

RS Examination:

Inspection:

Shape of chest $\Rightarrow$ ellipsoid/barel shape/pigeon

Symmetry of Chest $\Rightarrow$ bilaterally symmetrical

Movement of chest $\Rightarrow$ normally & symmetrically equally

Respiratory movements: Rate: 12-18/min

Rhythm: regular

Type of Respiration: ♀ - thoracoabdominal ♂ - abdominothoracic

Spine: central with normal curvature (kyphosis/scoliosis)

Position of Trachea: appears central

Palpation:

Position of Trachea: - Tip of index & ring finger of R hand on sternoclavicular joints, middle finger on suprasternal notch; feel tracheal rings with middle finger

- find space b/w anterior border of sternocleidomastoid & trachea; if trachea is deviated to one side $\Rightarrow$ space on that side becomes narrow

Central

Position of Apex Beat: - Place hand on apical area on precordium; localise the beat with ulnar border & then with middle finger; count intercostal spaces left, 5th intercostal space, $\frac{1}{2}$ inch medial to midclavicular line

Expansion of Chest - Thumbs in midline, palms on both sides of chest; movement of thumb away from the midline is observed anteriorly & posteriorly at apex & base of lung.

Ratio of Transverse & anteroposterior diameter $\Rightarrow 7:5$

Tactile Vocal Fremitus: Subject should say 99/123; place ulnar border of hand on chest (examine both sides before going to next area)

- i Supraclavicular Area
- ii Infraclavicular
- iii Mammary
- iv Inframammary

supine position

vi Infra Axillary $\Rightarrow$ Hands over head

vii Suprascapular

viii Infrascapular

ix Interscapular

Hands crossed in front

$\Rightarrow$ felt equally on both sides

$\downarrow$
equal on both sides

Percussion: - Plexor (middle) finger of left hand & pleximeter finger of right hand in both sides of all 9 areas.

- All areas - Resonant; equally resonant
- Cardiac dullness - Present in Left Mammary region
- Liver dullness - Present in Right Inframammary region.

Auscultation: - steth; both sides of all nine regions

NVBS (normal vesicular breath sounds)

Tracheal sounds resemble bronchial breath sounds.

Vocal Resonance: - steth; subject says 99 or 123; both sides of all 9 areas

Heard; equally heard

Adventitious (Added) Sounds: Stertor $\Rightarrow$ foreign body impaction, diphtheria

: wheeze $\Rightarrow$ during asthma attacks

: Creptitation - Fine $\Rightarrow$ pneumonia, heart failure

- Coarse $\Rightarrow$ bronchitis, polycystic disease of lungs

: Pleural rub $\Rightarrow$ inflammation of pleura.

Types of abnormal respiration:

- Kussmaul respiration $\Rightarrow$ increased rate & depth (Diabetic ketoacidosis)
- Cheyne-Stokes respiration $\Rightarrow$ period of hyperpnea followed by apnea
(in infants, at high altitude - physiological)
(in cardiac failure, renal failure - pathological)
- Biot's respiration $\Rightarrow$ irregular depth & rhythm (meningitis)

CVS Examination:

Inspection: Look for

- i) shape of chest $\Rightarrow$ ellipsoid
- ii) symmetry of chest $\Rightarrow$ Bilaterally symmetrical
- iii) movements of chest $\Rightarrow$ Appears equal on both sides
- iv) position of trachea $\Rightarrow$ Appears central
- v) position of apical impulse $\Rightarrow$ Not visible
- vi) JVP $\Rightarrow$ Not seen
- vii) Engorged veins $\Rightarrow$ Not seen
- viii) Pre-cordium $\Rightarrow$ No bulge
- ix) Spine $\Rightarrow$ Central with normal curvature (No scoliosis/lordosis/kyphosis)
- x) Any other pulsations $\Rightarrow$ -

Palpation:

- i) Position of Trachea $\Rightarrow$ ring & index finger on both sternoclavicular joints - middle finger palpates all tracheal rings
 $\Rightarrow$ Central $\Rightarrow$ " " " " " " " " - middle finger palpates both supra-sternal gutters
- ii) Position of Apex Beat $\Rightarrow$ locate palm over pre-cordium $\Rightarrow$ localise the apex beat with ulnar border $\Rightarrow$ then middle finger & count
 $\Rightarrow$ left 5th intercostal space, $\frac{1}{2}$ inch medial to mid-clavicular line (If apex beat not palpable in supine position $\Rightarrow$ try in sitting position $\Rightarrow$ if still not possible, ask patient to lean forwards)
- iii) Parasternal heave $\Rightarrow$ place ulnar border of hand on left parasternal line & feel for any lifting of hand
 $\Rightarrow$ Not felt (If felt $\Rightarrow$ right ventricular hypertrophy)
- iv) Palpable Thrill $\Rightarrow$ palpable murmurs
 $\Rightarrow$ Not felt (If felt $\Rightarrow$ valvular defects or aneurysm of great vessels)
 $\Rightarrow$ turn head to left
- v) Measurement of JVP $\Rightarrow$ Recline patient at 45° ; measure vertical distance (d) between top of column of blood & sternal angle; JVP = d + 5cm.
 $\Rightarrow$ -

Impalpable apex beat:

- $\rightarrow$ Left sided pleural effusion
- $\rightarrow$ Pneumothorax
- $\rightarrow$ Pericardial effusion
- $\rightarrow$ Mediastinal shift to right
- $\rightarrow$ Under the rib
- $\rightarrow$ Dextrocardia

Persistent elevation of JVP $\Rightarrow$ congestive heart failure

Percussion: check for cardiac dullness (Pleximeter finger should be parallel to border of organ; percuss from more resonant to less resonant areas)

- i) Left Border $\Rightarrow$ apex beat, 5th intercostal space upto 2nd space
- ii) Right Border $\Rightarrow$ 2nd to 11th intercostal space in right parasternal area
- iii) Apex $\Rightarrow$ Not demarcated
- iv) Base $\Rightarrow$ Not demarcated.

Auscultation:

Auscultatory areas: Mitral area $\Rightarrow$ left 5th intercostal space, $\frac{1}{2}$ inch medial to mid-clavicular line $\Rightarrow$ S₁, S₂ heard; S₁ louder

Pulmonary Area $\Rightarrow$ left 2nd intercostal space close to parasternal line $\Rightarrow$ S₁, S₂ heard; S₂ louder (heart sound that coincides with carotid pulsation = S₁)

Aortic Area $\Rightarrow$ right 2nd intercostal space close to parasternal line $\Rightarrow$ S₁, S₂ heard; S₂ louder

Tricuspid Area $\Rightarrow$ left side, close to lower end of sternum. $\Rightarrow$ S₁, S₂ heard; S₁ louder

Murmurs: $\Rightarrow$ not heard.

Other heart sounds $\Rightarrow$ S₃

$\Rightarrow$ S₄

$\Rightarrow$ ejection click

$\Rightarrow$ opening snap

$\Rightarrow$ murmurs

Murmurs $\Rightarrow$ occur due to turbulent blood flow.

Abdomen:

Inspection:

- i) Shape: **scaphoid**
- ii) Flanks: **not full**
- iii) Umbilicus: **central & inverted/everted**
- iv) Abdominal movements: **moves equally with respiration**
- v) Skin & Surface: **no scars, no swellings, no distended veins**
- vi) Heenal sites: supine $\Rightarrow$ **no swelling striations**

on standing, turning head to one side & coughing $\Rightarrow$ **no visible swelling**

Palpation: subject should lie on his back, legs semi-flexed to relax the abdomen

$\rightarrow$ Palpate all 9 areas of abdomen (from left iliac region $\rightarrow$ anticlockwise $\rightarrow$ till umbilical region)

$\hookrightarrow$ If subject complains of pain in an area, that area should be palpated last.

