

## Telogen Effluvium - Why, When, and How

Posted by : admin on Oct 10, 2007 - 10:04 PM

Editorials

Telogen Effluvium - Why, When, and How Dr. Richard Lee covers some of the most common questions regarding Telogen Effluvium - a condition that can masquerade itself as many things, including male and female pattern baldness...Effluvia? Effluviums? Even the name is confusing. According to Dorland's Medical Dictionary, telogen [Gk, telos, end + genein, to produce] is the resting phase of the hair growth cycle lasting approximately 100 days and effluvium: [L, effluvium, a flowing out] is defined as an outflow, which may pertain to sudden, severe hair shedding.

### The Hair Growth Cycle

To understand telogen effluvium, we need to have some knowledge of the hair growth cycle. Hair does not grow continuously on the human scalp. The anagen (growing) phase for terminal hair can extend 3 to 7 years and is a reflection of the size of the hair follicle. Catagen is the transitional portion of the hair growth cycle, between anagen and telogen and lasts only 1 to 2 weeks. During this time, there is a rapid involution and regression of the hair follicle. The hair follicle then enters the telogen phase, which is a relatively fixed period of time, approximately 100 days, regardless of the size of the hair follicle. There is no growth of the hair shaft during this phase. It is at the end of the telogen phase that the entire hair shaft, also often referred to as the club hair, will spontaneously shed, while a new hair shaft is forming within the hair canal. The white bulb at the end of the hair, along with the loosely attached collection of friable debris gives the shed hair its characteristic appearance.

In the scalp of the healthy, young human adult, approximately 90% of the hair will be in the anagen (growth) phase and approximately 10% will be in the telogen (dormancy) phase. Less than 1% will be in the catagen (transitional) phase. When you consider that the scalp contains 100,000 hairs, with 10,000 in the telogen (dormancy) phase... and 1% of those hairs in the telogen phase will be at the end of the 100 day long phase, you can easily understand why it is normal to shed 100 hairs per day.

### What is Telogen Effluvium?

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When excessive amounts of hair simultaneously switch from anagen (growth) into telogen (dormancy) and subsequently shed several months later, the phenomenon is referred to as a telogen effluvium. Rarely are more than 50% of the hairs on the head involved. Telogen effluviums can be acute or chronic. When the shedding lasts more than six months or persistently recurs, it is referred to as a chronic telogen effluvium. Chronic telogen effluviums have been reported mainly in women. No racial predilection exists. Although telogen effluvium can affect hair on all parts of the body, generally, only loss of scalp hair is symptomatic. The exact prevalence is not known and getting accurate statistics would be very difficult, but the condition is quite common. Telogen effluvium can occur at any age. It is likely that most adults have experienced an episode of telogen effluvium at some point in their lives and, unbeknownst to

most people, everybody has experienced the phenomenon early in life. In fact, mothers have been more aware of telogen effluviums in newborns and babies than most doctors have ever been. It is typical for a band like area of occipital hair follicles to enter the first telogen close to the time of birth and for these hairs to shed 2 to 3 months later. In the human infant, waves of hair growth occur before establishment of the mosaic pattern, which is usually present by the end of the first postnatal year.

### **What causes Telogen Effluvium?**

In order to cause a large number of hair follicles to simultaneously switch from the anagen (growing) phase into the telogen (resting) phase, the body has to undergo some systemic insult. A telogen effluvium is not caused by topical medications. But because there is a required time lapse of several months between the inciting cause and the excessive shedding of hair, the exact cause of the telogen effluvium is often not positively identified.

A typical and common case of telogen effluvium would be the episode of severe shedding of hair that may occur approximately 100 days after a woman has given birth. The inciting factor is probably the abrupt hormonal changes that occur at the end of pregnancy. All of the hair grows back within a year.

