![King Saud University logo] جامعة الملك سعود / King Saud University / 1957

432 Teams

Dermatology

Epidermis
Dermis
Fatty Tissue
Blood vessels
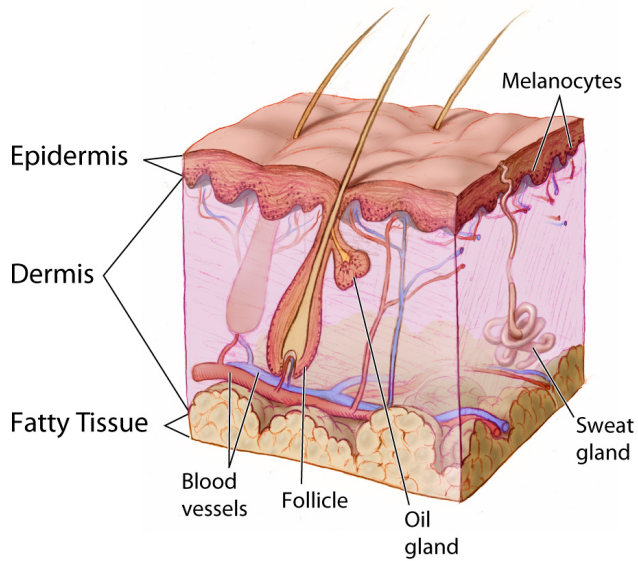Follicle
Oil gland
Sweat gland
Melanocytes

Hair disorders

Color Code: *Original*, *Team's note*, *Important*, *Doctor's note*, *Not important*, *Old teamwork*
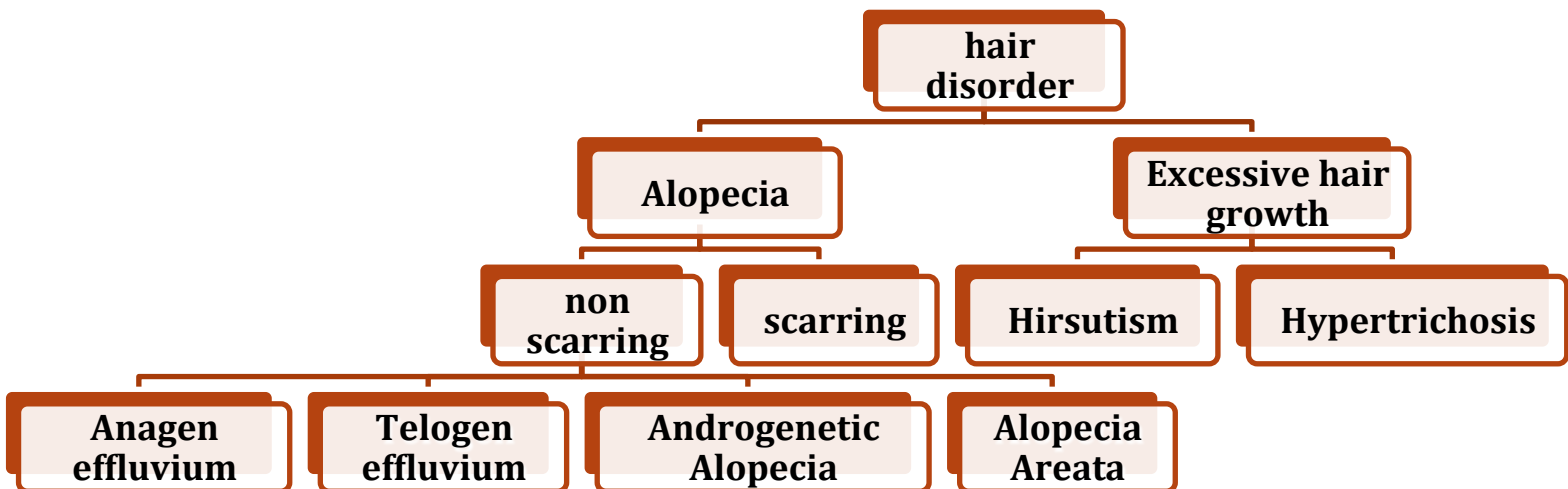
Done by: **Badr Almosned**

