

DISORDERS OF HAIRS

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objective

- ❑ Hair; function, anatomy, growth cycle and types.
- ❑ Hair disorders Classification.
- ❑ Alopecia;
 - I. Circumscribed alopecia;
 1. Alopecia areata.
 2. Trichotillomania.
 3. Tractional alopecia.
 - II. Diffuse alopecia;
 1. Telogen effluvium.
 2. Androgenic alopecia.
- ❑ Hypertrichosis.
- ❑ Hirsutism.

Hair

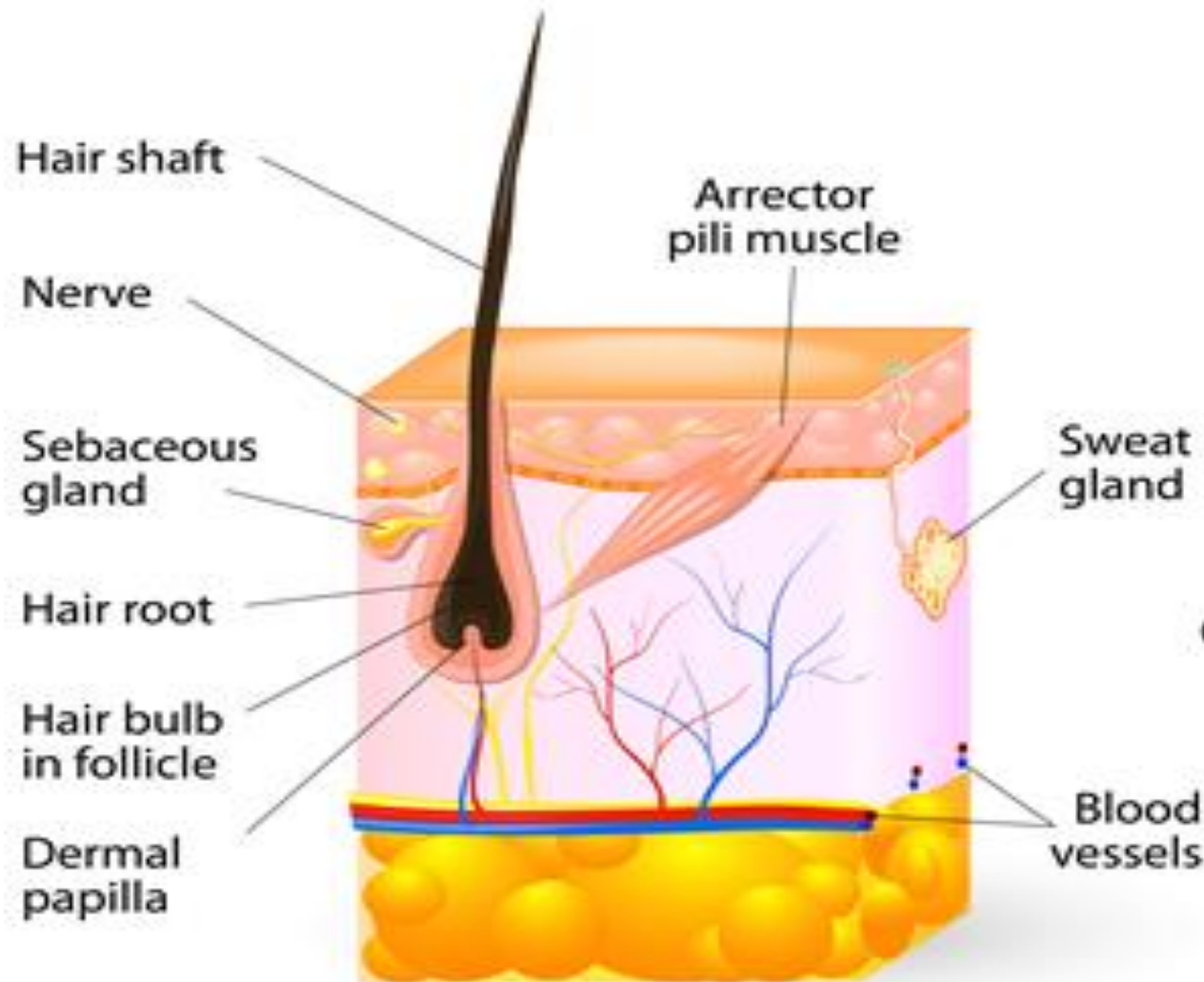
- ❑ Hair is one of the characteristic features in the mammals.
- ❑ Human skin contain about 5 million of hair follicles.
- ❑ Human hair has a various functions as;
 1. Protection against external stimuli.
 2. Sebum and apocrine sweat production.
 3. Thermo-regulation.
 4. Social and sexual interaction.

HAIR ANATOMY

□ Hair is consist of follicle and shaft.

□ Hair follicle is essential for the generation of the hair.

□ Hair growth has continuous growth and rest consequence.



