

Hair follicle

- Cuticle
- Huxley's layer
- Henle's layer
- External sheath
- Glassy membrane
- Connective tissue layer

Hair shaft

Melanocyte

Sebaceous gland

Arrector pili muscle

Meissner's corpuscle

Free nerve endings

Pore of sweat gland

Stratum corneum

Stratum lucidum

Stratum granulosum

Stratum spinosum

Stratum basale

Papillary layer

Reticular layer

Epidermis

Dermis

Subcutaneous tissue

Sweat gland

Hair matrix

Papilla of hair follicle

Hair cuticle

Sensory nerve

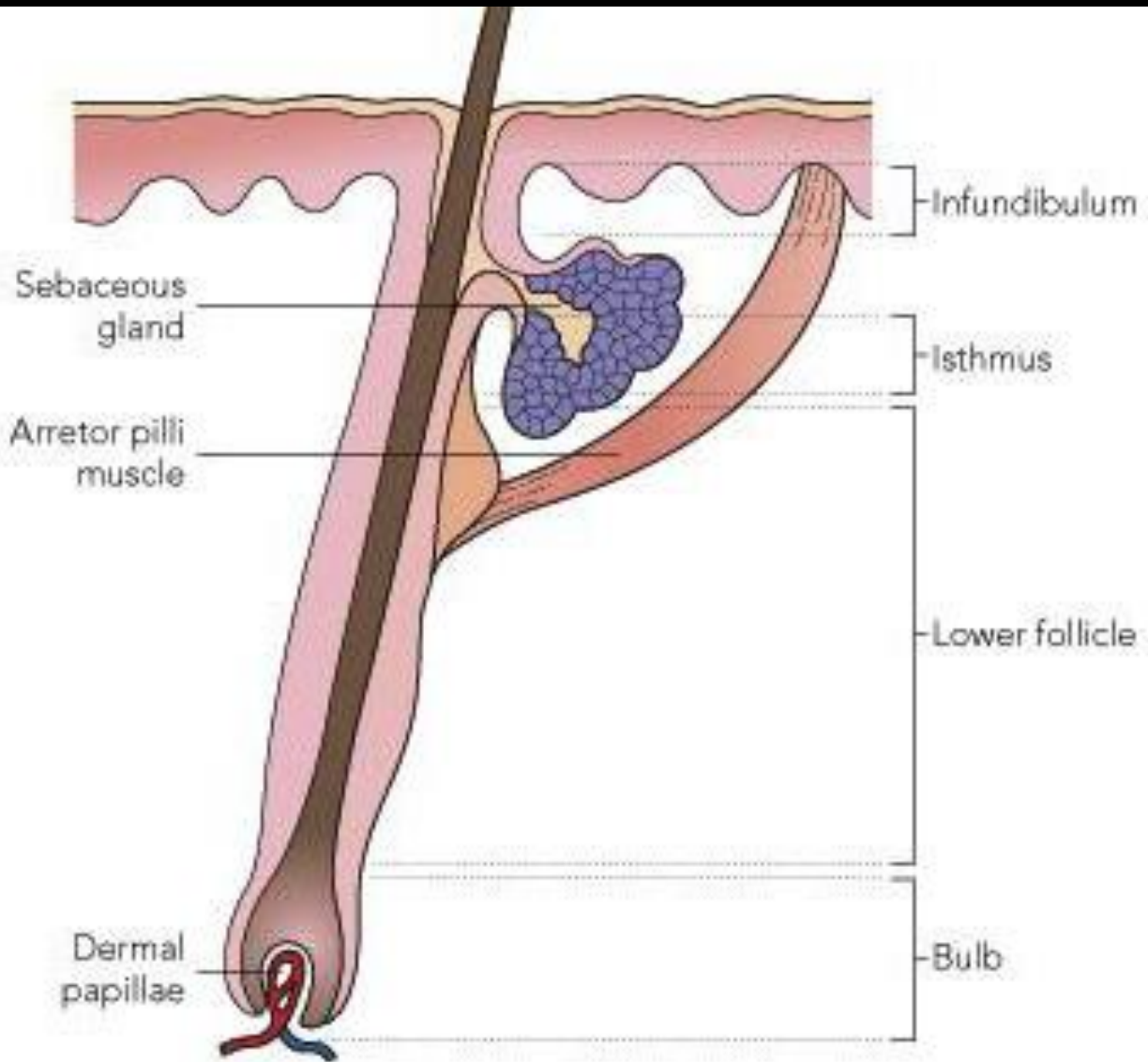
Elastic fibers

Vater-Pacini corpuscle

Artery

Motor (autonomic) nerve

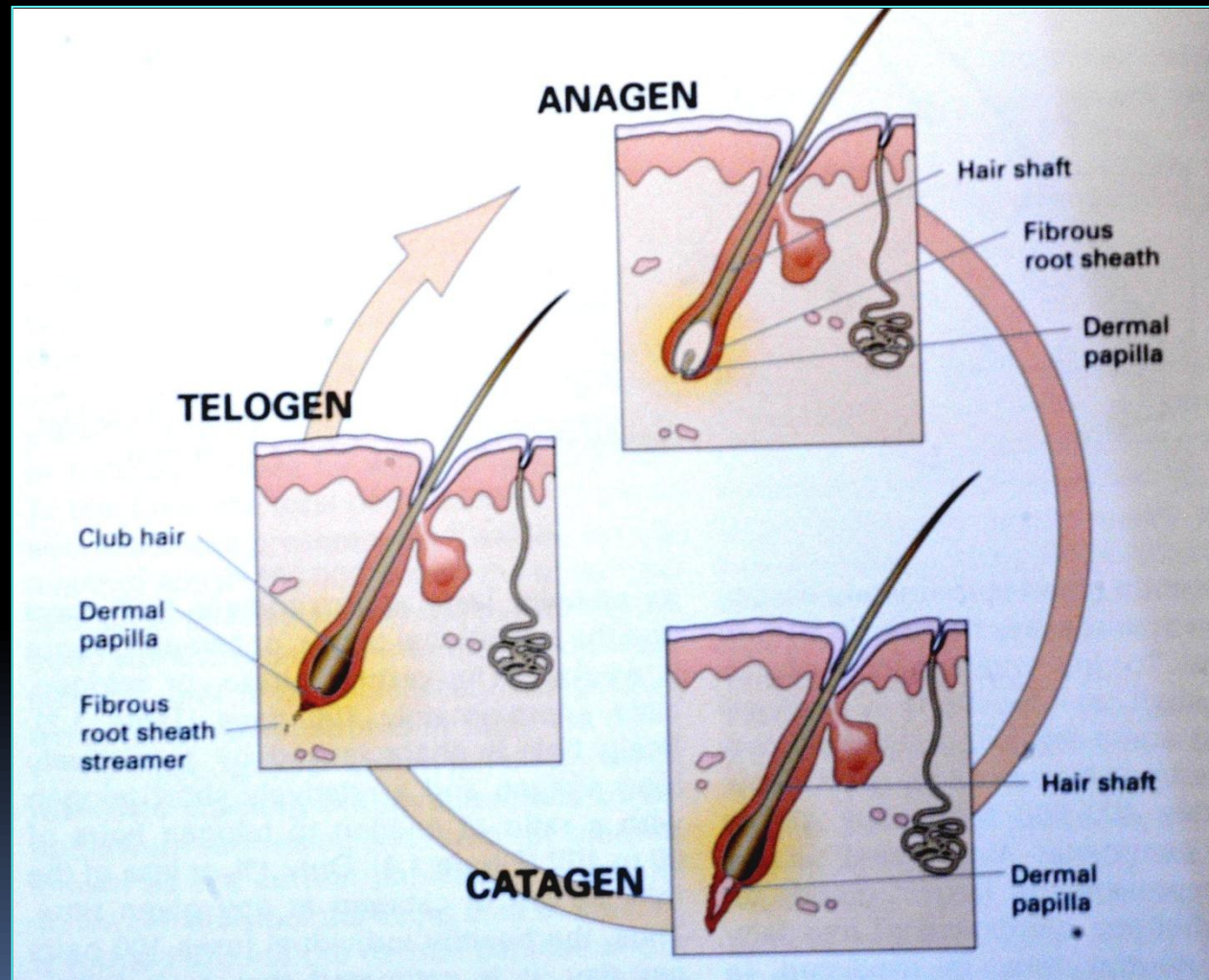
Vein



Hair Types

- **Vellous**
- **Terminal**
- **Androgen dependant terminal**

Hair Cycle



Hair growth is very dynamic



How many hairs in the body?

