



# Common Hair and Nail Problems

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# Hair problems

- Hair loss



- Hair shaft abnormalities



- Excessive hair growth



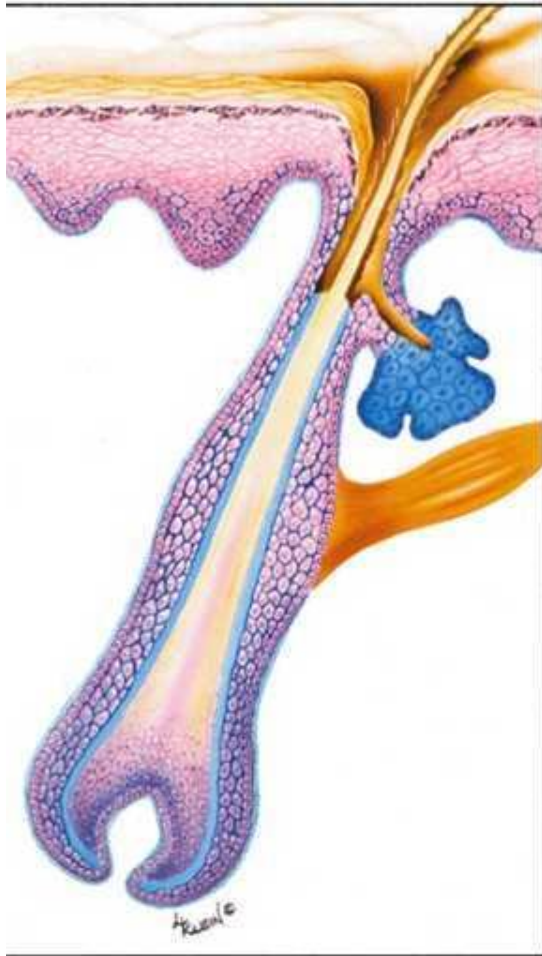
- Hair color



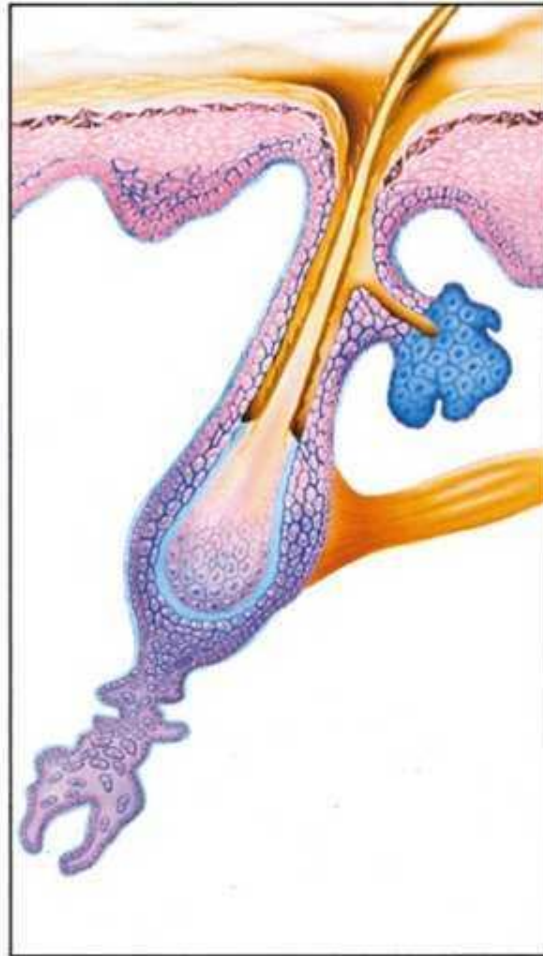
# Basic Hair Evaluation

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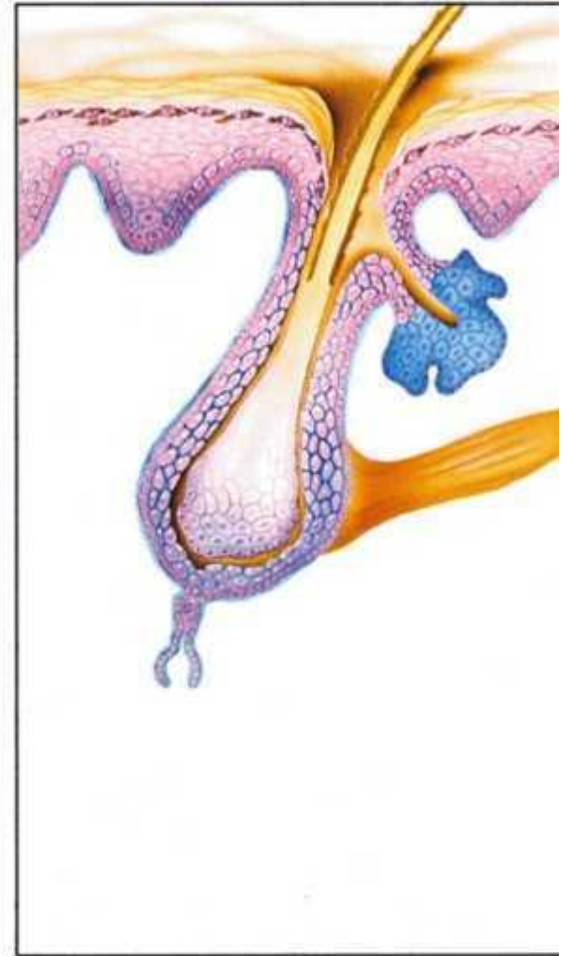
# The hair cycle



