

Biotin 5000



➔ The Moss Nutrition Professional Line ➔

ESSENTIAL COENZYME FOR HEALTHY HAIR, SKIN & NAILS

Supplement Facts

Serving Size: 1 Capsule
Servings Per Container: 90

	Amount Per Serving	% Daily Value
Biotin	5000 mcg	1670%

Other ingredients: Dicalcium phosphate, cellulose (capsule), vegetable stearate, silicon dioxide, microcrystalline cellulose.

Does not contain gluten.

SUGGESTED USE: 1 CAPSULE PER DAY OR AS DIRECTED BY YOUR HEALTHCARE PROFESSIONAL.

WARNING: IF TAKING MEDICATION, PREGNANT OR NURSING, CONSULT A PHYSICIAN BEFORE USING.

- Essential B-complex vitamin.*
- Provides 5000 micrograms (5 mg) biotin per capsule.*
- Required for metabolism of protein, fats & carbohydrates.*
- Helps support healthy hair, skin & nail strength.*

Biotin is a water-soluble vitamin, classified as a member of the B complex. Also known as “vitamin H” for the words Haar and Haut (hair and skin in German), biotin serves as a coenzyme for five biotin-dependent *carboxylase* enzymes and is essential for proper metabolic function. It is synthesized in the gut by intestinal bacteria and contained in foods such as egg yolks, organ meats, brown rice, nuts and peas. Biotin deficiency is characterized by hair loss and a red, scaly skin rash.

In addition to hair loss and dermatitis, symptoms of low biotin levels include lethargy, depressed mood, numbness and tingling in the extremities, ataxia, seizures and increased susceptibility to bacterial and fungal infections. Biotin requirements are higher in pregnancy as research suggests subclinical biotin deficiencies may develop in at least one-third of pregnant women. Oral biotin is both completely absorbed and considered extremely safe, with no toxicity concerns or upper limit (UL) of tolerability established.

Biotin-dependent carboxylase enzymes are required for a number of cellular processes and key metabolic reactions including *gluconeogenesis* (making glucose from protein), fatty acid synthesis and amino acid catabolism. Such processes are critical for the formation of myelin (the fatty substance which protects nerve cells), for cholesterol synthesis and for the maintenance of healthy skin, hair and nails. Biotin also plays a role in regulating gene transcription. Recent research suggests it is required for the proper functioning of more than 2,000 genes.

Frank biotin deficiency is rare but a number of hereditary disorders, metabolic conditions and drug interactions are known to impair biotin metabolism and/or uptake. In addition, the intestinal synthesis of biotin by gut microflora may be inhibited as a result of antibiotic use, or in people with inflammatory bowel problems. Animal studies suggest that dysbiosis-induced biotin deficiency causes hair loss. Although human studies have not confirmed the beneficial effects of biotin supplementation on hair strength and volume, research published in 2016 found that nearly forty percent of women complaining of hair loss were biotin deficient.

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*These statements have not been evaluated by the Food and Drug Administration.
This product is not intended to diagnose, treat, cure or prevent any disease.



Hair and fingernails share a similar structure, derived from primitive epidermis and made of keratinous fibrils embedded in a sulfur-rich matrix. Daily biotin supplementation has been shown in several studies to help promote strong and healthy nails, specifically by helping to reduce the clinical incidence of brittleness and splitting. A Swiss retrospective study of adults with brittle nails, for example, found that thickness of the nail plate (the hard, translucent portion of the nail, composed of keratin) increased by twenty-five percent in subjects who received biotin supplementation. Other studies have shown reduced incidence of nail splitting in subjects taking 2.5 mg biotin per day, half the amount contained in one capsule of **Biotin 5000**.

In terms of skin, biotin deficiency is well known to provoke the appearance of a scaly red rash, typically located in the region of body orifices such as the eyes or mouth. Such rashes respond well to biotin supplementation. Biotin also has been shown to help reduce the incidence of rashes due to other causes, such as reactions to certain medications. Drugs that have been demonstrated to impair biotinidase activity or deplete plasma concentrations of biotin include broad-spectrum antibiotics, benzodiazepenes and certain anticonvulsant medications. Cigarette smoking also has been associated with marginal biotin deficiencies.

Other health concerns for which biotin may be helpful include issues related to dyslipidemia, insulin sensitivity and blood sugar regulation. In vitro research suggests that biotin can help enhance the expression of genes and signaling pathways which favor healthy pancreatic islet function, while animal studies suggest it can help promote the proper function and proportion of beta cells. In a 2013 study, mice supplemented with biotin demonstrated improved glucose tolerance and serum insulin levels. Human research suggests that compared to healthy controls, biotin levels may be significantly lower in people with impaired blood glucose regulation. In one study, 9 mg per day of biotin was suggested to help correct blood sugar imbalances, without having a noticeable effect on serum insulin levels. Several animal studies have suggested that biotin may be effective in helping to decrease serum triglyceride concentrations and lipogenic gene expression in liver and adipose tissues.

CLINICAL PEARL: Supplemental high dose biotin (mg amounts) has been demonstrated to alter hormone lab test results, either too high or too low. Therefore, discontinue use of Biotin 5000 2 weeks before performing hormone testing, particularly thyroid hormone testing.

REFERENCES

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