Hair Growth Cycle

Each hair follicle goes through 3 stages in the growth cycle;

1. Anagen

(growth phase)

Nourishment of hair follicle via blood supply enables hair growth.

3 years



2. Catagen

(transition phase)

Hair follicle detaches from nourishing blood supply.

3 Weeks



3. Telogen

(resting phase)

Without nourishment, the hair dies and falls out.

3 months



- The average scalp hairs about **1 000 000** hairs.
- **90-95%** of the scalp hairs are **in Anagen** phase while **5-10%** are in **Telogen** phase.
- Upto **100** Telogen hairs are lost each day from the head & about same number enter Anagen.
- Scalp hair grows **0.3 – 0.4 mm/day**.

Types of hair

Lanugo

Fetal hair

Short,
fine,
Unpigmented
Before puberty

Vellus

Terminal

Long, coarse,
pigmented
arises from vellus
hair



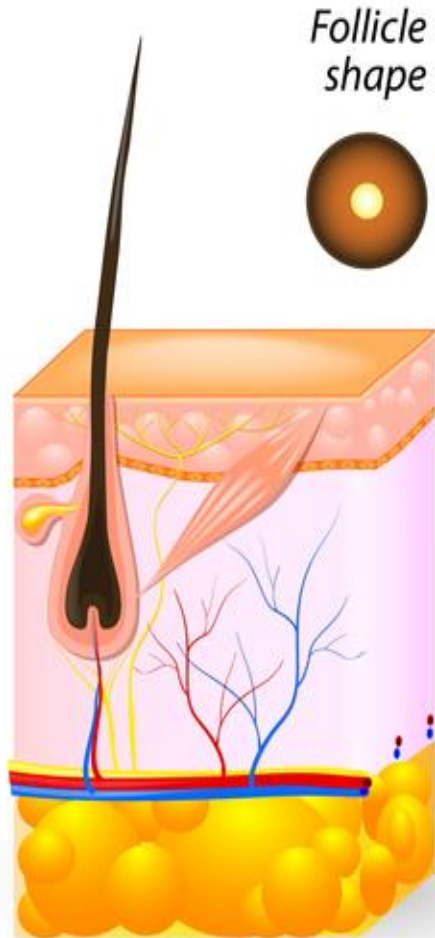
shed in utero
or in first
7 week of life.



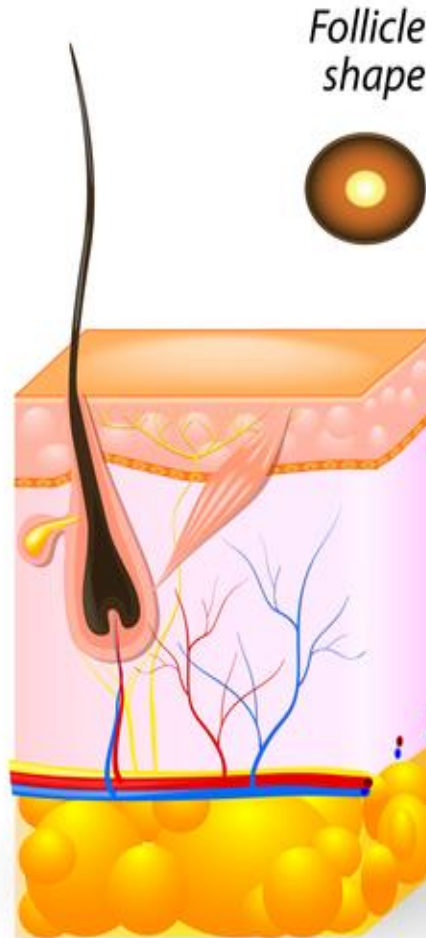
on the head, beard,
axillary and pubic
areas.

SHAPE OF THE HAIR

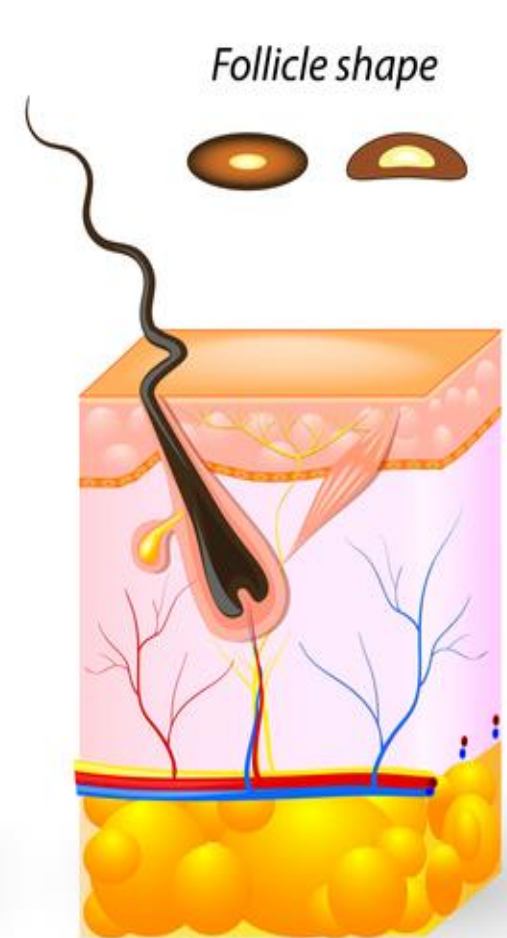
Straight hair



Kinky hair



Curly hair



HAIR DISORDERS

Classification of the hairs disorders

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Can be classified:

1. Hair loss disorders;

Alopecia.

