

# UNDERSTANDING HAIR LOSS & TREATMENT OPTIONS

Capillus Education Training Series



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Hair loss affects millions of men and women throughout the world. In the United States alone, approximately 80 million people<sup>1</sup> suffer from hair loss due to **Androgenetic Alopecia** (also known as pattern baldness or hereditary hair loss), which accounts for 98% of hair loss. Alopecia not only affects a person's appearance, it can also affect their self-esteem.

The purpose of this manual is to help the hair care professional understand the hair growth cycle, identify the various types of hair loss, and learn about the different types of treatment options.

*Always keep in mind that when it comes to determining the cause of hair loss nothing can replace a medical evaluation from a physician to rule out any underlying medical condition.*

## THE HAIR GROWTH CYCLE: HOW HAIR GROWS

Hair is made up of proteins called keratins, and it grows from follicles underneath the skin. Although every strand of hair on the human body goes through the hair growth cycle, each hair grows independently of the other. The hair growth cycle occurs in three main phases: the **Anagen (growing) phase**, which lasts 2 to 6 years, is when the hair is firmly attached to the hair root; the **Catagen (transitional) phase** lasts a few days and is when the hair stops growing and forms the basis for the next hair; and

the **Telogen (resting) phase** which lasts 3 to 4 months and is when the hair sheds and causes the stem cells to move deeper in the dermis to start a new anagen phase.

People are born with approximately 5 million follicles on their body, and about 100,000 follicles on just the scalp.<sup>2</sup> Regardless of where the hair is located on the body, all hairs undergo a similar growth cycle.

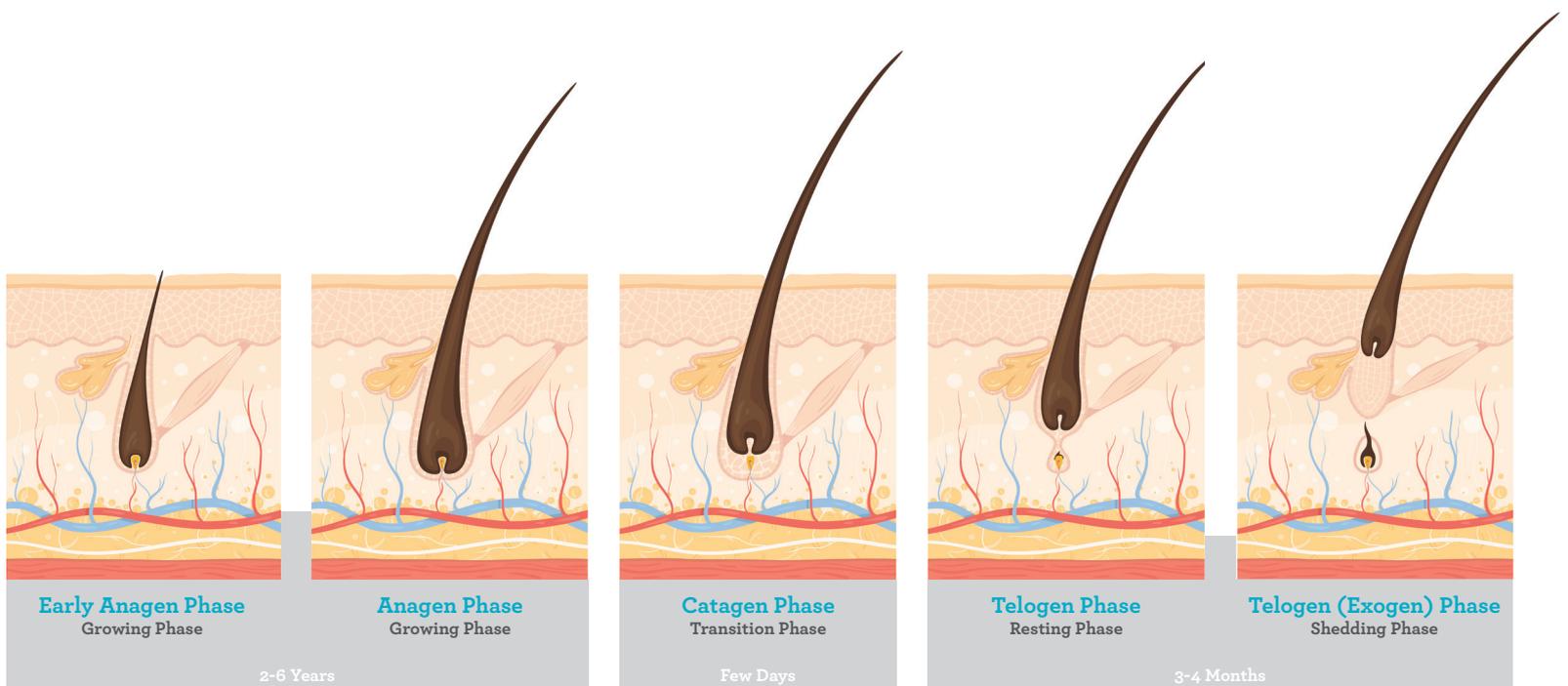


Figure 1 Hair Growth Cycle<sup>3</sup>

<sup>1</sup> Source: "Hair Loss: Overview". American Academy of Dermatology. <https://www.aad.org/public/diseases/hair-and-scalp-problems/hair-loss> (Retrieved on 1/26/18)

<sup>2</sup> Source: "How Hair Grow" American Academy of Dermatology. <https://www.aad.org/public/kids/hair/how-hair-grows> (Retrieved on 1/26/18)

# TYPES OF HAIR LOSS

There are many types of hair loss; some types are temporary and some are permanent. Identifying the type of hair loss someone is experiencing will help determine if the hair loss is permanent and whether it is treatable. Most cases of hair loss are due to genetics, and are treatable if caught on time.

## HAIR LOSS (ALOPECIA)

The average person loses about 50-100 hairs a day.<sup>3</sup> This is normal. While there is no set number of hairs for determining an abnormal amount of hair loss, if someone starts noticing a large amount of hair on their pillow or comb they should consult a physician.

This is especially the case if they start experiencing bald patches or thinning hair which can be the signs of an underlying medical condition. There are many types of hair loss (also known as alopecia). They can be classified into two categories: cicatricial (scarring) alopecia and non-cicatricial (non-scarring) alopecia. *Refer to Appendices A and B on pages 14-15 for hair loss classifications to help identify.*

## TYPES OF ALOPECIA

**Non-Cicatricial Alopecia:** According to the American Skin Association, “Non-scarring alopecias are more common than scarring alopecias and include pattern hair loss (also known as androgenetic alopecia), alopecia areata, telogen effluvium, and trichotillomania as well as other less common conditions. Sometimes diseases such as secondary syphilis, thyroid disease, and systemic lupus erythematosus can lead to non-scarring hair loss also. Non-scarring hair thinning can also occur with natural aging, which is known as senescent alopecia.”<sup>6</sup> It can also be caused by heredity, diet, behavioral problems, reactions to medications, or grooming habits. Hair loss associated with Non-Cicatricial Alopecia is temporary in most cases.

**Cicatricial Alopecia:** Cicatricial or scarring alopecias are classified as either primary or secondary scarring alopecia.<sup>5</sup>

*Primary scarring alopecia* occurs when the hair follicle is the target of a destructive inflammatory process. Primary scarring alopecias are further classified by the type of inflammatory cells that destroy the hair follicle during the active stage of the disease (ie lymphocytic inflammation and neutrophilic inflammation). Primary scarring is caused by an underlying medical condition. In most cases, the hair loss is permanent.

*Secondary scarring alopecia* is the destruction of the hair follicle caused by a non-follicle directed process or external injury. *Refer to Appendices A and B on pages 14-15 for hair loss classifications to help identify.*

## EXAMPLES

### Non-Cicatricial Alopecias

- Androgenetic Alopecia
- Anagen Effluvium
- Traction Alopecia
- Alopecia Areata
- Trichotillomania
- Telogen Effluvium

### Cicatricial Alopecias

- Lichen Planopilaris
- Frontal Fibrosing Alopecia
- Central Centrifugal Alopecia
- Pseudopelade of Brocq
- Folliculitis Decalvans
- Tufted Folliculitis
- Dissecting Folliculitis
- Destruction of Hair Follicle due to Burns

<sup>3</sup> Source: “Do You Have Hair Loss or Hair Shedding?” American Academy of Dermatology. <https://www.aad.org/public/skin-hair-nails/hair-care/hair-loss-vs-hair-shedding> (Retrieved on 1/26/18)

<sup>4</sup> Source: “Alopecia. American Skin Association. <http://www.americanskin.org/resource/alopecia.php> (Retrieved on 2/2/18)

<sup>5</sup> Source: Shapiro, L. and Otberg, N. (2015). *Hair Loss and Restoration*. (2nd ed.). Page 148. CRC Press. ISBN 978-1-4822-3197-7.

## ANDROGENETIC ALOPECIA: HEREDITARY HAIR LOSS

Most hair loss can be attributed to heredity and is classified as Androgenetic Alopecia (AGA). It can be easily identified because it presents in distinct patterns. The pattern varies between men and women.

Androgenetic Alopecia (also referred to as male-pattern baldness, female-pattern baldness, or hereditary hair loss) is a non-cicatricial alopecia and is the most common form of hair loss in both men and women.

### How Does Hair Loss Occur in AGA?

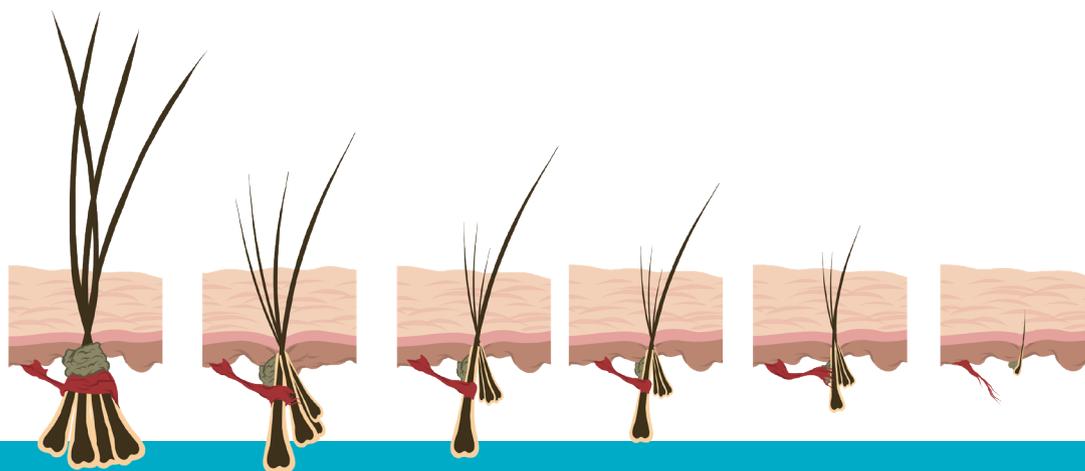
Hair loss in androgenetic alopecia occurs through the natural process of miniaturization. **Miniaturization** is the progressive deterioration of a hair follicle. A healthy hair follicle is capable of producing healthy, *terminal* hair which is thicker and darker in appearance. Over time the follicle shrinks with each cycle of hair and is no longer capable

of producing healthy terminal hairs; instead it produces thinner, weaker strands of hair, referred to as *vellus* hair. Eventually a miniaturized follicle dies and ceases to produce hair altogether, resulting in balding.

### What Causes Miniaturization?

In follicles with a genetic predisposition for hair loss, a hormone called **DHT (dihydrotestosterone)** causes the growth phase of the hair cycle to become increasingly shorter. This shorter growth window produces hair strands that are shorter in length and increasingly thinner in diameter with each hair cycle. For those without AGA in their genes, DHT is not a threat to trigger pattern hair loss.

Although it is medically benign, androgenetic alopecia can get progressively worse if left untreated.



“Scalp follicles exist as compound follicular units. In early stages of hair loss, the arrector pili muscle remains attached to the primary follicle, but loses its attachment to some of the regressing secondary follicles in some follicular units. Miniaturization of secondary follicles and detachment of the APM from these follicles extends to the rest of the follicular units. At this stage, patients may complain of hair thinning and loss of volume in their ponytail without any visible baldness.

With further progression, miniaturization continues and the muscle loses attachment to the secondary follicles in affected follicular units completely. Primary follicles eventually miniaturize and this leads to visible baldness. When primary follicles lose muscle attachment, the hair loss becomes irreversible.”<sup>6</sup>

# Miniaturization

<sup>6</sup>Source: “Androgenetic Alopecia: How It Happens” Hair Transplant Forum International. <https://www.ishrs.org/wp-content/uploads/2018/01/F3-2015.pdf> Retrieved on 2/20/2019)



**Androgenetic Alopecia in Men:** By the time most men reach 50 years of age they will have experienced some degree of pattern baldness. It can be identified by a predictable pattern of hair loss.

Men usually notice this type of hair loss with a receding frontal hairline or thinning and baldness at the crown or vertex.

See Norwood-Hamilton Scale below to see the natural progression of pattern balding if left untreated.

**Androgenetic Alopecia in Women:** As in men, AGA is the most common type of hair loss in women. It can affect women at any age, even in their teen years. In fact, according to the American Academy of Dermatology, forty percent of women have visible hair loss by the time they are 40 years old<sup>7</sup> and much more common among post-menopausal women.

Women usually first notice hair thinning by a widening of the part. Other signs include a smaller ponytail or even some recession in some cases. Female pattern baldness can be identified by a diffuse thinning over the entire scalp. In rarer cases thinning can occur towards the back and front of the hairline.

Refer to the Ludwig-Savin Classification below to chart the progression of female pattern baldness.

## HAIR LOSS PATTERNS

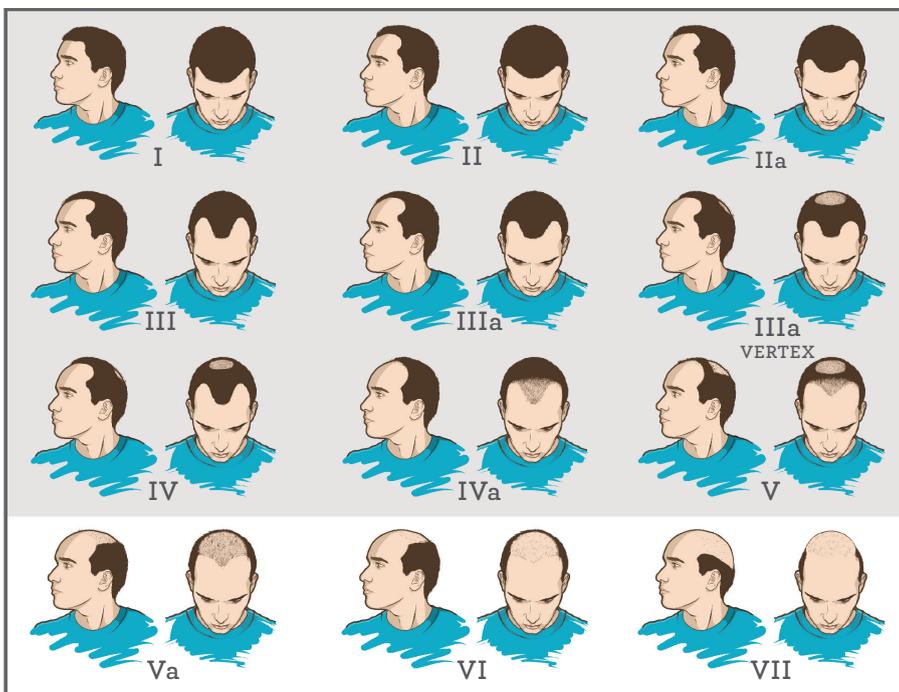


Figure A: Male Pattern Hair Loss (Illustration based on Norwood-Hamilton Scale)

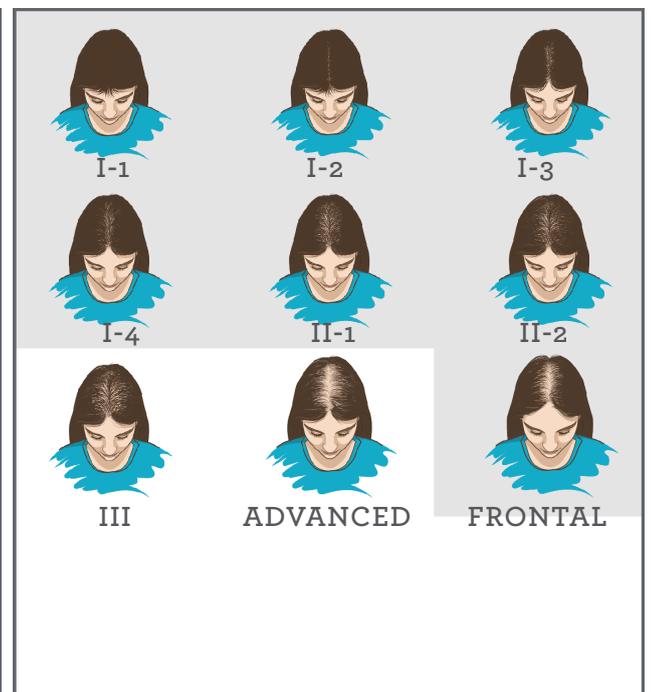


Figure B: Female Pattern Hair Loss (Illustration based on Ludwig-Savin Scale)

### DID YOU KNOW?

- The average person loses 50-100 hairs a day.
- Two Categories of Hair Loss are Cicatricial (or scarring alopecia) and Non-Cicatricial (non-scarring alopecia).
- Non-scarring Alopecia can be caused by: Heredity, Reaction to Medication, Behavioral Issues, Diet & Grooming Habits.

### CAPILLUS LASER THERAPY IS:

- FDA-Cleared for Treatment of 98% of Hair Loss (Androgenetic Alopecia).
- Verified in Independently Reviewed Clinical Trials.
- Can be used in conjunction with other treatments.
- Used by Hair Restoration Physicians across the globe.



<sup>7</sup> Source: WebMD. <https://www.webmd.com/skin-problems-and-treatments/hair-loss/hair-loss-medref> Retrieved on 2/18/19)

# DIAGNOSING AND ANALYZING HAIR LOSS

Before a treatment method can be recommended, a physician will need to determine what caused the hair loss. During the evaluation process, a physician might ask whether the hair loss is sudden or gradual, if the patient is under any medication, has allergies, family history of baldness, or if the patient has been dieting. If the patient is female, the physician might ask the patient about her menstrual cycle, if she is pregnant or if the patient is experiencing menopause.

Oftentimes a physician will inspect the scalp for an indication of hair loss. This is usually done by conducting a pull test to determine the localization and severity of hair loss, or by inspecting the hair on other parts of the body. Sometimes a physician will collect a hair sample, conduct a blood test or remove a part of the scalp to get the necessary evidence (or scalp biopsy). Because there are so many different causes for hair loss, it may take time to identify the hair loss to be able to find an appropriate solution.

## APPROACHES TO TREATING HAIR LOSS

### MEDICAL TREATMENT OPTIONS

There are various treatment options available for hair loss sufferers. Typically, they fall into two categories: Non-Surgical and Surgical. Based on the type of hair loss and its severity, a physician or hair restoration specialist will decide which procedure will work best for a person.

**Non-Surgical Methods to Treating Hair Loss:** There are non-surgical options for treating hair loss without surgery. Treatment options depend on the type of hair loss, stage of hair loss, and a person's tolerance for the treatment. If hair loss is too advanced, non-surgical options may not be feasible. The following methods can be used either as stand-alone or combination treatments.

- **Minoxidil** (marketed under brand names such as RX-Cap+® and Rogaine®) is FDA-approved and is effective in treating hair loss for both men and women. It is a topical solution that is applied twice daily to the scalp. While effective, compliance can be a challenge for many.
- **Finasteride** (marketed under brand names such as Propecia®) is an FDA-approved, prescription medication for men only that has also been proven to treat hair loss. Finasteride has been shown to cause adverse side effects including possibly irreversible sexual dysfunction<sup>8</sup> and is not approved for women because of the risk of birth defects to expectant mothers.
- **Photobiomodulation:** (Previously referred to as Low Level Laser Therapy (LLLT)) has been clinically proven to stimulate hair follicles and promote hair regrowth. LLLT is FDA-cleared for men and women and has no reported adverse side effects. It is important to note that not all laser devices are created equally. The design and protocol for treatment has a large impact on compli-

ance, and thus, efficacy.

**Surgical Methods to Treating Hair Loss:** For those who are at an advanced stage of hair loss progression, non-surgical methods may not be sufficient to treat their loss and they need to consider a surgical solution for their hair loss.

Hair transplantation is a surgical procedure which transplants healthy hair follicles to areas of thinning and is an option for some with healthy donor areas. There are two main surgical methods: strip donor transplant and follicular unit extraction.

- **Strip Donor Transplant:** During a strip donor transplant, a surgeon removes a strip of donor hair follicles, usually from the occipital region of the scalp, then subdivides into hair follicles which are then transplanted to the affected scalp area of hair loss.
- **Follicular Unit Extraction (FUE):** During this procedure, the surgeon removes the donor hairs with a special punch-like instrument. The hair grafts are extracted one cluster at a time.

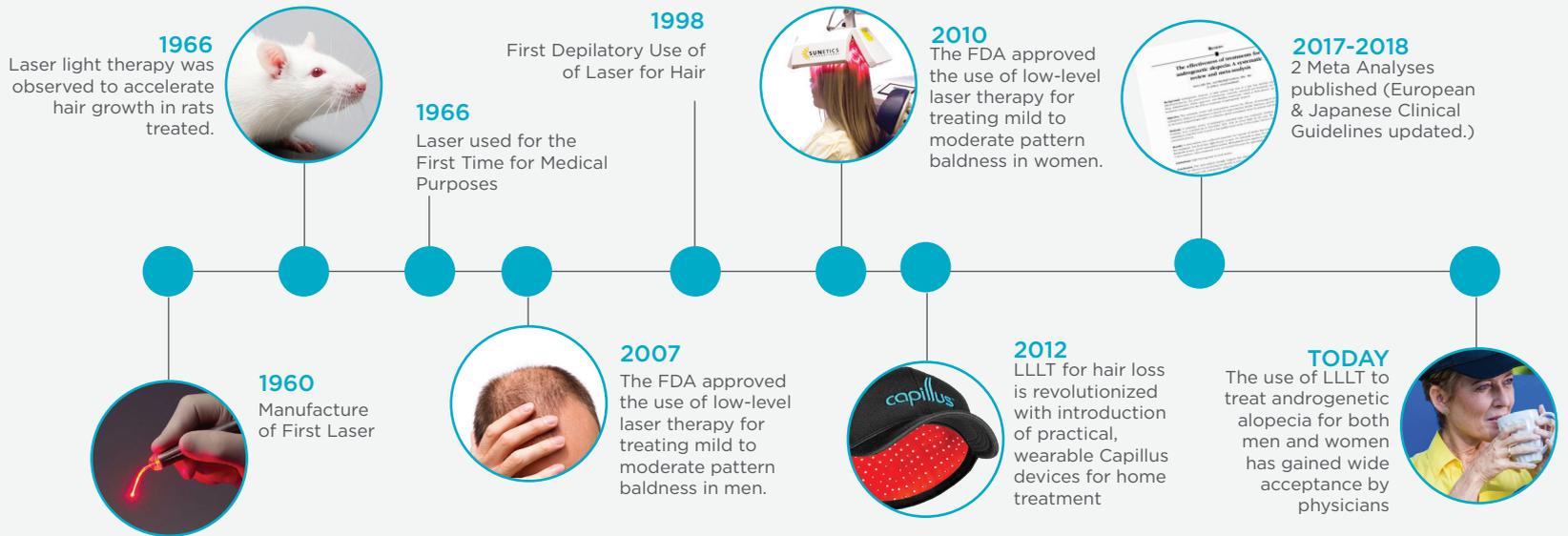
### ALTERNATE TREATMENT OPTIONS

Other alternatives to medical treatment of hair loss include concealing areas of balding. Solutions such as micropigmentation, hair replacements, wigs and cosmetic keratin fibers can provide minimal or extensive coverage of areas of hair loss on a temporary or short-term basis. Keratin fibers are a cosmetic option where miniature fibers cling statically to a person's hair, instantly providing temporary coverage that can be washed off. Hair systems can be tailor-made to a person's own hair, blending almost seamlessly with natural or synthetic hair. Micropigmentation is a process similar to tattooing where the skin on the scalp is pigmented to give the illusion of shaved hair.

<sup>8</sup> Source: Medical News Today. <https://www.medicalnewstoday.com/articles/247858.php> Retrieved on 2/18/19)

# TREATING HAIR LOSS WITH PHOTOBIO-MODULATION

## HISTORY OF LLLT



## ABOUT LOW LEVEL LASER THERAPY (LLLT)

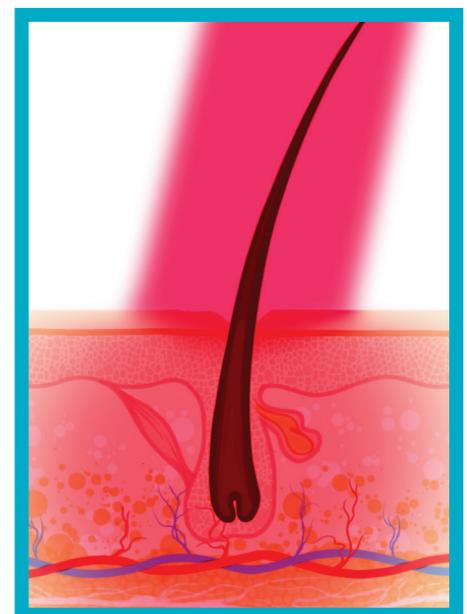
The use of biostimulation (also referred to as low-level laser therapy, cold laser therapy, photobiomodulation, and phototherapy) to treat certain medical conditions has been known for years. In the treatment of hair loss, LLLT has been used in a number of devices such as combs, helmets, hair dryer like hoods and caps.

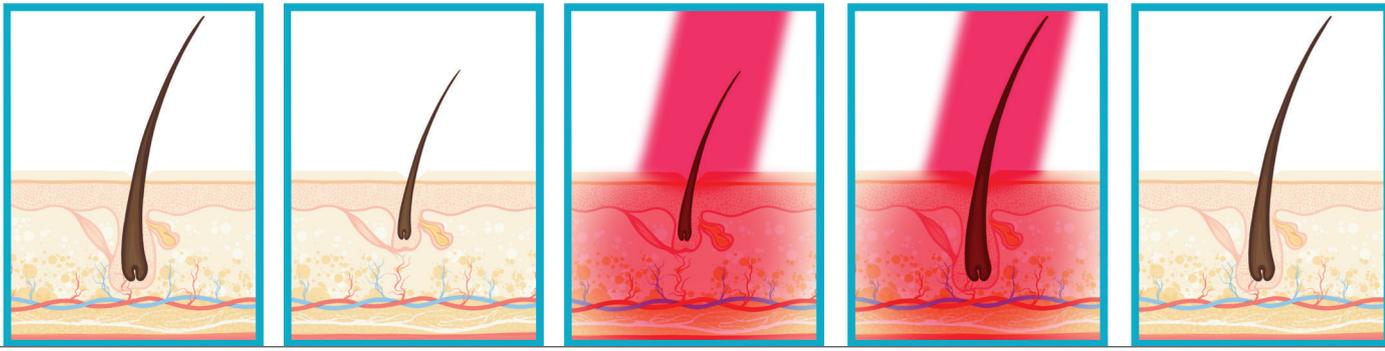
In recent years, low-level laser therapy as a way to treat hair loss has gained mass acceptance by the foremost physicians in the field of hair restoration, including world-renowned physicians who are both leaders and members of prestigious industry organizations of hair restoration surgery, dermatology and anti-aging.

## HOW LLLT WORKS

Just as light makes plants grow, it helps hair regrow. Low-level laser therapy (LLLT) is based on the biological effects of **photobiomodulation** in living organisms and has been shown to be effective in stimulating and energizing the cells within the hair follicle. LLLT reverses the natural process of miniaturization responsible for 98% of cases of hair loss by stimulating and energizing the cells within viable hair follicles.

- Low-Level Laser Therapy increases blood supply to the follicle which provides more oxygen and nutrition to the hair follicles thereby promoting a healthier growth rate of the existing hair follicles. On a cellular level, LLLT stimulates the mitochondria to produce more adenosine triphosphate (ATP) which delivers more energy to scalp cells.
- The protocol for treating genetic hair loss with LLLT consists of a person undergoing LLLT for treatments for a few minutes on a regular weekly schedule (treatment times and light output varies amongst devices in the market).
- Increases cell metabolism and the health of blood vessels in the scalp for thicker, supple and more durable hair shafts.





