General physical examination

INTRODUCTORY COURSE 2023

SCHOOL OF MEDICINE, MUTAH UNIVERSITY

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Greetings

I request the following in my lectures:

1. All microphones are muted.
2. No exit-reentry during lectures.
3. You can interrupt me for questions by clicking on “Raise Hand”.

General principles of physical examination

- Your physical assessment of patients begins as soon as you see them.
- Your ability to perform a clinical examination can only be improved by frequent bedside practice.
- You can imagine the history taking as a polite smart interrogation.
- And the physical examination as an investigation; searching for clues to find the disease

Preparing for physical examination

- Always introduce yourself to the patient, shake hands (which may provide diagnostic clues) and seek permission to conduct the consultation.
- Make sure you have the relevant equipment available and that you have observed local hand hygiene policies.
- Privacy is essential when assessing a patient.
- At the very least, ensure screens or curtains are fully closed around a ward bed.

Preparing for physical examination

- Seek permission from the patient to proceed to examination, and offer a chaperone where appropriate to prevent misunderstandings and to provide support and encouragement for the patient.

Equipment required for a full examination

- Disposable gloves
- Face mask
- Watch (seconds)
- Stethoscope
- torch
- Measuring tape
- Tendon hammer
- Tuning fork
- Wooden spatula

Measuring vital signs:

- Thermometer
- Sphygmomanometer
- Weighing scales
- Height-measuring device

3.1 Information gleaned from a handshake

Features	Diagnosis
Cold, sweaty hands	Anxiety
Cold, dry hands	Raynaud's phenomenon
Hot, sweaty hands	Hyperthyroidism
Large, fleshy, sweaty hands	Acromegaly
Dry, coarse skin	Regular water exposure Manual occupation Hypothyroidism
Delayed relaxation of grip	Myotonic dystrophy
Deformed hands/fingers	Trauma Rheumatoid arthritis Dupuytren's contracture

Preparing for physical examination

- Regardless of whether the patient is the same gender as the doctor or not, chaperones are always appropriate for intimate (breast, genital or rectal) examination.
- Chaperones are also advised if the patient is especially anxious or vulnerable, if there have been misunderstandings in the past, or if religious or cultural factors require a different approach to physical examination.
- Record the chaperone's name and presence. If patients decline the offer, respect their wishes and record this in the notes.

Preparing for physical examination

- Tactfully invite relatives to leave the room before physical examination unless the patient is very apprehensive and requests that they stay.
- A parent or guardian should always be present when you examine children.
- The room should be warm and well lit; subtle abnormalities of complexion, such as mild jaundice, are easier to detect in natural light.

Preparing for physical examination

- The height of the examination couch or bed should be adjustable, with a step to enable patients to get up easily.
- An adjustable backrest is essential, particularly for breathless patients who cannot lie flat. It is usual practice to examine a recumbent patient from the right-hand side of the bed.
- Ensure the patient is comfortably positioned before commencing the physical examination.
- Seek permission and sensitively, but adequately, expose the areas to be examined; cover the rest of the patient with a blanket or sheet to ensure that they do not become cold.