2. Excessive hair growth disorders;

Hirsutism & hypertrichosis.

I. Hair loss disorders;

ALOPECIA

Alopecia

Alopecia means loss of hair in areas where The hair normally is present.

Classification of Alopecias;

I. Circumscribed (Patchy Alopecia);

1. Non-Scarring Alopecias.
2. Scarring Alopecias.

II. Diffuse Alopecia.

CAUSES

I. Circumscribed (Patchy Alopecia)

1. Non-scarring;

1. Alopecia areata.
2. Trichotillomania.
3. Traction alopecia
4. Moth-eaten alopecia.
5. T.capitis (Gray patch & Black dots).

I. Circumscribed (Patchy Alopecia)

2. Scarring;

1. **Physical:** trauma / Chemicals.
2. **Infection;**
 - a. **Fungal;** T. capitis: Kerion & Favus.
 - b. **Viral;** Herpes zoster.
 - c. **Bacterial :** carbuncle & Lupus vulgaris.
3. **Auto-immune;** Lichen planus.
4. **C.T. Diseases ;** DLE.
5. **Neoplasia;** BCC, SCC.

Alopecia

II. Diffuse Alopecia:-

- 1. Androgenetic alopecia.**
- 2. Telogen effluvium.**
- 3. Anagen effluvium.**
- 4. Endocrine causes.**
- 5. Nutritional disorders.**
- 6. Chronic illness.**
- 7. Drugs;** chemotherapy – Immunosuppressive (cyclosporine) – Cytotoxic (Cyclophosphamide) & Excess vitamin A.

**i. Circumscribed
(Patchy)
Alopecia**

1. ALOPECIA AREATA



ALOPECIA AREATA

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Its a common asymptomatic non-scarring alopecia characterized by sudden onset of hair loss in a sharply defined, usually round patches.

Etiology :

Exact cause is unknown but some factors are implicated which includes:

- 1.** Genetic factors.
- 2.** Hair-specific autoimmune disease.
- 3.** Psychological & emotional factors.