5 millions hairs in the body

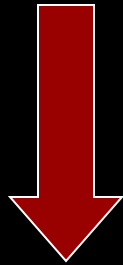
100,000 in the scalp

Growth rate?

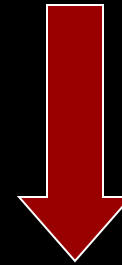
0.3mm/day for scalp hair



Alopecia



**None Scaring
(Reversible)**



**Scaring
(Irreversible)**

Nonscarring alopecia

Telogen effluvium
Anagen effluvium
Alopecia areata
Androgenetic alopecia
Hair shaft abnormalities
Trauma (e.g., traction)
Infectious disorders
(e.g., dermatophyte,
syphilis)
Systemic diseases (e.g.,
thyroid, systemic lupus
erythematosus,
iron-deficiency anemia)
Intoxications (e.g.,
vitamin A, Bismuth)
Nutritional deficiencies
(e.g., zinc, biotin)
Medications

Scarring alopecia

Developmental defects (e.g., Aplasia
cutis)
Infections (bacterial, viral, fungal)
Trauma (irradiation, thermal or caustic
burns)
Neoplastic disorders
Lichen planus (lichen planopilaris), lupus
erythematosus, morphea, scleroderma,
sarcoidosis
Keratosis pilaris atrophicans
Folliculitis decalvans
Dissecting cellulitis of the scalp
Acne keloidals
Pseudopelade
Alopecia mucinosa



Alopecia Areata



Sudden hair loss (localized or generalized)

Alopecia Areata affects up to 2%
75% : Self recovery, 2-6 m



Causes :

**30%: +ve Family history
autoimmune**

Clinical findings

- Well demarcated
- Exclamation point
- Normal scalp
- Nail: pitting, ridges



D@nderm



D@nderm



Types of alopecia areata

- Localized partial
- Localized extensive
- Alopecia ophiasis
- Alopecia totalis
- Alopecia universalis



Bad prognostic factors

- Young age
- Atopy
- Alopecia totalis, universalis, ophiasis
- Nail changes



Diagnosis

- Clinically
 - H/E: swarm bees
- 



Treatment

1. Observation
2. Intralesional Corticosteroids
3. Skin Sensitizers

Anthraline

Diphencyclopropenone (DPCP)



others

Others

- Topical steroids
- Systemic Steroids
- Cytotoxic Rx
- Phototherapy
- Minoxidil
- Hair Transplant – (NO)

Androgenetic Alopecia

(Male and Female Pattern Hair Loss)

- 
- **Androgen dependent loss of scalp hair**
 - **Androgenetic Alopecia affects up to 50% of males and 40% of females**
 - **Autosomal dominant with variable penetrance**
 - **85% : +ve family history**
- 

5 ALPHA Reductase

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graph TD; A[5 ALPHA Reductase] --> B[Testosterone]; B --> C[DihydroTestosterone (Active)]; C --> D[Miniaturization of Terminal Hairs]
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Testosterone

