STUDY OF OSTEOPOROTIC FRACTURES (V5)

Hip Abductor Strength Testing Protocol

LOWER EXTREMITY MUSCLE STRENGTH TESTING WITH HAND-HELD MANOMOMETER

1. Introduction:

This test is designed to estimate the subject's maximum isometric strength. The examiner must push on the subject's limb with the maximum force needed to overcome the resistance of the subject. The peak force attained will be automatically recorded on the manomometer.

In order to measure the strength of the muscle, we must know the distance between the joint that is moving and the place where the manometer is placed.

2. Equipment:

Hand-held manometer (Spark Instruments, Coralville IA).

The manometer should be calibrated once a week. Calibrate the manometer by hanging a 2 - 5 kg weight from the manometer (using velcro or other means of attaching the weight) and record the measure off the dial. Record calibration results (weight used, result) in a log book.

3. Measurement Procedures:

A. BOTH RIGHT AND LEFT SIDES WILL BE TESTED UNLESS:

a) HIP AND KNEE REPLACEMENTS
Do not test on side with recent hip or knee joint replacement (less than 8 weeks postoperative). TEST ON THE NONOPERATED SIDE. Indicate recent hip/knee replacement for appropriate side on the form.

For participants with hip or knee replacement more than eight weeks postoperative, ask about any recent problems they have had with pain or instability in the prosthesis. If pain, instability, loosening, or other complications are reported, TEST ON THE NONOPERATED SIDE.

B. TESTING HIP ABDUCTORS

a) Have the participant remove her shoes and roll her socks down to below the ankle bone.

b) The participant should be in the supine position on the examining table. The leg to be tested should be flat against the examination table with the patella directed upward. Put a sandbag or piece of foam under the participant's calf so that the heel is resting slightly off the table.

The opposite (left) leg should be bent with the sole of the foot flat against the exam table and the side of the knee resting against the wall.

c) Measure the distance between the tip of the greater trochanter (hip bone) and the lateral maleolus (ankle bone). We will only measure this distance once, on the first leg (which most often will be the right one) only. There is only space for one measurement on the form.

When making the measurement, you should place the manometer about 3 cm (which is about 3 finger widths) proximal to the malleolus. Remeasure this distance with your fingers before each measurement.

d) As you give the instructions below, demonstrate what you will do by pushing the manometer with one hand against your opposite arm.

"I am going to use this device to measure how strong your hip muscles are (show it to participant). I will put this cushioned part against your leg. When you are ready, I will count to three. When I count three I will begin to push against your leg. I want you to hold your leg there, don't let me push it back. Then when I say '**PUSH, PUSH, PUSH,**' I want you to push against the device as hard as you can. Don't be afraid to push as hard as you can without hurting yourself. **DON'T LET ME MOVE YOUR LEG-- PUSH BACK AGAINST ME.** We will repeat this twice on the right side and then twice on the left side."

e) Tell the participant to hold on to the edges of the examination table.

The examiner should stand with legs apart facing the participant's leg. **Examiner's should stand so as to maximize their stability and ability to resistance the participant's strength. This might be with the legs straddled, one foot in front of the other, or some other position. Do what feels most comfortable.** Hold the manometer firmly with your elbow bent at 90° and tucked firmly against your body. Support the hand that is holding the manometer with the other hand.

Lift the participant's leg and demonstrate how she should push her lower leg outward, away from the wall. Tell her:

"Keep your knee straight. Do not bend your knee."

f) Place the manometer along the lateral side of the lower leg 3 cm above the lateral maleolus (ankle bone). When the manometer is in place say:,

"Ready? One, two, three, **HOLD, HOLD, PUSH, PUSH, PUSH...RELAX.**"

Push hard enough to move her leg back toward the wall slightly.

g) Record the measurement. Record whether you were able to overcome her resistance by moving her leg backward a little.

h) Reset the manometer to ZERO for the next examination.

Protocol for documenting THR for hip OA from medical records.

Purpose: Determining who has a hip replacement for OA is a major objective of the our study of hip OA. About 300 subjects will have had a hip replacement since baseline. About half of these will be for hip OA, the other half mostly for hip fracture and a few other less common diagnoses. We will obtain medical records to document self-reported total hip replacements, and to determine the diagnosis.

In order to have this information available by the end of the funding period, it is essential to begin obtaining medical records right away for the participants who report having a hip replacement since baseline, and as soon as possible for those who report a total hip replacement at V5.

1. Hip replacements reported at V5. On the V5 take home questionnaire, participants will be asked if they have had a hip replacement since baseline, and if yes, for the name and location of the doctor and hospital doing the surgery.

If a ppt is not sure if her surgery was a hip replacement, go ahead and obtain medical records.

As participants are interviewed at V5, those reporting a hip replacement should be asked for a record release consent during the visit contact. Consent should also be obtained for ppts who return the take home but are not interviewed in person.

2. The coordinating center will generate lists for each clinic of all ppts who have reported a total hip replacement since baseline.

If participants who are deceased or mentally incapacitated have reported a hip replacement, clinics should send letters to next of kin asking the name of the doctor and hospital performing the procedure, and requesting consent for medical records release.

This list should also be checked against ppts response to the V5 take home questions about THR, and discrepancies resolved, if possible.

Ppts who previously reported a THR but do not complete a questionnaire for V5 should be sent a letter asking for doctor and hospital, and for consent to release medical records, if this is consistent with their requested level of contact by the study.

3. Request for THR documentation

NOTE: It may be necessary in some states to obtain a separate release form for the ppts' surgeon and for the hospital. Preoperative x-ray reports may only be available from the surgeon's office, but this will not be known until a request is first made from a hospital.

- A request for documentation should be sent immediately on receipt of consent.

• Request the following documentation:
- hospital face sheet with ICD9-CM diagnosis and procedure codes
- discharge summary
- preoperative radiology report
- operative report
- pathology report

4. This documentation will be sent monthly to the Coordinating Center for central adjudication.

5. We will attempt to develop a method for identifying those which were very likely performed for hip fracture repair so that we do not need to request medical records for these cases. For example, the list generated by the coordinating center will include whether the subject had a documented hip fracture and the date.

However, initially, we will documentation for all reported total hip replacements regardless of reason.