Anagen



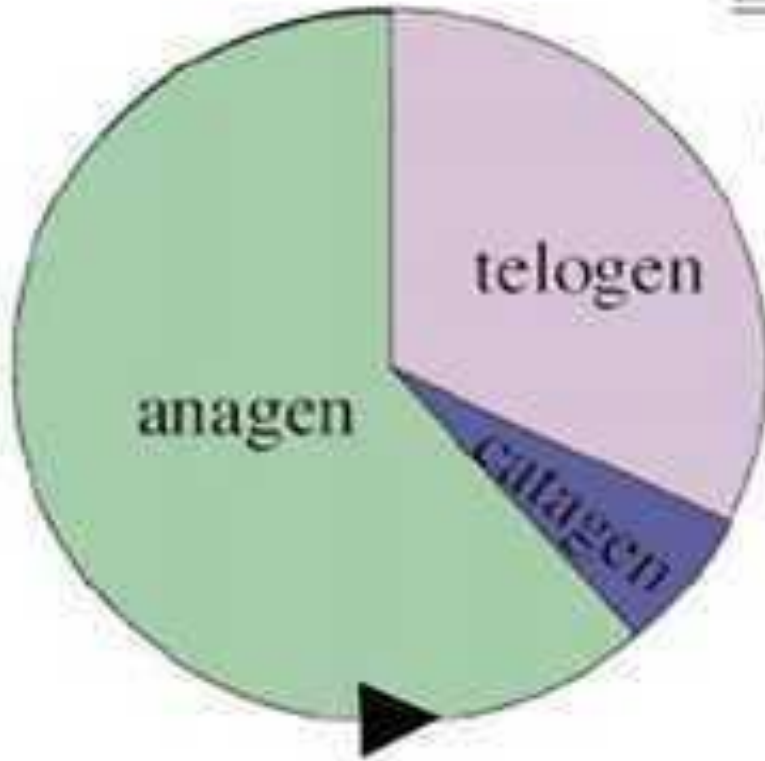
Catagen



Telogen



80-90%  
2-6 years

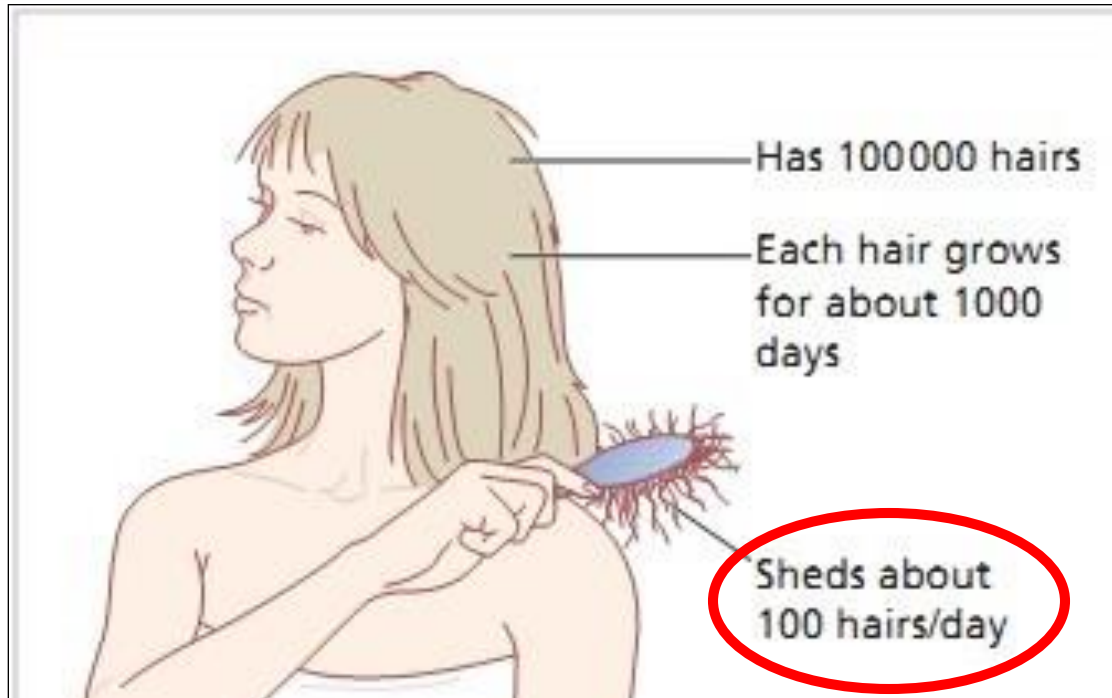


10-15%  
1-3 months



<1%  
1-2 weeks

# Normal hair shedding

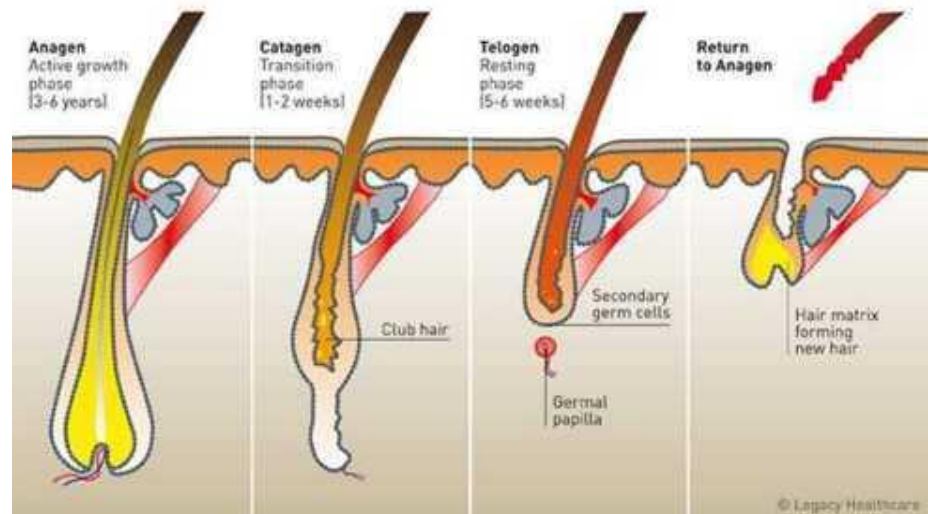


Phase	Duration	Amount
Anagen	1000	90,000 (90%)
Telogen	100	10,000 (10%)
	Total	100,000

# Abnormal hair shedding

>100 → Not wash

>200 → Wash



# History taking

- Hair loss or hair thinning?
- Number of hair shedding?
- Characteristics?
- Duration?
- Life event?
- Symptom to indicate systemic disease?
- Family history?





# Hair count



# Hair & scalp examination

- Inspection
  - Distribution
  - Scalp lesions
- Hair pull test
- Tug test



# Hair pull test



# Tug test



# Hair & scalp examination

- Distribution of hair loss
  - Localized
  - Diffuse
  - Pattern
- Hair shape: exclamation, tufted, fragility
- Scarring or non-scarring



# Case 1



# Case 2 and 3



# Case 4 and 5



Scarring alopecia should be concerned



# Non-scar vs Scar

- Non-scarring alopecia



- Scarring alopecia



**Permanent hair loss**

# Other areas

- Nail
- Oral cavity: mucosa, teeth
- Conjunctiva
- Thyroid gland
- Genitalia
- Other skin lesions



# Approach to the patient with alopecia



# ALOPECIA

NON-SCARRING

SCARRING

DIFFUSE

FOCAL

PATTERN

**>100 hairs/day**

- Telogen Effluvium
- Anagen Effluvium
- Alopecia Areata
- Trichotillomania
- Hair shaft defects

- Alopecia Areata
- Trichotillomania
- Hair shaft defects
- Congenital hair loss

- Male androgenetic alopecia
- Female pattern hair loss

# ALOPECIA

NON-SCARRING

SCARRING

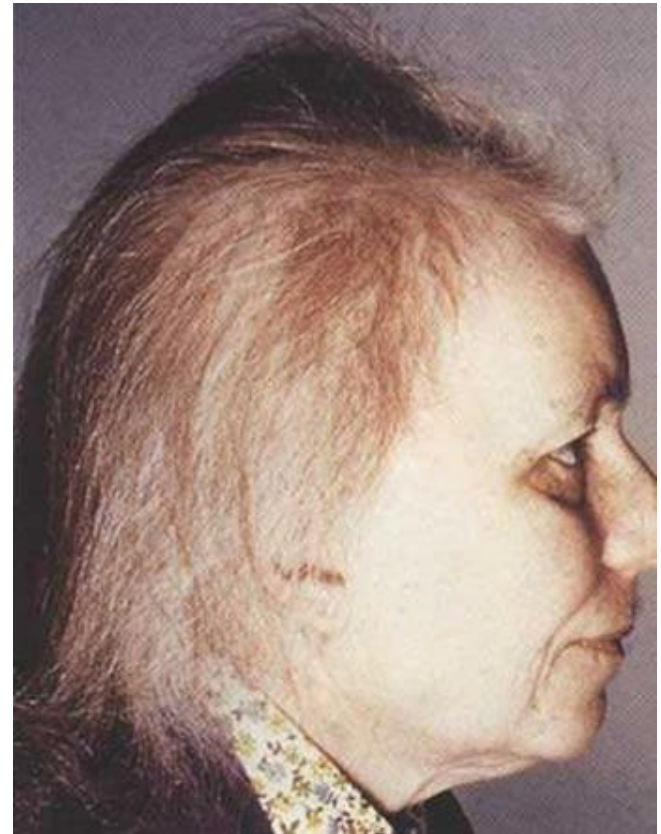
- Lichen planopilaris
- Lupus erythematosus
- Pseudopelade of Brocq
- Folliculitis decalvans
- Dissecting cellulitis of the scalp
- Morphea
- Trauma
- Tumor
- Infections

# Common alopecia

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# Telogen effluvium

- Reaction to physical or mental stressors, drugs
- 3-6 mo. after inciting event
- Resolve after cause removed



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## Endocrine

Hypo- or hyperthyroidism

Postpartum

Peri- or postmenopausal state

## Nutritional

Biotin deficiency

Caloric deprivation

Essential fatty acid deficiency

Iron deficiency

Protein deprivation

Zinc deficiency

## Physical stress

Anemia

Surgery

Systemic illness

## Psychological stress

## Drugs (only those with incidence >1% noted here)

Angiotension-converting enzyme inhibitors

Anticoagulants

Antimitotic agents (dose dependent)

Benzimidazoles

Beta blockers

Interferon

Lithium

Oral contraceptives

Retinoids

Valproic acid

Vitamin A excess

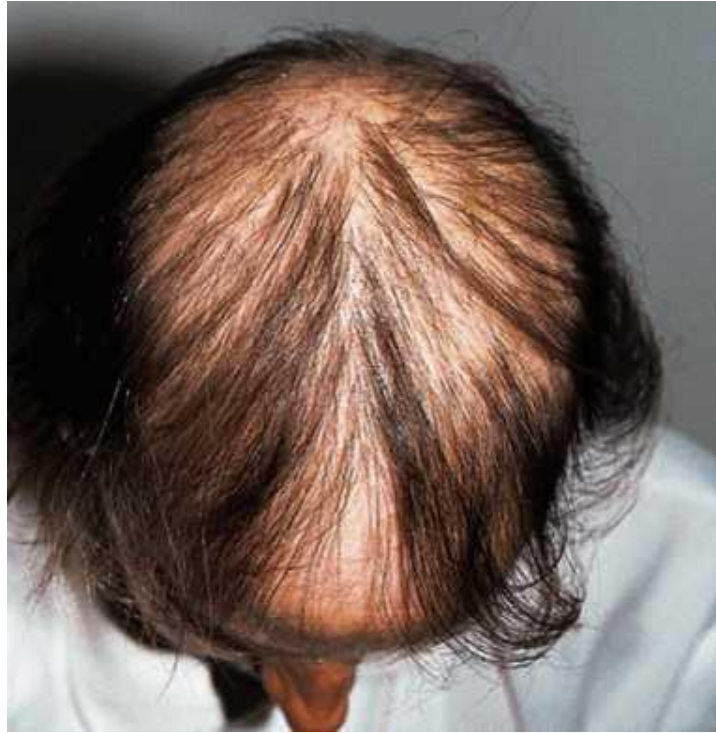


# Anagen effluvium

- Loss of anagen hairs
- Usually broken off > shed
- Cause
  - Radiation therapy
  - Systemic chemotherapy
  - TOXIC agents
  - Severe protein malnutrition