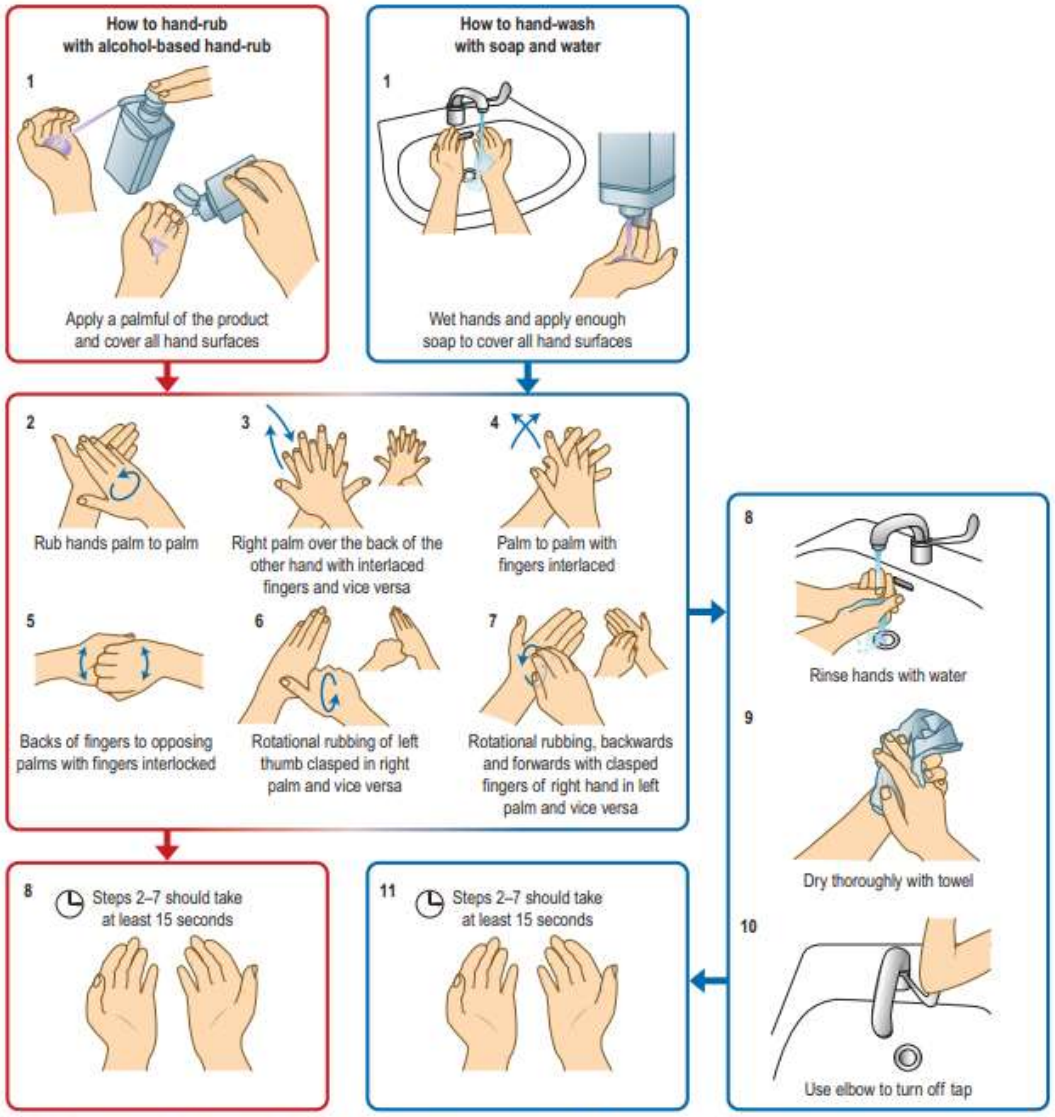


Fig. 3.1 Techniques for hand hygiene. *From WHO Guidelines on Hand Hygiene in Health Care First Global Patient Safety Challenge Clean Care is Safer Care; http://www.who.int/gpsc/clean_hands_protection/en/*

Environment

- Quite, warm, clean room.
- Privacy.
- Good illumination.
- Chaperon.
- Hand disinfectant

Beginning the examination

- Introduce your self.
- Hand-shake?
- Take permission for every step.
- Always explain what you are doing.
- Wash your hands before and after

Initial observation

- begins as soon as you see the patient.
- Recognize deteriorating, critically ill patient's.
- Early warning scoring systems are helpful assessing severity of the situation.
- They include assessment of vital signs: pulse, blood pressure, respiratory rate and oxygen saturations, temperature, conscious level and pain score.

Sequence for performing a physical examination

If the patient is stable

- Observe and comment:
- 1- General look:
- Do they look well?
- Are they in stress, or pain?

General look

- 2- Clothing's:
- Socio-economic status
- Trauma?
- Self or family neglect

General look

- 3- Is there a medical equipment attached? Canula? Chest tube? Face mask? …
- Is he carrying a walking aid?
- Are there subcutaneous devices

Gait and posture

- Use of a walking aid?
- Stable gait? Or there's imbalance?
- Is there a limp?
- Is the posture symmetrical?
  Is there a length discrepancy in limb?
- Abnormal spine structure?

Facial expression

- Anxiety, anger, happiness, sadness?
- Apathetic.
- Facial deformities.
- Mouth deviation.
- Eyes, presence of epicanthal folds.
- Central cyanosis.