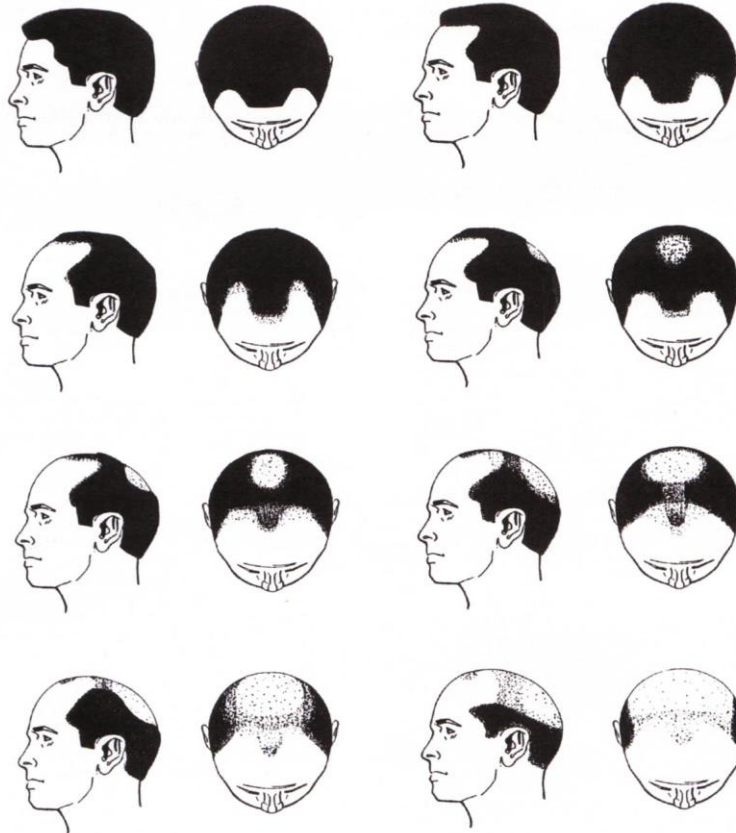
**DihydroTestosterone
(Active)**

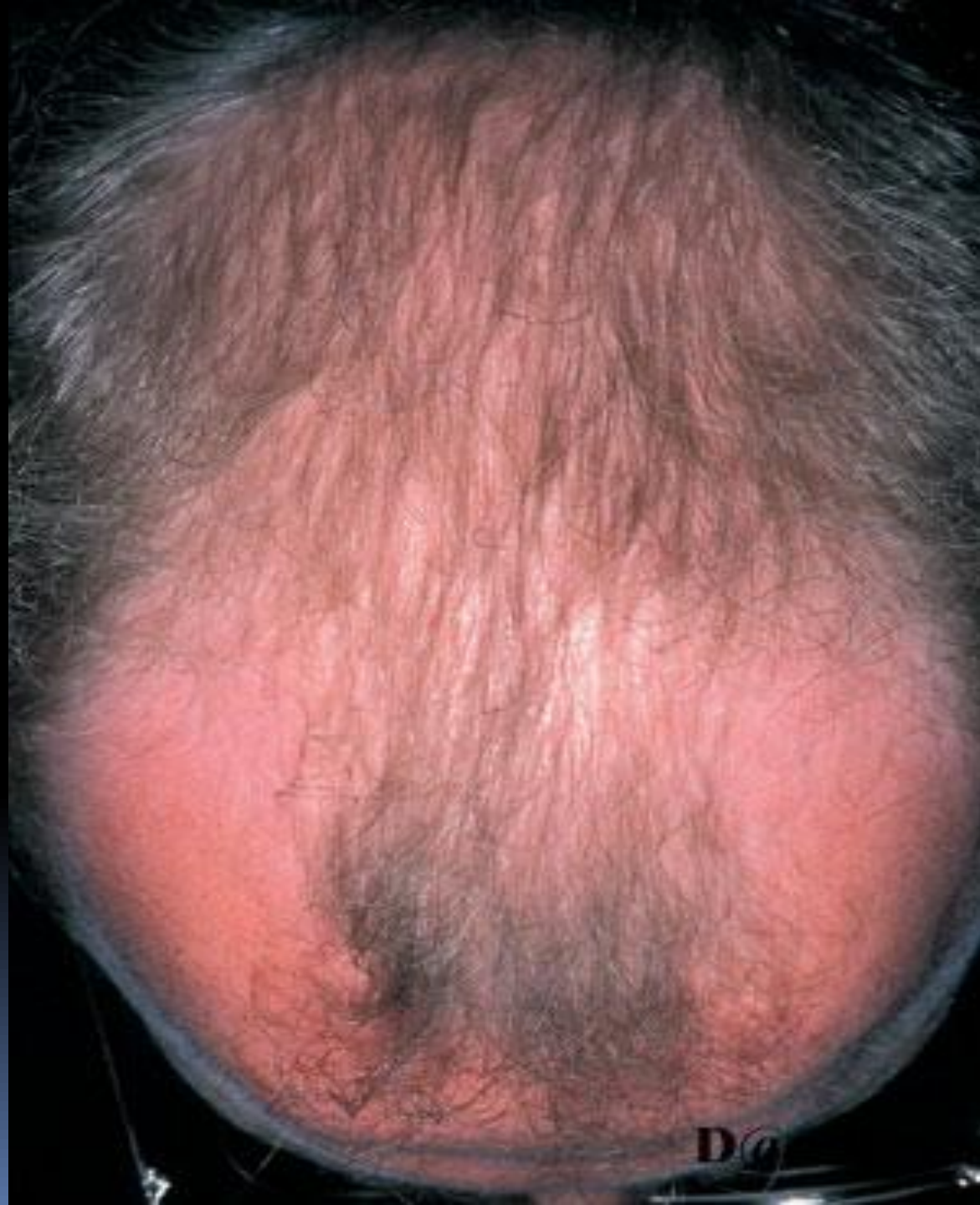
**Miniaturization of
Terminal Hairs**

