



# Shines & Shimmers

Where science meets nature

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## **your complete guide to hair removal methods**

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There are many methods available for removal of hair. I would divide them into three categories:

**Short-term:** These range from shaving and cutting [the cheapest and painless], to depilatory creams, mechanical epilators, sugaring, threading, tweezing and waxing [more expensive, messy and/or painful].

**Medications:** Certain drugs can be effective in reduction of excess hair growth. These include: Eflornithine Hydrochloride; Estrogen and Leuporide combination; Flutamide; Casodex [a new derivative of flutamide]. All of these drugs may have serious side effects [including liver problems, blood pressure problems and even increased

risk of cancers], some of them may still be in clinical trials and may not be available in Australia yet.

**Long-term:** To the best of my knowledge there are currently three mechanical [no use of drugs] methods for long-term hair removal. These are: electrolysis, laser and IPL. These are more expensive, but produce a long-term to permanent result. Lately, more and more people choose IPL as their preferred method of fighting excessive hair growth. While achieving outstanding results IPL is also the fastest and certainly least uncomfortable, often more affordable method and has less risks than the other two.

**RF (Radio frequency) and Microwave hair removal:** Please be aware of the newly emerging RF and Microwave hair removal technologies. Investigate thoroughly the technology itself [major eye safety issues for microwave hair removal (especially for facial hair removal) as well as effectiveness of these methods]. Talk to as many manufacturers, distributors and operators as possible, before opting for these. Independently sourced information is available on this topic, please ask your IPL therapist if you would like a copy.

## Cutting and Shaving

Shaving is really a form of cutting and is the most temporary method of hair removal because it merely cuts the hair off at the skin surface. Hair re-growth after shaving is immediate, approximately at a rate of around 0.2mm per day

## Depilatories

Depilatory creams are available in gel, cream, lotion, aerosol, and roll-on forms. They contain an alkaline chemical, thioglycolate. Thioglycolate mixed with sodium hydroxide or calcium hydroxide literally melts the hair away by disrupting disulfide bonds, which are chemical bonds that hold skin and hair cells together. The major side effect of a depilatory is skin irritation because the chemical can melt away skin cells. Depilatories can also cause serious skin irritations, even second or third degree chemical burns, and possibly, scarring. This can occur if the formula is too strong or is left on for too long. Some depilatories can increase acne and the occurrence of ingrown hairs. This too is a very short-term hair removal method.

## Abrasives

Short-term hair removal can also be achieved by rubbing the skin with abrasive materials. "Hair removing gloves" are mittens made of fine sandpaper. The gloves are rubbed circularly over areas of hair removal, breaking the hair shafts. This method can be very irritating to skin.

## Plucking

Plucking hair with tweezers is an effective way to remove hair but it can be very time consuming and the results usually are short lasting. Hair shaft must be long enough to grasp with tweezers and one would usually end up plucking every single or every second day, so it is quite inconvenient. Additionally, plucking stimulates blood supply to the hair follicle thus stimulating hair growth, so the more you pluck the more hairs appear.



## Mechanical epilators

Mechanical epilators have an electric rubber roller or coiled spring that catches the hair and pulls it out, much like plucking but working with lots of hair at a time. The method is quite painful, especially the first few times and it tends to miss hairs. Hairs need to be long enough for the epilators to work. Epi-Lady, one of the most recognized epilators on the market, utilizes a coiled spring that is rotated by an electric motor. As the hair enters the spaces between the coils, the coils grab the hair and pull it out down to the hair root. Epilators should not be used on sensitive areas such as the face, bikini, or underarms.

## Threading

Threading is a popular method of hair removal in India. It utilizes a twisted loop of cotton thread that is pulled across the skin. The thread catches the hair, and either pulls it out, or breaks it off. Adverse effects are similar to those of other forms of plucking

## Waxing

Waxing is a way of removing large amounts of hair at one time. Wax is warmed and spread over the skin. The hair becomes embedded in the wax, which cools and firms up grasping the hair. The wax is then quickly pulled off, pulling the hairs out of the follicles. Although effective for short-term hair removal, waxing has several downsides. It is quite painful and can be high maintenance, as it must be repeated frequently to keep the area clean. Just as with plucking hairs must be long enough and the in-between-time can be embarrassing.

