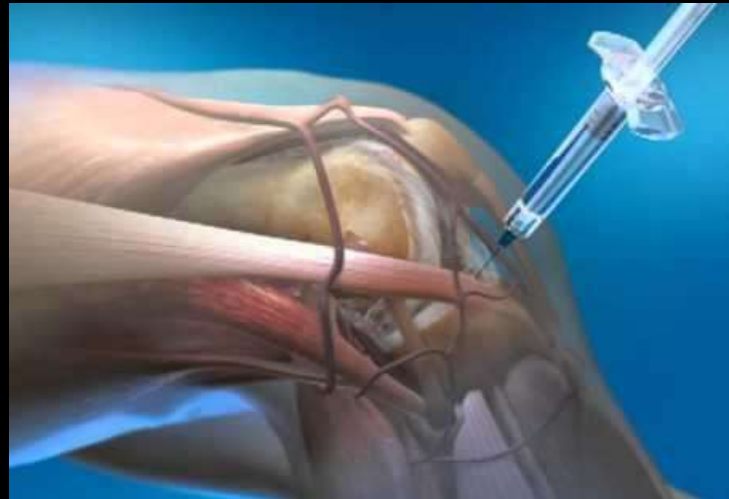




knee joint  
Arthrocentesis

# Arthrocentesis

- A bedside procedure in which a sterile needle and syringe are used to drain fluid from the joint, and in some conditions, medication is injected into the joint after fluid removal.



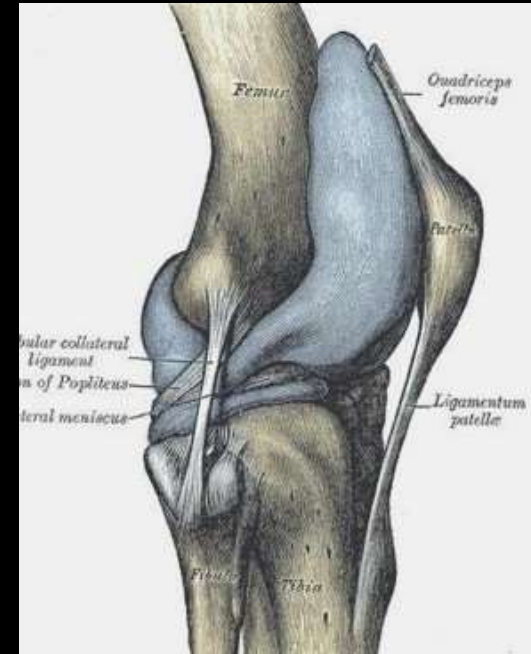
# Knee joint anatomy

- It is a synovial hinge joint formed between three bones: the femur, tibia, and patella.
- It has strongest capsule
- MCL , LCL, ACL, PCL  
med. and lat. menisci



# Knee joint anatomy

- Largest synovial membrane
- Surrounded by strong muscles
- ROM = flexion 0-130



# Indications

□ **Diagnostic** knee arthrocentesis:



- Evaluation of monoarticular arthritis
- Evaluation of suspected septic arthritis
- Evaluation of joint effusion
- Identification of Hemarthrosis
- Identification of crystal arthropathy

# Indications



## □ **Therapeutic** knee arthrocentesis:

- Relief of pain by aspirating effusion or blood
- Injection of medications (corticosteroids, antibiotics, chemotherapy or anesthetics)
- Drainage of septic effusion

# Contraindications

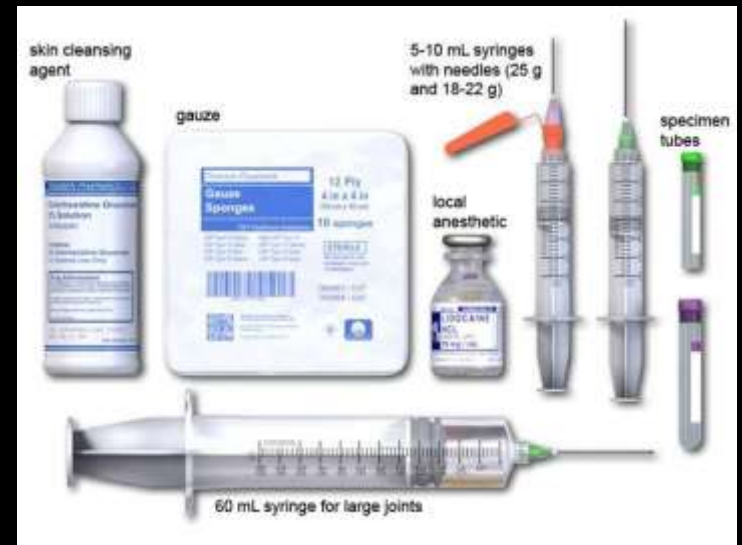


- ❑ There are *no absolute* contraindications for knee arthrocentesis.
- ❑ *Relative contraindications*;
  - Cellulitis overlying the joint .
  - Skin lesion or dermatitis overlying the joint
  - Known bacteremia
  - Adjacent osteomyelitis
  - Uncontrolled coagulopathy
  - Joint prosthesis

