

Knee Injection		
Category	Clinical Checklist Steps to Complete	Assessment Checklist Check errors performed or needed correction to avoid
Confirm Indication	<ol style="list-style-type: none"> 1. Knee osteoarthritis (unable to tolerate or refractory to PT and NSAID's) 2. Aseptic inflammatory arthritis 	<input type="checkbox"/> Unable to identify a valid indication. <input type="checkbox"/> Proposed indication not supported by proper historical or exam features.
Contra-indications	<ol style="list-style-type: none"> 1. Hardware in the joint 2. Infection in joint or overlying skin 3. Periarticular fracture, injury, or instability 4. Potential knee surgery in <3 months 	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> Unable to confirm absence of contraindications (*multiple points possible)
Obtain Consent	Explain & and confirm patient's understanding: <ol style="list-style-type: none"> 1. Procedural process 2. Risks & techniques to mitigate them 3. Potential benefits 4. Risks of not performing and alternatives. 	<input type="checkbox"/> Did not obtain consent <input type="checkbox"/> Uses complicated terminology <input type="checkbox"/> Fails to provide all 4 steps of the consent process
Supplies	See reverse side for full list	<input type="checkbox"/> Fails to obtain all necessary supplies before starting
Positioning	Superior lateral approach: Supine with knee fully extended or slightly hyper-extended, quadricep relaxed, patella mobile.	<input type="checkbox"/> Fails to appropriately position patient as described in either the superior-lateral or anterior approaches
	Anterior (medial or lateral) approach: Sitting position with knee relaxed and flexed at nearly 90 degrees	
Identify Entry Site	Superior lateral approach: Identify the superior margin of the patella and the posterior aspect of the lateral patella. Then mark an insertion point, just posterior to the superior margin of the patella.	<input type="checkbox"/> Misidentified superior edge of patella <input type="checkbox"/> Misidentified posterior margin of lateral patella <input type="checkbox"/> Misidentified superior-lateral point with palpable recess under the patella
	Anterior (medial or lateral) approach: Identify the margins of the patella, patella tendon and tibial plateau. Mark the insertion point ~1cm above the tibial plateau either 1cm lateral to the patella or 1cm medial to the patella.	<input type="checkbox"/> Misidentified inferolateral edge of patella <input type="checkbox"/> Misidentified patellar tendon <input type="checkbox"/> Misidentified tibial plateau <input type="checkbox"/> Fails to identify an appropriate insertion point.
	Verification of entry site by preceptor	<input type="checkbox"/> Does not ask for verification
Draw-up solutions	<ol style="list-style-type: none"> 1. Clean each vial with 1 alcohol swab 2. Using the larger needle aspirate 1-4 cc of lidocaine, then 1cc of triamcinolone or methylprednisolone 	<input type="checkbox"/> Fails to clean top of vial <input type="checkbox"/> Uses incorrect needle <input type="checkbox"/> Fails to aspirate most of steroid <input type="checkbox"/> Fails to recap and remove needle safely
Timeout	Confirm name, DOB, Procedure, Location, Allergies	<input type="checkbox"/> Fails to perform
Sterile Prep	Scrub chlorhexidine over insertion site >30 seconds, or apply providone-iodine around insertion site and allow to dry	<input type="checkbox"/> Does not sufficiently sterilize the site <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> Contaminate site (*multiple points possible)
	Maintain sterile site with no touch technique	
Local anesthetic	Apply ethyl chloride spray for 5-10 seconds or until skin turns white (optional).	
Needle Insertion	Insert quickly through the skin at the marked insertion point	<input type="checkbox"/> Concern for instability of grip
	Superior lateral approach: Advance needle under the patella, parallel to the floor, and directed towards the center of the joint (typically horizontally and slightly inferior). Anterior approach: Advance needle under the patella, parallel to the floor, and directed towards the center of the joint (typically 45 degrees).	<input type="checkbox"/> Advances needle in incorrect direction
	Advance to a depth of 2-4 cm	<input type="checkbox"/> Insertion depth less than 2cm or more than 4 cm
	Aspiration prior to injection of medication	<input type="checkbox"/> NO attempt aspiration prior to injection
	If difficulty advancing, then partially withdraw the needle close to the skin surface and redirect.	<input type="checkbox"/> Pivots fully inserted needle rather than withdrawing and redirecting
Extraction	Obtain hemostasis and apply band aid	

Supplies

Marker	18-22g needle (for drawing up)
Lidocaine 1% (4cc)	21-25g 1.5" needle (for injection)
Triamcinolone or Methylprednisolone 40mg/mL (1cc)	5-10cc syringe
Alcohol swab	2x2 gauze
Chlorhexidine or providone-iodine swab	Band-aid
	Ethyl chloride spray (optional)