- i) Tenderness: observed from facial changes $\Rightarrow$ **Not present**
- ii) Swellings: **Not present**
- iii) Liver:
 - place hand in right iliac fossa (index finger parallel to right costal margin)
 - as the patient inspires deeply, press fingers inwards, gradually moving up to right costal margin $\Rightarrow$ **Not enlarged**
 - if liver is enlarged, it meets radial aspect of index finger

Liver is usually palpable in children; in adult, palpable only when enlarged.
- iv) Spleen:
 - right hand $\Rightarrow$ right iliac fossa; left hand $\Rightarrow$ posterolaterally on lower portion of left rib cage
 - left hand presses medially & downward
 - right hand presses deeply & moves towards left costal margin to feel for enlarged spleen
 - Normally $\Rightarrow$ spleen is not palpable $\Rightarrow$ **Not palpable**
- v) Kidneys: right hand $\Rightarrow$ anteriorly, in right/left lumbar region
 - left hand $\Rightarrow$ posteriorly, below the corresponding costal margin
 - press both hands towards each other as subject inspires, attempting to feel kidney $\Rightarrow$ **Not enlarged**
- vi) Fluid Thrill: ulnar border of hand placed firmly on midline
 - place flat of left hand on left lumbar region
 - tap right lumbar region with right hand
 - if large amount of ascites is present $\Rightarrow$ wave is felt by left hand. $\Rightarrow$ **Absent**

Percussion: normally resonant (tympanitic) note is heard, except on areas of liver/spleen enlargement & tumours/mass/fluid.

$\hookrightarrow$ absence of dullness $\Rightarrow$ hepatomegaly & splenomegaly unlikely

Shifting dullness: patient lies on one side; upper flank will be resonant as fluid is pushed down by gravity

$\hookrightarrow$ if fluid presence is suspected. $\Rightarrow$ **Absent**

Auscultation: steth $\rightarrow$ all 9 areas

Bowel sounds: Normal/absent/increased $\Rightarrow$ **Heard**

$\hookrightarrow$ normal = intermittent low medium pitch gurgles

Baile's: $\Rightarrow$ **Not heard**

- Upper border of liver dullness: **Right, 7th intercostal space**
- upper border of splenic dullness: **absent**

Sensory System:

- Subject is blindfolded
- Sensations are tested starting distally proceeding towards more proximal parts on both sides

Fine touch: use wisp of cotton & touch various parts

Pressure touch: use von-frey's hair aesthesiometer

Cause touch: press lightly with fingertips

Pressure: press lightly with fingertips

Tactile Localization: use a pen to touch different parts

→ ask patient to indicate the point of touch with his pen.

Tactile Discrimination: Weber's compass ⇒ placed on different areas of body

→ start with minimal distance between points & keep increasing till subject tells it as 2 separate points.

Tongue / nose tip = 1 mm

Finger tips = 2 mm

Toes = 3-8 mm

Palms = 8-12 mm

Back = 40-60 mm.

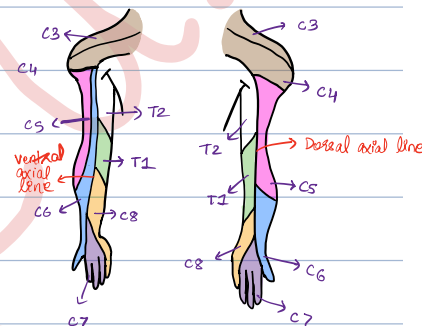
check → forearm

→ finger tips

→ Back

Felt equally on both sides/
Able to localise /
Able to identify

Dermatomes:



Pain: Superficial pain ⇒ use pins on different body parts ; Deep pain ⇒ squeeze calf muscle or Achilles tendon.

Biceps tendon ; Tendon Achilles.

Vibration: 128 Hz tuning fork ⇒ base placed on a bony prominence & patient is asked whether he/she feels the vibration or not.

→ styloid process ; olecranon process ; medial malleolus ; lateral malleolus.

Proprioception: move his small joint

→ ask him to recognize the movement & imitate on the other limb.

ask to replicate movement

Check: - IP joint

- Wrist joint

- Elbow joint

- Shoulder joint

- Knee joint

- Ankle joint.

Temperature: use test tubes containing warm or cold water.

Stereognosis: any common object is placed in subject's hand and he/she is asked to name it.

Graphesthesia: draw alphabets or numbers over the skin of the back

→ ask subject to identify

Motor System:

Bulk of the Muscle: note circumference of extremities at the level where maximum muscle tissue is present for both sides.

