



HOT TOPICS

in Electrolysis

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In electrolysis, each professional has her own working habits, her own personal touch. These differences, from one electrologist to another, are sometimes the object of inquiries even intense discussions. On the list of subjects that are the most controversial in electrolysis, is the one about the best interval of time between treatments. How many weeks should go by between each session? Two, three, four, six or eight weeks? There are many answers from one electrologist to another. At the second rank on the list, is the question about whether or not a temporary method of hair removal should be used between sessions. Some electrologists suggest shaving between treatments; others disapprove completely. Who is right? Which practice is the best? Well, let's try to find answers to these questions!

The Growth Phases

Before starting the debate, it is essential to review the different hair development phases. The life cycle of a hair consists of four distinct phases: the anagene phase, the catagene phase, the telogene phase and the exogene phase. There are also three types of hair: lanugo, vellus and terminal.

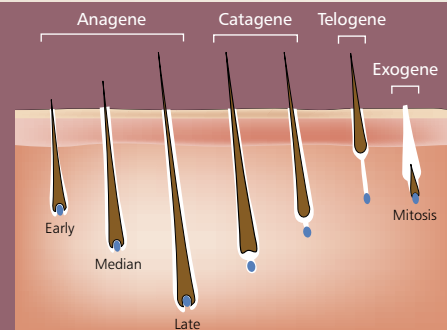
Lanugo hair is a fine down which grows on the body of the foetus and which is less abundant on the newborn baby. As for vellus hair, it is very fine, usually with almost no pigmentation (even without it sometimes). It is located in the pilosebaceous unit that is in the lobe of the sebaceous gland. This kind of hair will never become terminal unless there is topic traumatism (plucking, shaving) or a systemic condition (disorder, sickness, etc.).

According to medical research, vellus hair goes through the same phases as terminal hair and can take up to 2 to 3 months before growing back. Clinical studies indicate that it is possible to obtain excellent results on vellus hair during an electroepilation treatment even during the telogene phase.

Remember that when you treat the median part of the upper lip (fine, virgin hair, very superficial follicle), you can have results after only one or two treatments, if, of course, the following conditions are met:

- 1.) A perfect insertion technique, which means a superficial insertion according to the depth of the hair follicle.
- 2.) The right adjustment parameters, which means a very short period of time, in thousandths of a second and an average intensity between 50% and 70% (on the *Apilus*®).

Hair Growth Cycle



Anagene

A Early Anagene



B Median Anagene



C Late Anagene



D Migration of Germinatives Cells



The most controversial... the anagene phase.

It is the phase where the stem cells reproduce by mitosis. The mitosis activity is intense in order to produce a new hair and grow a follicle. The growth time during the anagene phase depends on several factors such as: age, sex, body area, race, heredity, hormones and relative to hair follicles, on the number of androgen receptors and hormones.

Each follicle that produces hair has its own growth time variation. The anagene phase consists in 3 steps described as follows: the early anagene phase (**A**), the median phase (**B**) and the late anagene phase (**C**).

A) At the early anagene phase, the follicle is not as deep and distorted. The bulb is very easy to reach and is located near the bulge. (Ref.: Gior. Gino. Modern Electrology)

B) The median growth phase contains all the germ cells necessary for hair growth. Since the follicle is deeper and hydration is at its maximum, it is the best time to perform thermolysis techniques, such as *Flash™*, *MicroFlash™*, *PicoFlash™*, or *Blend* techniques.

C) At the late anagene phase, the bulb reaches its characteristic form. It ages, starts dehydrating, keratinizing and gradually detaches itself from the papilla and follicle external sheath. It is slowly growing into the catagene phase.

There are 3 reasons why an electrologist should remove hair during the early anagene phase (**A**):

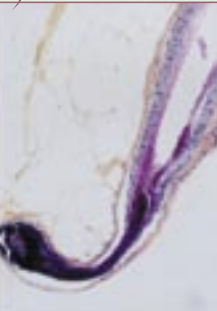
- 1.) To be able to reach the bulb in the case of naturally curly hair.
- 2.) To be able to reach the bulb in the case of a distorted follicle (the hair was pulled out without considering in which direction it was growing).
- 3.) To better reach the papilla and the bulge, which are close to each other at this phase.

We know that it is very difficult to insert a probe in a distorted follicle in the late anagene phase. In such a case, the effectiveness of the treatment is minimal since it is almost impossible to reach the papilla. Most of the time, there is a resistance when pulling the hair or the current simply cuts the hair. Finally, the same hair can cause folliculitis or reappear in the late anagene phase or even in the catagene phase. Since at the early anagene phase, the hair is less distorted and not as deep, we are sure to reach the bulb without difficulty and to obtain better results whatever technique is used.

Also, according to Dectro's latest research on human follicles, in collaboration with Dr. Charles Doillon from Laval University in Québec, it has been demonstrated that the bulge as well as the bulb contain germ cells responsible for hair growth (**D**). So, to permanently remove hair, both areas have to be destroyed, and the best way to do so is during the early anagene phase.