Alopecia areata – extensive



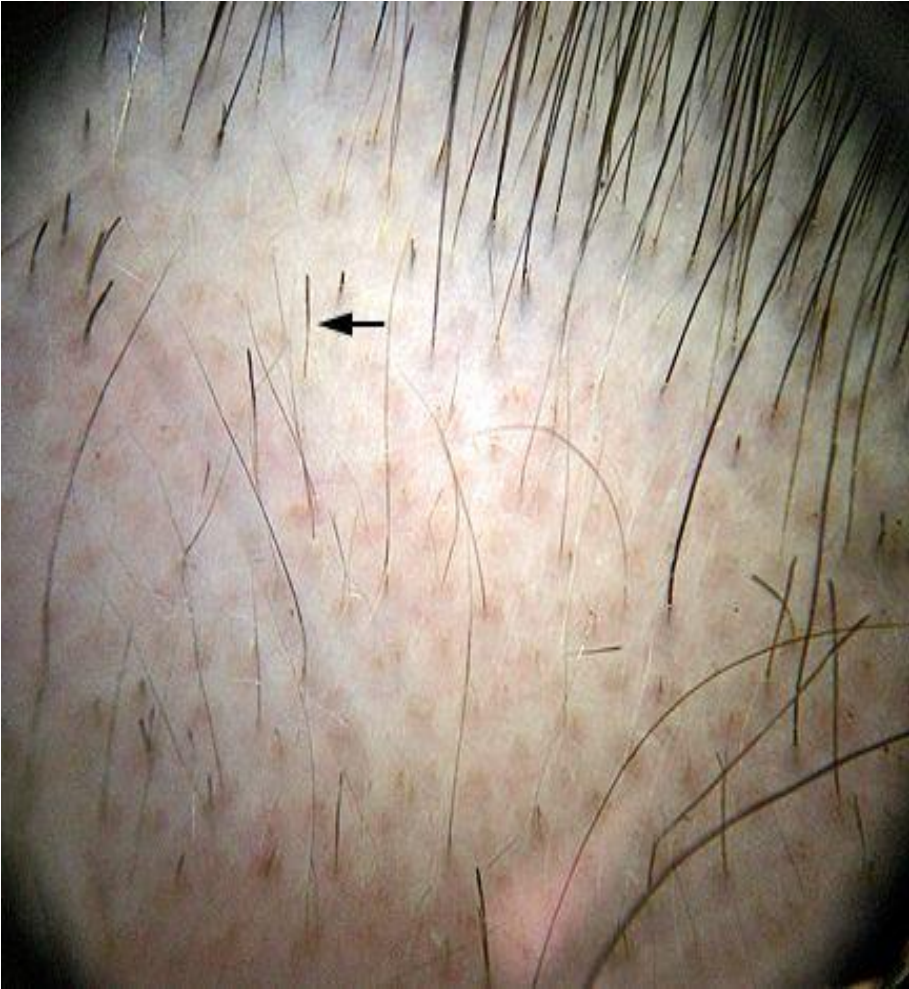
Alopecia areata – single patch



Clinical features:

- **AA** commonly presents as round or oval non scarring hair loss patches .
- Affected skin is **smooth, non-Scally** and no crusts.
- Usually single but may be multiple.
- Commonly affect the scalp, BUT Any hair-bearing surface can be affected e.g beard, moustache, eyebrows or eyelashes.
- **Exclamation mark** hairs (hair with broad distal end and thin proximal end) can be seen.
- **Nail pitting** may be seen in **10-60%** pts. It may affect one or all the nails.

Exclamation mark



Nail pitting



Classification

1. **Patchy AA**; patch or patches devoid of hair in the scalp (**commonest**).
2. **Alopecia totalis**; loss of the whole scalp hair.
3. **Alopecia universals**; loss of the whole hair from the scalp & body surfaces.
4. **Ophiasis**; loss of hair along the periphery of the temporal or occipital scalp.



**Patchy Alopecia areata
in the scalp**



**Patchy Alopecia areata
in the beard area**

OPHIASIS



Medscape www.medscape.com



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Source: Dermatol Nurs © 2007 Jansari Publications, Inc.

A.UNIVERSALIS



A.TOTALIS



prognosis

The course is **unpredictable**; recovery may be complete or partial but the following features is considered as **poor**

prognostic factors:

1. Family history of AA.
2. Young age at onset.
3. Autoimmune disease e.g: thyroid disease, vitiligo, DM-I
4. Nail changes.
5. History of Atopy.
6. Extensive hair involvement.
7. Ophiasis.
8. Eye lashes or eyebrows involvement.

Differential Diagnosis;

1. **Tinea capitis.**
2. **Trichotillomania.**
3. **Tractional alopecia.**
4. **Secondary syphilis.**

Treatment

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Wide range of treatments is available & various combination of these can be used:

- Topical or intraregional glucocorticoid.
- Topical irritants.
- Topical minoxidil 5% solution.
- Topical anthralin by short contact treatment.
- Topical immunotherapy.
- Topical or oral photo chemotherapy (topical or PUVA).
- Systemic as **cyclosporine**.

2. Trichotillomania



Hair Loss in Children



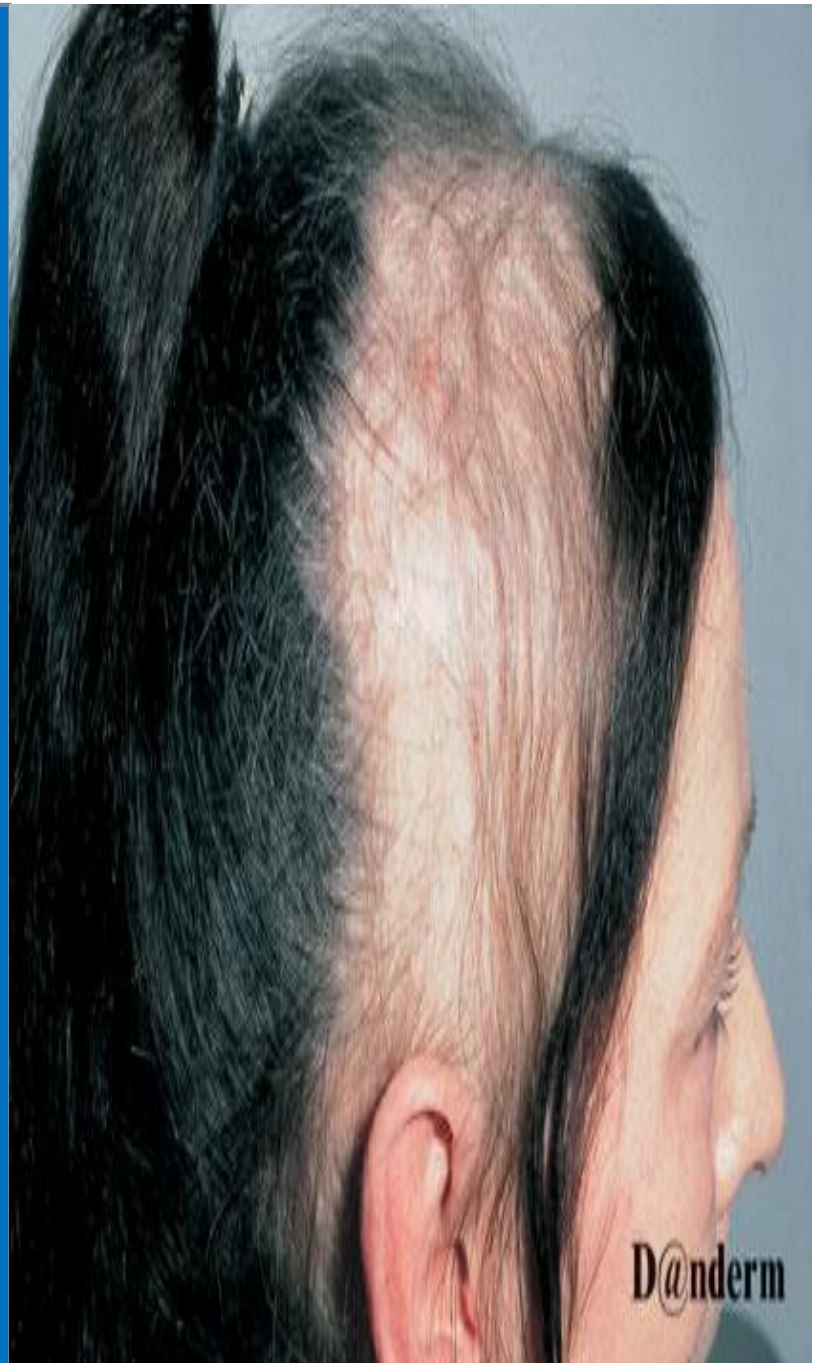
A condition called trichotillomania is common among children.

