

## HAIR AND HORMONES

When it comes to the health and quality or abundance of hair, hormones are in the drivers seat. In the past decade, groundbreaking new research has shown a defining link between thinning hair and fluctuations in estrogen and testosterone levels. Life experiences such as pregnancy, post pregnancy, nursing, pre- and post-menopause, as well as medications such as birth control or steroids, may also cause hormonal changes. These studies add new depth to the surprising number of men and women who are searching for a treatment for the appearance of thinning hair; in fact, 25 percent of all men have noticeably thin-looking hair, and as many as 36 percent of all women ages 40 to 49 experience some degree of thinning hair. So, how is the growth of your hair affected by hormones? What are the most common hormone-related causes of poor quality and condition of hair, and what can be done about it?

## HAIR BIOLOGY

To understand how hormones affect hair growth, you'll need to know the basics of the hair system at a cellular level. Each strand grows from a tiny opening on the scalp called a **follicle**. These sophisticated receptacles shelter the **hair bulb**, which provides an ideal environment from which the hair shaft is produced. Inside the bulb, proteins and carbohydrates are synthesized within the **hair papilla** (a group of specialized dermal cells intertwined with tiny capillaries that carries nutrients to the hair bulb while also removing toxins).

Also nestled in the hypodermis are **sebaceous glands**, hormone-regulated glands that secrete **sebum**, a fatty material that lubricates the follicle and skin and carries into the follicle the necessary hormones and nutrients the papilla needs to produce healthy, long living hair. Keratinized sebum plays a major role in clogged hair follicles, which can lead to thinning hair; it may also cause frequent skin breakouts and excessively oily scalp (adult cradle cap), which are two major early warning signs of a genetic pre-disposition to thinning hair.

As nutrient-rich blood, carried by the capillaries, circulates around the hair follicle via the hair papilla, hormones that are present in the blood stream also communicate to the cells within the follicle. There are two broad classes of hormones: **androgens** and **estrogens**. **Testosterone** is the best-known androgen, and although it is present in the bodies of both men and women, men have a greater amount. Testosterone reacts with a naturally occurring enzyme found in hair follicles called 5-alpha-reductase. The result of this reaction is **Dihydrotestosterone (DHT)** - found to be one of the major contributing causes of thinning hair and is not easily removed from the scalp skin, especially with conventional shampoos.

Depending on age, estrogens are present in particularly greater amounts in women and can inhibit or counteract the follicle-shrinking effect of androgens, which is why women are less likely to experience thinning and hair loss. However, **pseudo-estrogens** (estrogen mimics) can effectively trick hormone receptors (found in the membrane of every cell) into binding with them instead of real estrogens, causing estrogen imbalances. In men and women, this often results in the thinning and miniaturization of the hair, which causes it to be extremely fine and shallowly rooted.

## **THINNING HAIR IN WOMEN**

Women going through hormonal changes are especially prone to fine or thinning hair. These changes are often spurred by:

\* **Menopause:** In the simplest terms, menopause occurs when hormone production in women fluctuates and estrogen production gradually decreases, culminating in the permanent cessation of menstruation. Diminishing estrogen levels can potentially influence almost every bodily system, including hair production. As such, the appearance of thinning hair is often associated with menopause. It is important to note that the physical and mental indications of declining hormone levels, such as thinning hair, can occur before menstrual periods have ended. This period of declining hormones is called the climacteric or perimenopause. Perimenopause can last several years and often includes many of the characteristic symptoms of menopause.

\* **Pregnancy and Nursing:** When a woman is pregnant, the amount of estrogen and another hormone, progesterone, is dramatically affected to create the proper environment for the developing child and to prepare the mother for nursing. While the primary role of these hormones is to support the baby, they also affect other bodily functions. Since thinning hair, hair loss and hair texture are linked to hormone levels, a woman may experience excessive daily hair loss or a change in hair texture during pregnancy and nursing. In most cases, this is usually a normal, temporary condition. Her normal hair-growth-and-loss sequence should regain its proper balance after about six months.

\* **Oral contraceptives:** Since the pill alters the amount of estrogens in the body (either in the form of estrogen or progestin), a woman who begins or stops taking oral contraceptives may experience temporary shedding that can continue for up to six months.

## **EARLY DETECTION AND PREVENTION IS KEY**

As with any many areas of our lives, we make a decision to take preventative measures to alleviate or treat the problem, early detection and early treatment is important when it comes to addressing thinning hair. Consult with a medical professional if you feel hormonal fluctuations may be the cause of your hair thinning or hair loss. And, as always, it is never too early to start taking preventative measures against this potentially devastating problem. Use cleansers that cleanse the hair and scalp of DHT, environmental toxins and pollutants. Also, try conditioners that don't leave behind product residue, which can clog the hair follicles. Seek intensive scalp treatments that use vitamins, proteins, enzyme complexes and amino acids that help to nourish, energize and protect the scalp and hair. And when styling, use weight-free styling products that don't add product build up or weigh down fine or thinning hair. By being proactive and educated on hair loss or thinning hair, you can prevent these hair problems from taking the driver's seat in your life.