



# Libyan International Medical University



## Hair loss (alopecia or baldness)

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**Date of submission:-** 30.6.2018

This report was written to fulfill the requirement of **C.N.S** block in as a quality assignmen.

## **Summary (Abstract):**

One cause of male pattern baldness is genetics, or having a family history of baldness. Research has found that male pattern baldness is associated with male sex hormones called androgens. The androgens have many functions including regulating hair growth.

Each hair on your head has a growth cycle. With male pattern baldness, this growth cycle begins to weaken and the hair follicle shrinks, producing shorter and finer strands of hair. Eventually, the growth cycle for each hair ends and no new hair grows in its place.

Inherited male pattern baldness usually has no medical ill effects. However, sometimes baldness has more serious causes, such as certain cancers, medications, thyroid conditions, and anabolic steroids. See your doctor if hair loss occurs after taking new medications or when it's accompanied by other health complaints.<sup>(1)</sup>

## **Introduction:**

There are approximately 100,000 hair follicles on the scalp.

Hair is the second fastest growing tissue in the human body, the first being bone marrow.

The rate of hair growth is about 1.25 cm (0.5 inches) per month. With age the speed of hair growth significantly slows down, and may turn out to be only 0.25 cm (0.1 inch) a month.

Baldness becomes visible only when the amount of lost hair approaches to 50%.

Hereditary hair loss (androgenetic alopecia) is the most common form of hair loss in men, and is responsible for more than 95% of all cases of baldness.

Hair are a protein product of follicles and so are sensitive to changes within the body, and hair loss is often the result of an internal disorder.

What is hair loss?

Hair loss (alopecia) is a tendency of follicles to stop producing hair growth, leading to a decrease in the amount of hair. Although alopecia can occur anywhere on the body, it is especially distressing when it affects the scalp. It usually develops gradually and may be patchy or diffuse.

## **Discussion:**

### **Opinion the Mayo Clinic Staff:**

A number of factors can increase your risk of hair loss, including:

Family history, Age, Stress.

Poor nutrition.

Certain medical conditions, such as diabetes and lupus.

### **Causes:**

Most people normally shed 50 to 100 hairs a day. This usually doesn't cause noticeable thinning of scalp hair because new hair is growing in at the same time. Hair loss occurs when this cycle of hair growth and shedding is disrupted or when the hair follicle is destroyed and replaced with scar tissue.

The exact cause of hair loss may not be fully understood, but it's usually related to one or more of the following factors:

- ❖ Family history (heredity).
- ❖ Hormonal changes.
- ❖ Medical conditions.
- ❖ Medications.

### **Family history (heredity)**

The most common cause of hair loss is a hereditary condition called male-pattern baldness or female-pattern baldness. It usually occurs gradually and in predictable patterns — a receding hairline and bald spots in men and thinning hair in women.

Heredity also affects the age at which you begin to lose hair, the rate of hair loss and the extent of baldness. Pattern baldness is most common in men and can begin as early as puberty. This type of hair loss may involve both hair thinning and miniaturization (hair becomes soft, fine and short).

Hormonal changes and medical conditions

A variety of conditions can cause hair loss, including:

### **Hormonal changes:**

Hormonal changes and imbalances can cause temporary hair loss. This could be due to pregnancy, childbirth or the onset of menopause. Hormone levels are also affected by the thyroid gland, so thyroid problems may cause hair loss.

### **Patchy hair loss:**

This type of nonscarring hair loss is called alopecia areata (al-o-PEE-she-uh ar-e-A-tuh). It occurs when the body's immune system attacks hair follicles causing sudden hair loss that leaves smooth, roundish bald patches on the skin.

### **Scalp infections:**

Infections, such as ringworm, can invade the hair and skin of your scalp, leading to scaly patches and hair loss. Once infections are treated, hair generally grows back.

### **Other skin disorders:**

Diseases that cause scarring alopecia may result in permanent loss at the scarred areas. These conditions include lichen planus, some types of lupus and sarcoidosis.

### **Hair-pulling disorder:**

This condition, also called trichotillomania, causes people to have an irresistible urge to pull out their hair, whether it's from the scalp, the eyebrows or other areas of the body.

### **Medications**

Hair loss can be caused by drugs used for cancer, arthritis, depression, heart problems, high blood pressure and birth control. Intake of too much vitamin A may cause hair loss as well.