Speech

- Comment on tone, presence of hoarseness, stridor.
- Articulation of speech; dysarthria.
- language; dysphasia.
- Speed.

Hands

- Look:
- Deformities.
- Signs of trauma.
- Color: peripheral cyanosis, tobacco stains, coal stain.
- Swellings.
- Nails.

Hands

- Feel:
- Always ask for presence of tenderness before.
- Temperature:
  cold: CHF, hypotension
  warm: COPD, hyperthyroidism
- lumps.
- Tenderness.

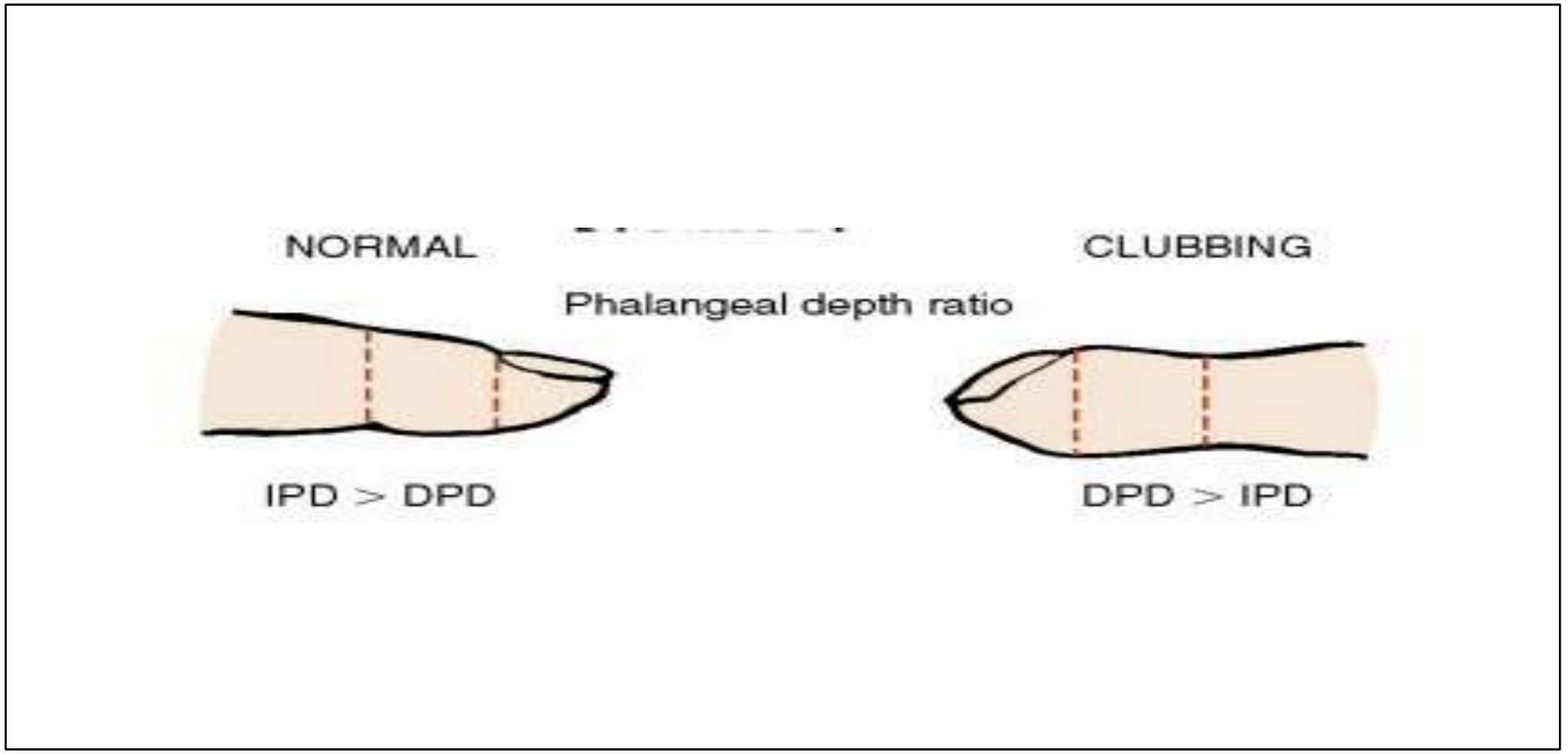
Nails

- Shape.
- Color; cyanosis, yellow nails, white nails.
- Capillary refill.
- Splinter hemorrhages.