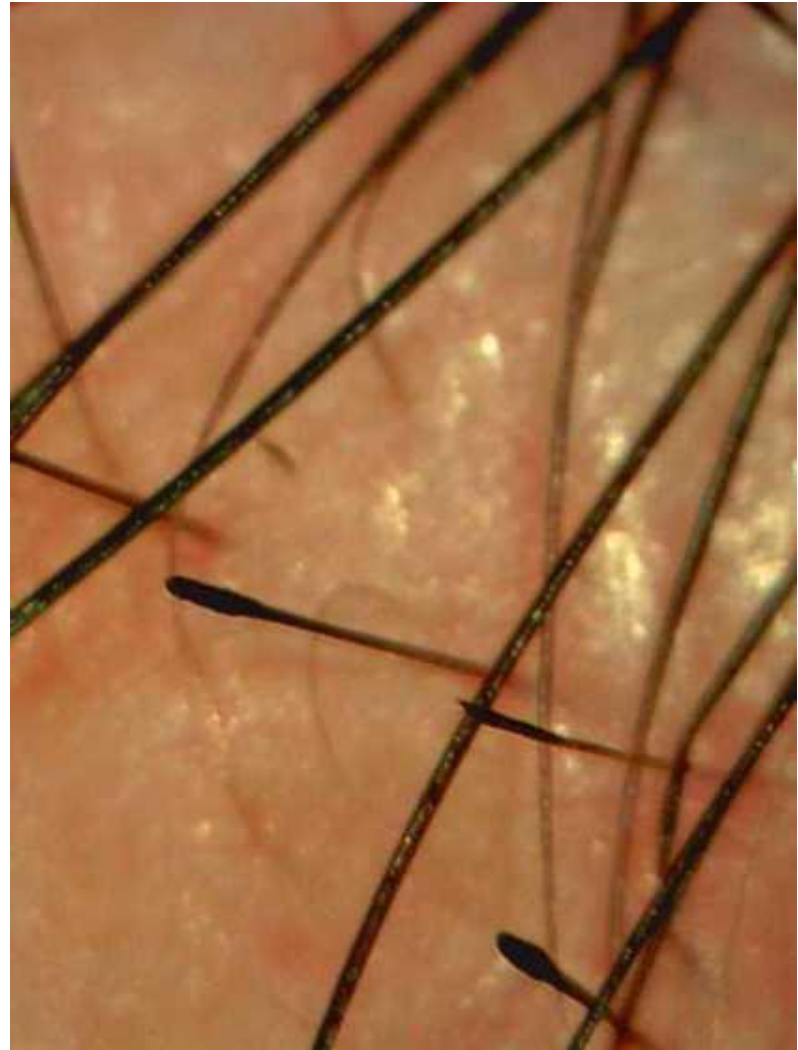


# Anagen effluvium

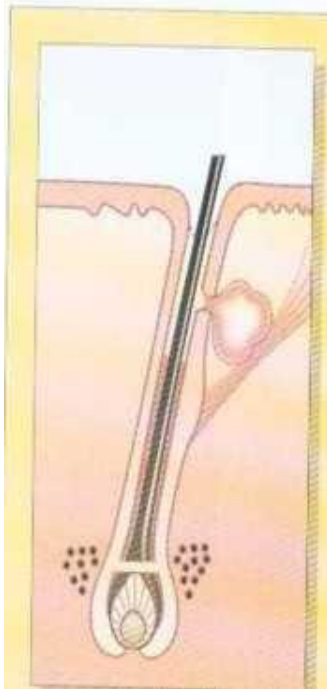


- Regrowth rapidly after stop chemotherapy
  - High-dose busulfan -> permanent alopecia

# Alopecia areata



# Pathophysiology



Lymphocyte  
accumulation

Hair shaft  
thinning



# Multiple patches AA



# Syphilitic alopecia

- DDX in sexually active period



Moth-eaten

# Alopecia totalis/universalis

- Alopecia totalis (AT)



- Alopecia universalis (AU)



# Alopecia areata



- Nail:
  - pitting, trachyonychia, onychomadesis



# Associated conditions

- Atopy
- Autoimmune thyroid disease
- Down syndrome
- Vitiligo
- Autoimmune polyendocrinopathy syndrome type I
- Type I diabetes (relative of AA pt.)
- SLE (Taiwan)

# Management of AA

## Treatment of Alopecia Areata

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### ■ Patchy alopecia

- Intralesional corticosteroids: Up to 2 mL injected/session and repeated at intervals.
- Potent topical steroid 1–2×/day.
- Topical anthralin 0.1%–2.0% once daily. Wash off after 10–20 min, steadily increase contact duration, switch to higher dose if no significant irritation.
- Minoxidil lotion (5%) twice daily.

# Management of AA

- Extensive or rapidly progressive alopecia.
  - Contact immunotherapy.
  - Systemic corticosteroids. Benefits are uncertain and must be weighed against risk of systemic corticosteroid therapy.
  - Wig or hairpiece.
- Alopecia totalis/universalis
  - Contact immunotherapy.
  - Topical/systemic steroids.
  - Wig or hairpiece.

# Prognosis

- Spontaneous remission (80% in 1 yr)
- Relapse is common
- Poor prognostic factor:
  - Location (ophiasis pattern)
  - Age of onset: childhood
  - Association of atopy
  - Duration of hair loss (>1 yr)
  - Loss of body hair
  - Nail involvement
  - Positive family history



# Trichotillomania

- Bizarre shapes , irregular border
- Hairs of varying length



# Trichotillomania

- Cognitive behavioral therapy : Most effective Rx
- Psychotropic drug :
  - 1<sup>st</sup> line: Clomipramine, SSRI (fluoxetine, sertraline)
  - NAC