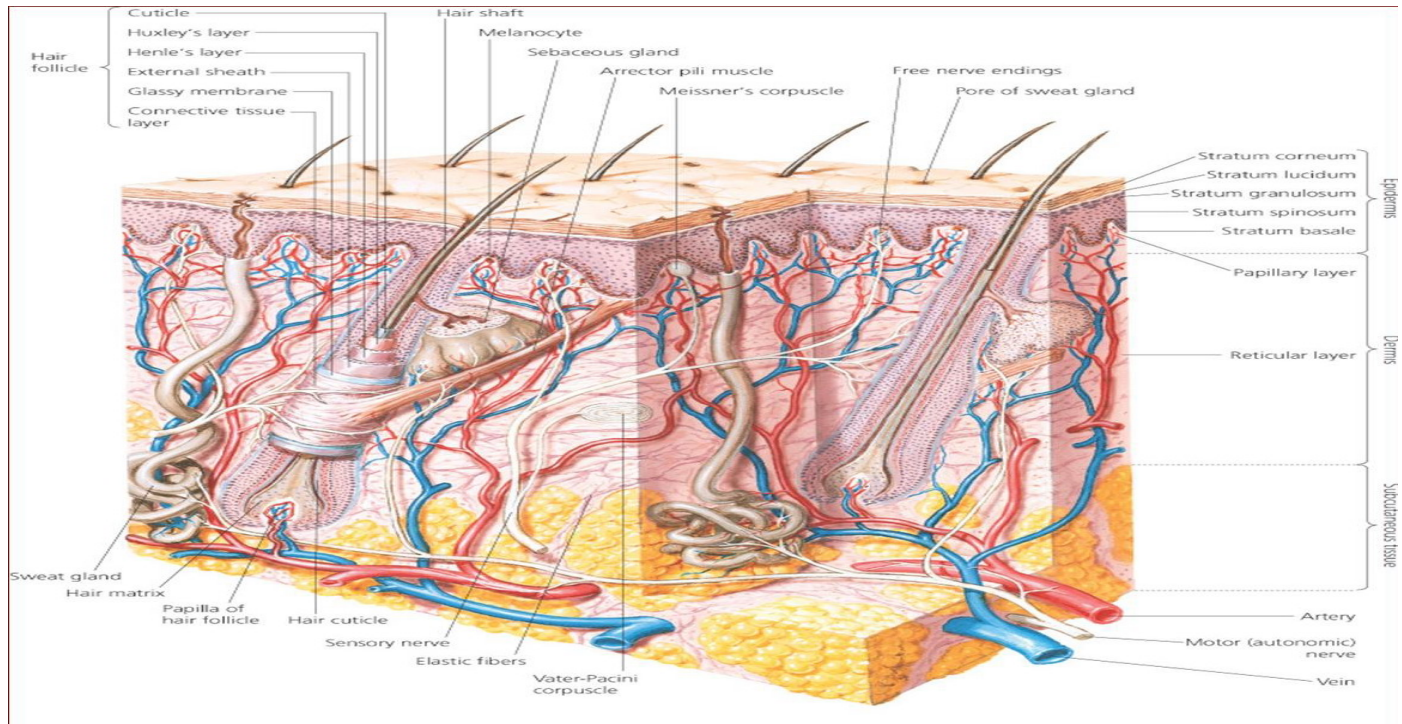*Reviewer:* **Muath ALSoliman**

Team Leader: **Basil Al Suwaine**

1

Objectives

1-   Normal anatomy of hair follicle and hair cycle.

2-   Causes, features and management of non scarring alopecia.

3-   Causes and features of scarring alopecia.

4-   Causes and features of Excessive hair growth.
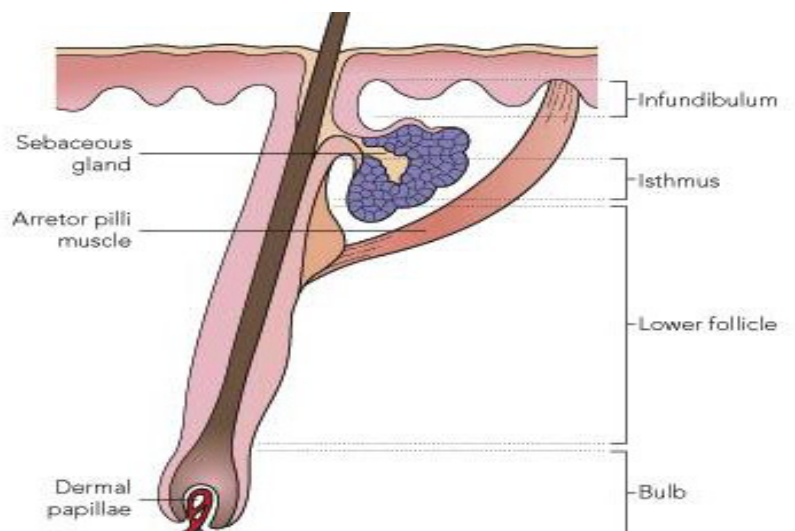
- ## *Anatomy of hair follicle:*

- How many hairs in the body?