Trichotillomania

- Trichotillomania is pulling out of his or her own hair resulting in patchy or full alopecia.
- Often associated with **psychological stress** or a **personality** disorder.
- **Scalp** is the most frequent site but eyebrows, eyelashes and pubic hair may be involved.
- More **common in female** than male pt.
- Onset usually early in **childhood to adolescence**.
- O/E; patch of alopecia **have irregular border** & contain hairs of varying lengths.



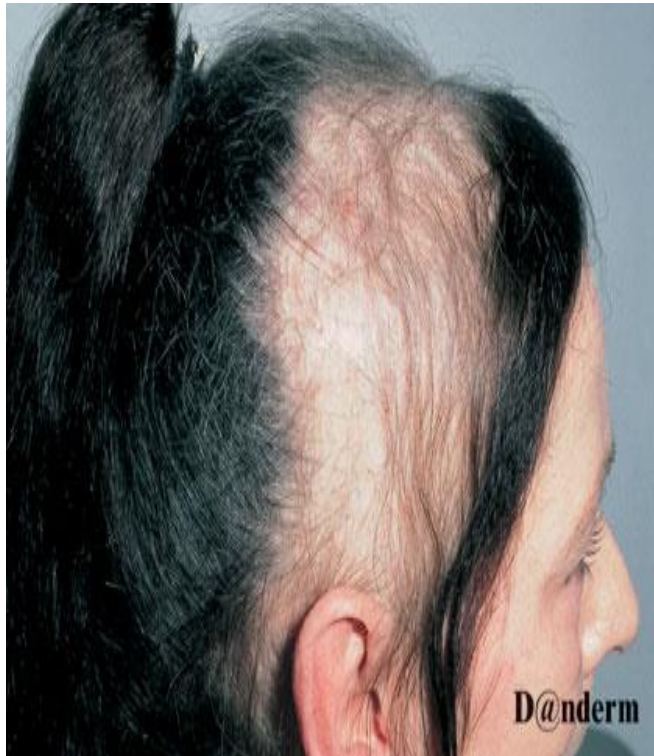
3. Tractional Alopecia



Tractional (cosmetic) alopecia

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Patchy non scarring alopecia produced by certain hairstyles, hair rollers, or hot hair-straightening combs in an area corresponding exactly to the stressed hair.



Avoid hairstyling practices
and products that can
damage hair.



ii. Diffuse Alopecia

1. Telogen effluvium



D@nderm

Telogen effluvium



- When **large numbers of hairs** of the scalp enter Telogen phase, the condition called telogen effluvium.
- Its **non-inflammatory** form of diffuse but not total hair loss.