# Androgenetic alopecia



- Male androgenetic alopecia



- Female pattern hair loss

# Male androgenetic alopecia



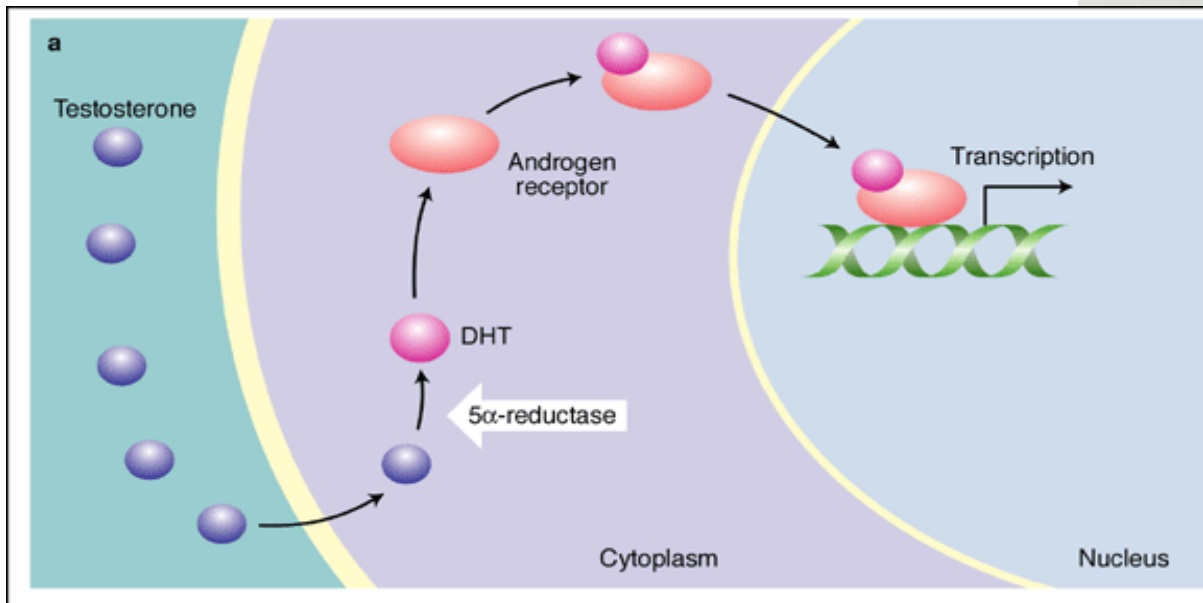


# Female pattern hair loss

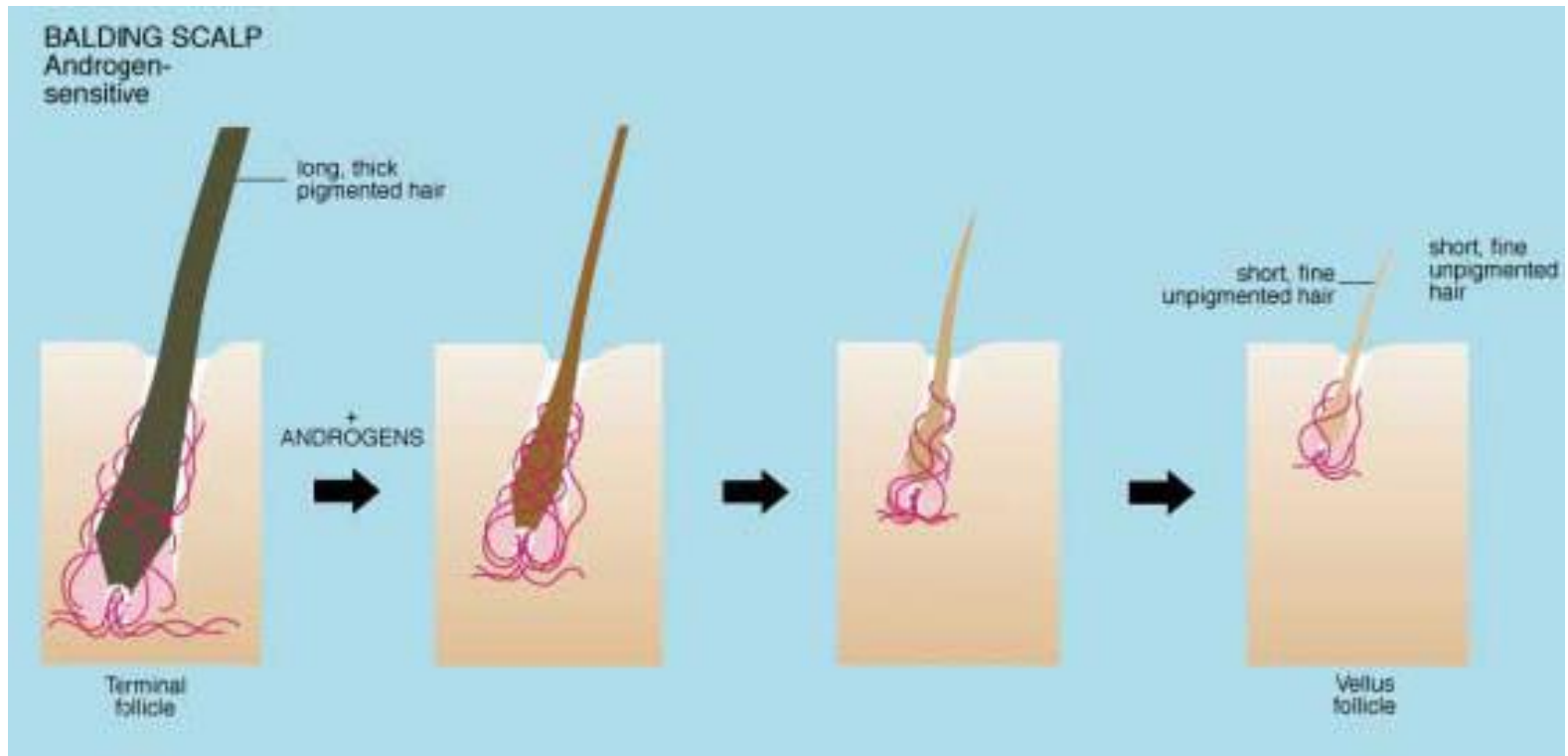


# 5 alpha reductase

- 5 alpha reductase enzyme
  - Key enzyme
  - Testosterone -> DHT



# Randall: paradoxical effect of androgen



- Miniaturization
- Shortening of anagen duration
- Increased percentage of telogen

# Management of AGA

## Treatment of Androgenetic Alopecia

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- Caution against unrealistic expectations; primary goal is to halt progression.
- Male pattern hair loss
  - 5% topical minoxidil solution or foam twice daily.
  - Oral finasteride, 1 mg daily.
  - Combination of the above: Use for at least 6 mo to assess response, and continue treatment to maintain response.
  - Surgery (e.g., hair transplantation). Most useful for restoring frontal hair loss.

# Minoxidil

- Topical only (solution or foam)
- 5% in male, 2-5% in female
- Twice daily
- Mechanism?
  - Unknown
- Side effect
  - Allergic contact dermatitis: propylene glycol
  - Irritant contact dermatitis: alcohol



# Pitfall: use of systemic minoxidil



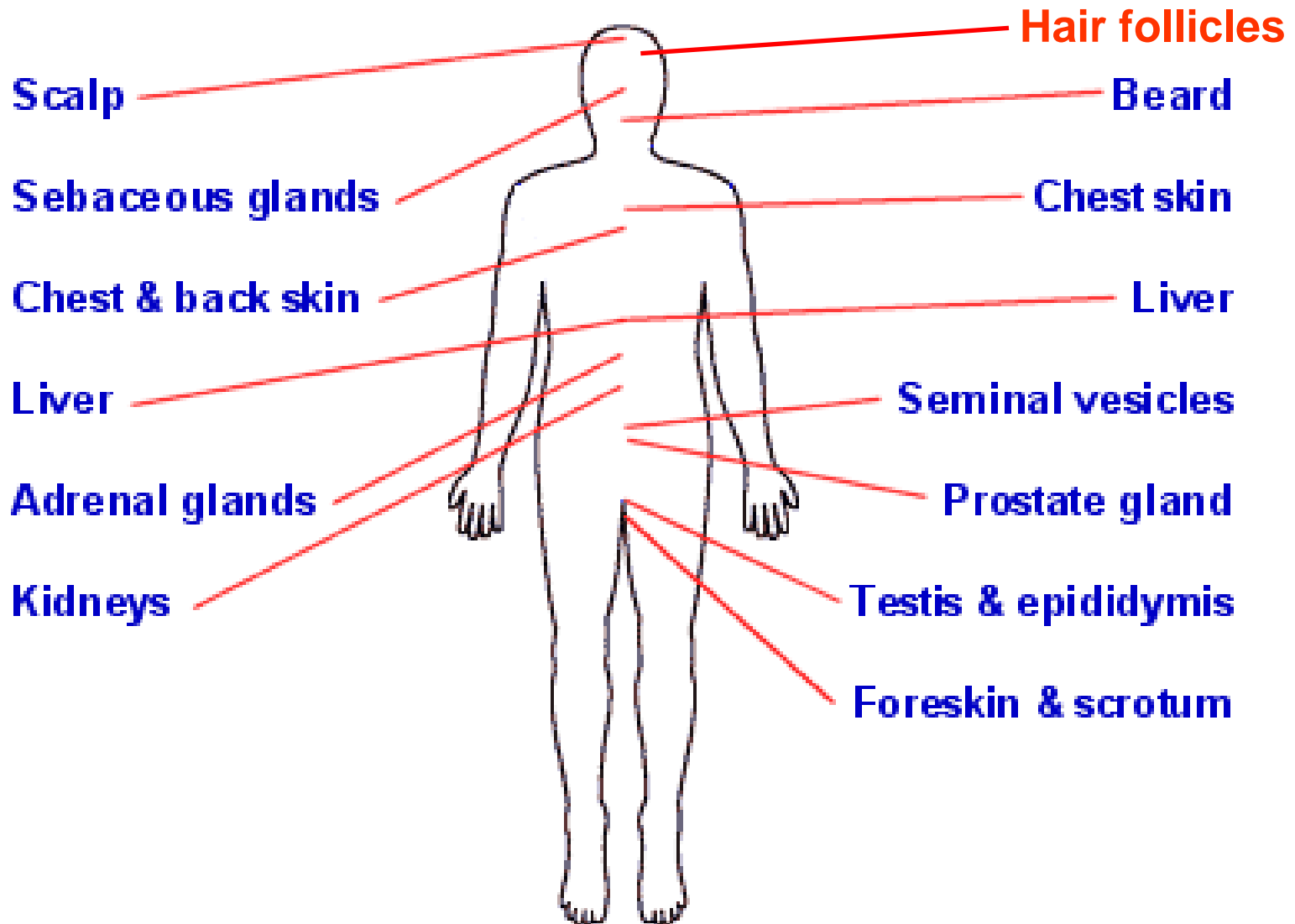
# Finasteride

- Type II  $5\alpha$  - reductase inhibitor
- 1 mg/day (Propecia)
- $\frac{1}{2}$  AD or  $\frac{1}{4}$  OD (Proscar)
- Sexual adverse effect
- Reduction incidence of prostate CA but small increase high grade prostate CA



**Type I  
5 $\alpha$  Reductase**

**Type II  
5 $\alpha$  Reductase**





# Dutasteride

- Type I & II  $5\alpha$  - reductase inhibitor
- More potent & more half life time
- Efficacy -> in research
  - Evidence of mark decrease DHT level
  - Evidence of improve AGA
- Current use in BPH