Male Pattern Hair Loss

درجات تساقط الشعر

Stages of Hair Loss





Female Pattern Hair Loss



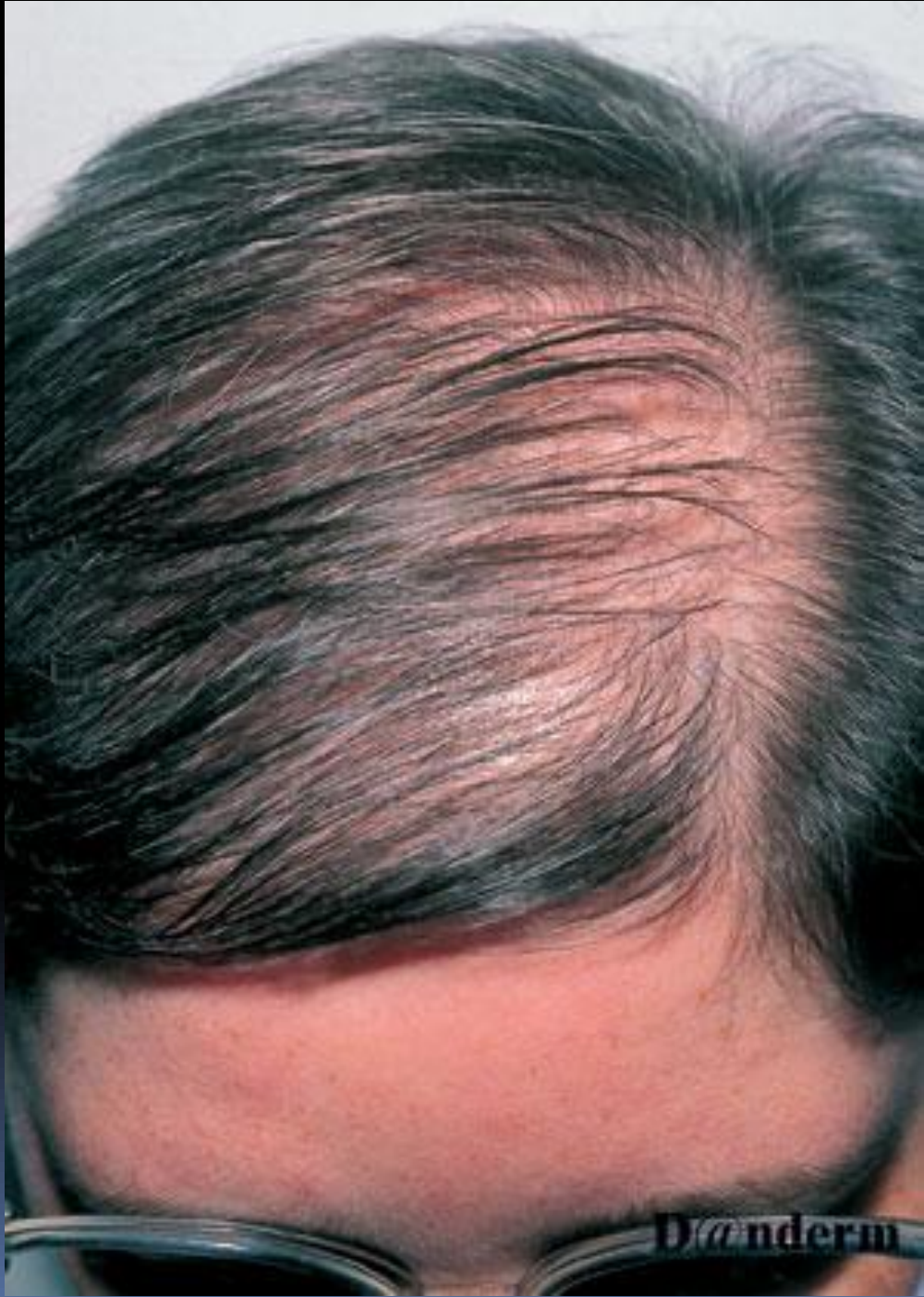
Grade I



Grade II



