

Contents		A STATE OF THE STA			
Beautiful Hair About Hair The Hair Structure The Hair Growth Cycle	1 3 4 6		Bea		tiful
Miniaturization  Causes of Thinning, Shedding and Ageing Ha			Ha		Why beautiful
Age	8	10000			healthy hair
Stress	8		от при		
Medication	9				is important to
Poor diet  Hormonal change	10				a woman
Post pregnancy	10				
Birth control	10		ALC: NO STATE OF THE STATE OF T		The day, the outfit, the look, the
Overstyling	11				success
Smoking	11		The state of the s	Will Company	
Types of Thinning Hair and Hair Loss	13	THAT I		- 1.1.1.1.1.1.1.1.1.1.1.1.1.1.1.1.1.1.1.	For a woman, everything starts with
Alopecia	13				her hair. Hair is an integral part of a
Androgenetic alopecia	14				woman's femininity. Great looking hair
Telogen effluvium	14				is important; it empowers and gives a
Anagen effluvium	16		<b>第二版图 图 图</b>		woman the confidence to be herself, to
Trichotillomania Traction alongois	16 16				enjoy life and to reach for the stars.
Traction alopecia  Folliculitis	16				
Psychological Effects of Hair	17	COMPANIES NATIONAL			
	19				
Steps to Healthy Hair When Should You Consult Your Physician?	20			A TOTAL STREET	
The Importance of Nutrition	21		The state of the s		
Hair Styling Tips and Common Questions	23	March Control		A Part of the second	
Healthy Hair Summarized	24	ALL LANDS		Mary Long Was	
References	26				
		11. 2 / / / / / / / / / / / / / / / / / /			

# Hair in today's society

We all want to look our best and strive to have beautiful hair.

If the condition of our hair starts to deteriorate, it can be upsetting.

In today's hectic and stressful world the current statistics<sup>1,11</sup> show that:

- By the age of 60, 8 out of 10 women will have visible hair loss
- Overall 1 in 2 women will experience hair loss in their lifetime
- 65% of men will experience hair loss by the age of 60
- 40% of hair loss sufferers in the US are women

Unlike in men, hair loss is commonly seen at any age in women however the incidence of hair loss in women increases significantly with age. Thinning hair is associated with the progression of ageing, and at some point most will experience this.

The earlier a problem is addressed, the sooner a solution can be identified. This process may begin with your hair stylist, where it is well known that people feel most comfortable. Your hair stylist can discuss and recommend the best hair care regime for you, thus helping you to maintain fuller, thicker and healthier looking hair.

It's important to know the reasons for poor hair health. Good diet and supplementation with essential fatty acids, vitamins and minerals are important to help maintain healthy hair growth. Having a healthy scalp is also important to help maintain healthy hair growth. We need to shampoo our scalp to remove the build-up of sebum and dead skin cells to eliminate bacteria.

In this guide, you will learn about hair, what affects it and what you can do for your hair to make it healthier.

We all want thicker, fuller, beautiful hair... so read on

## About Hair

To understand how to grow beautiful healthy hair, we must first understand what hair is, how it grows and what affects it.

Your head of hair is made up of about 150,000 follicles. Around 80% to 90% are in the Anagen or growing phase at any one time. So it's normal to shed an average of 100 hairs per day. If, however, you're shedding more than 100 hairs a day, or if you notice your hair getting thinner and lifeless, it could be due to a number of factors from poor diet and stress, to age, hormonal changes or medication, and you may wish to seek medical advice.

Good diet and supplementation with essential fatty acids, vitamins and minerals are important to help maintain healthy hair growth. Whatever we eat goes into our bloodstream. Our blood then delivers these nutrients and vitamins via tiny capillaries straight to the dermal papilla which nourishes growing hair. For this reason diet and nutrition play a big role in healthy hair growth.

It is important to realise that the effects of illness or a body imbalance on the hair and nails will not be realised for at least three months after the event.

What happens to your body today is not going to affect your hair tomorrow. It takes a number of months in line with the Telogen phase of the hair growth cycle to see visible effects.

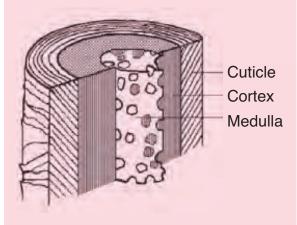
It's normal to shed an average of 100 hairs per day.