# Equipments

The materials required for knee arthrocentesis include the following:

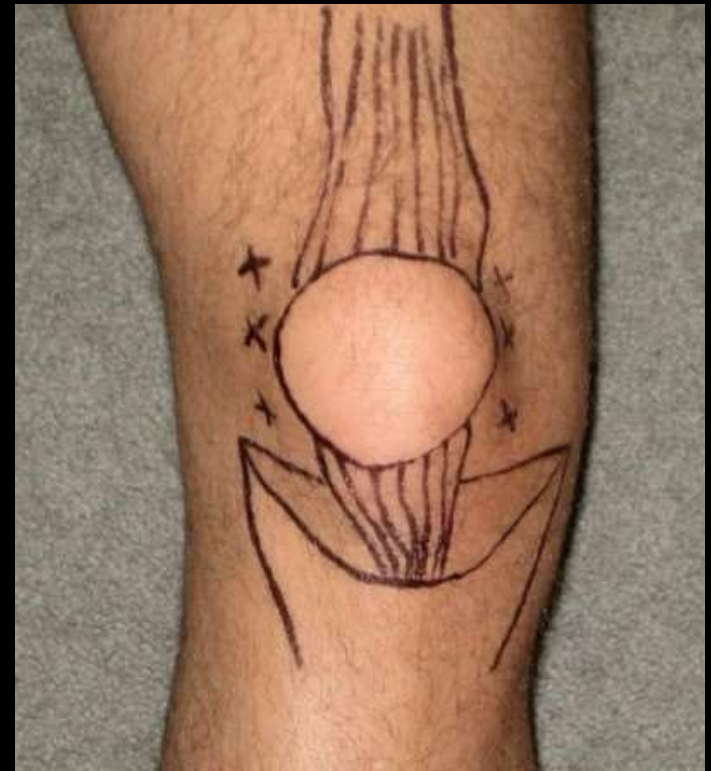
- Sterile gloves and drapes
- 5 gauze pads, 4 × 4 in.
- Skin preparatory solution
- Lidocaine 1%
- Syringes, 5 mL, 20 mL, 30 mL, 60 mL
- Needles, 18 or 20 gauge and 25 or 27 gauge, obese patients might require a 21-gauge spinal Hemostat
- Specimen tubes
- Bandage





# Approach Considerations

- *parapatellar approach* (which is generally preferred) ( med. & lat.)
- *suprapatellar approach* ( med. & lat.)
- *infrapatellar approach* ( med. & lat.)



# Patient Preparation

- informed consent.
- identification of the needle insertion site and marking it.



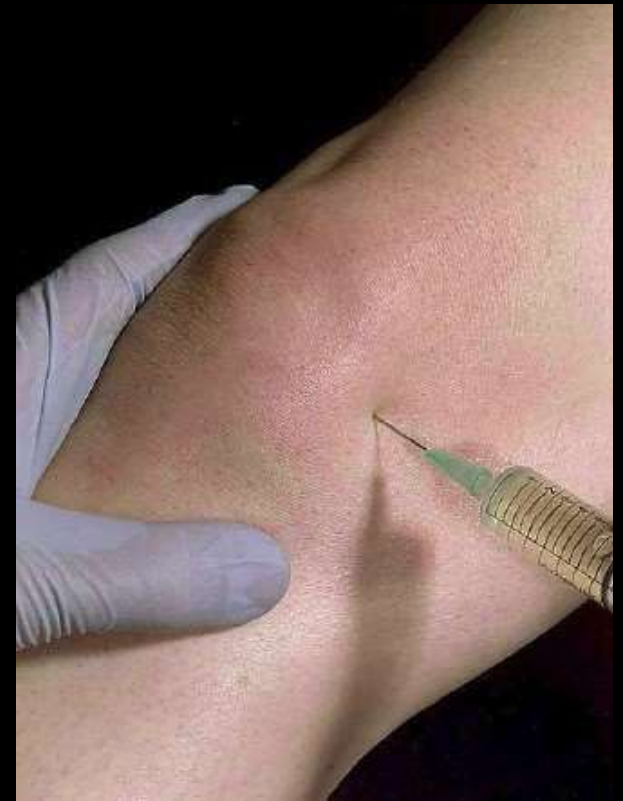
# Patient Preparation

- skin preparation and draping the joint.
- Local anesthesia;
  - lidocaine 1%



# procedure

- **Parapatellar approach** midpoint of either the medial or the lateral border of the patella. Insert a needle 3-4 mm below the point.
- useful when there is a small effusion



# procedure

- **Suprapatellar approach**, midpoint of either the superomedial or the superolateral border of the patella.
- Insert a needle through the midpoint of either set of superior borders.
- useful for large effusions



# procedure

- **Infrapatellar approach**, position the patient sitting with knee bent at 90°
- Identify inferior border of the patella and the patellar tendon.
- Insert a needle 5 mm below the inferior border of the patella and just lateral to the edge of the patellar tendon.