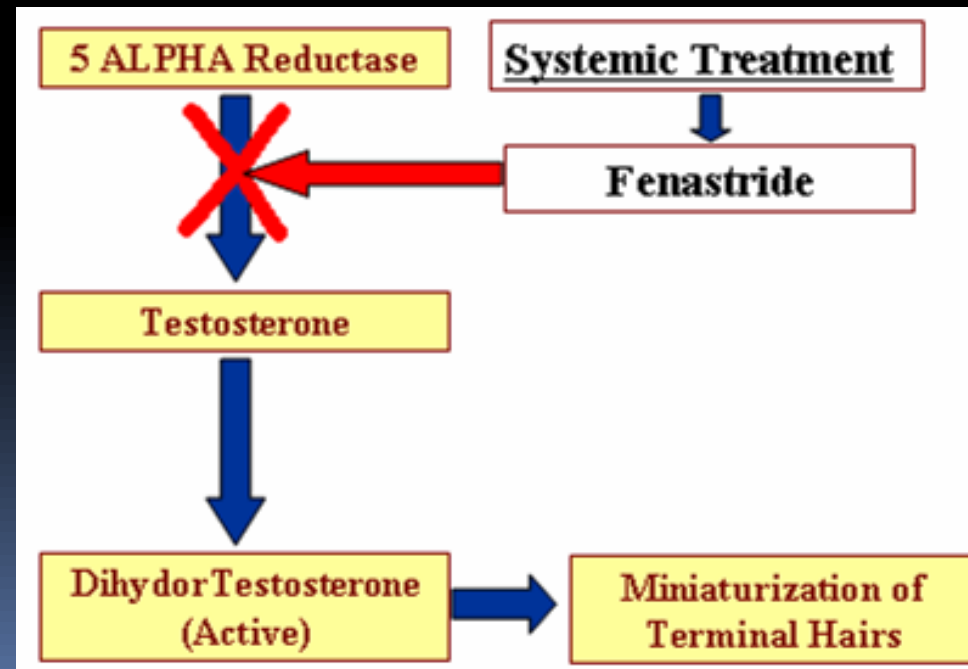
Grade III



Derm

Treatment

- **Topical:** Neoxidil 2%- 5% solution
- **Systemic:**
Fenestrone
Spironolactone

