

Susan Merenstein, RPh/Owner, Holistic Clinical Pharmacist

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4227 Murray Avenue between Lilac and Loretta Streets Part of South Murray Shops 412.421.4996 or 1.888.799.4247 | fax 412.421.6500

Minoxidil FAQ

Q. Is there a difference between Rogaine active ingredient (i.e. Minoxidil) and that of Murray Avenue Apothecary?

A. No. Minoxidil is Minoxidil. They have the same structure and molecular weight. Our Minoxidil is UPS grade, the highest purity you can get on the market. The chemical is manufactured by an FDA registered cGMP compliant facility.

Q. Does Minoxidil harm healthy hair?

A. Not at all. Although the exact pharmacodynamics of Minoxidil are not well understood. Researchers believe that Minoxidil products work in part by partially enlarging the hair follicles and reversing the miniaturization process. By enlarging miniaturized follicles, the growth phase of the hair cycle is prolonged, allowing the hair to become longer and thicker looking. With more follicles in the growth phase at the same time, it is possible to see improved coverage of the scalp. These effects are most observable in hair follicles affected by Male Pattern Baldness.

Q. Are Minoxidil solutions higher than 5% more effective in promoting hair growth?

A. Our pharmacy experience shows that Minoxidil displays a dose-dependent effect with higher concentrations improving the responsiveness and greater regrowth of hair.

Q. How can I know that using a high concentration Minoxidil lotion/cream isn't an overdose and/or won't be counterproductive to hair growth?

A. Minoxidil has to have a serum concentration of 20 ng/mL to have any hemodynamic or other systemic effect in the human body. Allowing for 1.7% absorption of Minoxidil from topical application, a 2% Minoxidil solution will result in 0.6 ng/mL and a 5% Minoxidil solution will result in 1.2 ng / mL of Minoxidil in the serum. So, there is more than a 16-fold safety margin from the use of 5% topical Minoxidil and a 5-fold safety margin with the use of a 15% topical Minoxidil solution.

Q. Can I expect improved results with the higher concentrations of Minoxidil?

A. The 5% and higher Minoxidil lotions have the potential to promote regrowth of more hair and thicker hair, but they do not change the genetic properties of the hair follicles. Although the growth (anagen) phase may be lengthened, the dormant (telogen) phase of approximately 100 days is unchanged. In order to see results, the existing thin hair shafts need to be replaced with thicker ones. It generally takes between 3 and 6 months of continued use to appreciate significant hair regrowth with any concentration of Minoxidil solution of 2% or greater.

Q. What are the possible side effects of which I should I be aware?

A. In the vast majority of patients there are no side effects. If side effects do occur, patients who have a known adverse reaction to Minoxidil should avoid using any of our products. Although rare, patients who are sensitive to Minoxidil may experience a rapid heart rate, a drop in blood pressure, or water retention. As a result, they may experience headaches, dizziness, chest pain and/or edema of the ankles. If such side effects occur, these patients should discontinue any formulas containing Minoxidil. You may have a sensitivity reaction at the site of application. These are skin reactions in the areas to which the Minoxidil solution is directly applied. These reactions may include soreness, redness, irritation, drying or flaking, etc. It is unusual for Minoxidil to cause any of these events. *Please see our Minoxidil sheet (PAL) for side effects of Minoxidil and additives.*

Q. Do I have to continue to use topical Minoxidil solutions even after my hair has grown back?

A. Yes. Topical Minoxidil solutions are still treatments and are not cures for MPB. If you discontinue using minoxidil solutions, the scalp will revert to its baseline (before-use) condition in three to four months. However, some patients can achieve acceptable maintenance with once/day applications of 1 mL our 5% Minoxidil.

Q. What applicator is the most effective and convenient?

A. Since topical Minoxidil preparations are absorbed most effectively when they are applied directly to the scalp, use whatever applicator would accomplish this task most efficiently for you. For most patients, the syringe works well to apply the solution directly onto the scalp.



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Minoxidil FAQ (Continued)

Q. Is it more effective to spray the Minoxidil on my hair?

A. Not really. It's important that the maximum amount of the medicated solutions be deposited on the scalp, so they can be absorbed into the dermis to the level of the hair follicle. There is essentially no effective delivery of medications through the hair shaft.

Q. Should the scalp be wet or dry when I apply the Minoxidil solutions?

A. As a general rule, medications are more readily absorbed when the skin is hydrated. But Minoxidil solutions can be applied to a dry scalp as well. Our recommendation is to apply the Minoxidil solutions to a dry scalp or to the scalp that is at least towel dried in order to avoid dilution.

Q. Will it help to apply the Minoxidil solutions more than twice / day?

A. We recommend only once a day treatment as DMI contained in our formulations can promote better absorption of Minoxidil. Azelaic acid can also facilitate absorption of Minoxidil.

Q. Does glycerin make Minoxidil formulas less effective?

A. No. Both glycerin and propylene glycol are pharmacologically inactive ingredients in the Minoxidil products. They are used in Minoxidil solutions because (1) they are humectants, (i.e. they help to moisturize the skin and help protect from the drying effect of the alcohol); (2) they increase and stabilize the solubility of Minoxidil; and (3) they keep a small quantity of Minoxidil on the surface of the scalp to allow for continued absorption after the alcohol necessary to the base solution has penetrated. Formulations made using glycerin will have a thicker consistency.

Q. What can I expect regarding look/feel/consistency of MAA's Minoxidil formulations?

A. The Minoxidil spray is a liquid and can be applied via sprayer or syringe. The lotion is a thin, pourable lotion and is dispensed in a pump-top bottle. It can also be dispensed via syringe. The cream is a moderately thick consistency and is dispensed in a tube with a flip-top. If your formulation contains retinoic acid (tretinoin), it will be light yellow in color - it is not noticeable once applied to scalp. The consistency of your product may vary slightly from batch to batch - this is <u>normal</u> and does not affect the stability or effectiveness of the product.

IMPORTANT NOTE: The consistency of the lotion/cream will be affected by the concentration of Minoxidil and the number of additives. Higher concentration of Minoxidil and/or more additives will result in a thicker consistency. Formulations made using glycerin will have a thicker consistency.

Q. How do I use my Minoxidil formulation?

A. No matter the form (liquid, lotion, or cream), always SHAKE WELL before every use. This may be difficult at first because we over fill the bottles, but it is necessary to guarantee the equal distribution of additives so you are getting the correct dose with every application. Apply and massage into affected areas such as scalp, temples, or hairline. We recommend that you do not exceed the prescribed dosage - doing so can increase your risk of side effects. Always wash hands after application. Keep away from children and pets. Store at room temperature.