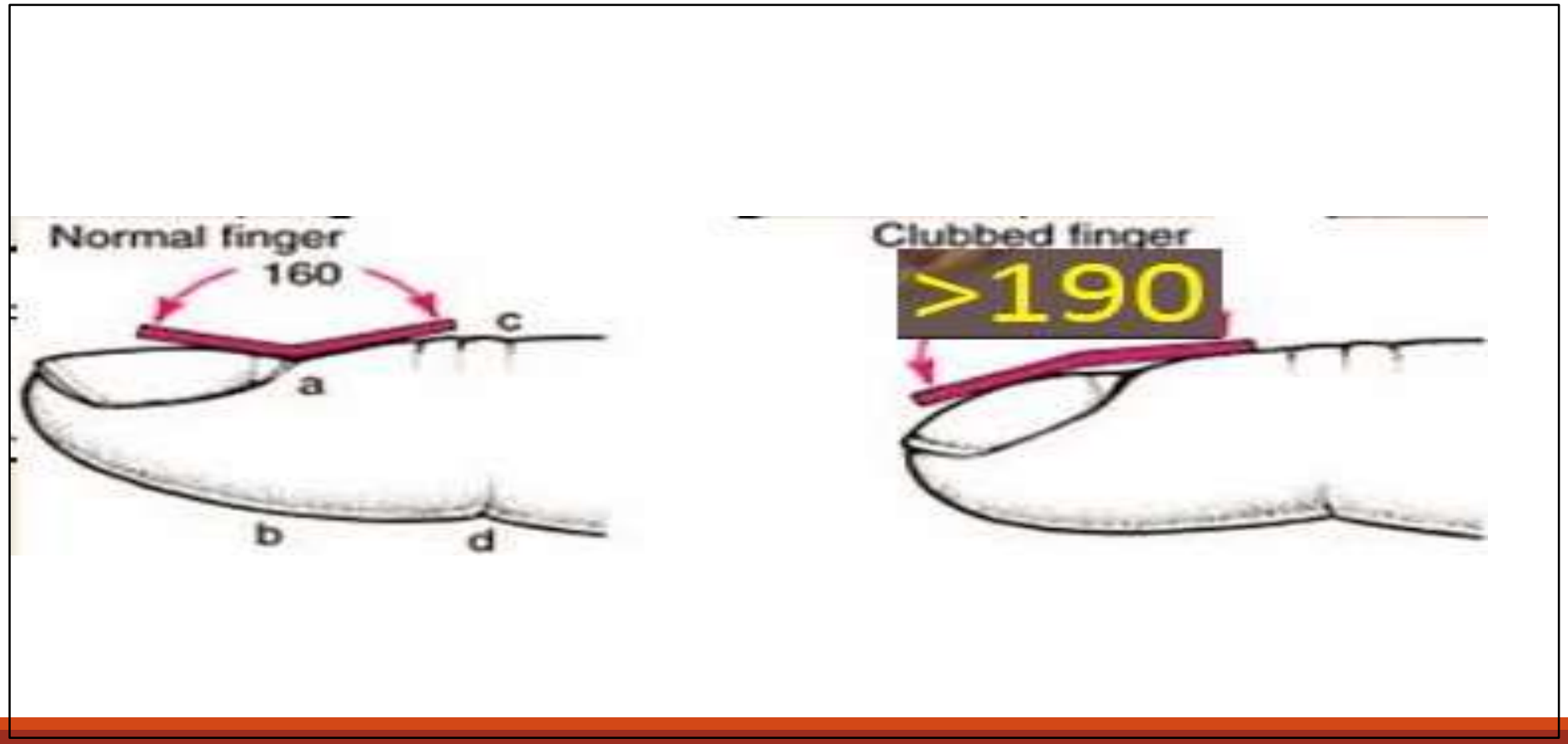
Clubbing

- Painless soft tissue **swelling** of the terminal phalanges and increased **convexity** of the nail.
- Many lung, liver, GI diseases causes clubbing.
- First examine the phalangeal depth .
- Then examine the hyponychial angel.
- Then examine the schamroth window.
- Finally assess for fluctuation.

