



The Gender Centre Inc. Fact Sheet

# Electrolysis Information

## Galvanic, Thermolysis, Blend

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Reviewed July 1<sup>st</sup> 2008

Facial hair remains a difficult problem for many people with gender issues who are living in a female role. There are treatments to slow and/or soften facial hair including creams, ointments, waxing and medication. None of these however, including the use of Aldactone, Androcur or hormone therapy will result in the permanent removal of hair. Electrolysis is currently the only way to achieve this.

There is currently no regulation either legally or through professional groups to ensure that people you go to for electrolysis will have the expertise to treat a difficult facial hair problem. For this reason we recommend that anyone seeking out an operator take extreme care, as poor treatment can be a waste of money and leave the client with scarred or damaged skin.

If you are currently undertaking electrolysis treatment or are considering it in the future, then the following information may be of assistance.

Operators who do electrolysis only will be likely to have the greatest expertise and have previous experience with clients who are on a variety of hormonal treatments.

The total cost of treatment is difficult to determine, so be wary of operators who try to give you exact quotes. It would not be unusual however if the total cost to remove a full, thick, dark beard was in excess of \$10,000.

With full beard removal, 3 – 6 hours of treatment may be required each week, depending on the method used. The hours will reduce as treatment progresses. Treatment can be painful and may take between 2 – 5 years to complete.

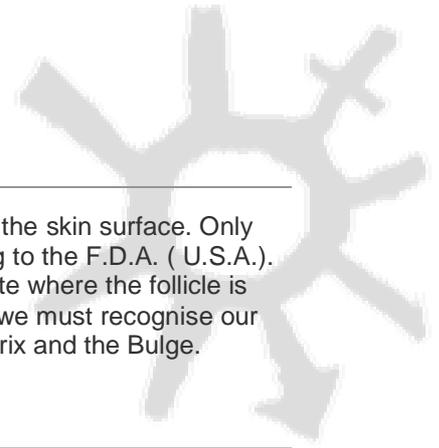
Appointments should be timed carefully by the operator to give skin time to recover between treatments and to treat hair at the correct stage of re-growth.

The client will need to be committed to arriving promptly to each and every appointment made. Experienced operators will demand this and may refuse to treat a client who does not demonstrate a clear commitment to their therapy.

Some methods require high electrical currents to effectively reduce strong hair growth and this may result in small welts and fine red scabs forming. These should change from red to brown over a few days and then heal. If they remain red and heal poorly or continue to ooze fluid instead of drying out, then permanent damage to your skin could occur. Should this occur it would be advisable to seek treatment elsewhere.

It may be helpful to choose an operator who has been recommended by someone who has achieved good results or alternatively ask for an initial consultation that involves a test patch or short treatment to see how your skin reacts to their method.

Before you start treatment, establish with the operator that the clinic pays careful attention to health and safety. All needles must be sterilized to avoid the risk of infections, including H.I.V. and hepatitis. The safest methods include disposable needles or the use of an autoclave.



## Hair

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The hair itself, is a dead structure, with the hair forming organ well under the skin surface. Only the needle method of electrolysis can permanently remove hair according to the F.D.A. ( U.S.A.). The hair is of no practical concern to the electrologist other than to indicate where the follicle is and to act as a guide for depth of insertion. To have successful epilation we must recognise our targets. In the follicle there are two main targets that we know of, the Matrix and the Bulge.

## The Matrix

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Actively dividing cells found in the hair follicle bulb which produce the hair.

## The Bulge

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A small sac of germinating cells just below the sebaceous gland in the top third of the follicle.

## The 3 Stages of Hair Growth

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- Anagen – growing
- Catagen – transition
- Telogen – resting

## Types of Hair

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There are basically two types of hair growth on the human body. The first type is a fine, soft colourless hair called Vellus and the second type is a coarse, thicker, well developed variety known as Terminal hair. When a Vellus hair has been stimulated it is known as Accelerated Vellus.

## Hair Cycle

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Hair has a three phase cycle. The first is the growth cycle or the active phase, followed by a brief transitional phase ending in a resting phase, reducing the follicle to one third of its normal size. The length of the total growth cycle and the duration of the alternating rest periods vary greatly from body region to body region and from person to person.