5 millions hairs in the body,

100,000 in the scalp.

- Growth rate:
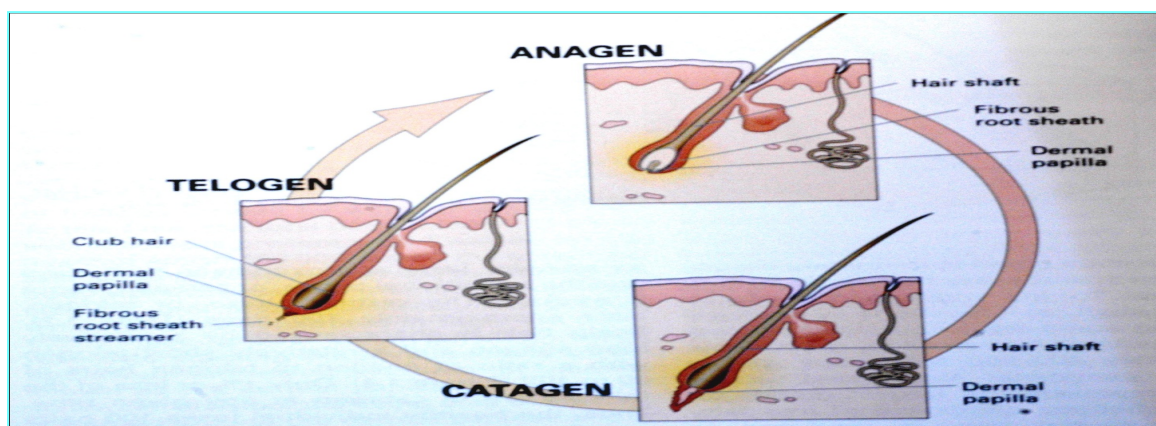
0.3mm/day for scalp hair

1cm/month

- ## *Hair type:*

  - Lanugo: covering fetus and newborn baby.
  - Vellous: thin and less color.
  - Terminal: thick and dark color, seen for example, on scalp, eyebrow or axilla.
  - Androgenic hair (Grow during & after puberty in males & females (e.g. axilla, pubic area).

- ## *Hair Cycle:*

Phase	Region	Time	Description
Anagen	Scalp	2-5 years	Growing of hair. The length of this phase determines the length of the hair
Catogen	Scalp	2 weeks	A short phase of conversion from active growth to the resting phase with degradation of hair follicles.
Telogen	Scalp	2-3 month	A resting phase at the end of which the hair is shed and new hair grow.

Alopecia

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

- ***Non-scarring alopecia: (reversible)***

1- Alopecia Areata:
- Sudden hair loss (localized orgeneralized).
- Alopecia Areata affects up to 2%.
- 75% Self recovery with 2-6 months.
- 30% +ve Family history.
- Autoimmune.

o *Clinical findings:*
- Well demarcated non-scarring hairless patch.
- Exclamation point. (!)
- Nail: pitting, ridges (indicating severe alopecia).

o *Types of alopecia areata:*
- Localized partial (1-2).
- Localized extensive (more than 2).
- Alopecia ophiasis (occipital and paraital area).
- Alopecia totalis (Total hair loss in the scalp).
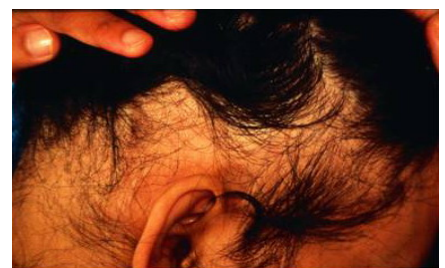- Alopecia universalis (whole body).

