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Musculoskeletal System Examination: The Basics

The rheumatological system involves diseases of the joints, tendons and muscles.

Presenting symptoms

Some of your patients may present with the following symptoms:

1. Peripheral joints:
 - a. Pain + Swelling
 - b. Morning stiffness
 - c. Functional capacity
 - d. Deformity
 - e. Instability
 - f. Change in sensation
2. Back pain
3. Limb pain
4. Raynaud's phenomenon
5. Dry eyes + mouth
6. Red eyes
7. other systemic symptoms

RHEUMATOLOGICAL EXAMINATION: THE BASICS

General inspection

- Look for the following signs:
 - Walking: painful?, stick?, deformity?
- Lay the patient on the bed, sitting on the edge, in a chair, or standing – depending on the parts examined.

Joint examination: the hands & wrists

History:

- Ask for pain?, stiffness?, swelling of joints? (arthritis, tendon sheath inflammation), deformity?, trigger finger? (tenovaginitis), loss of fn?.
- The above questions should be asked before you proceed with the examination.

Examination:

- Patient sitting, with hands on pillow (palmar surface down).
- **Look:**
 - Erythema?, atrophy?, scars?, rashes?, swelling?.
 - Wrists: swelling?, deformity?, ulnar + radial prominences?, muscle guttering (intrinsic muscles of hand between metacarpals)?
 - Metacarpophalangeal joints: skin abnormalities?, ulnar deviation?, dislocation of fingers?.
 - Interphalangeal joints: skin abnormalities?, deformities consistent with rheumatoid arthritis (swan neck, boutonniere, Z)?, Herberden's nodes?, Bouchards nodes?, sausage shaped phalanges (psoriatic arthropathy / ankylosing spondylitis)?\
 - Nails: psoriatic nail changes?, vasculitic lesions around nail beds?
 - Palmar surface: scars?, erythema?, muscle wasting?

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- **Feel and move:**
 - Palpate the wrists (thumbs on dorsal surface, index fingers supporting wrist beneath). Dorsiflex + Plantarflex the wrist → tenderness?, limitations?, joint crepitus?. Palpate ulnar styloid process → tenderness? (rheumatoid arthritis).
 - Palpate metacarpophalangeal joints, passive movement?, volar subluxation (rock metacarpophalangeal joint back and forth – limited movement → normal, too much → subluxation)?
 - Palpate the proximal and distal interphalangeal joint: swelling?, tenderness?. Palmar tendon crepitus (tenosynovitis)?
 - Carpal tunnel syndrome: flex wrists for 30 secs → pins + needles (1st two digits) in affected hand.
 - Wrist movements: active flexion/extension? – compare two sides. Thumb movements: extension, abduction, adduction, opposition. Limitations?, discomfort?. Finger movements: active flexion/extension (fist formation / straightening fingers).
- **Function:**
 - Grip strength: key grip?, opposition strength?
 - Practical test: undo button? Or write with a pen?
 - Further tests of hand should include: FTPRC, pain/temp/vib/proprio/touch.
 - Feel for subcutaneous nodules of rheumatoid arthritis near the elbows (olecranon) → rheumatoid arthritis, SLE (rare).

The elbows

History:

- Pain?, radiation?, swelling/inflammation? (olecranon bursitis), stiffness?, numbness/paraesthesiae? (ulnar nerve).

Examination:

- Feel for tenderness over medial / lateral epicondyles (tennis/golfers elbow).
- Feel for any swellings?
- Move elbow passively?, limitation to extension → synovitis
- Unbutton the shirt
- Test for range of movements.

The shoulders

History:

- Pain?, radiation?, deformity?, stiffness? (limits movement), instability? (as if shoulder jumping out during abduction), loss of function?

Examination:

- Unbutton the shirt – any limitations in movement, pain?
- Swelling?, scars?, injuries?, tenderness?
- 1 hand resting on shoulder, other hand movement the arm – feel the acromioclavicular joint. Movements: flexion, extension, abduction, adduction (front of chest), external rotation, internal rotation (scratch test – elicits rotator

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cuff problems – pain). Assess: limitation?, joint crepitus?, pain? In all these manoeuvres.

- Apley's scratch tests?, elbow flexion against resistance?

General rule: painful in all directions: arthritis, painful in one plane only: tendonitis, painless: neurological/tendon rupture.

Temporomandibular joint

History:

- Clicks / pain on opening the mouth?, jaw lock in open position?

Examination:

- Swelling in front of ear?, place finger in front of ear while patient opens/closes mouth – clicks?, grates?, tenderness? → rheumatoid arthritis.

The neck

History:

- Pain (sudden – disc prolapse, gradual – disc degeneration)?, deformity?, stiffness?, paraesthesia/weakness in arm.

Examination:

- Patient undressed to expose neck/shoulders/arms.
- Uneven posture?, Movements: flexion (touch chin)?, extension (look back)?, lateral bending (touch shoulder with ear)?, rotation?.
- Feel spinous processes posteriorly, tenderness?
- Neurological examination of the upper limbs is part of this examination.

The hips

History:

- Pain (groin → knee)?, limp?, clicks / snaps of joint? (psoas bursitis), functional impairment (walking / climbing stairs)?, stiffness?

Examination:

- Observe gait
- Patient supine on bed. Look at hip joint for: scars?, swelling?, deformity?, abnormal posture?.
- Feel distal to midpoint of inguinal ligament for pain from joint.
- Passive movements (read book for description): flexion, rotation (flex hip/knee, rotate internally/externally), abduction, adduction, extension (patient on tummy).
- Measure *true leg length & apparent leg strength* for EACH leg is measured. A difference in former – means disease in shorter leg. Difference in later – means pelvic tilted.

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The knees

History:

- Pain (most common) – local / diffuse?, stiffness (gradual → osteoarthritis)?, locking?, swelling?, deformity?, loss of function?

Examination:

- Patient's knees/thighs exposed. Quadriceps wasting?
- General inspection: scars?, swelling?, deformity?. Compare each other with other side.
- Movements; flexion, extension – watch patella (does it slide laterally then to midline, respectively).
- Palpate knee joint for swelling / heat etc. Patellar effusions: patellar tap: one hand on lower quadriceps, other hand pushes patella down – does patella sink before hitting femur? – if so – effusions present.
- Move joint passively: flexion, extension. Loss of range of movements?, crepitus?. Palpate for joint tenderness while knee is flexed.
- Collateral ligaments: move knee lateral/medial while holding the leg in slightly flexed position. Cruciate ligaments: