

BEAUTY

Laser Hair Regrowth Device Now Has FDA Clearance

By John Tulley
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It may seem strange to hear about a laser being used for hair regrowth, but this type of treatment has been around for some time and was discovered accidentally by a scientist testing the effects laser radiation on mice. It was in 1967 soon after the first working laser was invented that Dr Endre Mester at Semmelweis, university in Hungary was carrying out research to see if laser radiation caused cancer in mice. No cancers were found, but what surprised him was that hair grew back much more quickly on a shaved test area of the mice than on the mice in an untreated group. This effect called low level laser therapy (LLLT) also known as laser biostimulation, photobiomodulation and cold laser therapy is now used for the treatment of hair regrowth.

Possibly due to the then high cost of laser technology, very little research was carried out over the two decades after the first experiments were conducted. During the 1980s LLLT started becoming available as an expensive treatment through a number of exclusive hair clinics. The lasers used were large complicated fixed devices where patients had to sit under a hood similar to a salon hair dryer. Treatments were performed as frequently as 2-3 times per week, this was often inconvenient for individuals who might have to travel many miles to the nearest clinic or salon. However the results achieved were very good and soon, many salons all over the Europe, Asia and later in the US began offering treatments.

This laser hair regrowth treatment has now been backed up as an effective hair loss treatment by many scientific studies. In 1982 Trelles, M., and Mayayo, E, published "The Growth of Hair Under Laser Influence of the HE-NE Beam". In this study, patients with alopecia areata responded with positive results after only 6 to 8 twice weekly treatments. Later studies in the 1990's tested lasers working at different wavelengths and pulsing the laser to find the most effective laser configuration for treating hair loss. Most therapeutic lasers now operate at a wavelength in the range 600-1000nm where the wavelength is related to how far the light penetrates the scalp. The best wavelength to use is still argued over but it should be sufficient to penetrate at least 5-6mm depth to target the hair bulbs. Many current LLLT devices operate using visible red light at a wavelength of 660nm which can penetrate down to a depth of about 8-10mm. Higher wavelength lasers at 800-900nm are also used these can penetrate to a depth of about 30-40mm but these are mainly used for treating joints and muscle related problems.

More recent LLLT laser hair regrowth studies have started to reveal the reasons why and how laser light therapy helps stimulate hair regrowth. These studies have shown that laser light increases the levels of a chemical compound called adenosine triphosphate (ATP) which is known to stimulate living cells including the hair follicles. LLLT also has the effect of increasing the circulation of blood to the hair root which delivers the nutrients to cells that make up the hair follicle. The increased blood flow is also thought to help flush away the damaging waste products that may affect the hair growth cycle. This helps to improve the scalp environment to help stop thinning hair and promote new hair growth.