

HAND EXAM

1. Background and Rationale

Examining the hands can help identify generalized osteoarthritis and provide strong evidence that the any knee and hip problems are part of this generalized process. We will perform a hand examination in all participants, regardless of whether they have pain, to look for osteoarthritis there.

The hand exam will include an evaluation for Heberden's nodes (palpable bony enlargements of the DIP joints), Bouchard's nodes (palpable bony enlargements of the PIP joints) and bony enlargement and squaring of the thumb CMC joint. These joint enlargements can be assessed reproducibly and their presence correlates highly with the presence of osteoarthritis in the affected hand joints.

Introduce the hand exam as follows:

“Now, I am going to examine your hands. First, I'll ask you about any pain that you have had in your hands recently, and then I will examine the joints in both hands.”

2. Equipment and Supplies

- Exam table
- Chair for the participant to sit in
- Hand Exam Worksheet to assess hand pain

3. Hand Pain

Show the participant the hand diagram worksheet and ask them ‘Have you had pain for 1 or more days in your hands during the past month?’ If the participant indicates that they have had hand pain ask the participant to put an ‘X’ over any joint they have pain in. Record answers on the data collection form. Keep worksheet with the participant's file.

4. Hand examination for nodes/bony enlargement

Abbreviations used for this exam:

- DIP = Distal interphalangeal joint;
- PIP = Proximal interphalangeal joint;
- Thumb IP = thumb interphalangeal joint
- CMC = First carpometacarpal, or thumb base

Both hands of all participants will be assessed for Heberden's nodes (palpable bony enlargements of the DIP and thumb IP joints), Bouchard's nodes (palpable bony enlargements of the PIP joints) and bony enlargement and squaring of the CMC joint.

Definition: Bony enlargements are palpable, abnormal growths of bone around the margins of the finger joints (IP, DIP, PIP, CMC). Bony enlargements are sometimes asymmetric - not on both sides of the joint, or not on the same joint on opposite hands. They are typically hard and not tender. Distinguish between bony enlargements and synovial swelling by palpation. The bony enlargements will be hard while the synovial swelling will be spongy. Refer to photographs for examples of bony enlargements (Figures 1 and 2)

1. Participant is seated in chair or on an examination table in a relaxed comfortable position with palms downward under adequate lighting.
2. Examiner first visually inspects dorsal aspects (back) of both hands for obvious signs of OA (bony enlargement).

Script: "I'm going to feel your finger joints to see if any of them are enlarged."

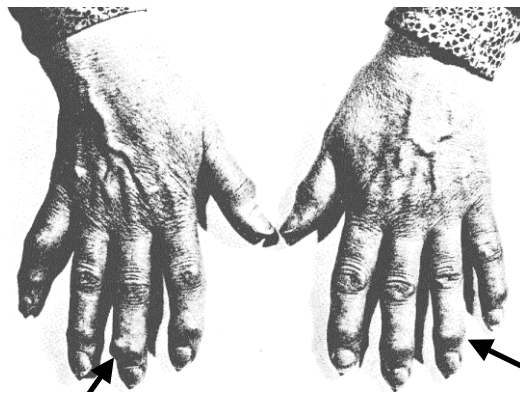


Figure 1
Heberden's nodes on DIP joints

3. Feel the joints of the right hand for bony enlargements. Support the hand being examined with one hand and feel the Thumb IP joint, then the DIP, and PIP joints of the fingers in sequence (fingers 2 [index] through five). Feel the upper sides and tops of each joint for bony enlargements.

For DIP joints, bony enlargements are most often on the upper sides and top of the joint (dorsolateral). For PIP joints, bony enlargements are usually on the sides and top of the joint.

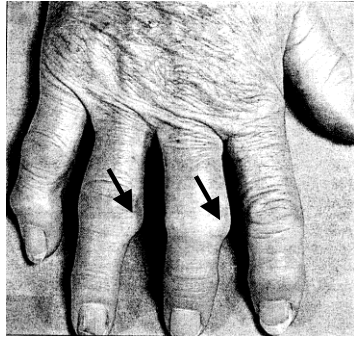


Figure 2
Bouchard's nodes on PIP joints



Figure 3
Examination procedure

4. Assess the CMC joint of the right hand. Bony enlargement of the CMC joint (thumb base) will appear as angulated bone (squaring) at the base of the thumb (see Figure 4 below). Palpate the CMC joint to confirm bony squaring.
5. Record results of the examination by filling in the bubble for the appropriate category on the Hand Examination data collection form.

Normal
Bony enlargement
Uncertain*
Unable to examine

*If the examiner is uncertain for two or more joints in a hand, the examiner should request a second certified examiner to perform the examination. A final score for that hand which represents the consensus of the two examiners should be recorded.

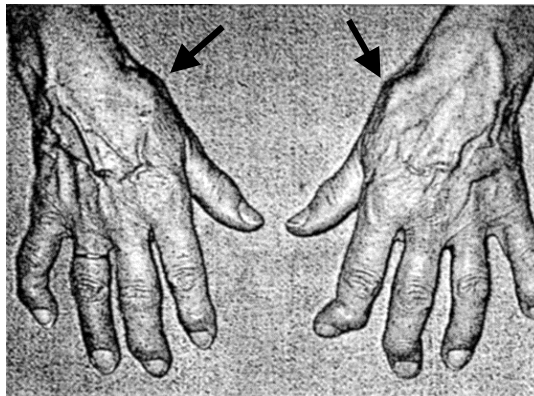


Figure 4. Thumb base/CMC joint squaring

6. Repeat the examination on the left hand.

5. Training

- Read and study operations manual chapter
- Attend training session
- Practice on volunteers between the ages of 50 and 79 and compare findings with other examiners.
- Discuss problems with study coordinator.

6. Certification requirements

- Fulfill training requirements
- Conduct exam on two participants with more experienced examiner according to protocol and reach consensus on findings.
 - Participant instructed to place hands with palms downward
 - Examiner feels joints in hands for bony enlargements
 - Joints are coded correctly
 - If two joints per hand are uncertain, consensus obtained with another examiner