Mid Arm circumference: (≈ 25 cm)

Mid Forearm circumference: (≈ 22 cm)

Mid Thigh circumference: (≈ 45 cm)

Mid Calf circumference: (≈ 30 cm)

Tone of Muscle: feel the muscle $\Rightarrow$ firm, can be moved from side-to-side

$\rightarrow$ hold the limb & carry passive moments $\Rightarrow$ not resistance offered

$\Rightarrow$ Normal tone

<u>Wrist</u>	<u>Elbow</u>	<u>Shoulder</u>
- Flexors	- Flexors	- Flexors
- Extensors	- Extensors	- Extensors
- Internal rotators	- Internal rotators	- Internal rotators
- External rotators	- External rotators	- External rotators

<u>Ankle</u>	<u>Knee</u>	<u>Hip</u>
- Plantar flexors	- Flexors	- Flexors
- Dorsiflexors	- Extensors	- Extensors
- Inverters		- Internal rotators
- Everters		- External rotators
		- Abductors
		- Adductors

Power of Muscle: note active resistance first without resistance & then against resistance

Grade 0 - No movements at all

Grade I - Flickering muscle w/ movements attempted

Grade II - Movement of joint eliminating gravity

Grade III - Movement of joint against gravity

Grade IV - Movement of joint against gravity with moderate resistance

Grade V - Movement of joint against gravity with strong resistance.

$\Rightarrow$ Grade 5

- Dorsal Interossei - abduct fingers against resistance

- Palmar Interossei - pull out paper from in between fingers

- Lumbricals - hold pen with thumb & index finger, pull.

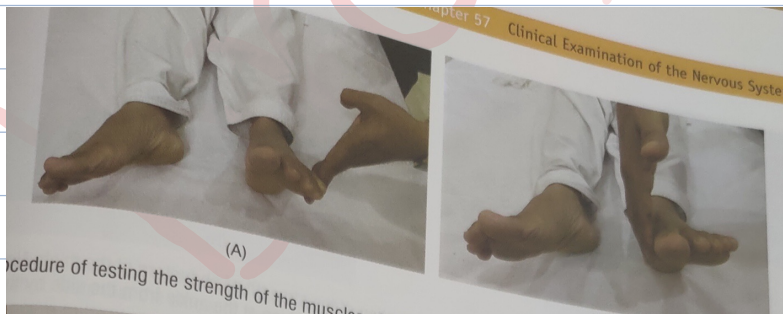
- Finger flexors - ask subject to squeeze your index & middle fingers together

- Wrist flexors - touch own wrist joint crease with finger tips.

- Extensors of wrist - form a fist (hold with dorsum facing upwards); push the dorsum; ask to extend
- Brachioradialis - Arm in midprone position; ask subject to bend forearm upwards.
- Biceps brachii - full supination; ask to flex against resistance
- Triceps - ask to straighten out forearm against resistance
- Supraspinatus - left arm 0° to 90° (resist this)
- Deltoid - perform forward & backward movements against resistance in abducted (at 45°) position.
- Infraspinatus - Elbow flexed to right angle; ask to push backward/outward against resistance.
- Pectorals - stretch out arms in front; resist joining of hands
- Serratus anterior - Check for winging of scapula by pushing hands against wall
- Latissimus dorsi - stretch out hand at the back; resist joining of palms.
- Abdominal muscles - do crunches without support
- Erector spinae - lie on stomach, lift up head, neck
- Intrinsic muscles of foot - difficult to test; just confirm absence of claw-foot