## Sugaring

Sugaring is a more "natural" approach to waxing. The method comes from ancient Egypt and is popular in Arab countries. A mixture of sugar, lemon juice, and water is heated to form syrup. The syrup is then formed into a ball, flattened onto the skin, and quickly striped away. The drawbacks of this method are the same as those of waxing. However, the advantage of this method over traditional waxing is the clean up. Sugar substance is water-soluble and can be removed easier than wax by simply rinsing with water.

## Needle-electrolysis

Electrolysis involves inserting a fine needle into the hair follicle and then sending an electrical current to its root. Each hair follicle must be treated individually and many sessions are necessary. This is a fantastic and proven method of long-term to permanent hair reduction but there are many negative aspects of it. It is very time-consuming and can be expensive, but most importantly is extremely painful, often even agonizing. In my opinion only grey or very light hairs (which did not respond to IPL treatments) should be treated by this method.

## Tweezer-electrolysis

Theoretically, galvanic tweezers (in contrast to needle electrolysis), use the hair itself to conduct electrical current to the hair root. Manufacturers claim that the hair, a semi-conductor, allows a small amount of electricity to travel through it developing a strong alkali which chemically decomposes the germ cells that produce the hair. Once the germ cells are destroyed, that hair follicle cannot produce another hair. Proprietary gels, creams and solutions work in conjunction with this equipment and are recommended. Water content of each hair follicle determines whether a sufficient amount of electrical current will be conducted through the hair. However, conductivity of hair is quite limited (if not impossible altogether). Even manufacturers themselves cannot agree as to whether "conductive gels" applied to the skin can enhance conductivity. Some manufacturers state that the electric current is dissipated in the skin itself with these gels and that they cannot possibly aid in conducting current to the hair root. To date we have not yet heard of a tweezer-electrolysis "success story"



## Medications

### Vaniqa

This is a chemical called eflornithine that suppresses an enzyme that makes hair grow. Vaniqa is a prescription-only topical cream that has been FDA-approved for reducing and inhibiting the growth of unwanted facial hair. The active ingredient in Vaniqa is eflornithine hydrochloride, which has been used to treat African sleeping sickness and certain cancers. Vaniqa works by inhibiting an enzyme that is needed for cell reproduction and other cell functions necessary for hair growth. Vaniqa

is applied twice a day to areas of unwanted facial hair. Noticeable results are usually observed after 4-8 weeks of therapy. Application must be continued for as long as inhibition of hair growth is desired. Vaniqa continues to reduce facial hair growth for up to 8 weeks after discontinuing treatment. Vaniqa causes inhibition of the enzyme ornithine decarboxylase, important for the growth of rapidly dividing cells, such as hair follicle phase cells. Since follicles spend part of their time in the dormant hair phases (catagen (rest phase) and telogen (shedding phase)) they aren't always affected by the drug. It takes approximately 2 to 4 months to inhibit all hair follicles. Reported side effects of Vaniqa in the clinical trials included temporary skin redness, stinging, burning, tingling, rash, "razor bumps," and acne. Skin Biology customers who have used Vaniqa have complained that the product made their face look "old". This is a possibility since the chemicals that stop hair growth can also stop skin repair and regeneration.

### Estrogens

One study found topical estrogen to halt the loss of head hair in 89% of the women treated, but conversely, estrogen reduced facial hair at the same time. Estrogen and leuporide are used together in the treatment of hirsutism. Estrogen treatment may cause irregular menstrual cycles, and possibly increased or decreased risk of cancer in women, depending on the dosage used.

### Lupron / Leuprolide

is a GnRH (Gonadotropin Hormone) Agonist which is used in combination with antiandrogens in to reduce body hair growth in women. It is in clinical testing.

### Flutamide

is a very powerful antiandrogen that blocks the androgen receptor so completely that androgens virtually have no effect in the body. Generally, it is not recommended for men. However, some physicians use it in small doses mixed into topically-applied minoxidil. They report that the combination promotes some hair growth and a reduction of facial hair in women. Potentially adverse effects include diarrhea, impotence, liver problems, and high blood pressure.

### Casodex

is a new derivative of flutamide, and a powerful antiandrogens that blocks the androgen receptors. It has fewer side-effects than flutamide. Because of its anti-androgen effects it has more serious side-effects in men than women. It is not yet available for marketing.



