

Formula 82M for Hair Regrowth

**A UNIQUELY ENGINEERED
FORMULATION PROVIDING
AN ALTERNATIVE SOLUTION
FOR ALOPECIA PATIENTS**

By Mark G. Rubin, M.D.

Male pattern hair loss (androgenetic alopecia) is a significant cosmetic concern, with 50% of men over 50 years of age being affected. In the U.S. there are over 50 million men afflicted with this condition. Androgenetic alopecia is a genetically driven condition. DHT (dihydrotestosterone) appears to be the trigger for androgenetic alopecia in genetically-prone individuals. Testosterone is converted to DHT by the enzyme 5 alpha reductase. Once formed, DHT attaches to the hair follicle and triggers the process of miniaturization of the hair follicle. As the follicle is miniaturized, the hair shaft diameter decreases until the normal terminal hair becomes a fine vellus hair, like peach fuzz.

More recent therapies for androgenetic alopecia have focused on blocking 5 alpha reductase (such as the oral use of finasteride, propecia).

Minoxidil has been the number one topical therapy for androgenetic alopecia since its FDA clearance in 1988. Even after years of use, its exact mode of action is not completely understood. Minoxidil sulfate is the active metabolite which has been shown to stimulate hair growth.

The proposed mechanisms of action for minoxidil are:

1. It creates vasodilatation.
2. It slows senescence of keratinocytes.

3. It increases proliferation of dermal papilla cells in the hair follicle.
4. It enhances cell proliferation.

Studies with topical minoxidil 2% or 3% show that hair regrowth tends to peak at around 1 year and that new non-vellus hairs were maintained at 4.5 - 5 years with ongoing use of the product. In addition to stimulating the growth of new hairs, minoxidil was also shown to increase the diameter of the individual hair shafts by over 30%. A randomized, placebo controlled comparison study of topical 5% minoxidil vs. topical 2% minoxidil showed the men in the 5% minoxidil group had 45%

more hair growth at 48 weeks than those men using 2% minoxidil.

INCREASED HAIR GROWTH WITH TRETINOIN AND MINOXIDIL

There is also evidence that tretinoin, when added to minoxidil, can increase its efficacy. Studies have shown that tretinoin increases the percutaneous absorption of

shown to penetrate the nucleus of cells and induce protein synthesis and cell turnover. Additionally, it prolongs cell survival and prevents apoptosis of dermal papilla cells.

After years of clinical use, it appears that patients with the most recent hair loss have the most success with regrowth from minoxidil-containing products. Therefore, those patients with partially miniaturized follicles have the most success in reversing the miniaturizing process.

been shown anecdotally to also improve hair growth. Over 15 years ago, a pharmaceutical group in South America created several topical formulas containing minoxidil, tretinoin, a topical steroid, and more recently, a natural 5 alpha reductase blocking agent, oleanolic acid, in addition to several other ingredients. Additionally, they also developed a proprietary method of solubilizing and stabilizing Minoxidil, allowing better stability, longer shelf life, and better efficacy.

DERMA 5 FORMULATION

In 2008 a group of 5 dermatologists in Mexico headed by Dr. Antonio Cueva introduced these formulas to Mexico. They performed some clinical trials showing a markedly faster onset of hair growth and more profound hair growth than they had seen with previous minoxidil based formulas. The attached photos document several cases showing the rapid and dramatic results of the use of the Derma 5 product.

In 2009 I tried the Derma 5 formula on several patients. I purposely picked several advanced cases of androgenetic alopecia. The included photos after only 3 months of use show the impressive efficacy. These early results are particularly significant in view of the fact that these patients are not considered very good candidates for hair regrowth, since they have had long-term hair loss with few or no visibly functioning hair follicles. The patients tolerated the therapy well, with only some mild pinkness in 1 patient.

“This is the first significant recovery product that I have seen, and it competes strongly with hair transplantation.”

– David Michelson, M.D.

minoxidil by 3 fold. Additionally, tretinoin in one study, when used alone, was shown to be able to increase hair growth in 58% of patients, while the combination of minoxidil and tretinoin increased hair growth in 66% of subjects. Another trial showed equal efficacy between once a day use of tretinoin 0.01% mixed with minoxidil 5% compared to twice daily use of minoxidil 5%. The adverse event profile of both formulations was similar. Intriguingly, in one study by Lewenberg, it was noted that while minoxidil appears to exert its best hair growing effects on the vertex of the scalp, the combination of tretinoin and minoxidil “results in hair growth in all areas of the scalp.”

The mechanism of action for hair growth from tretinoin is not clear either. It has been

Another ingredient that has been combined with minoxidil has been topical steroids, most commonly betamethasone dipropionate. The use of topical steroids has been shown to decrease inflammation associated with the use of minoxidil, tretinoin or the combination of both. Also, the combination has been shown to have increased efficacy over minoxidil alone. Notably, Upjohn, the manufacturer of Minoxidil, has a patent for the combined use of minoxidil and topical steroids.

Blockers of 5 alpha reductase, as previously mentioned, can reverse some androgenetic alopecia. Topical finasteride used alone has been shown to have a positive effect on hair growth. Other “natural” 5 alpha reductase inhibitors have

ADDITIONAL PATIENT OBSERVATION

A further refined version of the Derma 5 formula, Formula 82M, is now being dispensed in the U.S. by prescription only through MasterPharm Compounding Pharmacy under a license from Hair Science, LLC. Dr. David Michelson of Thousand Oaks, CA, has been treating patients with Formula 82M over the past year. Each of the patients has used Formula 82M for a period of 3 months or more and has seen significant results. Prior to this formula, there were no other options for alopecia patients other than Rogaine® and Propecia®.