Alopecia universalis

o *Bad prognostic signs:*
- Young age.
- Atopy.
- Alopecia totalis, universalis, ophiasis.
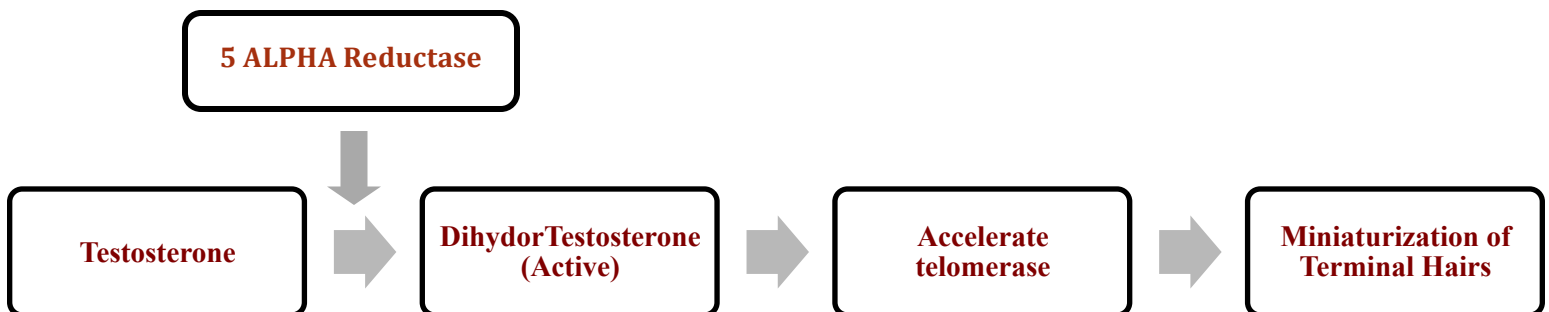- Nail changes.

Alopecia ophiasis

o ***Treatment:***
- Observation.
- Intralesional Corticosteroids.
- Skin Sensitizers:
  – Anthraline.
  – Diphencyclopropenone (DPCP).
- Others:
  – Topical steroids & Minoxidil.
  – Systemic Steroids.
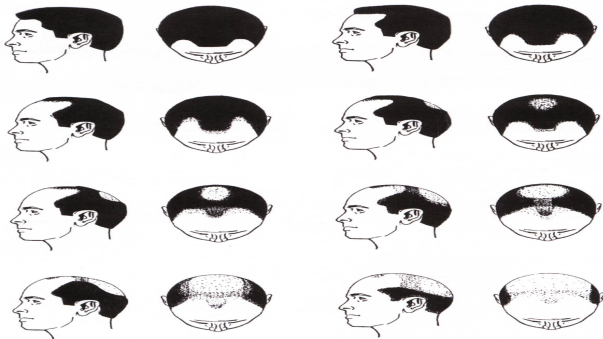 – Cytotoxic Rx.
  – Phototherapy (PUVA).

Manegment (from doctor)		
Localized		
	Children	**Adults**
First	Topical steroids	Intralesional Corticosteroids
Second	Skin Sensitizers	Skin Sensitizers
Totalis		
First	Skin Sensitizers	
Second	Systemic Steroids	
Universalis		
Skin Sensitizers + Systemic Steroids		

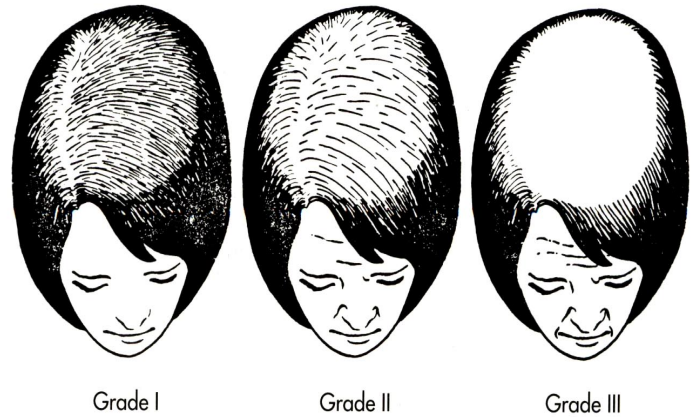## 2- Androgenetic Alopecia (Male and Female Pattern Hair Loss)
- Androgen dependent loss of scalp hair.
- Androgenetic Alopecia affects up to 50% of males and 40% of females.
- Autosomal dominant with variable penetrance.
- 85% +ve family history.

