Symptoms
Main Symptoms

Pain

Stiffness

Swelling

Weakness
The History

Joints: involved

Pain: onset, precipitating & relieving factors

Stiffness: pattern e.g. early morning

Disabilities: arising as a result of symptoms

Past History & Family History
Pain

Pattern of onset: acute or gradual
Site: joints or part involved
Type: sharp or dull, aching
Severity: mild, moderate or severe
Time Course: onset, duration, progress
Diurnal variation: pain worse day or night
Effect on activity: work, home, ADL (activities of daily living)
Stiffness

occurs in inflammatory joint disease: Rh. arthritis

worse in mornings or after period of rest

usually clears in 30/60 mins: depending on severity

occurs in degenerative arthritis: less pronounced
Swelling

ask if there is a history of joint swelling

identify which joints are involved

establish time course: onset duration & progression
Weakness

Occurs secondary to the arthritis

Grade its severity: distance able to walk or not

Determine functional capacity of patient:
  independent at home & at work?
  require any aids or assistance?
Past History

Arthritis or arthralgia

Diseases causing arthritis: *e.g.* Rheumatoid, Gout

Hospitalizations or Surgery

Trauma: residual or resulting joint damage
Family History

Inflammatory arthritis
Connective tissue disease
Psoriasis
Ankylosing Spondylitis
Gout
Osteoarthritis
Social History

Occupation & home circumstances

Ability to stand/work for long periods

If disabled ask re ability to perform activities of daily living (ADL): self caring, toileting, dressing & feeding
Key Points

• Listen carefully to patient’s symptoms
• Establish pain sites & which joints involved
• Determine the time course
• Assess if any systemic symptoms present
• Determine if any disability present
Examination
Examination

• Inspection

• Palpation

• Movement
The Principles

Anatomy: bones, synovium, cartilage, ligaments, tendons, muscles & nerves

Inflammation: heat, pain & swelling

Function: range of movement, activities: walking

Complications: deformity & disability
Inspection

Inspect: swelling, wasting, skin changes, deformity

Compare both sides: right & left

Swelling: over joints

Deformities: ulnar deviation, (Rh.A), subluxation, dislocation, valgus & varus

Wasting in muscles around joints: e.g. small hand muscles (Rh.A) & quadriceps (O.A)
Palpation

Feel the skin over joint for warmth: **best done with backs of your fingers/hand**

Tenderness is guide to inflammation: **this may limit joint examination**

Palpate the joint for: **swelling & deformity**

Determine if swelling is:
- hard: *bony*
- soft/spongy: *synovitis*
- fluctuant: *effusion*
Movement 1

More information: by passive than by active movement

Ask pt to relax & allow: movement of joint

Attempt it gently: whilst looking at pts face for pain

Limitation may be due to: pain/effusion/fixed deformity

Limited extension is called: a fixed flexion deformity
Movement 2

Joint crepitus is palpable grating sensation: indicates irregularity of joint surfaces

Feel for joint crepitus with one hand: during passive movement of joint with the other hand

Measure degree of any restriction: of movement

Assess the pt’s: back & gait
Key points

• Determine which joints are painful or swollen

• Note range of movements & any restriction

• Note muscle wasting

• Check that the relevant nerves are intact

• Document any weakness or loss of function
Abnormal gaits are: painful (antalgic) or nonpainful

Painful limping: affected leg spends short time on ground

Painless limping: Causes: a short or deformed limb, stiff joint or muscle weakness

Pelvic Weakness
  Unilateral: gives a Trendelenburg gait
  Bilateral: gives a waddling gait
Examination of Gait
The Spine

Spine: Cervical, Thoracic, Lumbar segments

Establish pain: site, referral pattern, aggravating/relieving factors

Establish pain response: to cough, movement & rest

Establish mode of: onset, duration & course or progression

Ask re neurological symptoms: power, sensation & bladder or bowel control
Cervical Spine

Inspect neck for abnormal posture, position etc: e.g. torticollis

Palpate: outline of spines

Movements
Active
  Look right & left: normal lateral rotation = 70-80 degrees
  Tilt head sideways: normal lateral flexion = 45 degrees
  Flex & extend neck: normal flex = 75 degrees, ext = 60 degrees

Passive: Perform same movements passively but gently
Cervical spine movements active

Flexion

Extension
Sideways

Side flexion to right

Side flexion to left
Rotation

To left

To right
Cervical spine movements passive

Rotation

Lateral flexion
Cervical spine movements passive

Flexion

Extension
Thoracic Spine

Inspect in standing position for abnormalities: from front, back & sides

Palpate: spines & bony outlines

Define area of tenderness: confirm by percussion using finger tip or tendon hammer

Inspect in seated position: for rotation movements

Common abnormalities: kyphosis, scoliosis & local tenderness e.g Pott’s disease, malignancy
Thoracic spine percussion
Thoracic spine rotation
Thoracic spine flexion
Lumbar Spine 1
Standing Position