From Left to Right:

1) Healthy Hair Follicle 2) Thinning (Miniaturized) Hair Follicle 3) Laser Penetrating Weakened Hair Follicle 4) Laser Therapy resulting in Restored Hair Follicle 5) Renewed Healthy Hair Follicle

## BENEFITS OF LLLT

- Stimulates and energizes the cells within the hair follicle
- Increases retention of existing hair follicles
- Non-Invasive, Non-Surgical Approach
- No known adverse side-effects
- Renews the hair follicle for thicker, healthier looking hair
- Improves results whether used in conjunction with other methods of hair restoration such as topical solutions, medications, or hair transplants or as stand-alone treatment

### The Science of Photobiomodulation

A widely accepted theory is that LLLT, particularly at wavelengths in the red (visible) range, affects the functioning of the stem cells that cause hair growth. LLLT activates cytochrome c oxidase and increases mitochondrial electron transport, which leads to an increase in adenosine triphosphate (ATP) and subsequent reversal of hair follicles from the dormant telogen stage of growth, to the active growth or anagen stage.

Hair loss in androgenetic alopecia depends on a testosterone derivative in the skin, dihydrotestosterone (DHT). Low level laser therapy is believed to increase blood flow in the scalp and stimulate metabolism in catagen or telogen follicles, resulting in the production of anagen hair.

In theory: The photons of light lead to the production of ATP which is converted to cyclic AMP in the hair follicle cells. This AMP releases energy and stimulates metabolic processes necessary for hair growth. Release of nitric oxide from cells leads to increased vascularization to the scalp distributing nutrients and oxygen to the hair roots. Excessive build-up of DHT is prevented.

### Energy Delivery

There are variable characteristics which deliver treatments in a way that the FDA considers substantially equivalent to the first device cleared. All of the devices cleared by the FDA for the specific purpose of treating androgenetic alopecia and promoting hair growth operate in the visible light range; specifically at or around 650 nm. There are differences in physical design and technical characteristics that should be considered for selecting a low level light

therapy device.

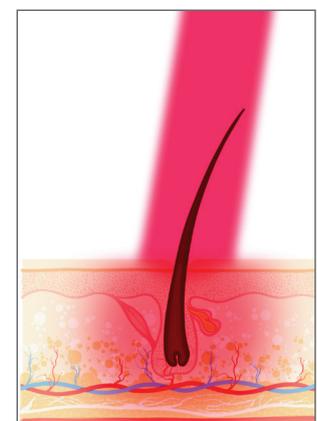
**Laser fluence** is a measure used to describe the energy delivered to an area. The important variables to consider when calculating fluence are 1) the shape of the beam (e.g. Gaussian, flat-top, semiconductor beam), 2) the distance to target, and 3) the duration of time the light is emitting (pulse width).

A Gaussian beam (like that used in Capillus laser therapy) has the benefit of dispersing laser energy within a targeted area without spreading it so far that the light energy is insignificant. The optimal distance for a Gaussian beam to treat the hair follicle is at 2 centimeters or less from the scalp in order for the light energy to have a photobiomodulating effect on the hair follicle at approximately 5 millimeters under the skin.

A laser beam at 650 nm penetrates the hair follicle where it is necessary. An LED diode disperses and does not penetrate to the same depth to be effective.



LED Light on Hair Follicle. Does not reach the root of the follicle.



Laser ~650 nm on Hair Follicle. Reaches 5 mm under skin to penetrate to root of follicle.

# ABOUT CAPILLUS LOW-LEVEL LASER THERAPY DEVICES

## CAPILLUS LLLT DEVICES - A BREAKTHROUGH IN TREATING ANDROGENETIC ALOPECIA

One of the biggest keys to a successful hair loss treatment program is ease of compliance. If hair loss sufferers feel the treatment method is too cumbersome to use, too time consuming, too messy, or it creates adverse side effects, they will most likely abandon the process before they begin to see results. The Capillus laser therapy cap was created with user compliance in mind.

The Capillus laser therapy cap is a physician recommended, FDA-cleared, over-the-counter medical device for treating androgenetic alopecia. It has been clinically proven to prevent the progression of hair loss and regrow thinning hair with no reported side effects.

Those using a Capillus laser therapy device could see results as early as 17 weeks if used as directed. A double-blind study conducted by a neutral third party for Capillus, LLC, demonstrates that low level laser treatment of the scalp every other day for 17 weeks using the Capillus cap is a safe and effective method for treating androgenetic alopecia. In fact, the clinical study showed that the Capillus cap reduced hair loss in all active study participants. The participants were selected based on proper evaluation by physicians who ruled out underlying medical conditions.

Capillus laser therapy caps use safe, low-level lasers to energize hair follicles and stimulate new, natural hair growth. Unlike other hair restoration devices that use a combination of lasers and LEDS, the Capillus devices use only laser diodes.

The clinical study showed that use of the Capillus laser device resulted in an average 51% increase in hair regrowth over the baseline, with results varying from an increase of 11% to 189% more hair than the participants began with at the start of the 17-week trial. Countless clinical trials have shown no known side-effects due to low-level laser therapy. It is a safe and effective treatment method for androgenetic alopecia.

The Capillus laser therapy device is designed to be inserted in a sports cap which means patients can wear the device discreetly while receiving treatment unlike laser therapy brushes that require a patient to comb their hair for more than twenty minutes.

The Capillus medical device is battery-operated for hands-free operation and patient mobility (as opposed to laser domes or laser head bands in which the patient must sit still during treatment). The laser therapy cap can be used in conjunction with other hair restoration methods such as hair transplantation surgery, topical treatments, or medications. The Capillus laser therapy cap can be used by both men and women. More importantly, the treatment protocol is just six minutes a day which ensures patient compliance. Compliance means optimal efficacy.

## CLINICAL TRIAL

**Treatment Protocol:** The area selected for treatment and monitoring was the central vertex area of the scalp. After enrollment was completed by the physician investigator, a designated area of approximately 19mm was clipped uniformly to a length of 3 mm and the center of the area was tattooed with a permanent green ink, utilizing a commercially available decorative tattoo gun. Each subject was provided with a test device, unspecified as to active or placebo. Pre-treatment photographs were taken by a professional

photographer, with a proprietary SLR camera, macro lens and standardized formatting lens adapter. The subject was instructed on the proper use and care of the device and directed to use it every other day, at home, for 30 minutes, for 17-weeks. The fluence delivered is 1.775j/cm<sup>2</sup>. Monitoring for compliance was managed by an independent third party. The subject was called once per month. At the completion of the 17th week of treatment, the subject returned to the investigation site for clipping and post-treatment photography.

**Results:** The clinical study conducted by a neutral third party for Capillus, LLC, demonstrates that low level laser treatment of the scalp every other day for 17 weeks using the Capillus272 Pro device is a safe and effective treatment for androgenetic alopecia. ClinicalTrials.gov Identifier: NCT01967277. Subjects receiving LLLT at 650 nm achieved a 51% increase in hair counts as compared to sham treated control patients.



Active Treatment Group Subject Pre and Post Treatment



# TALKING TO HAIR LOSS CLIENTS

## EXPECTATIONS FOR LASER THERAPY RESULTS

Hair restoration therapy is a long-term process. Laser hair restoration works but is a gradual process that requires patience. Remind clients that they need time to evaluate the treatment. If they are complying with the instructions for use and regularly using their device as per the treatment protocol, they should expect to see some results within 6 months.

Compliance Is Key: Androgenetic Alopecia is a progressive, lifelong condition; thus laser therapy, like any other treatment for AGA, is intended to be used indefinitely unless otherwise prescribed by a physician. As long as someone complies with laser therapy, they should maintain a fuller head of hair and prevent progression of hair loss.

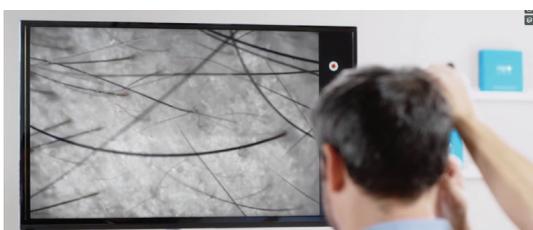
The following is a general guideline of what to expect in the hair restoration journey.

**0-3 Months:** Hair loss should begin to stabilize within the first months of treatment. You may not notice any visible changes on the surface, however changes are occurring below the surface. During this time, laser therapy is restoring the health of the follicle that is responsible for producing healthier strands of hair. The follicle stimulation may accelerate shedding of weaker strands of hair to make way for new strands of thicker, healthier hair. Some users may notice more shedding due to this phenomenon. If you do experience shedding, don't worry, it's a good sign. You may experience some itchiness as the new hair starts to grow and that is also normal.

**3-6 Months:** Next, you will begin to notice a decrease in hair loss. After the first few weeks of using your device according to the instructions, you will notice that hair is not shedding as much as previously. Do not be discouraged if you don't see significant change. Keep in mind that preventing progression of hair loss is in itself a success. You may notice your hair is slightly fuller in the area where you had noticed thinning.

**12 Months:** This is the time to evaluate the results of laser therapy. We recommend you take another set of pictures and compare to those you took at the beginning.

**24 Months +:** This is when you should see the greatest, most impactful results. Expect to see the most you can get from Capillus laser therapy at this point. As long as you continue to comply with laser therapy, you should maintain a fuller head of hair and cessation of hair loss.



## CONSULTATION TOOLS

Many times a client needs to see the reality of their hair thinning. It is helpful to have on-hand a digital microscope with a connected display (monitor or iPad) to illustrate where hair follicles have begun to miniaturize and what follicles of hair are still viable for regrowth.

Having the hair loss scales for men and women on hand also help explain the progression of androgenetic alopecia (See Page 7).

## TRACKING PROGRESS

**Digital Photographs:** The use of before and after photographs is a great way to monitor and show the results of hair restoration treatment. When taking progress photos, consistency is key to properly documenting the progress. Ensure the client is in the same pose and that the lighting and background is the same for each subsequent photo session.

Hair restoration doesn't happen overnight. But, long-term results may be more vivid than anticipated. With before and after photos, you can track the small achievements made. We recommend taking photos every few months over the course of a year. These recurrent snapshots paint a larger picture of the impressive progress.



## SUMMARY

There are many different types of alopecia (hair loss), they basically fall into two categories: cicatricial (scarring) and non-cicatricial (non-scarring) alopecia. Cicatricial alopecia is caused by a medical condition. Non-cicatricial Alopecia may be caused by grooming habits, behavioral issues or heredity. Androgenetic Alopecia (also referred to as male pattern baldness, female pattern baldness, or hereditary hair loss) is a non-cicatricial alopecia and is the most common type of baldness. It accounts for 98% of all hair loss. Persons suffering from hair loss should consult a physician to rule out any underlying medical condition before seeking a treatment method.

There are two main methods for treating hair loss: Surgical and Non-Surgical. Strip donor transplant and follicular unit extraction are the most widely used methods of surgical hair restoration. Minoxidil, Finasteride, and Low-Level Laser Therapy (LLLT) are clinically-proven, non-surgical medical treatments to treating hair loss.

For years, the use of LLLT to treat certain medical condi-

tions has been known. Recently, Low-level Laser Therapy has been widely accepted by physicians as a way to treat hair loss. LLLT works by increasing cell metabolism and increasing blood supply to the hair follicles. By following the treatment protocol, patients will be able to stop further hair loss and promote hair regrowth.

