ANATOMY OF THE NAIL

- Lunula: visible part of the nail matrix
- Cuticle: protective fold of skin
- Nail matrix
  - Nail plate production
  - Contains nerves, lymphatics, blood vessels
- Nail plate: translucent keratin protein
- Nail bed: skin beneath the nail plate
- Proximal nail fold
  - Epithelium with granular layer
  - Sweat glands
NAIL GROWTH

- Developes between 9-20 weeks IUD
- Nail matrix produces corneocytes
- Old cells pushed forward
  - Compressed dead cells
  - Flat & Translucent (color due to capillaries)
  - 18% water, 78% protein, lipids <5%
- Continuous nail growth
  - Fingernails 0.1mm/day (3mm/month)
  - Toe nail 0.033mm/day (1mm/month) 18 month full toe nail replacement
Matrix disease causes thinning of nails
Nail bed disease results in thickening of nail

<table>
<thead>
<tr>
<th>FASTER</th>
<th>SLOWER</th>
</tr>
</thead>
<tbody>
<tr>
<td>HANDS</td>
<td>FEET</td>
</tr>
<tr>
<td>DOMINANT</td>
<td>NON DOMINANT</td>
</tr>
<tr>
<td>PREGNANCY</td>
<td>LACTATION</td>
</tr>
<tr>
<td>YOUTH</td>
<td>OLDER AGE</td>
</tr>
<tr>
<td>MALE</td>
<td>FEMALE</td>
</tr>
<tr>
<td>SUMMER</td>
<td>WINTER</td>
</tr>
</tbody>
</table>
FUNCTION OF NAILS

- Fingernails
  - Protection
  - Sensory perception
  - Manual dexterity
  - Scratching
  - Picking up small objects

- Toe nails
  - Protective/ Balance
  - Attractiveness
  - Rudimentary
COMMON NAIL PATHOLOGIES
CLUBBING

Increased transverse and longitudinal nail curvature with hypertrophy of soft tissue of digit pulp

- Undiagnosed pulmonary, cardiovascular, neoplastic,
- Hepatobiliary, endocrine, gastrointestinal disease
  - Lung Ca
  - Heart defects
  - Cirrhosis
  - COPD
  - Cystic Fibrosis
- Idiopathic (X-linked autosomal recessive)
**CLUBBING**

Lovibond’s angle >180

Curth’s angle <160

Schamroth’s Window Test
KOILONYCHIA (SPOON NAILS)

- GREEK: Koilos (hollow), onyx (nail)
- Thin concave nail
- Normal in infancy
- May be familial trait (autosomal dominant)
- Iron deficiency and haemochromatosis
- Raynaud’s disease
- Lupus Erythematosus
PINCER NAIL (aka TRUMPET NAIL)

- Increased transverse curvature
- Midline pitch
- Genetic (gradient)
- Psoriasis, DM, Age, Malnutrition
- Improper care (pedicures)
- Ill fitting shoes
OTHER NAIL ABNORMALITIES

- Macronyenia
- Micronyenia
- Anonyenia
- Onycholysis
- Pterygium
PITTING NAILS

- Psoriasis
- Eczema
- Reactive arthritis
- Alopecia areata
BEAU’S LINES

- Horizontal ridges
- Short term disease/ injury
- Chemotherapy
- Raynaud’s
- Uncontrolled DM
SPLINTER HEMORRHAGES

- Red and brown streaks under nail
- Lupus
- Psoriasis
- Endocarditis
Subungal hematoma
- Blood pool under the nail
- Acute or chronic injury
- Migrating distally
Common in African American (100% over 50 y.o)

Subungal melanoma

- Hutchinson’s sign
- Most common in great toe
- After 50 y.o
- Getting wider and darker
- Blurred borders
- History of melanoma
ONYCHOMYCOSIS

Chronic communicable disease

Dermatophytes, yeast, molds

- Distal subungal
- Superficial white (candida)
- Proximal subungal
- Total dystrophic
Routine foot care may be covered when systemic condition(s) result in severe circulatory embarrassment or areas of diminished sensation in the patient’s legs or feet. In these instances, certain foot care procedures that are otherwise considered routine (e.g., cutting or removing corns and calluses, or trimming, cutting, clipping, or debriding nails) may pose a hazard when performed by a non-professional on patients with such systemic conditions.
THANK YOU