5 ALPHA Reductase

Testosterone → **DihydorTestosterone (Active)** → **Accelerate telomerase** → **Miniaturization of Terminal Hairs**

**Male Pattern Hair Loss (Hamilton stages)**   **Female Pattern Hair Loss (ludwig)**

- **Male pattern hair loss:** It starts with thinning; it is called fronto- parietal recession and then it goes upwards. It usually spares the Temporal and occipital areas.
- **Female pattern hair loss:** There is no fronto-parietal recession and no frontal recession, so the frontal hairline is preserved. There is never complete boldness, there is thinning only. It is more common in postmenopausal women.
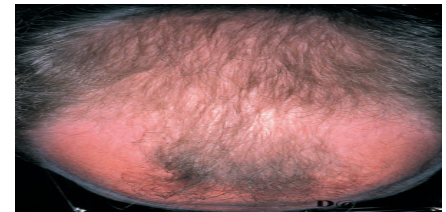
o *Treatment:*
   - Topical:
      - Minoxidil 2%- 5% solution.
   - Systemic:
      - Finastride.
      - Spironolactone.
      - OCP.
   - Hair transplant.
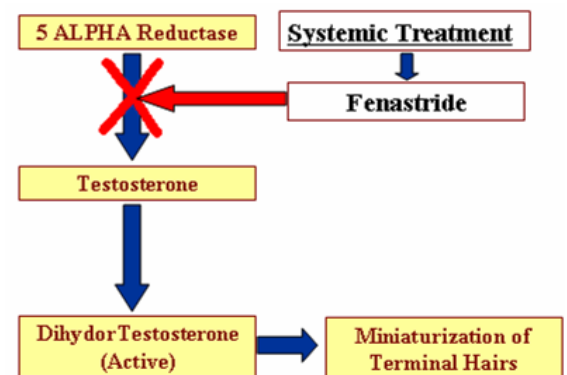
3- Telogen effluvium:
- Acute alopecia.
- Reversible (but may be become chronic).
- 3-4 months from trigger.

o ### 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
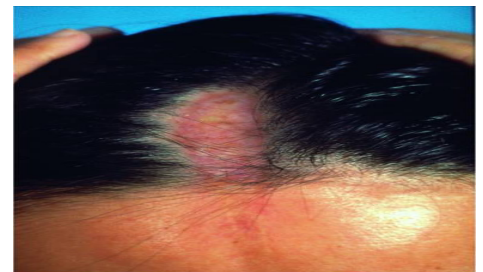   Biotin deficiency
    Drugs (Table 11.8)

o ### Treatment:
- Remove or treat the cause.
- Minoxidil 2%-5% Solution.

4- Anagen effluvium:
- Always related to cytotoxic chemotherapy.
- Acute and severe alopecia.
- Mostly reversible but not always.
- 2-3 week from trigger.

- ### Scarring alopecia: (irreversible)
- SLE—DLE.
- LP.
- Sarcoidosis.
- Leprosy.
- Kerion.
- Trauma.

Excessive hair growth

Type	*Hirsutism*	*Hypertrichosisause*
Defination	Excess growth of androgen-dependent hair in a male pattern affecting Female.	Excess growth of hair in a non-androgenic pattern affecting both sex.
Cause	Idiopathic (the commonest). Adrenal, pituitary. Ovarian (PCO). Turner syn. iatrogenic (drug).	Congenital. Acquired: drug, porphyria, endocrine (thyroid , anorexianervosa).
Tretment	Underline cause + laser	
Pictures		

Summary (431 team)			
Disease	*feature*	*Clinical Findings*	*Treatment*
Alopecia Areata	Reversible. 30% of Down syndrome. 75% self recovery.	Well demarcated. Exclamation point. Normal scalp.	▪ Adults: Localized: Intralesional steroids. Generalized: sensitizers. ▪ Children: topical steroids.
Androgenetic Alopecia	50% of males. 40% of females. Autosomal dominan.	▪ Males: fronto- parietal recession. ▪ Females: After menopause. No baldness.	Minoxidil 2%-5% solution. Fenastride.
Telogen Effluvium	From any chronic disease.	Chronic.	Treat the cause + Minoxidil.
Anagen Effluvium	From chemotherapy.	Acute complete hair loss, but reversible.	

MCQs

1- A 40 year old lady with lymphoma on chemotherapy. Soon after starting chemotherapy she lost all of her hair. In what phase of hair cycle, the most likely the defect in her hair?

A. Anagen.
B. Catagen.
C. Telogen.
D. Unknown.

2- A 31-year-old obese male patient who did diet and lost 35Kg of his weight over 4 months presented with diffuse hair fall.
What is the most likely diagnosis ?

a. Androgenetic alopecia.
b. Telogen effluvium.
c. Anageneffluvium.
d. Alopecia areata.

3- 32 years old male presented to the dermatologist complaining of hair loss. On Examination, there were multiple well-defined smooth patches over the vertex area of his scalp.
Which of the following could be a bad prognostic sign for the condition he is suffering from?

A- History of atopy.
B- Mucus membranous involvement.
C- Diabetes mellitus.
D- Rapid progression of the disease.

Answer:
1-A.
2-B.
3-A.