# Management of AGA

## ■ Female pattern hair loss

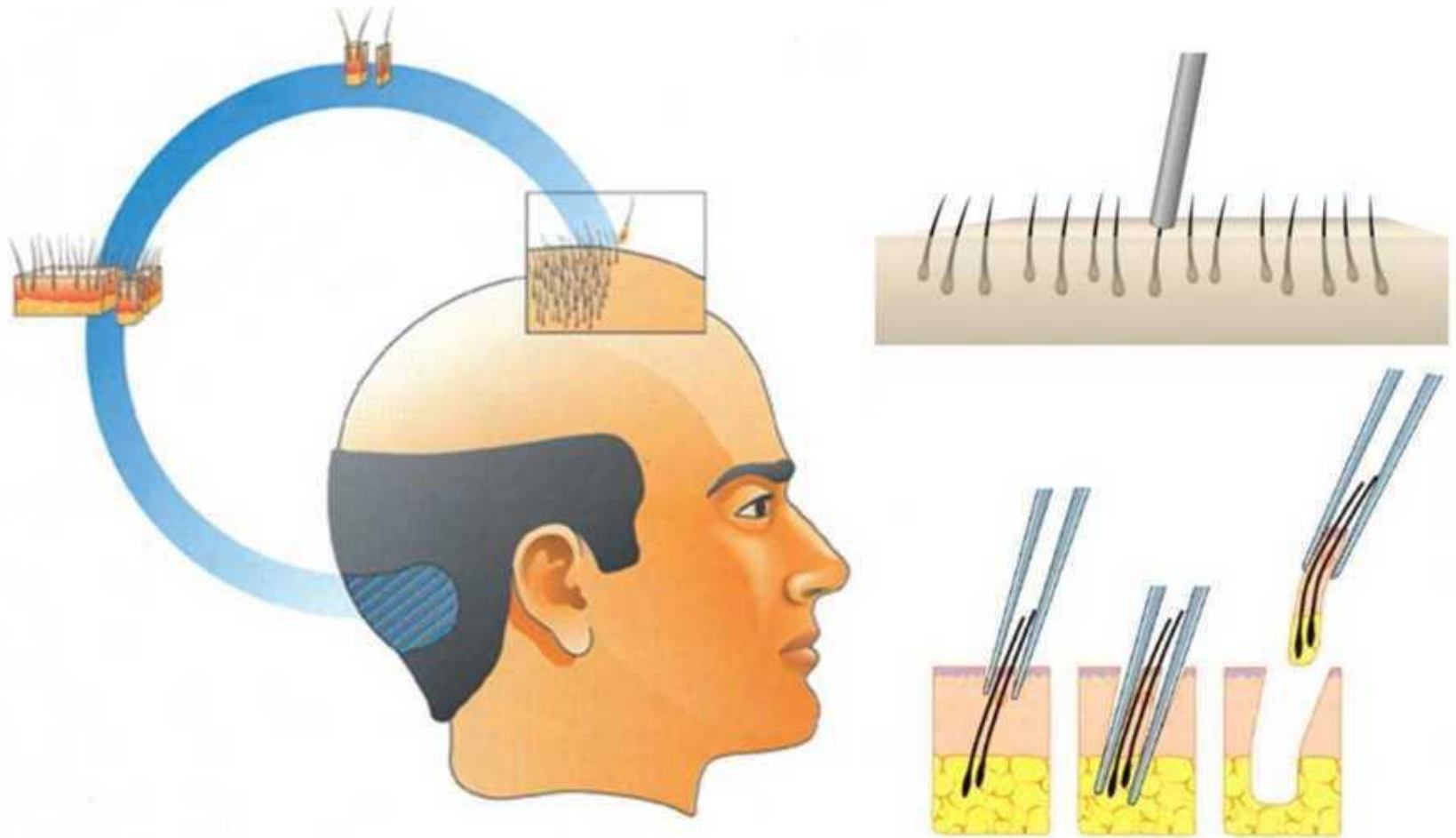
- 2%–5% topical minoxidil solution twice daily.
- Topical  $17\beta$ -estradiol (e.g., estradiol benzoate, 20–25 mg/mL isopropanol).
- Oral anti-androgens (spironolactone, cyproterone acetate).
- Combination of the above: Use for at least 6 mo to assess response, and continue treatment to maintain response.
- Maintain serum ferritin  $> 40 \mu\text{g/L}$ .
- Hair transplantation in selected cases.

# Pitfall: use of 5 alpha-reductase inhibitor in female

- Teratogenic effect
  - Feminization in male fetus
  - No risk to a male fetus in a pregnant partner



# Hair transplantation



# Scarring alopecia



## ■ Characteristics

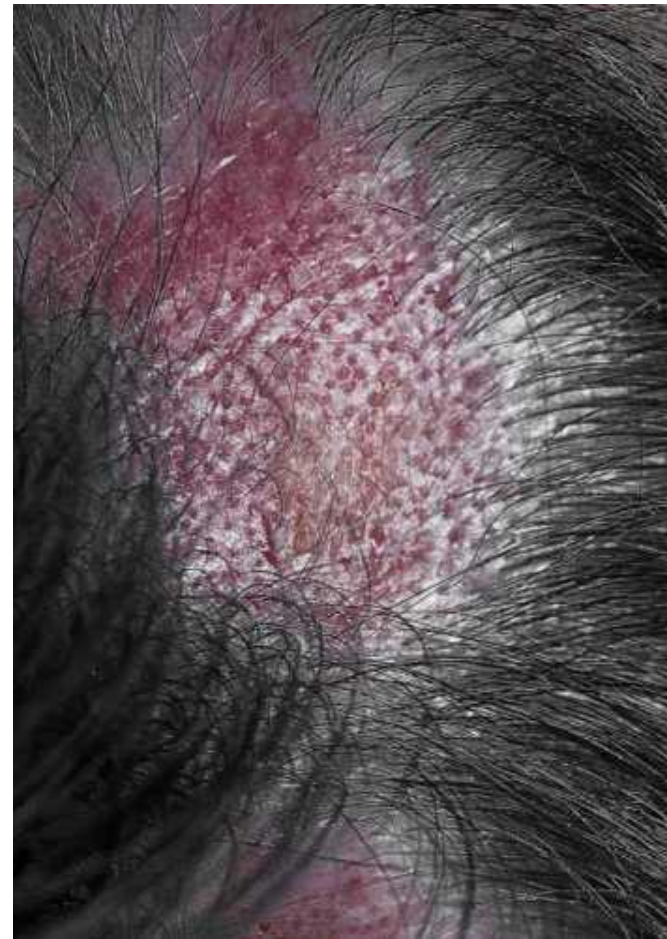
- Permanent destruction of the hair follicle
- Irreversible damage to hair follicle stem cell
- Effacement of follicular orifices

# Discoid lupus erythematosus

telangiectasia



pigmentary change, central atrophy



round, scaly- adherent scales,  
follicular plugging

# Discoid lupus erythematosus

- Risks to develop SLE
  - 1. Widespread DLE below the neck
  - 2. Non-specific lesions
    - Alopecia
    - Vasculitis
  - 3. ANA positive high titer
  - 4. Lymphocytopenia

# Treatment of CCLE

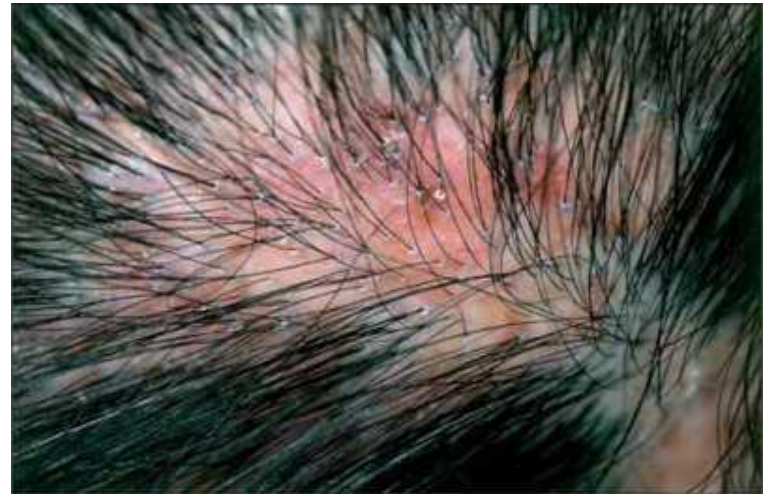
- Topical therapy
  - Sunscreen
  - Potent topical/intralesional steroid
- Systemic therapy
  - Antimalarial drugs
  - Methotrexate
  - Dapsone
  - Thalidomide





# Lichen planopilaris

- Lichen planus of the scalp
- Evidence of lichen planus elsewhere
- Screening for HCV





Lichen planus



Wickham striae



Reticulated whitish patch



Pterygium nail



Twenty nails dystrophy

# Treatment of LPP

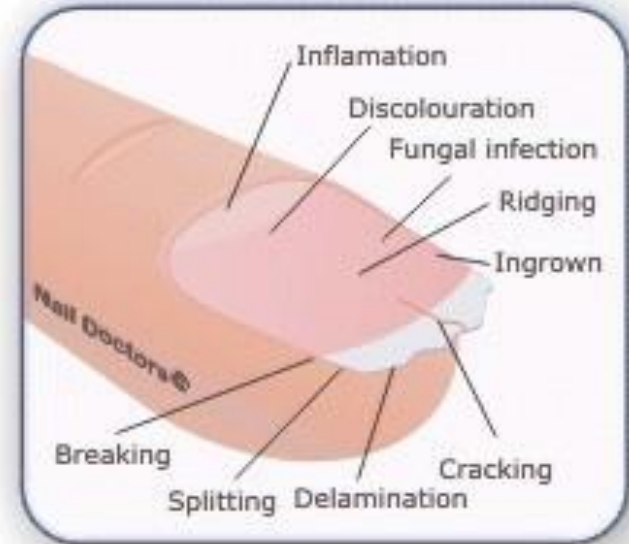
- Mild to moderate LPP (<10%)
  - Intralesional steroid (+/- topical steroid)
  - Oral steroid for rapid progressive
- Severe LPP (>10%)
  - Hydroxychloroquine
  - Cyclosporine

# Nail problems

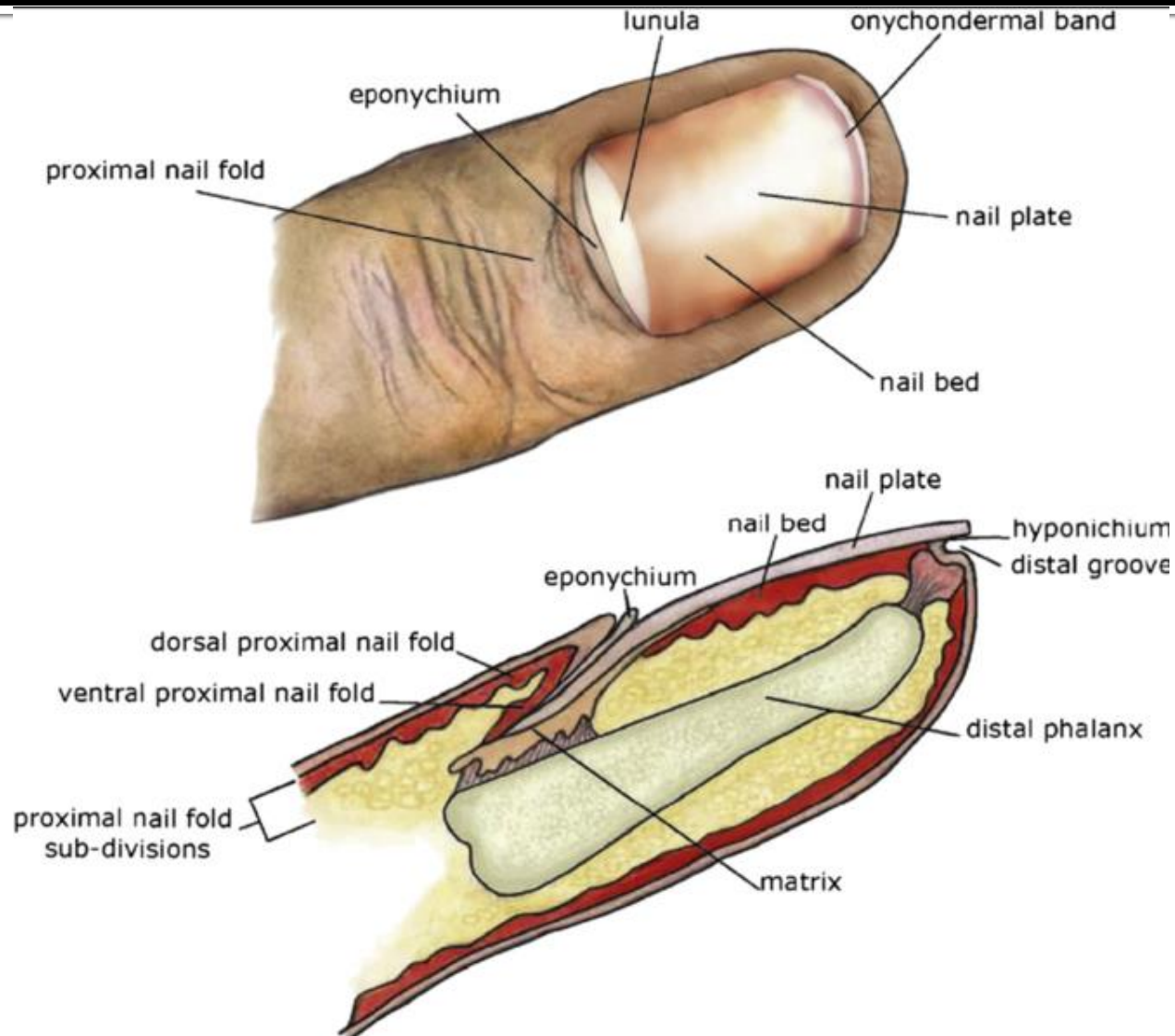


# Nail problems

- Contour
- Surface
- Color
- Periungual
- Detachment



# Structure of nail





# Contour

- Clubbing
- Koilonychia
- Over curvature



# Clubbing



- Intrathoracic disorder
- Hypertrophic pulmonary osteoarthropathy
  - Pachydermoperiostosis
- Secondary lung carcinoma

# Koilonychia



- Spoon nail
- Physiologic in early infancy
- Iron deficiency

# Pincer nail



- Over curvature



# Surface

- Beau's line
- Pits
- Trachyonychia



# Beau's lines

- Transverse depression of nail plate
- Occur after illnesses



# Nail pitting



# Nail pitting



- Alopecia areata
  - Shallow regular pitting



# Trachyonychia

- Twenty nail dystrophy



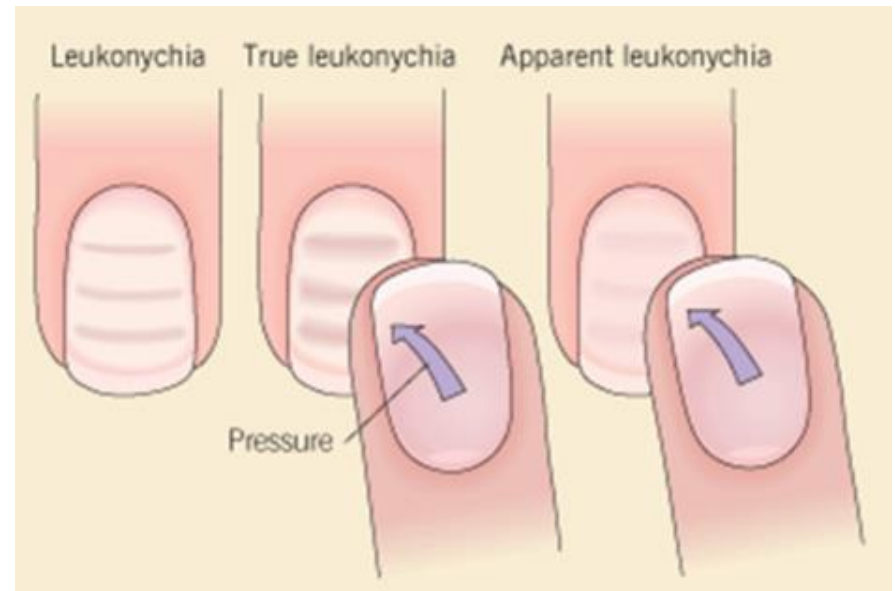
# Color

- Leukonychia
  - True leukonychia
  - Apparent leukonychia
- Chromonychia



# Leukonychia

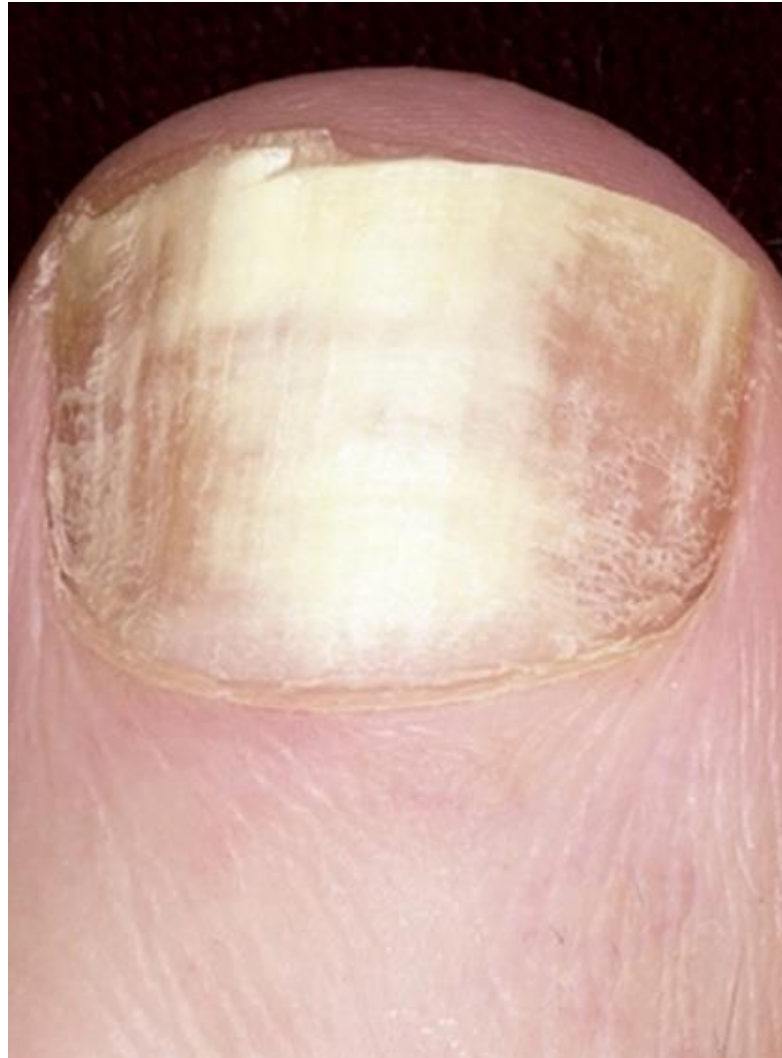
- True leukonychia
  - Transverse: systemic disorder
  - Punctate: manicure
  - Longitudinal
- Apparent leukonychia
  - Terry's nail
  - Half and half nail
  - Muehrcke's nail



# White spots (leukonychia punctata)



# White superficial onychomycosis



# Terry's nail

- Associated with
  - Cirrhosis of the liver
  - Chronic congestive heart failure
  - Adult-onset diabetes mellitus



# Half-and-half nail

- Two parts showing a sharp demarcation
- Uremic patients



# Muehrcke's nail

- Paired, narrow white bands parallel the lunula in the nail bed
- Associated with
  - Hypoalbuminemia
  - Following chemotherapy