Inspect for: deformity e.g. loss of normal lordosis

Assess spinal movements: actively & passively

Assess effects on: spinal cord & nerve roots
Lumbar Spine 2

Standing Position

Observe from behind that: spine is straight

Observe from side that: spine is lordotic or forward facing

Ask the patient: to flex or bend forward, backwards & sideways: Note range of movement: in each direction

Check for: local tenderness by palpation & light percussion
Lumbar spine flexion
Lumbar spine extension
Lumbar spine lateral flexion
Straight Leg Raising Test

Examine pt in lying position

Flex knee & check that hip flexion: is normal

With the leg fully straightened: raise heel from bed with one hand whilst preventing knee flexion with other hand

Ask pt to report: as soon as leg becomes painful or develops any numbness

Gently: dorsiflex the ankle joint also checking for pain
Femoral Nerve Stretch Test

Ask pt to: lie prone or on their stomach

Flex knee slowly: on the affected side

Ask pt to report: any pain in back, thigh or leg

If above fails to produce pain: gently extend hip
Key Points

- Note abnormal posture: distinguish between structural & postural scoliosis

- Bony tenderness localizes pathology to same site

- Assess range of spinal movements & any restriction

- Acute loss of neurological function is an emergency
The limbs

Multiple joints or just one joint involved

Inflammatory or non-inflammatory

Review history: joint pain, stiffness, swelling, restricted movement & its diurnal pattern

Is pain referred: e.g. shoulder \(\rightarrow\) lateral arm, elbow \(\rightarrow\) forearm or hip \(\rightarrow\) knee

Any specific risk factor: e.g. trauma, occupation
Examining the upper limb

Joints: hand, wrist, elbow & shoulder

Inspection for: skin changes, swelling, deformity, muscle wasting

Feel, palpate & move joints: passively

Check function: e.g. hand grip
The hand & wrist 1

Inspect dorsal & ventral aspects: hand & wrist

Inspect following:

- wrist joints
- metacarpophalangeal (MP) joints
- proximal interphalangeal (PIP) joints
- distal interphalangeal (DIP) joints

Look for: red shiny skin, swelling, deformity & wasting
Dorsal hand and wrist
Ventral hand and wrist
The hand & wrist 2

Palpate joints to find: heat, tenderness & swelling

Palpate tendons for: local swellings, crepitus

Note limitation in: range of movements (ROMs)

Check: hand & pinch grip strength
The Elbow

Inspect both elbows: noticing any swelling, deformity

Palpate elbow joints: tenderness, swelling, nodule/bursae

Compare range: active flexion-extension $n=150$ degrees

Check supination & pronation with elbows flexed by sides: whilst at same time palpating head of radius
Elbow flexion
Elbow extension
The Shoulder

Inspect from *the front & the back* noting any: *wasting, swelling or differences in shape*

Note any: *tenderness*

Inspect ROMs by asking to: *abduct & adduct, flex, extend & circumduct*

Proceed with examination: *if abnormality present*

Check the: *glenohumeral joint and the rotator cuff*
Elevate arms
Abduct arms
Arm flexion
Arm extension
Arm internal and external rotation
Key points

• Determine which joints are painful or swollen

• Note range of movements & any restriction

• Note wasting

• Check that the relevant nerves are intact

• Document any weakness or loss of function
Examining the lower limb

Joints: hip, knee, ankle & foot

Inspection: skin changes, swelling, deformity, muscle wasting

Feel & move: passively

Check function: e.g. walking, rising & sitting
The Hip Joint 1

Pain is usually presenting complaint of hip joint disease

Inspect in 3 positions: standing, walking & lying

Inspect spine from behind looking for: scoliosis & pelvic tilt

Look for limb: shortening & abnormal limb/foot position e.g. eversion

Palpate: for any joint tenderness
The Hip Joint 2

Trendelenburg’s gait/sign

• ask pt to stand first on one leg & then on the other affected leg & observe from behind

• normal is upward pelvic tilt on the non standing leg

• in gluteal weakness when standing on the affected or weaker leg: look for a downward direction of pelvic tilt: on the unaffected side non standing leg
The Knee 1

Examine in: standing, walking & lying positions

Check: deformity (valgus/varus) or other abnormality

Inspect for: joint swelling & wasting in quadriceps

If wasting present: measure at fixed point above upper border/patella & compare to same point on other side

Confirm suspected effusion: with a patellar tap
The Knee 2

Examine knee joint in lying position for:
tenderness, swelling, range of movement, stability

Knee stability: check for intact collateral ligaments & cruciate ligaments

Common findings: joint tenderness, flexion deformity, effusion, popliteal or Baker’s cyst, wasting in quadriceps
The ankle and foot

Inspect walking for abnormality in gait: dropped foot, equinus deformity

Inspect standing: flat feet (*pes planus*), arched foot (*pes cavus*)

Inspect lying position: deformity in shape feet & toes (valgus/varus)

Palpate for: tenderness, swelling *or* decreased movements

Inspect ROMs: flex, extend, invert/evert actively & passively
Key Points

• Pain may be referred from another site e.g. pain at knee but coming from hip

• Localize the joint/area of maximum tenderness

• Check full ROMs at joints including hips & knees

• Deformity at one site can cause secondary deformity at another

• Assess function & disability