What do we do with hair in the median or late anagene phase? It is best to use the proportional dual pulse technique in rapid thermolysis offered by *Apilus®* in order to destroy the bulge and the bulb. This technique must be combined with *Pro-Tec®* insulated probes (*IsoGard™* or *IsoBlend™*) which are specially designed to protect the skin however deep is the insertion. What if the hair is distorted? You can always use combined currents. However, this technique becomes inappropriate if the hair is already in the catagene phase!

G Early Catagene



Catagene

The catagene phase, also called apoptosis (programmed death of the hair), is a transition phase during which time, the bulb dries up, gradually detaches itself from the papilla to come up towards the surface up to the bulge. This period of transition is very short in time (about 2 weeks). Frequently, the catagene hair, which can be found in the area nourished by hormones, has no time to shorten itself and the germ cells of the papilla start over the mitotic process. This reaction explains why there can be two hairs in the same follicle (one telogene and one anagene) without them necessarily coming from a twin papilla (ex.: hyperpilosity, medication, hormonal disorder, etc.).

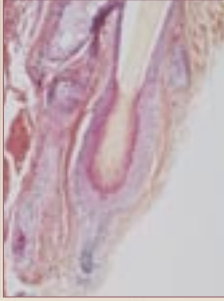
In the catagene phase, the dual pulse technique can also offer interesting results if the treatment is done at the beginning of the phase. However, it is difficult to anticipate this phase since it is a very short one and in no time, the hair is in the telogene phase. The best thing is still to plan short intervals of time between treatments. (**G**)

telogene

E) Telogene



F) Late Telogene



In the telogene phase, the hair is at the end of its life cycle, it is keratinized and depigmented. Its bulb looks like a grain of salt and is located under the sebaceous gland, very close to the bulge. According to Dr. Charles Doillon's research, we know that the bulge germ cells can be destroyed by heat. These studies prove that interesting results can be obtained even during the telogene phase. Be careful though with skin reactions! What is important during that phase is to take into account the depth of insertion which is very superficial, to favor rapid thermolysis techniques such as *MicroFlash™* or *PicoFlash™*, to use insulated probes and to adequately adjust the working parameters. **(E, F)**

H) Exogene and Beginning of the Mitosis on Papilla



exogene

The exogene phase refers to the shedding period of the hair. It represents the period when the hair falls on its own and gives out the chemical signal for a new sequence of hair growth. **(H)**

temporary Methods and treatment planning

Now that we understand the hair life cycle, what about temporary hair removal between sessions (waxing, shaving, tweezing, sugaring, etc...) and scheduling treatments? A few years ago, it would have been unthinkable to suggest shaving or waxing between treatments to a customer. Most electrologists would have refused this practice on the pretext that hair (and vellus hair) would be stimulated making their work more difficult. As years go by, the rules change and we think that everything is accepted: shaving or waxing between electroepilation treatments, appointments every six to eight weeks... But be careful!!!

It is understandable for technicians who offer laser or intense pulsed light (IPL) treatments to ask their clients to shave between hair removal treatments. Indeed, in order to destroy the hair, the light or the laser must be absorbed by the hair pigmentation. For this reason, it is imperative to shave between sessions because if the hair is visible at the surface during a treatment, the light will burn the skin superficially. It is also best to plan appointments every six to eight weeks in order to have enough time for the hair which has been dried out, to be expelled completely. After this period of time, the new hair will probably be in the median or in the late anagen phase, even in the early catagen phase, if there is a hyperpilosity problem.

In electroepilation, the hair is immediately removed from the follicle. The depth of each follicle varies from one to another, so it is perfectly normal after two or three weeks to see new hair of a few millimeters coming out. If you let six to eight weeks go by between sessions, you really complicate your work, specially with people that have hyperpilosity and/or distorted follicle conditions. In this case, the ideal would be to plan an appointment every two to three weeks maximum.

Also, for us electrologists, the best way to evaluate our work is to examine the growth. Actually, if the technique has been well done, the new hair will be pointy. On the other hand, if it has been badly executed and some hair has been cut because of too superficial insertions or too high parameters, the hair will have a square tip. So, if we allow shaving between hair removal sessions, we have no way to assess ourselves and correct our working method. This is an excellent reason not to encourage any temporary hair removal method between electrolysis treatments. And if the appointments are scheduled every two or three weeks, shaving won't be necessary!

In conclusion, we have chosen to be professional electroepilation technicians, we are passionate and concerned about our work... and we must continue this way. Of course, it is our responsibility to learn from our own experiences, to assess our work and this without neglecting the different options, new research and new technologies that are offered to us. According to my experiences and the comments of fellow workers, I insist again by suggesting that you should treat hair in the early anagen phase, for the simple reason that the bulge and the papilla are close to each other during that phase. Your treatments will be more comfortable, you will have less skin reactions and you will have visible results much more rapidly. I leave you on these thoughts and these superb photographs of follicle cross-sections in order for you to reach your own conclusions. ♦