- Dorsiflexors of feet & toes
- Plantar flexors of feet & toes



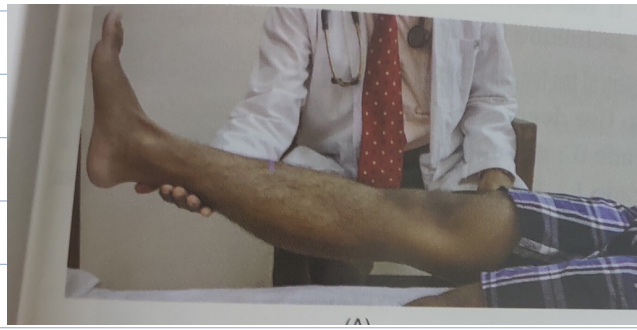
- Invertors & Evertors of foot



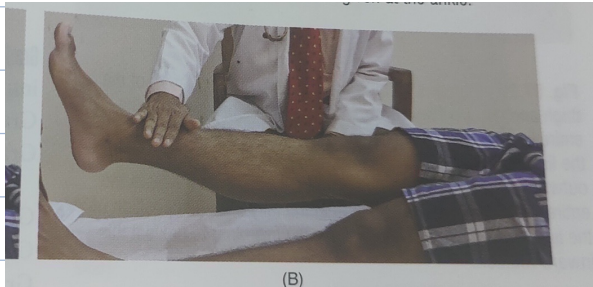
- Extensors of knee



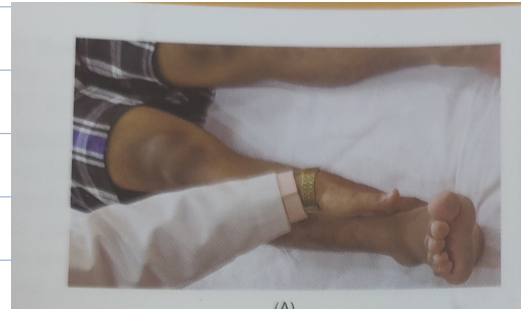
- flexors of knee



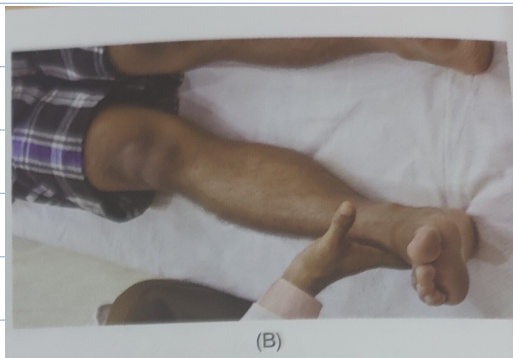
- Flexors of thigh



- Extensors of thigh



- Adductors of thigh



- Abductors of thigh



- Rotators of thigh/hip

Co-ordination Movement:

Finger - Nose Test $\Rightarrow$ with eyes closed ; must be able to do it slowly & rapidly

Finger - Nose - Finger Test

Diadochokinesia $\Rightarrow$ execute alternate movements (like pronation & supination of forearm)

Making a circle - with forefinger.

Knee-heel test

$\Rightarrow$ Able to do

Making a circle

Romberg's test: stand erect first with eyes open & then with eyes closed

- If swaying is present on closing eyes $\Rightarrow$ positive test for sensory ataxia (cerebellar ataxia is not increased on closing eyes)

Tandem walking test



Gait: noted when subject enters the room & walks to examination table

- Circumduction gait: hemiplegia
- Shuffling gait: Parkinsonism
- Scissor gait: diplegia
- Propulsive gait: extrapyramidal lesion
- High-stepping gait: sensory lesion
- Drunken men's gait: cerebellar lesion.

$\Rightarrow$ Normal gait

Abnormal movements: any involuntary muscular contractions

Spasm: exaggerated & involuntary muscular contraction (Tonic/clonic)

Fasciculations: clonic contractions of isolated muscle fibers

Chorea: purposeless & irregular movements ; increased by emotional stress & absent in sleep.

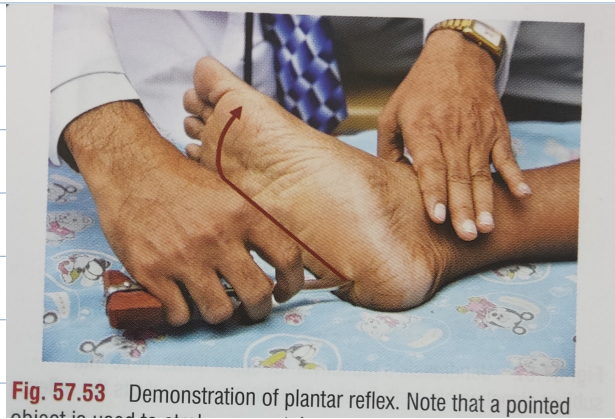
$\Rightarrow$ Absent.