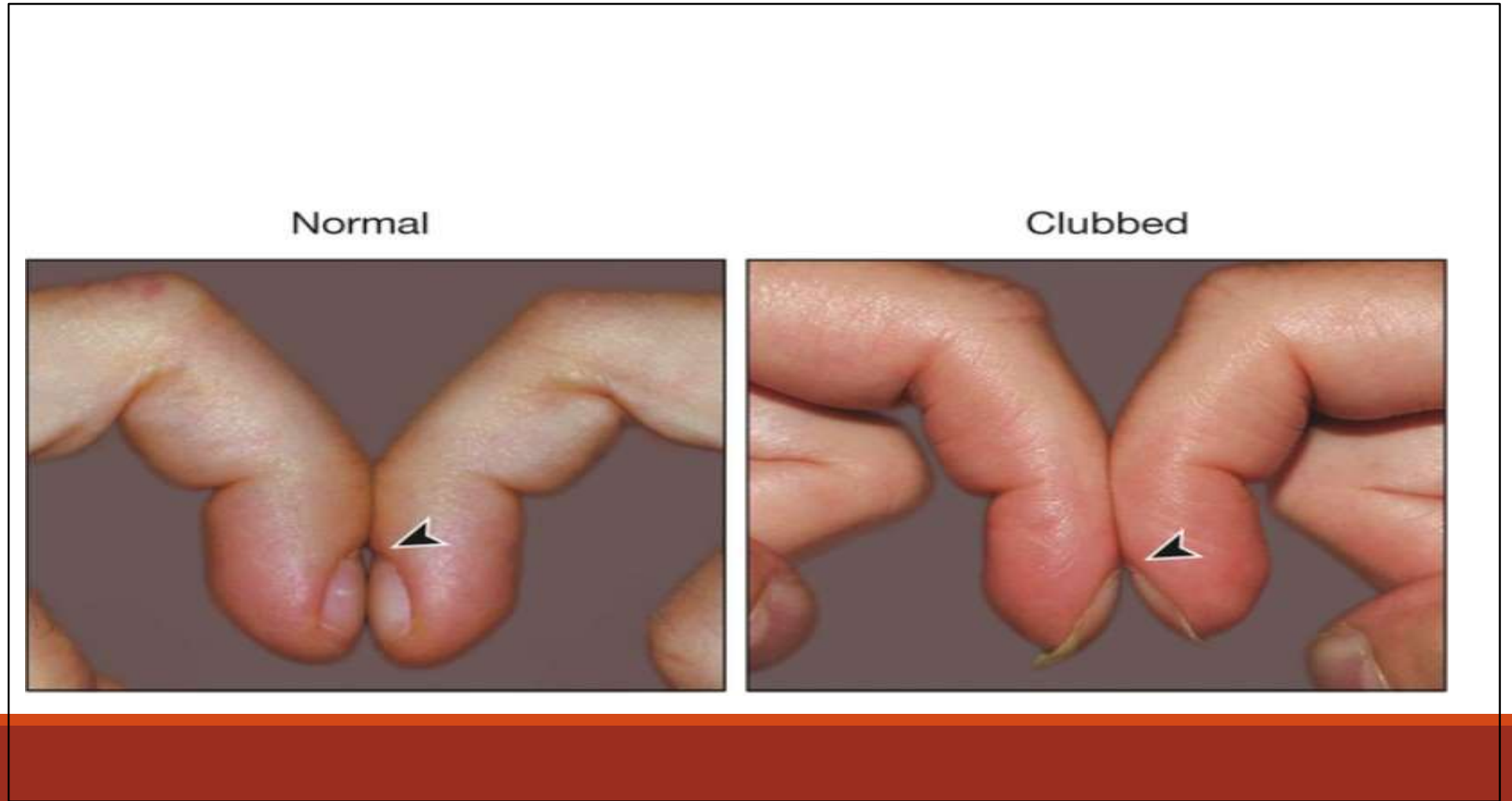
Phalangeal depth



Hyponychial angel



Schamroth's window sign



Skin

- The skin should be exposed where appropriate and inspected carefully for any abnormalities of pigmentation.
- Disorders of skin are many
- Comment of abnormalities:
- Ulcers, abnormal pigmentation, masses.
- Jaundice, pallor, cyanosis.