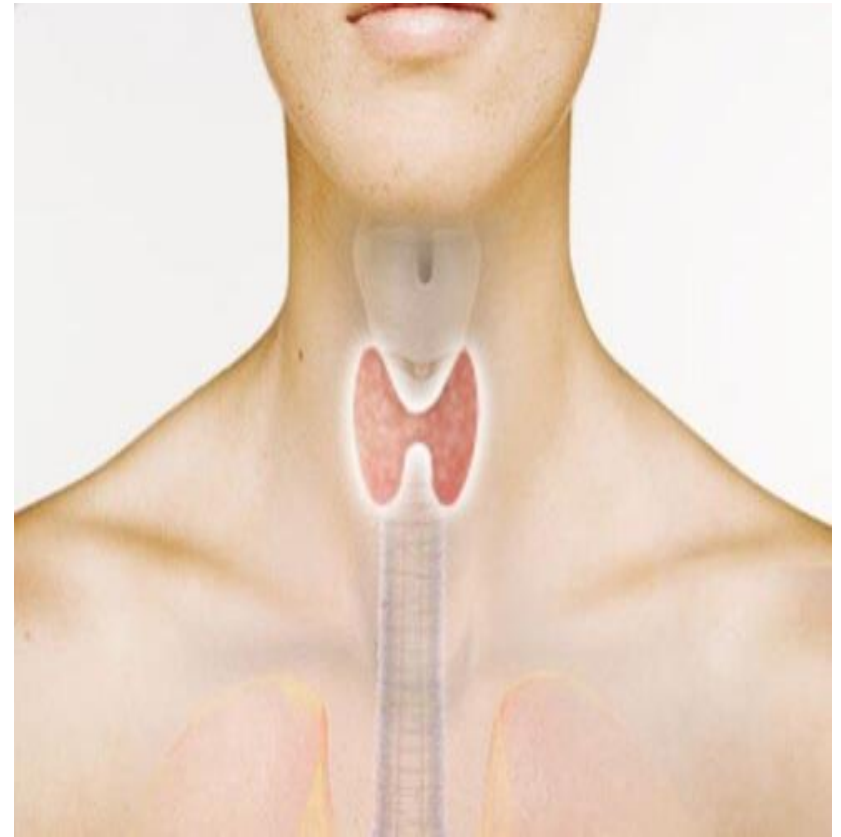
Causes:

1. Physiological causes; e.g. shedding of the newborn & postpartum.
2. Psychological stress.
3. Iron deficiency.
4. Severe infection & post febrile illness (e.g; malaria).
5. Chronic illness e.g; HIV, SLE, Hyper or Hypothyroidism, etc.
6. Post surgical.
7. Drugs: retinoids, anticoagulants, antithyroid, anticonvulsant, b.blockers..).

Psychological stress.



Hypo or Hyperthyroidism



Telogen Effluvium





Spinach



Eggs and Dairy Products



Carrots



Oat



Sweet Potatoes

Foods That Prevent Hair Fall



Chicken



Nuts



Yogurt



Strawberry



Foods rich in Vitamin-C

2. Androgenic Alopecia



Androgenic alopecia



Is an androgen-dependent hereditary hair loss seen more commonly in **males** than in females.

Clinical pictures:

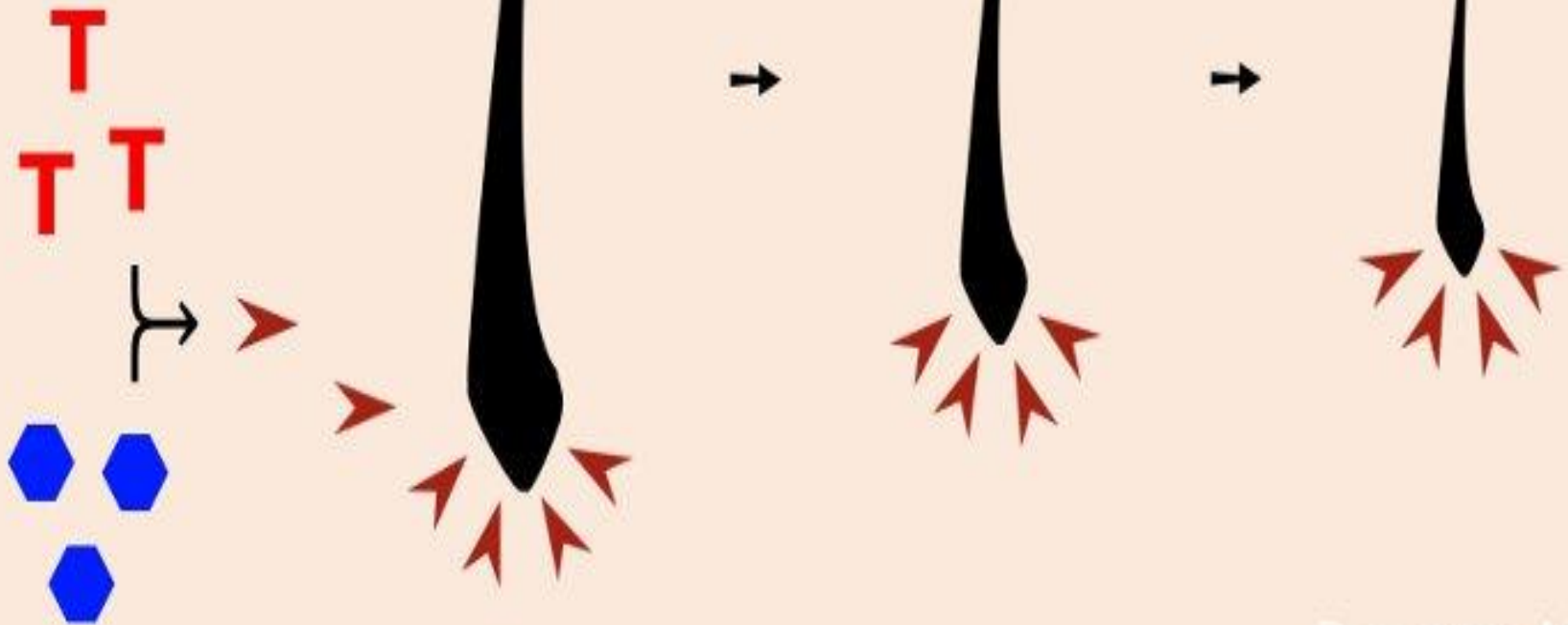
- ❑ hair thinning begins between the ages of **12 - 40 yrs.**
- ❑ Half of the population expresses his trait before 50yrs.
- ❑ The first signs of balding are increased fronto-temporal recession accompanied by mid-frontal recession, Then hair loss over the vertex follows, Eventually the hair density decreases over the top of the whole scalp.
- ❑ **The hairs over the occipital and parietal area are not affected.**