#### The Hair Structure

Hair is composed of strong structural protein called keratin. This is the same kind of protein that makes up the nails and the outer layer of skin.

Each strand of hair consists of three layers;

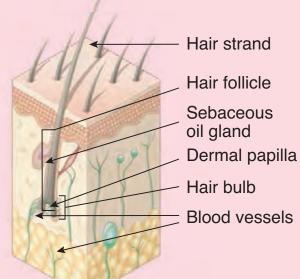
- 1. An innermost layer or medulla which is only present in large thick hairs.
- 2. The middle layer is known as the cortex. The cortex provides strength and is responsible for both the color and the texture of hair.
- 3. The outermost layer is known as the cuticle. The cuticle is thin and colorless and serves as a protector of the cortex.



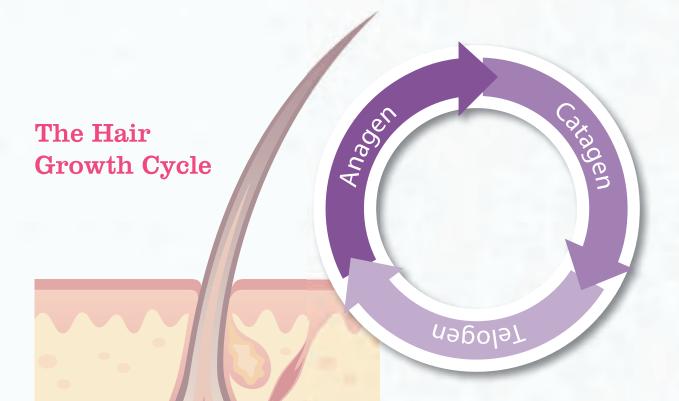
#### Skin and Hair Working Together

Skin is the largest organ in the body which supports the growth of hair and nails. Below the surface of the skin is the hair root, which is enclosed within a hair follicle. At the base of the hair follicle is the dermal papilla. The dermal papilla is fed by the bloodstream which carries nourishment to produce new hair.

When we are sick or unwell or there is an imbalance in our body, our skin may suffer. This is because the blood will travel to the areas that need it the most first to deliver the key nutrients and vitamins. By the time our blood capillaries are taking the blood to our dermal papilla there isn't a huge amount of essential nutrients left, resulting in poor quality hair and nail growth.







It is important to understand the healthy hair growth cycle<sup>2</sup> to understand why hair loss, thinning and shedding occurs.

Human hair grows in a continuous cyclic pattern of growth and rest known as the "Hair Growth Cycle".

Hair grows from the follicle, or root, underneath the skin. Between starting to grow and falling out years later, each hair passes through different growth phases. Every hair is at a different growth phase of the cycle.

#### 1. Anagen

The growing phase of hair development lasts two to seven years and determines the length of the hair.

This is when the hair follicle is attached to the dermal papilla. The longer this phase lasts, the longer your hair will grow. As we get older, the Anagen phase gets shorter, so hair may become thinner after each cycle.

#### 2. Catagen

This is the transitional stage that lasts about 10 days. This is when the hair follicle shrinks and detaches from the dermal papilla, which takes us into our Telogen phase or resting stage.

#### 3. Telogen

This phase lasts about three months, and as the old hair is no longer attached to its blood supply, it can't be repaired and can appear dull and lifeless. In this phase hair growth stops and the old hair detaches from the hair follicle. A new hair begins the growth phase, pushing the old hair out. Around 10-15 per cent of hairs are in the Telogen phase - that's why we shed hairs all the time.

#### **Miniaturization**

Miniaturization is the technical term given to the shortening of the Anagen phase of the hair growth cycle. For many people the length of the Anagen phase shortens every cycle resulting in slower hair growth, becoming thinner, shorter, more brittle, or weak with each successive progression through the hair growth cycle.

Over time, the miniaturization process leads to the appearance of thin or lacklustre hair – vellus baby hair. In some cases, hair may stop growing altogether. Healthy hair is maintained when the scalp receives a sufficient blood supply thus achieving the ideal environment for healthy hair growth. If the follicles do not receive the required nutrients and oxygen rich blood from the blood stream, they shrink and vellus baby hairs develop.

Miniaturization of hair follicles can be recognised by receding hairlines and male and female pattern baldness. Many treatments work by increasing the duration of the Anagen phase or reducing the Telogen phase.

# Causes of Thinning, Shedding and Ageing Hair

There are many factors which influence healthy hair growth<sup>3-4</sup>; these encompass a whole range of medical, emotional and lifestyle conditions which can prevent the body from effectively absorbing the essential nutrients it needs to support healthy hair. Hair thrives on a plentiful supply of specific proteins, vitamins and minerals. Hair is considered as 'non-essential' by the body, so if you are lacking in good nutrition it can often be your hair that suffers. Poor hair condition resulting in thinning hair shedding can be an accumulation of many causes, such as;

#### Age

In our twenties and thirties we typically have 615 hair follicles per square centimeter. The number falls to 485 by the time we hit fifty and to 435 at eighty. Each hair also becomes thinner, therefore reducing hair volume.

#### **Stress**

Believe it or not, the cliché about stress leading to hair problems is actually true. In extreme stress, the adrenal gland goes into overdrive, and the resultant increase in adrenaline sometimes leads to a consequent increase in the production of testosterone and dihydrotestosterone which, without enough estrogen to counterbalance it, can lead to hair not being as healthy as it should be.

For some people being stressed can seriously affect the condition of their hair and it can turn into a vicious circle. Stress affects the hair cycle and the impact of this can cause a lot of stress for the sufferer.



In some instances medicines may have side effects which impact on healthy hair growth. These include cholesterol lowering agents, ulcer healing agents, anti-diabetic drugs, blood pressure medication and birth control pills.

#### Poor diet

A diet rich in protein, vitamins and minerals is essential for healthy hair and hair growth. The hair follicle is a non-essential tissue and therefore one of the last tissues to receive nutritional substances. Any long-term deficiencies may lead to premature hair problems.

#### **Diet tips:**

- Eat at least 5 ounces (approximately 150 grams) of protein a day
- Food high in protein include; Meat, Fish, Beans and Lentils, Eggs, Cheese, Tofu, Nuts and Seeds, Hummus.

Because hair is made of 80% to 95% protein, this is an important area of your diet. Iron deficiency is a major cause of hair loss especially in women or men who are vegetarian. If you are iron deficient or anemic, then taking iron could be helpful for your hair.

Other important minerals for healthy hair functioning are<sup>18</sup>:

- \* Zinc found in seafood and cereals
- \* Silica found in potatoes, red and green peppers and bean sprouts
- \* Magnesium found in green vegetables and nuts
- \* Essential fatty acids such as omega fatty acids found in fish.

#### Hormonal change

Hormonal changes associated with menopause can affect the healthy hair growth cycle. While this menopausal side effect is relatively rare, it has been known to occur in some cases. Other hormonal changes in the body, notably thyroid issues and hormonal responses to changes in the autoimmune system, have been known to affect hair growth in some women. Women with Polycystic Ovary Syndrome can experience problems with their hair due to a hormone imbalance and increased sensitivity to the male hormones we all have.

#### Post pregnancy

While a beautiful and natural process, it is nonetheless a stressful process on the body. Consequently, it's common for post-partum hair shedding or even bald patches to occur as the body's hormone levels normalise. This is usually a temporary condition and should reverse itself in time. Breast feeding should be borne in mind here, as your body will not normalise until you have stopped breastfeeding. If hair health is still an issue 3 to 6 months after breastfeeding, chances are the hair condition may be attributed to something other than the pregnancy.

#### Birth control

The pill is the most common form of contraception in women. The mixture of progesterone and estrogen carries an occasional side-effect which affects healthy hair growth in those who have a hereditary medical history of hair growth problems.

#### Overstyling

Aerosol sprays, hair dyes, hair irons, and curlers might seem to be essential to hair beauty in the short term, but do keep in mind that excessive use of any of these items may result in damaging hair in the long run. You may also want to consider the styling products that you're putting into your hair and scalp on a daily basis.

#### Smoking

Smoking affects healthy hair growth. Cigarette smoking has been shown to cause poor circulation, which can affect the amount of blood flow to our hair follicles. Smoking is also known to deplete the levels of Vitamin B in your body which is important for healthy hair growth.

> Ensuring you eat a balanced diet including plenty of essential highprotein foods (such as meat, eggs, nuts and milk), and fruit and vegetables will boost your vitamin and mineral intake and keep your hair looking its best.





Types of Thinning Hair and Hair Loss

#### Alopecia

Alopecia<sup>7,8,9</sup> is an autoimmune condition that causes hair to fall out from the scalp or other areas of the body in small, round, smooth patches because the immune system mistakenly attacks the hair follicles, inhibiting new hair growth. Alopecia carries a considerable disease burden and can destroy a person's quality of life. About 2% of Americans, or 4.5 million people, will have an episode of alopecia during their lifetime<sup>14</sup>; however, the condition is more common in children and young adults than in any other age group. Almost 66% of people with alopecia are under age 30 and only 20% are older than age 40.<sup>14</sup> In addition, alopecia may be hereditary; about 20% of those with alopecia have a family history of the condition.

There are three types of alopecia – alopecia areata, alopecia totalis, and alopecia universalis. Usually occurring on the scalp, alopecia areata begins as a single, smooth, circular patch about the size of a quarter. The patch grows back in about 3-6 months without treatment and may even grow back as white in color. Other times, two or three patches may appear at one time, which should also grow back, but may be replaced by others.

Patterns of female alopecia can vary considerably in appearance.
Patterns that may occur include:

- \* Diffuse thinning of hair over the entire scalp, often with more noticeable thinning toward the back of the scalp
- \* Diffuse thinning over the entire scalp, with more noticeable thinning toward the front of the scalp involving the frontal hairline.

Alopecia totalis is the complete loss of hair from the scalp while alopecia universalis is the complete loss of hair from the entire body. In most cases, the hair grows back without treatment, but there are medications available that can help the immune system cease attacking the hair follicles and allow new hair growth. The cause of alopecia is currently unknown.<sup>14</sup>

#### Androgenetic alopecia

This is an inherited sensitivity to the effects of androgens (male hormones) on scalp hair follicles. However, women with hair loss due to this cause usually do not develop true baldness in the patterns that occur in men—for example, women rarely develop the "cue-ball" appearance often seen in male-pattern androgenetic alopecia. 10

#### Telogen effluvium

A common type of hair thinning or shedding caused when a large percentage of scalp hairs are shifted into the "shedding" phase. This means that more hairs are in the resting stage than usual, slowing down the hair growth cycle and resulting in more than typical hair loss. 12-13

The causes of telogen effluvium (TE) may be hormonal, nutritional, drugassociated, or stress associated.

The hair growth cycle needs to revert back to the Anagen phase before it will re-grow.



Thinning from TE is usually more severe at the parting and rarely results in recession of the hairline. It is believed to develop by either:

- \* An environmental trigger that "shocks" the hair follicles into a dormant state, causing excessive shedding or thinning of the hair that is usually noticeable within a few months of the "shock". This type of TE develops rapidly, but it can also recede just as quickly. The hair follicles return to normal once the trigger is removed and will begin growing new hairs quickly. Typically, people with this type of TE experience hair loss for less than six months and regain their hair within a year.
- \* Exposure to a persistent trigger that causes the hair follicles to enter the resting phase and remain there for an extended period instead of re-

entering the Anagen phase.
When this happens, more hairs remain in the Telogen phase and fewer hair follicles are available to grow new hair in the Anagen phase, resulting in a gradual thinning or shedding of hair. This type of TE progresses much more slowly and lasts longer than TE caused by an environmental "shock".

\* Abbreviated Anagen, Catagen, and Telogen phases during the hair growth cycle, causing thinned hair on the scalp and constant shedding of shorter, thinner hair fibers.

Triggers for TE in men and women include<sup>16</sup>:

- \* Chronic illness
- \* Chronic stress
- Hormonal changes due to giving birth (postpartum alopecia)
- Certain vaccinations



- \* Crash dieting/improper nutrition
- \* Physical trauma (car crash, falling accidents)
- \* Surgery
- \* Certain medications (antidepressants, hyphen anti-coagulants, anti-inflammatory)
- \* Toxin exposure

The good news is that TE is reversible and the hair usually grows back to its healthy state once the trigger has been identified and removed.

Telogen effluvium is when more hairs remain in the Telogen phase therefore, fewer hair follicles are available to grow new hair in the Anagen phase, resulting in a gradual thinning or shedding of hair.

#### Anagen effluvium

An extensive hair loss caused by sudden profound disturbances to the matrix cells of the hair follicles. Rather than shedding, the hair is detached from the bulb suddenly in its growing phase.

However, because it is in the anagen phase the hair will re-grow once the offending factor is removed. The two most common causes of anagen effluvium occur from chemotherapy<sup>15</sup> and from radiation therapy.

#### Trichotillomania

Considered an impulse control disorder, trichotillomania<sup>14</sup> is an uncontrollable urge to repeatedly pluck or pull the hair out of the scalp or other body areas, leaving uneven, rough, round patches. People suffering from trichotillomania engage in this behaviour as a way to deal with feelings of sadness, depression, anxiety, and poor self-esteem. About 4% of the US population has trichotillomania with women four times more likely to suffer from the condition than men. Symptoms of trichotillomania, usually begin in adolescence and the behaviour tends to cease in about 12 months for most people. For those that have persistent trichotillomania, treatment with certain medications combined with behavioural therapy has shown some effectiveness.17

#### Traction alopecia

This is caused by damaging the dermal papilla and hair follicle by constant pulling or tension over a long period and is often seen in women with tight braiding.

#### **Folliculitis**

This is an infected hair follicle which if not treated can lead to scarring alopecia. It occurs most commonly in men and it requires specialized treatment i.e. referral to a Physician, a Dermatologist or Trichologist.

#### **Involutional Alopecia**

Hair naturally thins a bit due to the normal aging process as more hair follicles enter the Telogen phase and the residual hairs become shorter and less in number. This type of hair loss is known as involutional alopecia.



# Psychological Effects of Hair

So now we know how your hair grows, what affects its growth, and the types of hair issues, let's look into the effects hair issues have on women in their everyday lives. Hair is an important part of a woman's feminity therefore hair issues cause significant psychological stress for those who suffer from it primarily because society places such an emphasis on beautiful hair. Many people who suffer from hair loss often report feelings of depression, self-consciousness, and poor self-esteem<sup>15</sup>.

Hair loss
is a sensitive
issue that
many women
worry about

Recently, some research<sup>6</sup> was conducted which focused on the psychological effects of thinning hair in 1,000 women who had perceived hair loss issues, and 1,000 women who did not have any hair loss issues. This research showed that thinning hair can strongly affect a woman's overall confidence and her sex life. According to the survey:

- \* 96% of women suffering from thinning hair felt that their hair is connected to their sense of beauty
- \*86% envy women with thick hair
- \* 55% of women felt they are negatively judged as a result of their thinning hair and 45% felt selfconscious in presentations or meetings
- \* 39% agreed or somewhat agreed that their thinning hair negatively affects their sex life







# Steps to Healthy Hair



## What healthy hair steps can you take?

There are a variety of ways you can improve and maintain the health of your hair.

- \* Ensure you're eating a healthy and balanced diet full of nutritious lean proteins, fruits and vegetables, and foods high in omega-3 fatty acids which all help to promote a healthy scalp, strengthen hair, and promote hair growth.
- \* Take a look at your lifestyle; are you stressed? Excessive stress is a known contributor to hair loss. Is there a way you can reduce this stress? For example have some 'me' time, join a yoga class, take more walks etc. Just small changes can help you manage this stress better.
- \* Style your hair with care tightly pulled hair with rubber bands or cornrows, dyes, perms, excessive shampooing, heated appliances or blowdrying, and harsh shampoos and styling products can cause significant damage to

the hair. Perhaps you could allow your hair to dry naturally once a week, or reduce the amount of hair styling product you use. Taking the appropriate steps to minimize the damage caused by these practices could stop hair loss, shedding or thinning and allow new hair to grow.

Discuss your hair issues with your Physician, Dermatologist or Trichologist to get their recommendations.



# When Should You Consult Your Physician?

Hair loss and shedding can appear suddenly or gradually over time and present itself in many different ways, depending on its underlying cause. Hair loss may not only affect the scalp, but the whole body, too. Depending on the type, the hair loss can be temporary and the hair will grow back or the loss may be permanent.

Individuals should consult a physician if they are experiencing the following symptoms with their hair loss:<sup>16</sup>

- \* Losing hair in an unusual pattern
- \* Losing hair at an early age (in the teens or twenties)
- \* Losing hair suddenly, not gradually over time
- \* Losing hair in large quantities after combing or brushing
- \* Feeling pain or itchiness in the areas of hair loss
- Noticing redness, scaliness, or a rash on the affected areas
- \* Experiencing acne, facial hair, or an abnormal menstrual cycle
- \* Experiencing male pattern baldness (androgenetic alopecia) as a female
- \* Finding bald spots in your eyebrows



\* Gaining weight or have muscle weakness, sensitivity to cold temperatures, or fatigue

- \* Experiencing signs of a bacterial infection on the scalp, such as: increased pain, swelling, redness, tenderness, or heat on scalp, a fever of 100°F (37.8°C) or higher with no other obvious cause
- \* Experiencing gradual thinning and balding on the scalp, and want to discuss treatment options
- \* Believing that a medication may be causing the hair loss.