Jaundice

- an abnormal yellow discoloration of the skin, sclera and mucous membranes.
- Best detected in the covered part of sclera.
- when serum bilirubin concentration rises above 3 mg/dL due to pathology in metabloic pathways.

Cyanosis

- a blue discoloration of the skin and mucous
- membranes that occurs when the absolute concentration of deoxygenated haemoglobin is increased more than 5 g/dl
- Where to detect:

lips, mucous membranes, nose, cheeks, ears, hands and feet.

Cyanosis

- may be absent in anaemic or hypovolaemic patients despite the presence of hypoxia.
- Conversely
- cyanosis may manifest at relatively mild levels of hypoxia in polycythaemic patients.

Peripheral cyanosis

- seen in the distal extremities
- Maybe due to hypoxia, or:
- may simply be a result of cold exposure, when prolonged peripheral capillary flow allows greater oxygen extraction and hence increased levels of deoxyhaemoglobin.
- E.g. low cardiac output states, arterial disease and venous stasis or obstruction

Central cyanosis

- cyanosis can be seen in the lips, tongue and buccal or sublingual mucosa.
- can accompany any disease (usually cardiac or respiratory) that results in hypoxia and deoxyhaemoglobin concentration above (5g/dL).

Cyanosis

- Note :

- blue discoloration in the tongue : its central cyanosis

- blue discoloration in lips and distal extrimities : its peripheral cyanosis

Pallor

- Occurs due to:
- Anaemia
- vasoconstriction due to cold exposure or sympathetic activation (e.g. hypotension).

Pallor

- Best sites to detect:
- conjunctiva specifically the anterior rim of lower eyelid.
- palmar skin creases
- face in general
- Nail-bed pallor; although diagnostic value is poor.

Tongue

- Look and move, Don’t feel.
- Smooth tongue
- Large tongue
- Masses
- Wasting
- Deviation
- Fasciculations

Body habitus

- Weight
- Stature
- Hydration

Weight

- Measured in kilograms
- For standardization; we use BMI

Nutritional status	BMI non-Asian	BMI Asian
Underweight	<18.5	<18.5
Normal	18.5–24.9	18.5–22.9
Overweight	25–29.9	23–24.9
Obese	30–39.9	25–29.9
Morbidly obese	≥40	≥30

Obesity

- Caused by some diseases.
- Causes so many diseases

•gluteal–femoral obesity or the ‘pear shape’ Has better prognosis than ‘apple-shaped’ obesity.

Weight loss

- Wt loss considered significant if :

1 - 10% over 6 months

2 - 5% over 3 months

3 - 2% over 1 month

Stature

- Long stature
- Short stature
- Abnormal stature

HYDRATION

- MUCOUS MEMBRANES
- AXILLA
- JVP
- URINE OUTPUT
- LOWER LIMBS

Localized edema

- Venous causes
- Lymphatic causes
- Allergic causes
- inflammation

Angioedema

Hand swelling due to inflammation

Lumps and lymph nodes

- First ask few questions:
- Onset
- Duration
- associated pain
- Discharge
- Progression
- previous history

Lumps (and Ulcers)

- Site
- Shape
- Size
- Color
- Tenderness.
- Attachment to surrounding tissues?