T = Testosterone

⬡ = 5a Reductase

➤ = DHT

Miniaturization



Male-pattern hair loss



Female-pattern hair loss



Hairloss



Treatment

1. Topical minoxidil.
2. 5-alpha reductase inhibitors as finasteride (male).
3. Anti-androgens; as spironolactone often in female .
4. Hair transplantation.



Topical Minoxidil.

- It's a **vasodilator**, slow or stop hair loss and promotes hair regrowth.
- **Stimulates hair follicles and growth** but does not reduce DHT or 5-alpha reductase enzyme which is the primary mediator of male baldness.
- Should be in contact with the scalp for at least 4 hours.
- Present in two concentrations: 2% and 5%.
- S/E; irritation at treated area and unwanted hair growth elsewhere on the body.

Finasteride

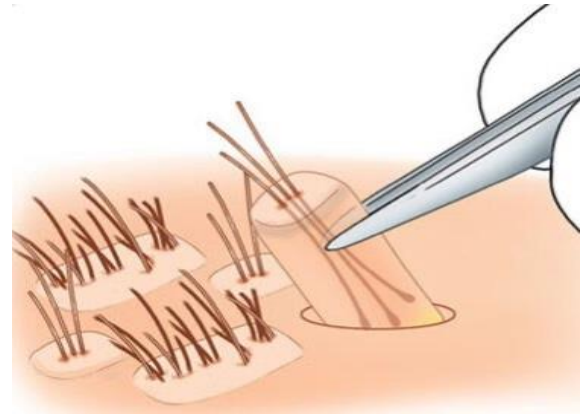
- It's approved by FDA for treatment of BPH & MPB.
- **Its type II** 5-alpha reductase inhibitor.
- It acts like minoxidil on crown area and hairline.
- Gynecomastia, erectile dysfunction and depression are some possible side effects.

Spironolactone

- **It's** a selective androgen receptor and both reduces adrenal androgen production and exerts competitive blockade on androgen receptors in target tissues.
- **It** can be topically or systemically applied.
- **Due** to its feminizing side effects and risk of infertility in men; it is used more often in female androgenic alopecia.

Hair transplantation

- **It's** a surgical procedure.
- **It's** used for male pattern alopecia.



II. Excessive Hair Growth;

1. Hypertrichosis



Hypertrichosis

Its an excessive hair growth on any area of the body (**non-androgenic**).