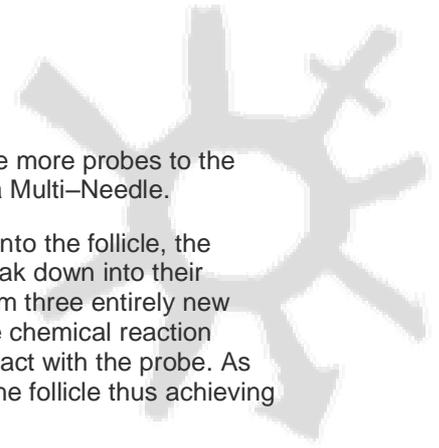
There are three methods of hair removal that have proven permanent:

- Galvanic Multi–needle – Chemical reaction liquefies the tissue.
- Thermolysis – coagulates the tissue in the follicle.
- Blend – A combination of the above.

## Galvanic Multi–Needle method

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In 1875 Dr. Charles E. Michel (1833–1913) an ophthalmologist, published the first account of successful permanent hair epilation by electrolysis in the St. Louis Clinical Record.



In 1916 Professor Paul M. Kree, aware of the growing demand added five more probes to the unit. This major invention which cut down the time required is known as a Multi-Needle.

This method uses a Direct (Galvanic) current. When the probe is placed into the follicle, the application of direct current causes the body salts and tissue fluids to break down into their constituent chemical elements which quickly rearrange themselves to form three entirely new substances; lye (which is highly caustic), hydrogen and chlorine gas. The chemical reaction happens all around the probe and is proportionate to the moisture in contact with the probe. As the moisture is converted into lye, it is the lye that liquefies the tissue in the follicle thus achieving permanent hair removal.

Advantages of the Galvanic Multi-Needle Method:

- Hair is successfully removed in a shorter time frame.
- Flexibility to move around curved follicles.
- Less discomfort for the client.
- Minimum re-growth.
- No disturbance to the surrounding tissue (no heat)

Disadvantages

- Requires minimum 3 minutes per hair.

The Galvanic Multi-Needle method is best suited to strong deep terminal or accelerated vellus hair (e.g. beards), plus all body hair.

## Thermolysis

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In 1923 Dr. Henri E. Bordier of Lyon France, was the first to use High Frequency for the removal of hair. He revolutionised electrolysis with this new method, promising greater speed and hopefully better results. Although it was not until the 1940's that it became popular. This was also known as Radio Frequency, Diathermy or Short Wave.

Thermolysis uses a high frequency current and gained its name because of its action of destroying tissue in the follicle by heat. When the probe is inserted into the follicle, it acts as a transmitter for the current. Because High Frequency current is continually changing direction, it has the ability to produce an area of friction within the moisture of the tissue surrounding the tip of the needle. The friction in turn results in heat which coagulates the fluid into a thickened mass, destroying the follicle.

Advantages of Thermolysis

- Visual results instantly
- Greatest advantage is its speed. (One to three seconds per hair.)

Disadvantages

- Very high re-growth
- Only able to successfully remove hair in anagen (growing) stage.
- Curved follicles cannot be destroyed.
- Surrounding tissue is heated, therefore treatment is limited.



Thermolysis is best suited to Vellus hair for facial down.

## The Blend

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In 1945 Dr. Henri E. St. Piere of San Francisco, in collaboration with Arthur Hinkel, a service engineer at General Electric, developed the Blend technique. They saw the popularity of thermolysis but also knew of the problems with re-growth. The two men thought that if they could combine the two modalities and utilise the speed of thermolysis and the effectiveness of galvanic, they would have a way of permanently removing hair quickly and easily.

The Blend uses high frequency and direct (Galvanic) current and is a dual action method. The Galvanic current produces lye while the High Frequency current heats up the moisture. When the lye is heated it will produce a much higher degree of caustic strength, it will diffuse easily into the heated mass which is very porous creating a turbulence around the needle, pushing the lye into any opening it can find.

Advantages of The Blend:

- Treatment time is 7 plus seconds per hair.
- The re-growth rate is believed to be less than that of Thermolysis.

Disadvantages

- Heating effect on surrounding tissue (limited treatments)
- Heating of hydrogen gas, by short wave, in the follicle can cause "Blow Out".

The Blend is best suited to vellus, accelerated vellus and scattered terminal hair for facial down, fine body hair and scattered coarse hairs.

The Gender Centre can provide referral to electrolysis professionals in the Sydney area. For more information contact the community worker.

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