If you are experiencing any of these symptoms, you should consult your primary care physician as soon as possible. You may also consult a dermatologist about your hair loss and possible treatment options.



## The Importance of Nutrition

It is always recommended to follow a well-balanced diet for your hair to look and feel as healthy as possible. If your diet is poor it is likely your hair will be too. A well-balanced diet includes a combination of the correct foods: carbohydrates, proteins, fats, minerals and vitamins, eaten in the right proportions at the right times.

#### **Great Hair Foods**

- Eat whole-wheat bread and cereals instead of white refined types
- \* Nibble on seeds such as sunflower or pumpkin which are rich in protein
- Eat unsalted nuts as these are better for you and also rich in protein
- \* All fresh fruits and salads are good for you
- \* The darker the greens the better they are for you

\* Tropical fruits are often sweeter and richer in enzymes such as: mango, papaya, banana and pineapple.

It's not only what you eat, but when you eat is important. Regular snacking is essential to help sustain energy levels; therefore you should not skip meals and ideally aim to eat every four hours.









# Hair Styling Tips and Common Questions

Now you know what you should be doing from a nutrition point of view, let's learn about a few tips to help make your hair looking its best.

## What styles are best for thinning hair?

Long hair puts pressure on the root, which is why it's a good idea to keep your hair short if it's showing signs of thinning. The good news is that there are plenty of fashionable styles to choose from. Speak to your stylist to choose the best syle for your hair.

## How often should I wash my hair?

Hair thinning accumulates between washes giving you an inaccurately high 'shed' when you shampoo. Wash your

hair as frequently as you can because you'll keep an accurate track of your hair shedding and you'll keep your hair looking its best.

### What sort of brush should I use?

Go for a soft bristle or massaging brush that will help to stimulate the scalp and boost circulation to the hair follicle. Fine hair tends to tangle, so brush gently and avoid tugging at the hair.

#### How can I best style my hair?

Use high-volume styling products that maximise your hair. Hair colouring can help add contrast, with gentle highlights providing 20 per cent more visual volume.

### How should I address my thinning hair with my stylist?

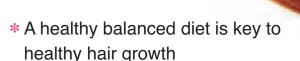
Be honest and make sure you have a proper consultation before any hair cutting or styling.



## Healthy Hair Summarized

- \* Trichology is the science of the structure, function and diseases of the human hair and scalp.
- \* Hair is made up of a complex chain of amino acids, which are organic compounds. Amino acids are building blocks of proteins. Essentially hair is made up of nine amino acids.
- \* Our skin is the largest organ in the body that supports the growth of hair and nails.
- \* Located at the base of the hair follicle is the dermal papilla that absorbs essential nutrients from our blood stream to support hair growth.
- \* When we are sick or there is an imbalance in our body, the blood will often neglect the skin as it delivers essential nutrients to other organs first such as the lungs, kidneys, liver etc. For this reason the appearance of our skin, hair and nails will deteriorate. What happens to our body today will not affect our hair tomorrow, it can take up to three months to notice these affects.
- \* Anagen, Catagen and Telogen are the three phases of the hair growth cycle.
- \* The Anagen phase is the most important phase for ensuring optimum hair growth and can last

- between 2 and 7 years. 80-90% of hairs are in the Anagen phase at any one time. Each hair is independent having its own growth cycle at different times; otherwise we would all lose our hair at once during the resting stage.
- \* The average head of hair is made up of between 100,000 150,000 hair follicles.
- \* On average, we shed up to 100 hairs every day. This is normal hair shedding and accounts for the hair loss seen every day in the shower and with hair combing. The less you shampoo your hair the more hairs will appear in the plug when you shampoo your hair. The longer your hair, the more hairs will appear to be falling, however you must take the length into account.
- \* Miniaturization is the term used to describe the shortening of the Anagen phase of the hair growth cycle
- \* The main causes of thinning hair are age, stress, medication, poor diet, hormonal changes, post pregnancy, birth control, overstyling and smoking.