Other causes of hair loss

### **Hair loss can also result from:**

#### **Radiation therapy to the head:**

The hair may not grow back the same as it was before.

#### **A trigger event:**

Many people experience a general thinning of hair several months after a physical or emotional shock. This type of hair loss is temporary. Examples of trigger events include sudden or excessive weight loss, a high fever, surgery, or a death in the family.

#### **Certain hairstyles and treatments:**

Excessive hairstyling or hairstyles that pull your hair tight, such as pigtails or cornrows, can cause traction alopecia. Hot oil hair treatments and permanents can cause inflammation of hair follicles that leads to hair loss. If scarring occurs, hair loss could be permanent.<sup>(2)</sup>

### **Opinion the health Assist**

#### **Androgenic alopecia:**

The major cause of hair loss is Androgenic alopecia - the genetic predisposition for hair loss inherited from either or both of parents. Almost all people have some degree of androgenic alopecia. Visible changes occur in most people by the age of 50 years.

Androgenic alopecia is more common in men than women. About two-thirds of men experience some degree of appreciable hair loss by the time they are 35 years old, and about 85% have significantly thinning hair by age 50. And nearly 40% of women experience some degree of androgenic alopecia in their lifetime.

The main cause of androgenic alopecia in both men and women involves a genetic sensitivity to a dihydrotestosterone (DHT), a derivative of the male hormone testosterone. DHT causes hair follicles to shrink and induces miniaturization of hair. Shrinking follicles produce thinner hair, and eventually fail to produce new hairs at all. Stress may trigger onset of androgenic alopecia by inducing hormonal changes.

Androgenic alopecia in men (male pattern baldness) is generally characterized with the onset of a receding hairline and thinning crown. Hair on the forehead area or on the top of the head appear to be the

most sensitive to DHT. Hair on the sides and back of the head do not possess this genetic trait and therefore are not affected.

In women androgenetic alopecia (female pattern baldness) can begin at puberty, but is most often occurs after menopause. Women develop a diffuse thinning of the hair throughout the scalp while the frontal hairline generally remains intact.

### **Iron deficiency**

Iron deficiency is one of the possible causes of excessive hair loss, especially in women. Adequate levels of iron are essential to hair growth and maintenance. Some people don't have enough iron in their diets or may not fully absorb iron. Iron depletion is common to women during menstruation and pregnancy and can be corrected through proper diet or iron supplements.

### **Protein deficiency**

Severe protein malnutrition may also cause hair loss. The body will save protein by shifting growing hairs into the resting phase. Some people who go on crash diets that are low in protein, or have severely abnormal eating habits, may develop protein malnutrition. This condition can be reversed and prevented by eating the proper amount of protein and, when dieting, maintaining adequate protein intake.

### **Thyroid disease**

Both hyperthyroidism and hypothyroidism can cause hair loss. Thyroid hormones directly modulate multiple hair biology parameters—from hair follicles cycling to pigmentation. About 30% of persons with thyroid disease suffer from hair loss.<sup>(3)</sup>

## **Opinion the family doctor organization**

### **What causes excessive hair loss?**

A number of things can cause excessive hair loss. For example, about 3 or 4 months after an illness or a major surgery, you may suddenly lose a large amount of hair. This hair loss is related to the stress of the illness and is temporary.

Hormonal problems may cause hair loss. If your thyroid gland is overactive or underactive, your hair may fall out. This hair loss usually can be helped by treating your thyroid disease. Hair loss may occur if male or female hormones, known as androgens and estrogens, are out of balance. Correcting the hormone imbalance may stop your hair loss.

Many women notice hair loss about 3 months after they've had a baby. This loss is also related to hormones. During pregnancy, high levels of certain hormones cause the body to keep hair that would normally fall out. When the hormones return to pre-pregnancy levels, that hair falls out and the normal cycle of growth and loss starts again.

Some medicines can cause hair loss. This type of hair loss improves when you stop taking the medicine. Medicines that can cause hair loss include blood thinners (also called anticoagulants); medicines used for , or heart problems; vitamin A . birth control pills; and antidepressants.

Certain infections can cause hair loss. Fungal infections of the scalp can cause hair loss in adults and children. The infection is treated with antifungal medicines.

Since hair loss may be an early sign of a disease, it is important to find the cause so that it can be treated.<sup>(4)</sup>

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