Consistency

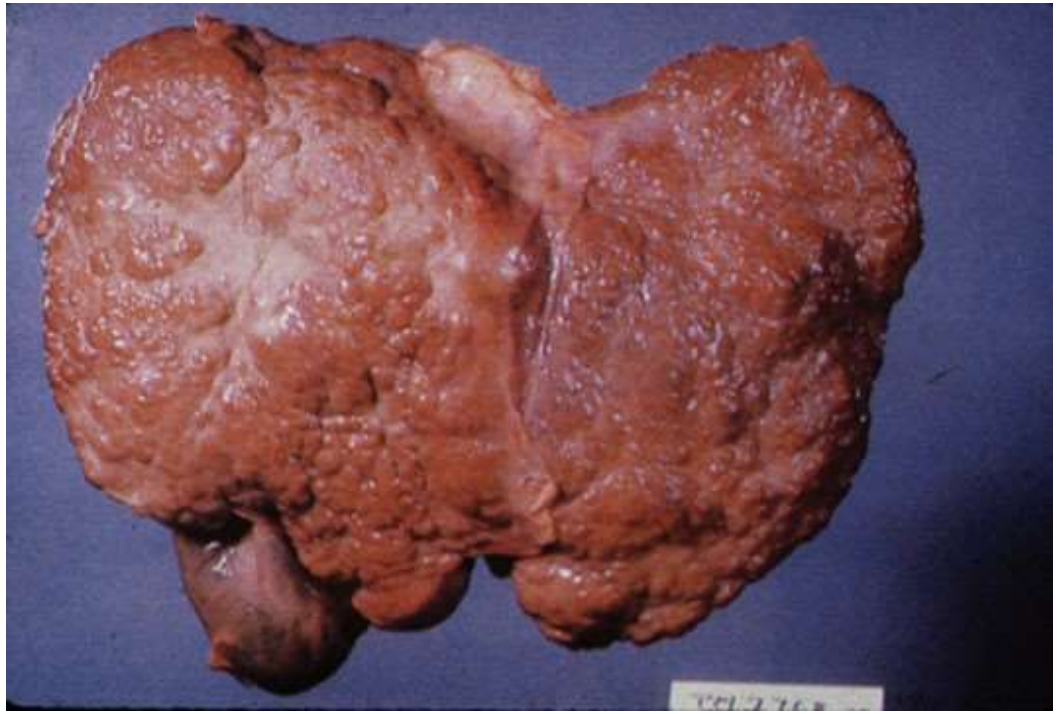
- Ranges from **soft** to **firm** to **hard.**
- compressible?
- Fluctuating?

Edge (margin)

- Defined Vs. ill defined
- Regular Vs irregular

Surface and shape

- Shape:
  shape of an organ, Vs rounded lump
- Surface:
  smooth, nodular, irregular.



Position

- Try to identify the source of the lump
- E.g. muscle, soft tissue.
- If it's deep or superficial to abdominal muscles.
- Thyroid masses moves with swallowing.

Inflammation

- Redness: vasodilatation.
- Warmth: vasodilatation.
- Swelling: increased capillary permeability.
- Pain/tenderness: cytokines.

After that

- Examine vascular systems
- The draining lymph nodes
- And general physical examination

Lymph nodes

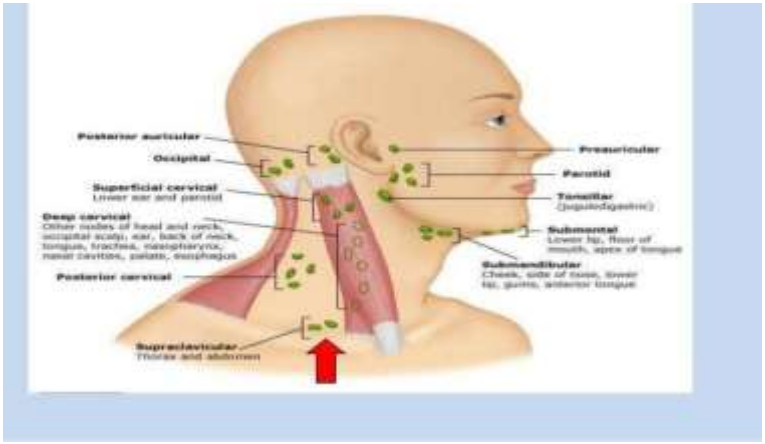

Posterior auricular
Occipital
Superficial cervical
Deep cervical
Posterior cervical
Supraclavicular
Preauricular
Parotid
Tonsillar
Submental
Submandibular

Fig. 3.27 Palpation of the cervical glands. A Examine the glands of the anterior triangle from behind, using both hands. B Examine for the scalene nodes from behind with your index finger in the angle between the sternocleidomastoid muscle and the clavicle. C Examine the glands in the posterior triangle from the front.

Fig. 3.28 Palpation of the axillary, epitrochlear and inguinal glands. A Examination for right axillary lymphadenopathy. B Examination of the left epitrochlear glands. C Examination of the left inguinal glands.

- If you find localised lymphadenopathy, examine the areas that drain to that site
- If generalized you should examine the liver and spleen , + pulmonary crackels

THANK YOU