Other causes of telogen effluvium include illness, major physical trauma, menopause, crash diets, severe psychological stress, major surgery (especially with general anesthesia), hypo- or hyperthyroidism, anemia's, acute and severe blood loss, heavy metal poisoning, etc. Chronic illness such as malignancy, and any chronic debilitating illness, such as systemic lupus erythematosus, end-stage renal disease, or liver disease can cause telogen effluvium.

Immunizations also have been reported to cause acute hair shedding. Even jet lag and job changes have been reported to cause a telogen effluvium. In the United States, oral medications may very well be the most common cause of telogen effluviums. The list of medications associated with telogen effluviums is extensive and includes retinoids, beta-blockers, anticoagulants, SSRI's, non-steroidal anti-inflammatories, calcium channel blockers, etc. In any and all cases, the common factor is metabolic or physiologic stress several months before the start of the hair shedding.

### **How do I know if I have TE?**

Making the diagnosis of a telogen effluvium is usually quite straightforward. A 'hair pull' will determine whether or not a disproportionate number of hair follicles are in the telogen phase. And this is a test, which the patient can do himself or herself. Pinch a bunch of hair between your thumb and middle finger. You will have approximately 25 to 30 hairs within the pinch. Give the bunch of hair a sharp tug. Repeat this tug in several places over the scalp. It would be normal to dislodge one or two hairs with each pull, because approximately 10% of the hairs on the scalp are in the telogen phase. The hairs that are dislodged should have a small, friable, whitish bulb on the scalp end. If you pull out more than 4 or 5 hairs in each pull, it's likely that you are having a period of telogen effluvium. For an accurate pull test, it is important that you have washed your hair regularly, i.e. daily or every other day. With infrequent washing, more hair than normal may pull out giving an erroneous interpretation. Since a telogen effluvium is not limited to the hair follicles at risk for MPB or FPB, shedding can involve hair on any part of the scalp (and even body hair). The underlying scalp has a normal appearance without scarring or inflammation and there should not be any areas of complete alopecia. A close examination of the scalp may reveal

a higher than expected number of short new hairs growing in.

If there is an obvious history of an inciting event and the time elapsed between the inciting event and the excessive shedding is consistent with the approximate length of a telogen phase, laboratory studies are of little use in making the diagnosis. Although a scalp biopsy can be performed to confirm the diagnosis, it would seldom be necessary if the history is characteristic and a 'hair pull' produces numerous telogen hairs. There are no signs or symptoms, which allow you to anticipate the shedding from a telogen effluvium.

### **Treating Telogen Effluvium**

Because acute telogen effluvium is in reality a normal process, which occurred prematurely in a synchronized manner to a large number of hair follicles, and which resolves spontaneously, treatment can be limited to reassurance. The identifiable inciting factor should be avoided or discontinued or treated, whichever is appropriate. Assuming there is no intervening pathological process, all of the hair will be replaced in six to twelve months and the replacement hair should be identical to the hair that was shed.

### **Telogen Effluvium and Miniaturization**

Unfortunately, a telogen effluvium can be the harbinger of the onset of Male Pattern Baldness or the initial event in a period of accelerated MPB. In these cases, which are fairly common, the hair also grows back, but the hair may be significantly finer and smaller, because the hair follicles affected have miniaturized by the MPB process. While 5% topical minoxidil is not proven to promote recovery of hair in telogen effluvium, this medication has a theoretical benefit because minoxidil acts directly on hair follicles and promotes anagen growth. Patients who are eager to play an active role in their treatment may wish to use a 5% minoxidil solution. The use of DHT inhibitors is not recommended for the treatment of telogen effluvium.

### **In Conclusion**

Chronic telogen effluvium is more likely to be caused by a chronic metabolic abnormality and is less likely to resolve rapidly. The underlying cause or disorder should be avoided or discontinued or treated, whichever is appropriate, and the patient should have reassurances that the hair loss will not progress to baldness.

Hair transplantation is not a recommended treatment for telogen effluvium.

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