

Hair Loss and Prevention in Women Pre/Post-Menopause

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Overview

The majority of women in the world will experience hair loss at some point in their lives. Hair loss is caused by many different factors, such as vitamin deficiency, chemical exposure, and UV radiation. In women who are experiencing or have experienced menopause, we can assume that hair loss is caused by alopecia, causing Female Pattern Hair Loss (FPHL) [1]. However, there are appropriate measures that can be taken in order to prevent hair loss or maintain a healthy hair condition in both pre- and post-menopausal women. We review the types hair loss common in pre- and post-menopausal women, along with preventative measures and current related studies. One ingredient that we focus on is ProCelinyl™, a constituent incorporated into Revela, in order to stimulate hair growth and decrease the effects of alopecia. Research indicates that this newly developed product effectively aids in hair growth and improves the extent of hair loss by more than 80% [2]. It is important to continuously develop these types of products in order to prevent further damage to the hair follicles and nurture what hair is left on the scalp. Both women and men who experience hair loss may experience hair loss due to stress, which may cause further hair loss, reduced quality of life, and a secondary morbidity [3]. The evolution of these products in the hair care industry are crucial to improving the quality of life and confidence of both women and men suffering from hair loss.

There are many different exposures in a person's life that can lead to increased hair loss for both men and women. These factors can range from treating the hair cosmetically/chemically to certain lifestyle choices that can affect overall health. But for many women, hair loss proves to be a struggle that can affect their confidence and quality of life. Luckily, there are many treatments that have been developed today that can help prevent and combat hair loss. Hair loss can be caused by a vast array of different issues. For example, heat and chemicals are two major factors that lead to hair damage, and ultimately hair loss. Heat is found through the use of heat products such as hair dryers, straighteners, and curlers. Exposure to ultraviolet radiation damages hair fibers and sunlight can lead to dryness, rough surface texture, decreased color and luster, and increased stiffness and brittleness [4]. When cosmetic products are used incorrectly or too frequently, they may produce changes in hair texture that correspond to morphological changes on

the hair surface [4]. Examples of harmful chemicals include regular use of dyes for color treatment, hairsprays, and frequent shampooing. Physical causes of hair shaft damage include friction from hair accessories, washing, and towel drying. Friction has also proven to be the most damaging to wet hair as well as daily grooming and photodamage [4].

A well-known way to stimulate hair growth is to use herbal oils. In India the traditional process is the preparation of hair oils put together with various hair growth promoting drugs, and preparations are included to treat various dandruff, hair fall process, split ends etc. [5]. Natural hair oils are the hair care products which are rich in Vitamins, Minerals and Fatty acids which are the vital elements in the human cells and these elements are also present in the skin and hair of our body [5]. Applying these oils allows for the regeneration of the scalp, thus promoting strong and healthy hair growth. Certain populations are at a greater risk for iron deficiency, including premenopausal women who experience blood loss through menstruation and malabsorption disorders. Vegans and vegetarians are also included in these populations. Other important nutrients that might increase hair loss include niacin, fatty acids, selenium, Vitamin D, Vitamin A, Vitamin E, Folic Acid, Biotin, Amino Acids and Proteins, and other Antioxidants. As previously mentioned, women who are experiencing or have experienced menopause are at a higher risk for hair loss due to certain disorders. But this can also be explained through a condition called alopecia. Also known as alopecia areata, it is an autoimmune disorder characterized by transient, non-scarring hair loss and preservation of the hair follicle [6].

The National Alopecia Areata Foundation states that 147 million people worldwide are diagnosed or predisposed to alopecia areata. Alopecia is non-scarring, however, and preserves the hair follicle [2,7]. However, during menopause, hair properties can be affected resulting in a specific form of alopecia, called Androgenetic alopecia [2]. We can also refer to this as Female Pattern Hair Loss (FPHL), the most common form of alopecia in elderly women [1]. The prevalence increases with age, approximately 12% in women aged 20-29, to over 50% in women over the age of 80 [8]. FPHL has an effect on hair follicles which causes bitemporal hair thinning, leaving an intact frontal hairline [1].

On the other hand, in post-menopausal women, Frontal Fibrosing Alopecia (PFFA) can occur. This is a progressive condition, causing destruction of the upper portion of the hair follicle. As a result, there is symmetrical regression of the frontal and temporal hairline, with partial or complete hair loss to the eyebrows [1]. Although, the mechanism of selective menopausal changes in the scalp is not fully understood. If diagnosed early, we can expect treatment to have more of an effect. However, the onset of hair loss is difficult to diagnose, which can result in loss of efficacy due to late diagnosis in the stable condition. When it comes to managing hair loss in menopause, the goal of treatment is to remedy underlying hormonal imbalances if present, as well as improving physical appearance of hair loss. Administration of systemic medication and topical treatments are two approaches to combating hair loss. Additionally, there are hair transplants that can be considered for cases of advanced FPHL. Laser hair combs also exist to stimulate the hair follicles [1]. Because the destruction of the hair follicle occurs with alopecia, treatments aim to target hair follicle health. A breakthrough ingredient, called ProCelinyl™, is an ingredient integrated into the hair loss product Revela, targeting the Dermal Papilla (DP). The dermal papilla is found at the bottom of the hair follicle, where the hair bulb lies. This area acts as a physical location for stem cells and hair matrix cells, as well as a site for cell signaling [2]. A lack of cells in the DP can result in follicle miniaturization and decreased follicle regeneration, causing hair loss. ProCelinyl™ acts in order to increase proliferation of follicle dermal papilla cells, in hopes of increasing hair growth. In vitro studies have shown that ProCelinyl™ substantially increases the proliferation of human follicle dermal papilla cells (>50%), and is able to target cells in the DP whilst leaving surrounding cells unaffected. The clinical trials

involving this ingredient have shown results in 6 weeks versus 3-4 months in traditional hair loss treatments, with 97% of subjects seeing improvements and 82% experiencing a decrease in hair shedding [2]. Hair loss may be genetic, or unable to be fully reversed. Even so, hair loss treatments such as Revela are constantly improving and undergoing experimentation to aid in the hair loss that plagues many women's lives. But, in addition to treatments, with a healthy lifestyle and proper diet, one may be able to eliminate many existing factors leading to hair loss. This encompasses taking vitamins and using minimal heat and chemicals directly on the hair. Further research has demonstrated correlation between certain coping patterns and quality of life for individuals experiencing hair loss [3]. More research is needed in order to assess the best ways to target these patterns as well as prevent further hair loss in these populations as a whole.

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