

Male and Female Pattern Hair Loss: Etiology and Treatment

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Androgenetic alopecia (inherited, pattern hair loss) is the most common form of hair loss, affecting nearly 50 million men and 30 million women in the United States. The incidence and severity of male and female pattern hair loss increase with age. Bradley R. Wolf, MD, secretary of the American Board of Hair Restoration Surgery, member of the International and European Societies of Hair Restoration Surgery, internationally recognized expert and lecturer in his field, with offices in Cincinnati and in Aspen, CO, discusses causes and alternatives for hair loss.

In males, thinning of the hair begins after puberty. As a rule of thumb, 25% of men age 25, 40% of men age 40, and 50% of men age 50 show evidence of male pattern hair loss. Female pattern hair loss occurs in about 20 percent of American women overall. In one study of 1008 Caucasian women, 3% age 20-29, 17% age 30-49, 25% age 50-69, and 28% of women 70-79 years old were affected by female pattern hair loss.

Economic Impact

In the United States alone, over one billion dollars a year is spent on remedies for hair loss. The remedies, proven and unproven, include prescription medications, non-prescription medications, herbal preparations, shampoos, wigs, hairpieces, and surgical hair restoration. Of the nearly 80 million Americans experiencing hair loss, only 3% seek consultation with a physician.

Psychological Aspects

Hair is one of the few body parts over which we have immediate control to express our individuality or chosen identity. The psychology of hair loss is tied to masculinity, sexual attractiveness, and aging. Hair loss is an unwelcome, stressful experience for most men and women. Worry and preoccupation with hair loss results in stronger behavioral efforts to conceal, compensate for, and cope with hair loss. In women, hair loss can be expected to be more stressful, if not psychologically debilitating. Women report significantly more socio-emotional stress and efforts to cope. As men and women struggle to cope with their condition, they search for ways to halt or reverse the course of their hair loss and to restore their body-image integrity. Cosmetic medicine is able to enhance the self-concept of the patient by making available changes that may elevate self-esteem and create a renewed self-image.

The Cause

The gene for hair loss and circulating androgens must be present for male or female pattern hair loss to occur. The gene is transmitted via a multifactorial or polygenic form of inheritance. Male hormones such as androgens, testosterone and dihydrotestosterone (DHT), have been established as the initiating factor. DHT metabolized from

testosterone by the 5alpha-reductase enzyme affects the genetically receptive follicles, causing hair loss via miniaturization (shrinkage). The result is a progressively shorter and finer hair. With age, total cessation of growth will occur in genetically programmed follicles.

Medical Treatment

Effective pharmacologic treatment has been substantiated by scientific studies. Only two medications, topical minoxidil (Rogaine®) and oral finasteride (Propecia®) have been proven to regrow hair. Minoxidil (2%) is the only medication approved by the FDA to treat hair loss in women. Minoxidil (2% and 5%) and finasteride tablets are the only therapies approved for men. Minoxidil is a liquid that affects hair follicles by reversing the miniaturization process and stimulating new growth on existing follicles. Finasteride is an oral medication that stimulates regrowth on existing miniaturized follicles by blocking the formation of the active male hormone dihydrotestosterone (DHT). Both medications increase volume by increasing the length and diameter of existing hair follicles. No medication can create new hair follicles.

Surgical Treatment

In men overall, hair transplantation is the most frequently performed cosmetic surgical procedure. Men and women are candidates for this procedure. Over the last ten years the results have improved dramatically. Today, given the appropriate candidate, hair transplantation results are completely natural and last for the remainder of the patient's life. Hair transplantation, a follicular redistribution, consists of the transfer of the patient's own permanent hair follicles, using grafts, from the back and sides to the scalp to areas of hair loss. In the past, circular sections of the patient's donor skin were removed in the area of loss and circular "plugs" of tissue containing up to twenty hairs were inserted. The results were not natural and resembled rows of corn.

Since the recognition almost forty years ago that transplanted hair would grow, the size of the tissue containing the hair follicles, the graft, has gotten smaller and smaller. Today the donor tissue is dissected under specialized high power microscopes. Grafts as small as a single hair follicle can now be successfully identified and transplanted with a growth rate of 95-100%. Hair naturally grows in groupings of one, two, three, and four hairs called follicular units. Using magnification, the natural groupings can be identified, preserved, and transplanted (Figures 1 & 2). Surgeons performing hair transplantation can now recreate natural hairlines and natural density in areas of hair loss. Hair transplantation is an outpatient procedure in which local anesthesia is usually used.



Figure 1 - In this 38-year-old male, 2430 follicular unit grafts (4800 hairs) were transferred in two procedures (2400 hairs per procedure). Patient is shown before (left) and 8 months after second surgery (right).



Figure 2 - In this 56-year-old male, 1111 follicular unit grafts (2000 hairs) were transferred in one procedure. Patient is shown before (left) and seven months after surgery (right).

The Future

Researchers are attempting to identify a cell type that will grow a mature hair follicle. If found, the cell could be replicated through cell multiplication and those with pattern hair loss could regain all their lost hair. It is currently not known if and when this may be viable. Investigation is taking place to better elucidate the biologic, hormonal, and molecular controls of the hair loss process, and it is anticipated that further advancements in the pharmacologic and surgical treatment of hair loss will occur.

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