JOINT PROCEDURES fall into 3 general categories, both (mis)posted as 'ARTHROGRAMS", with slight modifications of set-up: **ASPIRATION** (r/o infection), **PAIN STUDIES**, and **GADOLINIUM FOR MRI**.

BASIC SET-UP: ALL 3 start with:
Informed and witnessed consent, 'Time Out" to confirm **patient** (wristband plus verbal ID) and **joint/side identities**
Basic Tray
Iodine (skin prep) and Alcohol (post-injection skin clean-up)
Lidocaine 2% 50 mL
20 G spinal needle
1 1/2" 25 G needle (NOT the 5/8")
1 1/2" 22 G needle
1 1/2" 16 G needle
2 10 ml syringes-- one for Lidocaine 2%, one for contrast-- put tubing on contrast immediately to clarify identity!
Labels and pen now included on sterile tray; label syringes as load
50-cc tubing (don't open, don't always need)
contrast (don't open, don't always use)
mammo-spot type marker
waterproof 'Sharpie' pen (non-sterile)
6.5 (or your size) sterile gloves, prefer *not* purple-- use OVER nonsterile gloves

ASPIRATIONS to R/O INFECTION, and PAIN STUDIES.
Goal: extract joint fluid, or at least stick a needle tip in joint if no fluid, to test for infections. You are done when samples successfully reach correct labs in correct format. We do any non-Neuro joint, most often hips/SI/knees/shoulders.
PAIN STUDY: seeks to inject long-acting anesthetics and steroids, to test both immediate and long-term response; no samples taken (unless, of course, pus comes rolling out at you--then culture it!). We usually do hips (supine) or SI joints (prone, towel roll under contralateral hip).
GADOLINIUM INJECTION: for MR; usually shoulders, wrist, occasional hip, other

ASPIRATION needs intra-articular fluid samples, so to Basic set-up add:
5 cc syringe to use when attempting to extract fluid
green port-a-cul vial
purple OR green vacutainer
red vacutainer
small vial NONBACTERIOSTATIC saline (don't open, may not need)
Lab sheets-- Pathology 5, Path 2, forms
Path 5, green port-a-cult --standard requests are C&S, Gram, anaerobic/aerobic; may need TB, fungal, prn. Tell HO to send correct lab forms if bizarre requests. If no free fluid aspirated, stab spinal needle tip into culture and label form 'needle-tip, dry tap". Goes to MICROBIOLOGY LAB.
Path 2, purple or green top--body fluid cell count and differential. Goes to CORE LAB.
red top--"DidJa" tube, put extra fluid here in case you missed something ("DidJa sent the extraterrestial DNA test sample, DidJa get the SpongeBob titres...")
clear plastic sample envelopes-actual labeled sample goes to deep main pocket, paperwork to shallow pouch.
about 6-10 extra pt. labels for samples, paperwork
SAMPLES must have machine-stamp label on tube or they get tossed at lab. Must be **hand-delivered** to relevant labs, by you or trusted tech/accomplice to whom you gave custody--do NOT leave on counter assuming 'someone' will take them. "Someone" doesn't exist.

PAIN TEST additions to basic set-up:
During consent, explain test may ‘make them better, may lead to no change, or even make you slightly more sore later today. These are all normal and possible outcomes and help separate out possible causes of your pain”.
10 cc syringe to fill with 9cc Bupivacaine:1cc Kenalog 40
Bupivacaine (aka Marcaine, Sensorcaine) .5%, 20 ml bottle
Kenalog 40, one 5cc vial—shake well (cloudy)

lots of chit-chat to relax pt and send out endorphins
Post-injection, one needs to ask the pt. to assess any immediate change in pain or ROM (ambulate in room, get up/down from chair, whatever), and to then keep track over next few days/hrs to note when pt. returned to pre-injection baseline (anesthesia good for 3-4 hrs, steroids may kick in and go days/weeks).

GADOLINIUM INJECTIONS: for MR which must follow immediately. Call MR and make sure they are aware of pt; give them estimate as to when they can expect pt. (make sure you ascertain which building/ scanners!)
Basic set up plus: smallest container **Gad** (may need to get from MR), tiny (1cc) **TB type syringe** marked in .1cc increments; ~20 cc or slightly less **sterile saline** (need not be non-bacteriostatic), 20 cc syringe.
Draw ~.4-.5 cc Gad into tiny syringe; and draw ~18-19 cc saline into 20 cc syringe; pull back 20 cc plunger a mm or two. Inject ~.15cc from TB syringe into nipple of 20 cc syringe; put finger over nipple tip and invert 1ce or 2ce to mix. This creates the necessary dilution (1:200 if you put .1 cc Gd into the 20 cc saline, as in many articles, but this slightly higher concentration has been working well for us).
Use **conventional radiographic contrast** for test injections to confirm intraarticular position under fluoroscopy. Once confirmed intraarticular, remove the tubing from the radiographic contrast, put it on 20 cc Gd/saline syringe, and gently push ~2-3 cc saline solutuon through tubing to replace contrast with Gd/saline; re-attach to intraarticular needle, and inject Gd/saline as tolerated (?7-10 cc shoulder or hip; watch pt's face, ask how feel—previous effusions leave joint space distended, surgery/prior procedures may scar it down tighter). Flick fluoro on intermittently to confirm radiographic contrast being displaced/diluted intraarticularly by Gd/saline (radiolucent) injection.
Help pt. off table minimizing shoulder motion (ie stay in hospital gown, don't change back to street cloths to move to MR area), ESCORT (wheelchair probably) to MR **yourself** if an MR fellow has not come over to observe/escort.

Donna Magid MD, MEd