## Laser Hair Removal vs IPL Hair Removal

Lasers and IPLs have been used for permanent hair reduction and skin rejuvenation treatments for many years. Although both IPL and Laser are light-based technologies, there are distinct differences between the two.

**SCIENCE BEHIND LASER:** Lasers use a single wavelength of coherent light while IPLs utilize various wavelengths of incoherent light. There is a large assortment of laser machines operating in clinics and salons. Different Laser equipment would usually operate on different wavelengths and parameters. Various wavelengths of light absorb into (and effect) different substances [chromophores] in our skin and body differently and this can make it **very difficult for the consumer to choose the correct laser machine**. The machine would have to suit their particular skin and hair type and tone as well as be suitable for treatment of that person's particular condition [hair removal or pigmentation treatment etc]. This means that two different people may respond to treatment on the same Laser equipment completely differently, even if they are similar in the way they look.

**SCIENCE BEHIND IPL:** IPLs offer **fast, comfortable, effective with long term results and minimal side effects** (when performed by trained experienced technician). This brilliant light-based technology was first introduced to the world in early to mid nineties and **was invented (by a laser manufacturer) with the sole purpose of replacing laser equipment for**

**cosmetic producers**. The idea was to make various treatments (hair removal, capillaries, and skin rejuvenation and pigmentation treatments) possible with just the one machine, rather than using different laser machines to treat each problem.

**PRICE:** Historically, laser equipment has been more expensive than IPL equipment; this could **potentially affect the price of treatments**.

**SAFETY:** IPL machines typically do not require the high levels of power or energy fluence necessary for lasers. High levels of power or energy fluence **can be associated with such side effects** as skin discoloration, crusting and burns/blisters.

**PAIN FACTOR:** Most people feel a stronger sensation with laser treatments than with IPLs.

**SESSIONS REQUIRED:** Although a lot depends on the practitioner, lasers generally work a little faster. However, the end result will vary for different people due to skin and hair types as well as their individual body's response and the level skill of the therapist.

**TIME EACH SESSION:** As a rule **laser treatments are more time consuming** than IPL sessions. This is due to the fact Laser machines usually have a significantly smaller size of crystal, therefore the area treated per shot is much smaller.

**SESSIONS REQUIRED:** Although one Laser or IPL session can produce a noticeable long-term result, as a rule multiple treatment sessions are necessary to obtain optimal effects. Depending on various factors you may need anywhere between **4 and 10 sessions**. Breaks between treatments should be from **3 to 8 weeks** (depending on area treated, hair removal methods previously used, and quality of your hair). Frequency of treatments gradually decreases. Number of facial hair removal sessions is generally greater where a hormonal imbalance is present in the body.



**WHY SO MANY SESSIONS:** The main reason multiple sessions are necessary is that hair growth cycles vary and not all hair grows at the same time. Only hairs in the **active growing (anagen)** stage are treated effectively. There is also more melanin present at this stage in the hair follicle, therefore light absorption is greater. Over the course of treatments you are able to catch all or most of the hairs in anagen stage.

**HAIR/ SKIN SUITABILITY:** If you would like to determine whether your hair is suitable for Laser hair removal or IPL hair removal you need to consider several variables. Most hair types, including lighter shades usually contain pigment and therefore can be treated by IPL. Even though so far our clients have been **thrilled with the results**, it is almost impossible to predict the exact outcome any individual will achieve.

#### Hair Color and Density:

The **darker** the hair - the **better** the response. The **thicker** the hair – the **quicker** the results. **Lighter** hair is possible, but **difficult to treat**. This is mainly due to the fact light hair usually contains pheo-melanin, which absorbs light energy less avidly than the eu-melanin pigment which is present in black or brown hair. White hairs do not contain any melanin and the best form of treatment for grey hair is still electrolysis. Drop us a line if you need a referral)

#### Skin Color:

Light skin makes IPL hair removal easier to perform. **Fewer treatments** are required, and better, faster results are obtained. People with **darker skin** can be treated, but results are slower and more sessions may be recorded. In other words **the better the contrast between the hair and the skin – the better and quicker the outcome**.

**DARKER SKINS:** IPLs are considered to be safer for treatment of darker skins than Lasers.