**Fig 8.** Oil-drop sign of the toenails.



**Fig 9.** Salmon-colored spots of the fingernails

# Longitudinal melanonychia



# Hutchinson's sign



- Extension of pigmentation onto the nail folds is a classic sign of subungual melanoma

# Green nail

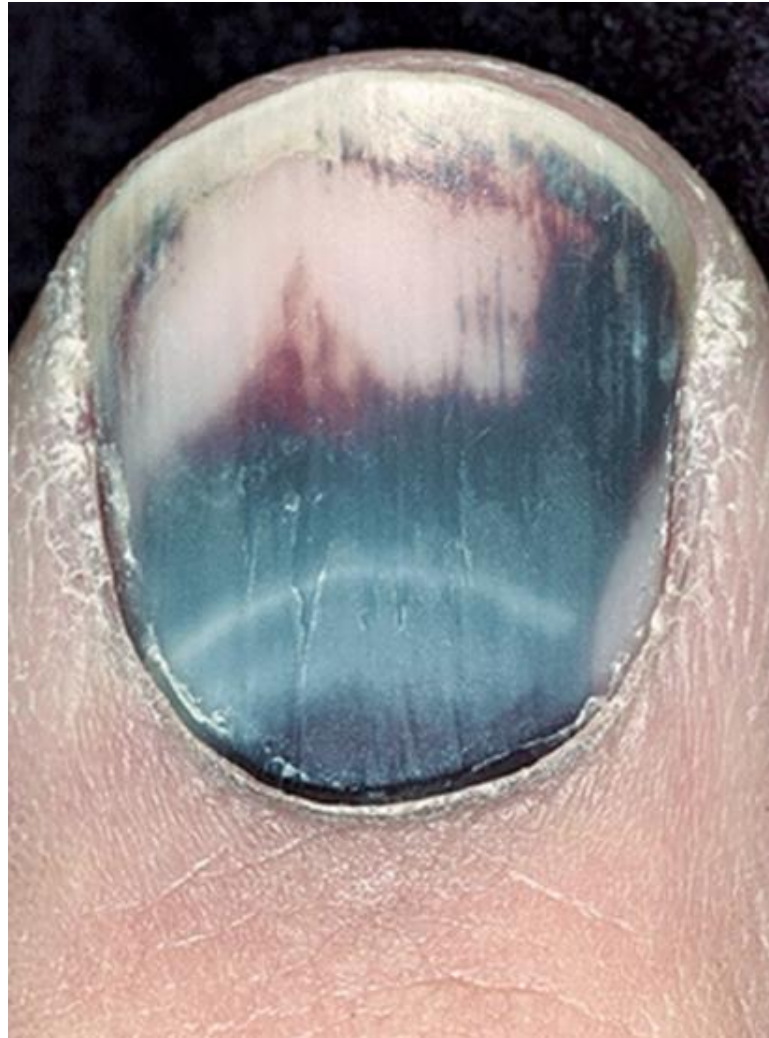


- *Pseudomonas* nail infection

# Splinter hemorrhages



# Trauma (subungual hematoma)

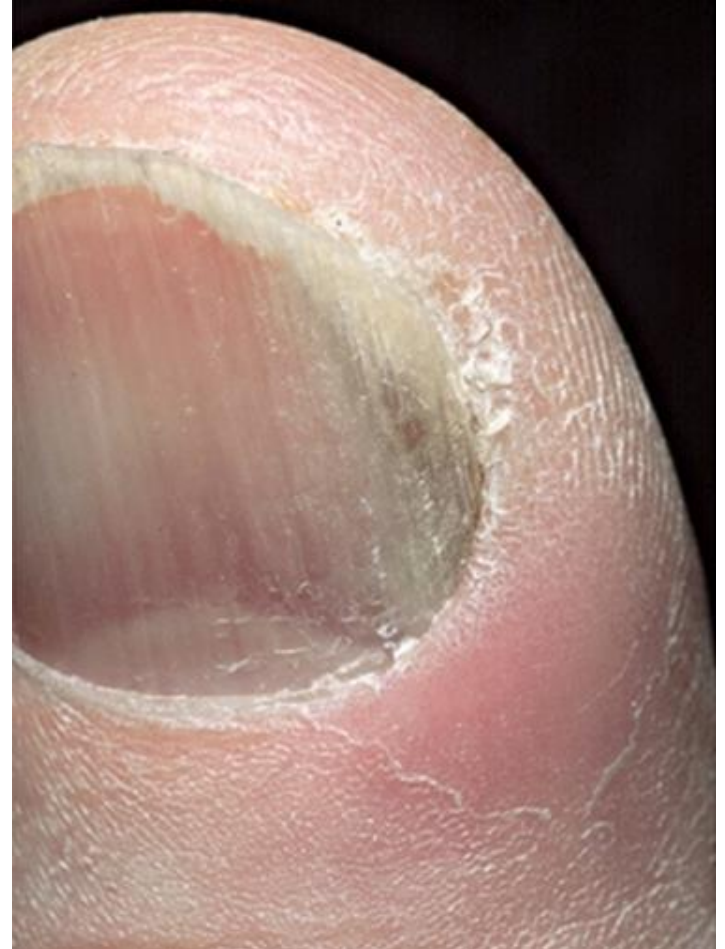


# Periungual

- Acute paronychia
- Chronic paronychia
- Dorsal pterygium
  - Gradual shortening of proximal nail groove
- Ventral pterygium
  - Obliterating distal nail groove



# Acute paronychia



# Chronic paronychia



# Ingrown nail



# Dorsal pterygium (Lichen planus)



# Ventral pterygium



# Faulty detachment

- Onychomadesis
  - Nail shedding
- Onycholysis
  - Detached distal or lateral attachment

# Onychomadesis



# Onycholysis

- Environmental
  - Exposures, irritants, **water**, photo onycholysis
- Primary skin disorder
  - Psoriasis
- Infection
  - Candidas, dermatophytes
- Drugs
  - Tetracyclines
- Metabolic/systemic disorder
  - Hyperthyroidism
- Tumor
  - Subungual exostoses, SCC



