

Biotin Alone or a Science-Driven Nutraceutical Multi-Targeted Approach?

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It is with great fervor that I revisit the article published in *Journal of Drugs in Dermatology* by Soleymani et al, titled “The Infatuation With Biotin Supplementation: Is There Truth Behind Its Rising Popularity? A Comparative Analysis of Clinical Efficacy versus Social Popularity.”¹ First, I’d like to thank the authors for raising awareness of the overuse of biotin for hair loss and reminding us of the struggle we are faced with daily when debunking quick-fix myths propagated by media infatuation.

In the not-so-distant past, self-prescribed high doses of biotin were perceived to be an adjunct therapy for remedying many types of hair loss or thinning. This has been fueled by glamorization in the popular media, which is vastly disproportionate to the minimal, at best, clinical evidence supporting its efficacy in hair loss treatment. A recent web-based survey conducted by ProVoice polled 60,000 HCP’s. Results showed 34.5% of Dermatologists recommended hair supplements for hair growth, and biotin is the #1 overall product recommended at 18.3%. In certain cases, biotin is a treatment, prescribed at specific doses, for specific medical conditions. A common example is biotin deficiency, acquired or inherited, which, in industrialized countries such as the US, is an extremely rare condition. Physicians have recommended it in select patient groups with limited options as adjunct therapy for hair health, in amounts of 2.5–3mg/day. However, as it often occurs, patients’ perception of more is better often lead to some patients over medicating with exorbitantly higher than recommended doses. To date, there have been no clinical trials investigating the efficacy of high doses of biotin supplementation for the treatment of alopecia of any kind, nor have there been any randomized clinical trials to study the effects of biotin alone on hair quality and quantity in human subjects. Yet, people buy into the social media hype of self-medicating with higher doses expecting unrealistic results and are ultimately disappointed, leaving little hope for using any natural remedy as a solution.

In February 2017, the FDA released a safety communication warning that excess biotin may interfere with certain laboratory tests.² Most recently, in June 2019, the FDA provided recommendations for manufacturers to help reduce risks of biotin interference with these particular tests.³ Again, more is not better, and we have an obligation as health care professionals to educate our patients.

We practice evidence-based medicine. Where is the evidence supporting positive results with biotin use for hair loss? There is none. It may be time to consider other advancements with clinical trials to support a suggested use. Let’s be clear and not allow the pendulum to swing in the opposite direction as this is not an all-or-none situation. This, as a co-factor in combination with other vitamins and botanical nutraceuticals has shown efficacy in successfully improving hair growth.

We do know hair loss is a multifactorial problem and a shift in the treatment approach may now be necessary.⁴ Why aren’t we looking at a multifactorial solution? In Dermatology, certain conditions have shown improved outcomes with botanical use. Farris et al⁵ showcased this point clearly with an in-depth look at the mechanism of actions of certain combinations of standardized botanical nutraceuticals such as ashwagandha, tocotrienols, biocurcumin, saw palmetto, and bioperine in combination with marine collagen. They have shown various synergistic roles in combating hair loss—fighting against both intrinsic assaults such as stress hormones, DHT, genetics, aging, nutritional deficiencies, and environmental assaults such as toxins, UV exposure, styling, and pollution. A nutraceutical supplement containing vitamins like biotin, in proper doses, combined with bioactive nutraceuticals has shown clinical efficacy, as published in “A Six-Month, Randomized, Double-Blind, Placebo-Controlled Study Evaluating the Safety and Efficacy of a Nutraceutical Supplement for Promoting Hair Growth in Women With Self-Perceived Thinning Hair”⁶ and is gaining more use in clinical practice.

There is definitely a need for more multi-center randomized clinical trials to further confirm the efficacy and benefits in prescribing nutraceuticals for hair loss. Perhaps we should go back to basics, follow the science in nutraceuticals, and not allow social influencers to triumph over evidence-based medicine.

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References:

1. Soleymani T, Lo Sicco K, Shapiro J. The infatuation with biotin supplementation: is there truth behind its rising popularity? A comparative analysis of clinical efficacy versus social popularity. *J Drugs Dermatol*. 2017;16(5):496-500.

2. U.S. Food and Drug Administration. The FDA Warns that Biotin May Interfere with Lab Tests: FDA Safety Communication. November 28, 2017.
3. U.S. Food and Drug Administration. FDA In Brief: FDA provides draft recommendations to diagnostic manufacturers to help reduce risks of biotin interference with certain lab tests. June 13, 2019.
4. Sadick NS, Callender VD, Kircik LH, Kogan S. New insight into the pathophysiology of hair loss trigger a paradigm shift in the treatment approach. *J Drugs Dermatol.* 2017;16:135-140.
5. Farris PK, Rodgers N, McMichael A, Kogan S. A novel multi-targeting approach to treating hair loss, using standardized nutraceuticals. *J Drugs Dermatol.* 2017;16:141-148.
6. Ablon G, Kogan, S. A six-month, randomized, double-blind, placebo-controlled study evaluating the safety and efficacy of a nutraceutical supplement for promoting hair growth in women with self-perceived thinning hair. *J Drugs Dermatol.* 2018;17:58-565.

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