

FUE treatment

## MEDICAL INFORMATION - MINOXIDIL

*Minoxidil is a vasodilator (a means of widening the blood vessels) and was originally used as an oral medication for high blood pressure. It had a very odd side effect of stimulating hair growth, and it later appeared that one of the possible causes could be increased blood supply to the hair follicles.*

### Minoxidil as a hair growth promotor

After this discovery, attention was turned to how this medication could be used most effectively for people subject to hair loss. Ultimately, a lotion containing minoxidil was developed, and launched in 1988 under the brand names Rogaine (US) and Regaine (outside the US). It is sold not only in a 2% solution, but also in 5%, 12.5% and even 15%. Studies have shown that higher doses work much better: the 5% is said to be 45% more effective than the 2% version. In European pharmacies, only the 2% version is available without prescription. From 5% upward, a doctor's prescription is required.

When ordering on the Internet, usually no prescription is required. This is a very good and cheap solution, but it is advisable to discuss use of stronger minoxidil varieties with your doctor.

### The effect


Over the years, a lot has been said and written about how minoxidil stimulates hair growth, and this is still not known precisely. Originally, it was thought that minoxidil contributes to better circulation in the scalp, but studies show this view to be outdated. The latest theory is that it is because minoxidil belongs to the group of medicines known as 'potassium channel openers' (PCOs). It appears that PCOs stimulate hair growth, but it has been hard to reach firm conclusions about this in studies. At any rate, the drug has no influence whatever on hormone levels, making it unlike finasteride and dutasteride. Since it is not a hormonal agent, but has a general stimulant effect on hair growth, minoxidil can also be used for many types of (i.e. not just androgenic) alopecia.

### Anticipated results

60 to 70 % of users report renewed hair growth, but only 8 to 30 % describe this result as 'cosmetically satisfying'. Completely new hair growth on bald patches occurs rarely. The agent works mainly on men and women who have not been balding for long (5-10 years), and losing hair mainly on their crown. The hair that has grown back due to minoxidil always remains 'minoxidil dependent'. That means that they are lost again if the treatment with minoxidil ceases, or if use is combined with other hair growth stimulants such as finasteride. Although minoxidil stimulates hair growth, in fact, this does nothing to the underlying cause of androgenic alopecia. The agent has no anti-androgenic effect, and therefore it does not inhibit DHT attaching itself to the androgen receptors (AR) of the hair follicles. Ultimately, use of minoxidil alone will no longer be sufficient to prevent definitive hair loss.

### Side-effects

Minoxidil is a safe agent. The main problem that can occur is unwanted hair growth. That is why it is important that the drug is not taken orally but topically. Oral administration stimulates the growth of all body hair. Problems hardly ever arise with topical application. Side-effects that are mentioned sporadically are: dry skin, irritation, dizziness and headaches. A slight increase in bodily hair or beard growth can also occur, since small quantities of minoxidil enter the bloodstream via the skin. Despite the innocuous nature of these side-effects, some doctors consider that they may pose risks to people with cardiac and vascular diseases.



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### Use of minoxidil

Minoxidil must be applied twice per day, in the morning and in the evening, and the user must attempt to avoid making the hair wet, but only the scalp.

### Minoxidil in combination with other agents

The combination of finasteride with minoxidil is popular with people with androgenic alopecia. Although studies have shown that finasteride is much more effective than minoxidil in fighting AGA, it has also merged that these agents work better in combination than one of them on its own. The reason for this is that both growth is stimulated and the androgenic causes are tackled.

### A few practical tips

It is preferable to apply minoxidil after showering, when the scalp is well hydrated. It is best to apply minoxidil with a spray with a long nozzle, so that you can push it through the hair and make direct contact with the scalp. The product must not be sprayed in a mist (like hair spray). If irritation occurs, it is best to lower the dose from 5%, for example to 4% or 2%, and you lower the frequency of use. Do not combine minoxidil with other products, such as RetinA, which reinforces uptake. This would increase the chance of irritation with potential scarring. A new form of minoxidil is Rogaine foam. This form contains no propylene glycol, the substance which often causes irritation in the lotion containing minoxidil. Unfortunately, Rogaine foam is only available in the US, but will also be available on the European market within a few months.