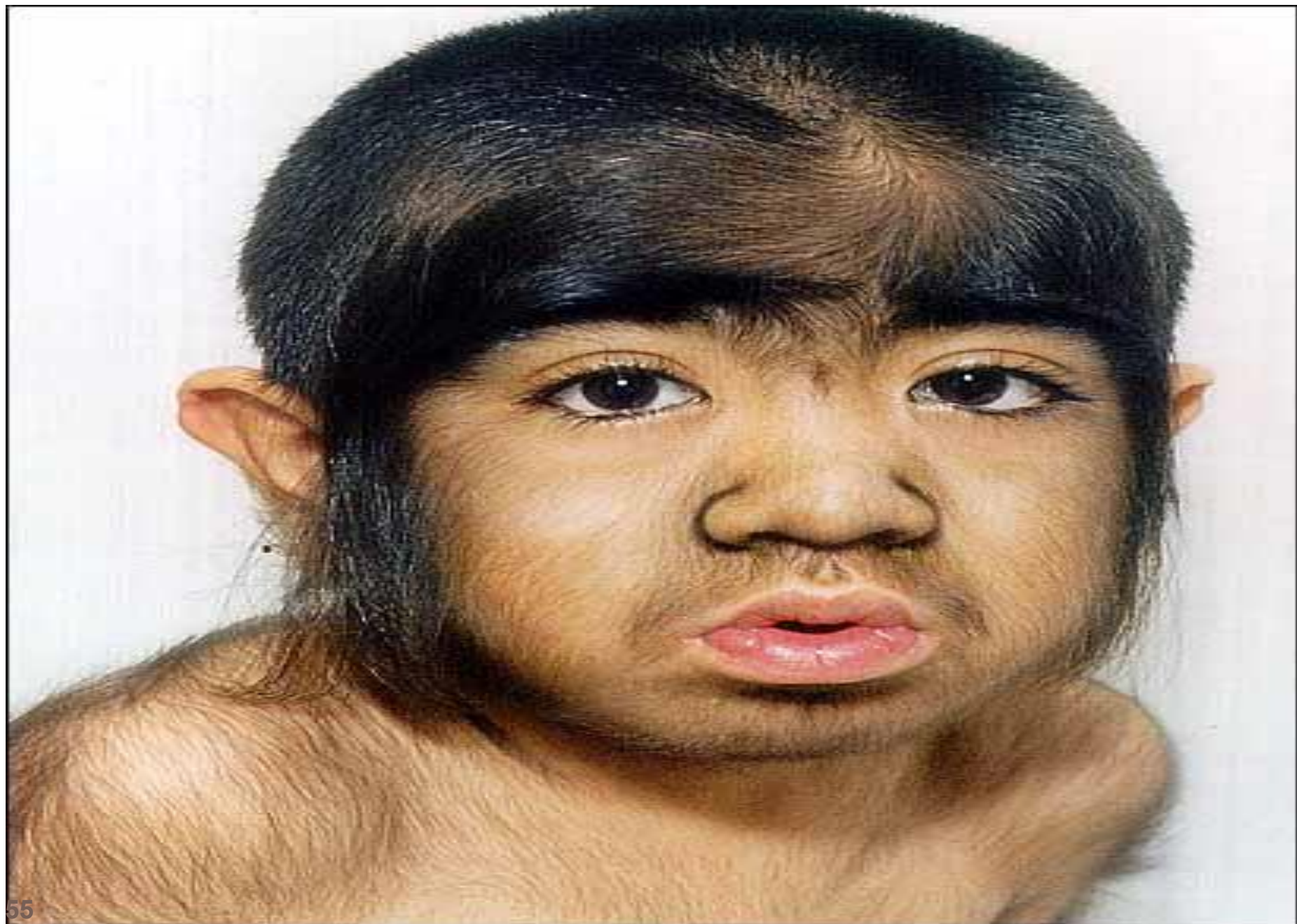
Etiology;

Either congenital or acquired (**where drug induced is the commonest**).

Clinically; excessive growth all over the body & affect both sexes.

Treatment;

1. Treat the cause.
2. Traditional hair removal; chemical epilation, electrolysis & waxing.
54. Laser hair removal.



2. Hirsutism

Hirsutism

- Its **excessive** terminal hair growth in the women as male pattern.
- Its related **to increase** in androgen levels or the **end-organ response to androgens** (Hypersensitivity).



Causes

1. **Most** common;

1. idiopathic.
2. Hirsutism of Ovarian Origin (PSO).

2. **Less** common;

1. Hirsutism of Pituitary Origin.
2. Hirsutism of Adrenal Origin.
3. Iatrogenic Hirsutism (drug induced as carbamazepine, fluoxetine. isotretinoin and OCP).
4. Familial Hirsutism.

presentation

- **Hirsutism** alone.



- **Hirsutism** with pilosebaceous unit over activity (acne).



- **Hirsutism** and ovulatory disorders.

- **Hirsutism** and sign of virilization.



Treatment;

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1. Treat the cause.

- stop offending drugs.
- treat tumors by surgical removal.
- treat medical disorders.

2. Cosmetic measures;

- removal of the present hairs by; shaving, waxing, epilation, electrolysis, & Laser hair removal.

3. Weight reduction; if $BMI > 25 \text{KG}/\text{M}^2$

Exercise (1)

A 25-year-old female developed diffuse hair loss 3 months after delivery of her first child. The probable diagnosis is:

- a. Androgenic alopecia.
- b. Telogen effluvium.
- c. Endocrinal alopecia.
- d. Anagen effluvium.

Exercise (2)

Q1. What are the causes of scarring alopecia?

Q2. What are the causes of diffuse alopecia?

Q3. What are the causes of localized non-scarring alopecia?

Q4. What are the classification and the poor prognostic factors of alopecia areata?



A healthy diet helps prevent hair loss.

THANKS FOR YOUR ATTENTION