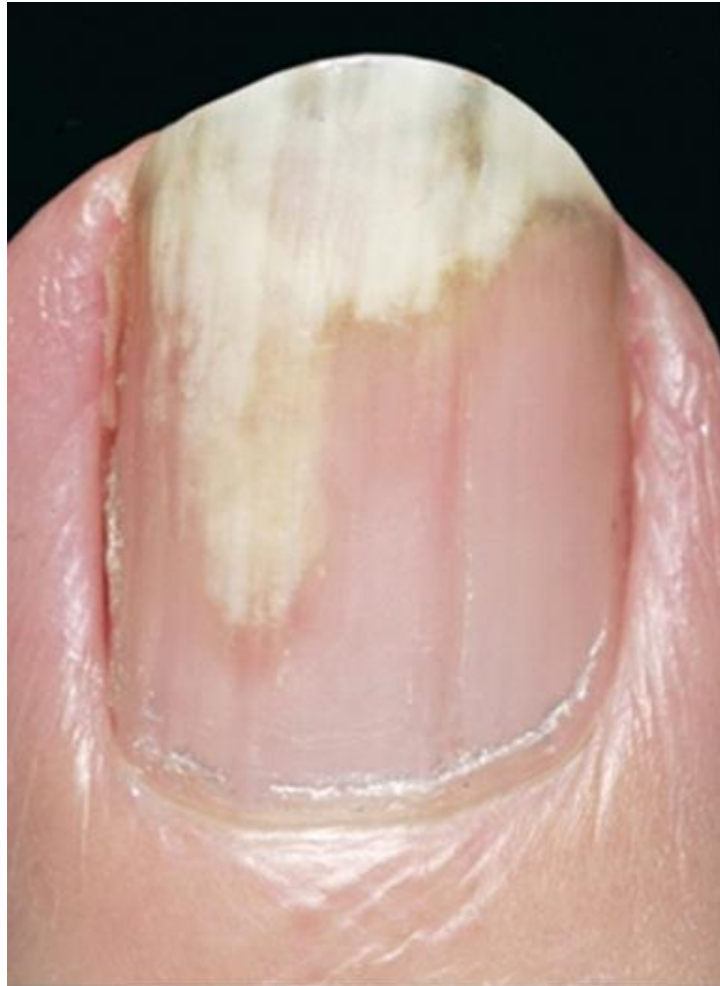


**Fig 10.** Onycholysis of the fingernails.

# Onycholysis: secondary infection

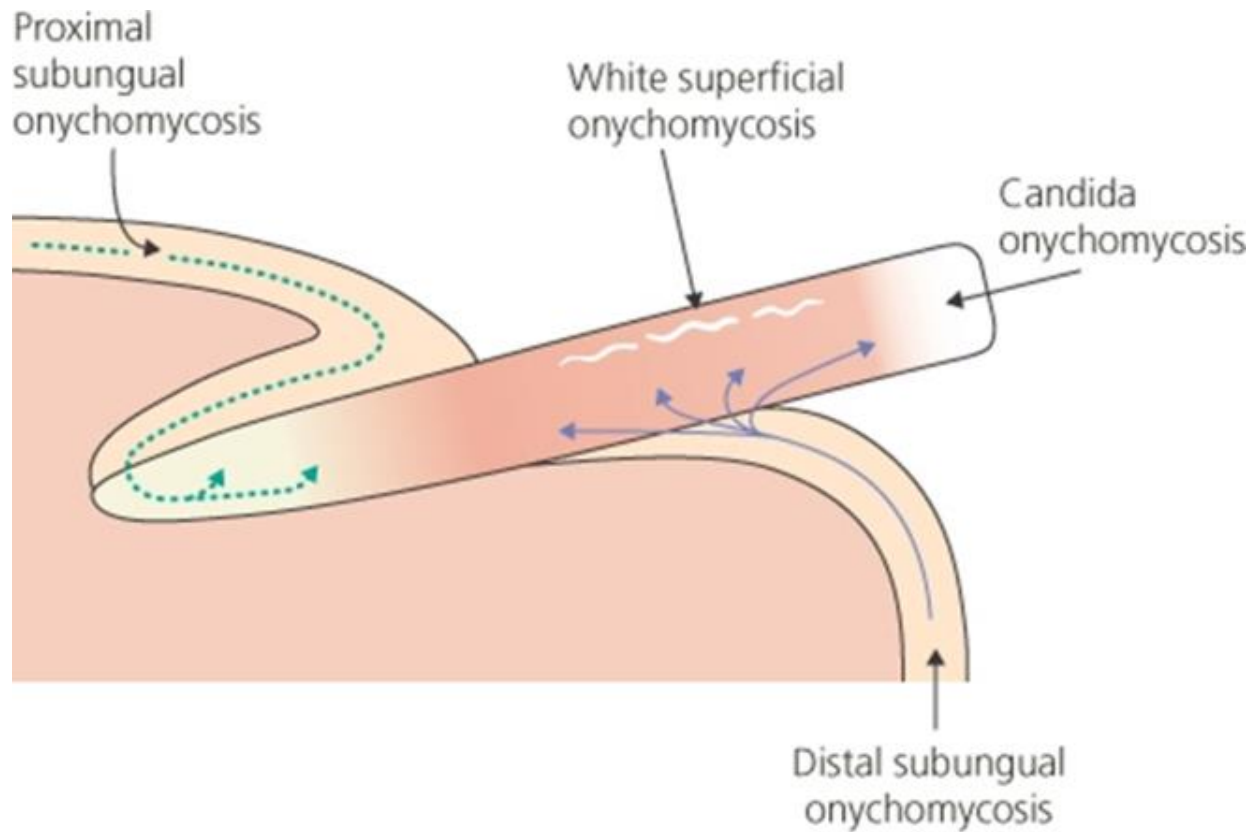


# Onycholysis: trauma

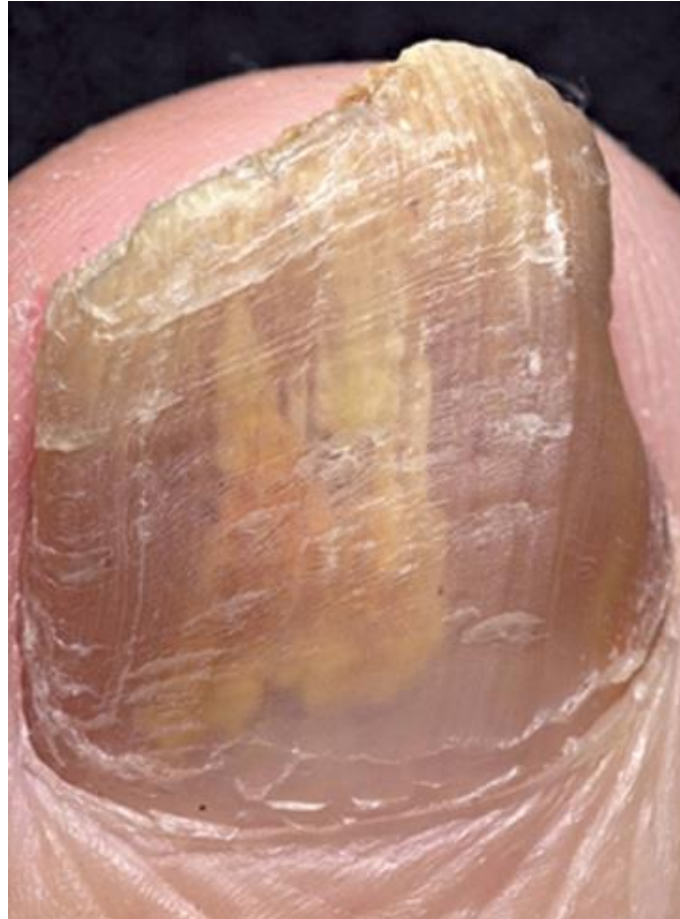


# Onychomycosis

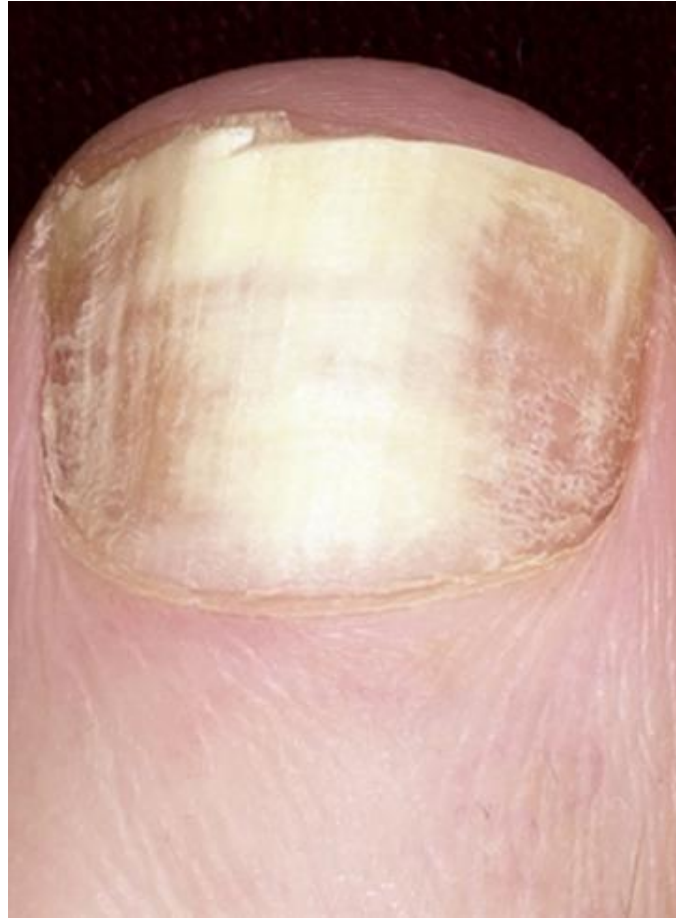
- 4 types



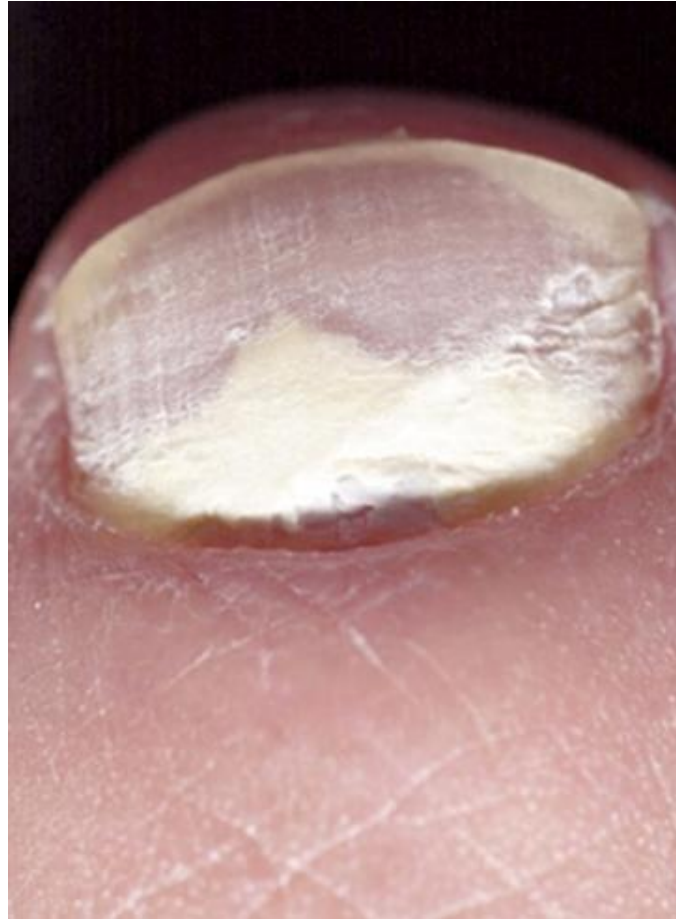
# Distal subungual onychomycosis



# White superficial onychomycosis



# Proximal subungual onychomycosis



# Treatment of onychomycosis

- Systemic antifungal drug: azole group, terbinafine
- Onychomycosis of toenails
  - Oral itraconazole
    - 200 mg PO BID for 1 week, then 3 weeks without treatment, repeated for a total of 4-6 pulses of therapy
- Onychomycosis of fingernails
  - Oral itraconazole
    - 200 mg PO BID for 1 week, then 3 weeks without treatment, then 200 mg PO BID for 1 week (2-4 pulses)





**THANK YOU**