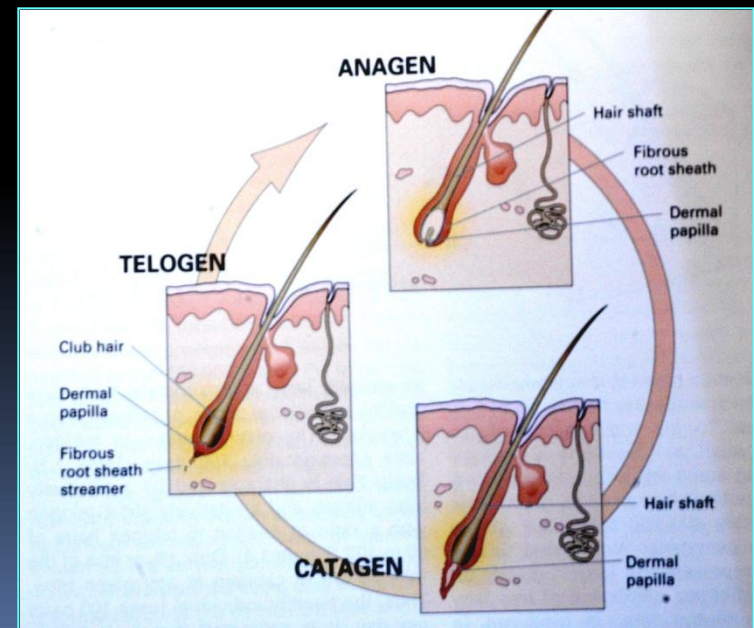


Telogen effluvium

Chronic alopecia

Reversible (but may become chronic)

3-4 months



Causes

Physiologic

- Physiologic effluvium of the newborn
- Postpartum effluvium

Injury or stress

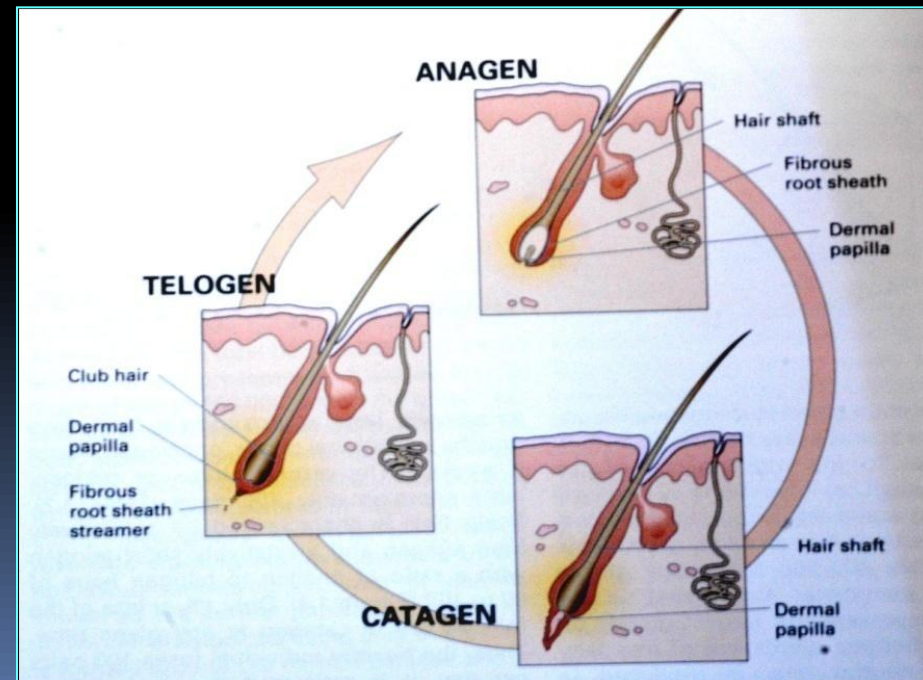
- High fever
- Severe infection
- Severe chronic illness
- Major surgery
- Hypo- or hyperthyroidism
- Crash diets, precipitous decrease of calories or protein (Fig. 11.38)
- Iron deficiency
- Essential fatty acid deficiency
- Biotin deficiency
- Drugs (Table 11.8)

Treatment

- Remove or treat the cause
- Minoxidil 2% Solution

Anagen effluvium

- Always related to cytotoxic chemotherapy
- Acute and severe alopecia
- Mostly reversible but not always



Scarring Alopecia

- SLE—DLE
- LP
- Sarcoidosis
- Leprosy
- Kerion - Favus
- Trauma









EXCESSIVE HAIR GROWTH

Hirsutism

- Excess growth of androgen-dependent hair in a male pattern
- Female
- **Causes:** Adrenal, pituitary, Ovarian (PCO), Turner syn., iatrogenic (drug), Idiopathic (the commonest)



Hypertrichosis

- Excess growth of hair in a non-androgenic pattern
- Both sex
- **Causes:**

Congenital

Acquired: drug, porphyria,
endocrine (thyroid, anorexia nervosa)