The Capillus low-level laser therapy device is FDA-cleared and clinically proven to help stop hair loss and regrow hair. The treatment protocol for the Capillus laser therapy cap is just six minutes a day. The laser therapy device is battery operated for client mobility. Clients can receive treatment while engaged in other activities such as driving, walking, or enjoying a cup of coffee. When using the Capillus cap as directed, clients can begin to see results in 17 weeks.

Offer the Capillus laser therapy device to clients who express a desire to treat their hair loss, but do not wish to use topical solutions, medications, or surgical methods. Or if they wish to improve the results of their existing treatment method.

# APPENDIX A

## HAIR LOSS CLASSIFICATIONS

### NON-CICATRICAL ALOPECIA

TYPES OF NON-CICATRICAL ALOPECIA		WHAT IT LOOKS LIKE	DESCRIPTION	CAUSE	WHO IT AFFECTS	TREATMENT
ANDROGENETIC ALOPECIA (AGA)	MALE PATTERN BALDNESS (MPB)		Gradual thinning or complete baldness on the scalp that becomes more noticeable over time.  <b>MPB</b> is a predictable pattern of hair loss. In men, it occurs in isolated areas like the crown and temples.	Genetics and high levels of dihydrotestosterone ( <b>DHT</b> ), a hormone, have been known to cause Androgenetic Alopecia	98% of hair loss is attributed to Androgenetic Alopecia.  MPB: Accounts for more than 98% of hair loss in men. About 50% of men will show signs of <b>MPB</b> by 50 years of age.	Hair restoration surgery, topical solutions, medications, low-level laser therapy are the most common types of treatment
	FEMALE PATTERN BALDNESS (FPB)		<b>FPB</b> occurs gradually over the scalp at an unnoticeable rate. In women, balding or thinning hair occurs over the entire top of the head.		<b>FPB</b> is the most common form of hair loss in women. FPB accounts for 25% - 38% of hair loss in women.	
ANAGEN EFFLUVIUM			Hair loss occurs rapidly, and in some cases, patients can lose all their hair.	Caused by a reaction to medications used to treat cancer	Affects patients undergoing treatment for cancer	When patients stop taking the medication, hair regrows
TRACTION ALOPECIA			A recession of the hair line due to chronic traction (or hair pulling).	Caused by grooming habits such as the excessive use of curling irons, blow dryers, or certain hair styles (ballerina bun or tight ponytails).	Women and men who wear their hair in a certain manner for practical, religious or cultural reasons.	Adjusting how the hair is worn, or a change in grooming practices can reverse the effects of traction alopecia.
ALOPECIA AREATA (AA)			The hair loss occurs in clumps.	It is an autoimmune disease in which the body's immune system attacks the hair follicles.	6.8 million people in the United States, about 2% of the US population.	No known cure for Alopecia Areata, but it can be treated with the use of anti-inflammatory medications, topical immunotherapy treatments, or Minoxidil.
TRICHOTILLOMANIA			Affected areas are the eyebrows, scalp and beard.	It is an obsessive-compulsive disorder in which patients have an overpowering desire to pull out or pluck their hair until there are noticeable amount of baldness.	Accounts for approximately 4% of hair loss	Treatment methods include psychological counseling, behavior modification, medication or a combination of all three.
TELOGEN EFFLUVIUM	ACUTE TELOGEN EFFLUVIUM (ATE) CHRONIC TELOGEN EFFLUVIUM (CTE)		<b>ATE:</b> Abrupt onset of shedding, reduction in hair density, and thinning hair  Evidenced by excessive shedding and hair loss.	<b>ATE:</b> Fever, postpartum, change in diet, medication	Occurs when there is a change in the number of hair follicles. If the number of hair follicles producing hair drops significantly during the telogen phase, there will be a significant increase in dormant stage hair follicles.	No statistical data is currently available, but it affects mostly women
	CHRONIC TELOGEN EFFLUVIUM (CTE)		<b>CTE:</b> A form of diffuse hair loss affecting the entire scalp  Evidenced by excessive shedding and hair loss.	<b>CTE:</b> No obvious cause has been determined but it has been linked to medications, hormonal or nutritional imbalances		

NON-CICATRICAL (NON-SCARRING) ALOPECIA

# APPENDIX B

## HAIR LOSS CLASSIFICATIONS

### CICATRICAL ALOPECIA

SCARRING CATEGORIES	INFLAMMATION	TYPE OF INFLAMMATION	WHO IT AFFECTS	WHAT IT LOOKS LIKE	
CICATRICAL (SCARRING) ALOPECIA	LYMPHOCYTIC	Lichen Planopilaris	Accounts for 30%-40% of scarring alopecia. It is the most common cause of primary scarring alopecia	Mostly located at the crown and vertex area of the scalp. The hair loss area is usually smaller, irregularly shaped, and interconnected	
		Frontal Fibrosing Alopecia	Very rare, no statistical data is available		Occurs on the forehead and eyebrows
		Central Centrifugal Alopecia	Primarily affects women of African ancestry	Presents itself as a skin-colored patch of scarring alopecia on the crown, gradually progressing to the outwardly to the parietal areas	
		Pseudopelade of Brocq	Typically affects women 30-50 years of age		Predominantly affects the scalp
	NEUTROPHILIC	Folliculitis Decalvans	Very rare, no statistical data is available	Occurs on the scalp in the form of patches in middle-aged adults	
		Tufted Folliculitis	Rare folliculitis of the scalp		Identified by finding several hair tufts scattered within patches of scarring alopecia
		Dissecting Cellulitis of the Scalp (Dissecting Folliculitis)	Most commonly seen in African American men between 18-40 years of age	Typically presents with fluctuating modules, abscesses, and sinuses, which discharge pus. Lesions are mostly found on vertex and occipital scalp	
SECONDARY SCARRING ALOPECIA			Destruction of the hair follicle is incidental to a non-follicle-directed process or external injury	Severe infections, burns, radiation, tumors or traction	