Athetosis: snake-charming movements (especially seen at small joints like hands).

Reflexes:

Superficial: - Plantar Reflex

- Cremasteric Reflex
- Abdominal Reflex
- Scapular reflex



Note that with the pointed metallic end of the k
e surface of the abdomen is scratched from the
side the midline is the midline is the midline is the

Deep:

Cranial Nerves I to VI:

Olfactory Nerve

- ask subject to sit comfortably & close his eyes & one nostril
 - take source of smell next to open nostril
 - ask patient to identify
 - repeat with other nostril.
- can identify all substances.

Optic Nerve:

Visual Acuity - Distance Vision:

- sit at 6m from Snellen's chart
- close one eye & read chart with other eye

Ex: Distant vision (without correction) 6/36 6/36
Distant vision (with correction) 6/6 6/6 Normal

Visual Acuity - Near Vision:

- hold Jaeger's chart at a distance of 10-12" from subject's eyes
- ask subject to read

Ex: Near vision (without correction) NS NS Normal
Near vision (with correction) NS NS Normal

Colour Vision:

- read Ishihara's chart completely

Colour Vision Numbers Identified Numbers Identified Normal

Field of Vision: Confrontation Test: Sit 3 feet away from patient.

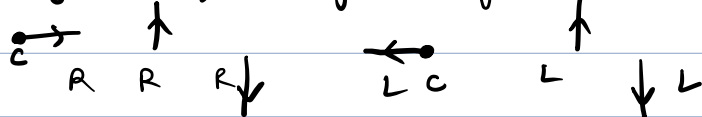
- subject should fix his gaze at the tip of your nose.
- subject closes one eye & you close your opposite eye
- bring finger from periphery to centre of 4 quadrants (upper, lower, nasal, temporal)
- Compare patient's FoV with yours.

III, IV, VI:

Extra ocular movements: check for ptosis or nystagmus (if any)

→ subject must look at finger & follow the movement

→ finger tip at a distance of 25 cm from subject's eye

→ finger movement ⇒ 

Ptosis & Nystagmus ⇒ Absent

size & shape of pupil ⇒ Absent

movement of eye ball ⇒ Normal

Elevation ⇒ Could trace moving object

Depression ⇒ " " " "

Abduction ⇒ " " " "

Adduction ⇒ " " " "

Accommodation Reflex: Ask subject to look at distant object.

→ take your index finger to a point midway between the two eyes & very close to the eyes

→ ask subject to look at the tip of the index finger

convergence of eyeballs & pupillary constriction seen — Normal.

PUPILLARY REFLEX:

Direct Light Reflex: } • place your hand between the subject's two eyes

Indirect Light Reflex: } • bring torch from side of subject & immediately focus the light onto one of his eyes & look for reaction of that eye (direct) & other eye (indirect/consensual)

Trigeminal Nerve:

Sensory — Tactile sensibility (Fine touch, crude touch, Tactile Localisation, & point discrimination)

— Proprioception

— Vibration

— Pain

— Temperature.

(temple & upper part of cheek)

- Notes - Clenching of teeth (palpate temporal & masseteric prominences on both sides)
- Movements of jaw.

Reflexes - conjunctival reflex (bring cotton from side to centre & suddenly touch conjunctiva with it) *pupil contracts.*

- corneal reflex (touch sclerocorneal junction (limbus) with cotton) *Blinking of eyes*
- Jaw jerk (ask patient to partially open mouth; place left index in the groove under lower lip; tightly tap on nail of finger with knee hammer) *Mouth closed.*

Cranial Nerves VII to XII:

VII N.:

- ask subject to
- close eyes against resistance
 - show his teeth, smile & whistle
 - inflate his mouth & blow out his cheeks & tap with fingers
 - clench his teeth & look for prominence of platysma

- Facial Asymmetry	Absent
- Tics / Spasms	Absent
- Winking / Ptosis	Sensory - Motor component functional
- Opening of eye by examiner	Unable to open
- Whistling	Sensory - Motor component functional
- Smiling	// // //
- Blowing mouth & Tapping	// // //
- Nasolabial folds	Present
- Clenching of teeth	Sensory - Motor component functional

Anterior $\frac{2}{3}$ of tongue