Compliant patients are reaping the benefits of this topical. Dr. Michelson believes that patient awareness of this product will grow and gain popularity by word of mouth and increased prescribing through physicians. Many products on the market, especially over-the-counter products used by the consumer do not always produce the results patients are seeking.

“This is the first significant recovery product that I have ever seen, and it competes strongly with hair transplantation,” comments Dr. Michelson. His patients were more interested in trying Formula 82M after they had viewed photos of other patients that had success using this product.



Patients before (left) and three months after (right) the use of Derma 5. Photos courtesy of Dr. Antonio Cueva.



Patient before (left) and three months after (right) the use of Formula 82M. Photos courtesy of Dr. Mark Rubin and Dr. Antonio Cueva.

“Seeing is indeed believing. And, with the incredible, untouched photos that we are seeing from documented patient results, it’s no wonder that Formula 82M will continue to take hold.” Solid evidence is being seen by multiple prescribers within their patient bases. In the future, Dr. Michelson is interested in combining Formula 82M with low level light technology to improve and further increase hair regrowth with alopecia patients.

Dr. Peter Rullan (San Diego, CA) is also prescribing Formula 82M to his alopecia patients and currently has over 24 patients who have been using this therapy in the past twelve months. Dr. Rullan himself has used the formula along with his physician assistant. The results seen in his patients have been very good. At least 75% of his patients currently using Formula 82M have been very satisfied with the product. The cost of the product is reasonable and is not a hindering factor when a patient decides if the cost outweighs the benefits. Most patients see a noticeable difference in the thickness of their hair within 2 - 3 months. Dr. Rullan has experience using the predecessor formula of Derma 5 prior to adopting the new Formula 82M into his practice. “Personally I believe this formula works better than Rogaine or


Propecia,” said Dr. Rullan. The most recent formula allows the patient to discontinue the use of finasteride after a specific point in the therapy. It also is comprised of a complete set of ingredients for hair regrowth – retinoic acid, low-potency steroid, minoxidil, and its finasteride-like agent, make it a sustainable product and a viable answer to alopecia. It is less irritating and has caused less flaking and scaling than what has been reported with Rogaine.

The ease of use with the spray applicator fits the lifestyle of his patients. It is non-greasy and does not flatten or weigh down the hair. Applying it twice daily allows patients to see a noticeable difference within the commonly known therapy time of 2 – 3 months. Addressing hormonal issues is important as some patients have thyroid or androgenic disorders that require appropriate treatments with oral medications.

Stephen Laddy, M.S., R.Ph, CEO of MasterPharm, the pharmacy that has compounded this new formulation, is pleased with the outcome for these patients. “The unique delivery system and process of stabilizing the active ingredients makes for a highly effective formulation. Other formulations are typically not as stable,” said Mr. Laddy. Mr. Laddy believes that as physicians are exposed to these results, more will join the prescribers of Formula 82M and ultimately this will have a great effect on the marketplace. “We have created a green, safe, and highly effective formulation,” commented Mr. Laddy. “It will be a substantial prescription product.”

CONCLUSION

So why does this product appear markedly more efficacious than others on the market such as Rogaine and Propecia? A review of product ingredients discussed in this article shows that higher strengths of minoxidil (5%) are more effective than lower (2%). The addition of tretinoin increases the efficacy of minoxidil. A topical steroid improves efficacy and reduces irritation, and a 5 alpha reductase blocker increases efficacy. Formula 82M contains all of these previously proven ingredients and now in a propylene glycol-free base. However, more importantly, their proprietary solubilizing and stabilizing process appears to markedly improve drug delivery and shelf life.

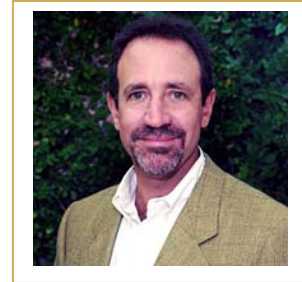
This article is meant to serve as a preliminary overview of the Formula 82M topical formulation for androgenetic alopecia. I am continuing to evaluate this formulation, which is currently being made available by prescription in the U.S. through MasterPharm Compounding Pharmacy (masterpharm.com). 

References

4. Bazzano GS, Terezakis N, and Galen W: Topical tretinoin for hair growth promotion. *J Am Acad Dermatol*, 15:880-883, 1986.
5. Ferry JJ, Forbers KK, LanderLugt JT and Szpunar GJ: Influence of tretinoin on the percutaneous absorption of minoxidil from an aqueous topical solution. *Clin Pharmacol Ther*, 47:439-46, 1990.
6. Lewenberg A. Treatment of alopecia with a minoxidil-tretinoin

combination. *Adv Ther*, 8:190-98, 1991.

1. Olsen EA, et al. A randomized clinical trial of 5% topical minoxidil vs 2% topical minoxidil and placebo in the treatment of androgenetic alopecia in men. *J Am Acad Dermatol*, 47(3) 377-85, 2002.
2. Shin HS et al. Efficacy of 5% minoxidil vs combined 5% minoxidil and 0.01% tretinoin for male pattern hair loss: a randomized, double-blind, comparative clinical trial. *Am J Clin Dermatol*, 8 (5) 285-90, 2007.
3. Rogers NE, Avram MR. Medical treatments for male and female pattern hair loss. *J Am Acad Dermatol*, 59 (4)547-56, 2008.



About the Author

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Dr. Rubin is a specialist in skin rejuvenation, an international lecturer, and has written numerous papers, book chapters, and a textbook on skin rejuvenation. He is actively involved in clinical research projects in the fields of wound healing, skin care products, chemical peeling, lasers, and injectable dermal fillers. This combination of teaching, research, and consulting keeps Dr. Rubin at the cutting edge of his specialty.