- \* The most common type of thinning hair is known as Telogen effluvium.
- \* The density of your hair and hair type is determined by the shape of the hair bulb. The cuticle, which is the keratinised outer layer of hair, forms itself in scale like cells, laying in a downward direction. This layer is one cell thick, but can overlay several times, depending on the hair texture, condition and colour. Blonde hair tends to be denser than red heads or brunettes, so in every square inch you will find more blonde hairs.
- \* Natural blondes suffer more from an oily scalp than any other hair colour because there are more blonde hairs per square inch on the head and each hair follicle contains a sebaceous gland that produces sebum.

So now you know all about hair, what affects it and what you can do for your hair to make it healthier.

Take action today for thicker, fuller, beautiful hair in the future...

For more information about hair visit:

American Board of Dermatology: www.abderm.org

American Academy of Dermatology: www.aad.org

International Association of Trichology: www.trichology.edu.au/

# References

- Statistic Brain http://www.statisticbrain.com/hair-loss-statistics/ Source: Relevant Research, Inc., International Society of Hair Restoration Surgery, Date Verified: 7.26.2012. Accessed May 16, 2013.
- 2. Alaiti S. Hair Growth. http://emedicine.medscape.com/article/837994-overview#a30. Accessed May 16, 2013
- 3. MedlinePlus website. Hair Loss. http://www.nlm.nih.gov/medlineplus/ency/article/003246.htm. Accessed May 16, 2013.
- 4. Mayo Clinic website. Hair Loss Causes. http://www.mayoclinic.com/health/hair loss/DS00278/DSECTION=causes. Accessed May 16, 2013.
- 5. Hunt N. The psychological impact of alopecia. BMJ. 2005 October 22; 331(7522): 951–953. http://www.ncbi.nlm.nih.gov/pmc/articles/PMC1261195/. Accessed May 16, 2013.
- 6. Lab42 survey on 2,000 women, 2011. Accessed May 16, 2013.
- 7. University of Maryland Medical Center website. Alopecia. http://www.umm.edu/altmed/articles/alopecia-000004.htm. Accessed May 16, 2013.
- 8. Thiedke CC. Alopecia in Women. Am Fam Physician. 2003 Mar 1;67(5):1007-1014. http://www.aafp.org/afp/2003/0301/p1007.html. Accessed May 16, 2013.
- Gilhar A et al. Alopecia areata. N Engl J Med 2012; 366:1515-1525. April 19, 2012. http://www.nejm.org/doi/full/10.1056/NEJMra1103442. Accessed May 16, 2013.
- Genetics Home Reference website. Androgenetic alopecia. http://ghr.nlm.nih.gov/condition/androgenetic-alopecia. Accessed May 16, 2013.
- American Hair Loss Association website. Introduction Men's Hair Loss.
   <a href="http://www.americanhairloss.org/men\_hair\_loss/introduction.asp">http://www.americanhairloss.org/men\_hair\_loss/introduction.asp</a>. Accessed May 16, 2013.
- 12. Hughes ECW. Telogen Effluvium. http://emedicine.medscape.com/article/1071566-overview#a0199. Accessed May 16, 2013.
- 13. WebMD website. Telogen Effluvium and Other Effluviums. http://www.webmd.com/skin-problems-and-treatments/hair-loss/effluviums. Accessed May 16, 2013.
- 14. PubMed Health website. Trichotillomania. http://www.ncbi.nlm.nih.gov/pubmedhealth/PMH0002485/. Accessed May 16, 2013.
- 15. WebMD website. Hair Loss During Chemotherapy. http://www.webmd.com/skin-problems-and-treatments/hair-loss/chemotherapy. Accessed May 16, 2013.
- 16. WebMD website. Hair Loss When to Call a Doctor. http://www.webmd.com/skin-problems-and-treatments/hair-loss/tc/hair-loss-when-to-call-a-doctor. Accessed May 16, 2013.

#### **Additional Resources:**

- 1. Mayo Clinic website. Hair Loss Preparing for your appointment. http://www.mayoclinic.com/health/hair-loss/DS00278/DSECTION=preparing-for-your-appointment. Accessed May 16, 2013.
- 2. International Society of Hair Restoration Surgery website. Hair Restorative Medications: A Summary at a Glance. http://www.ishrs.org/article/hair-restoration-medications-summary-glance. Accessed May 16, 2013.
- 3. WebMD website. Natural Treatments for Hair Loss. http://www.webmd.com/skin-problems-and-treatments/hair-loss/features/hair-loss-natural-treatments. Accessed May 16, 2013.