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Biotin is an ingredient in numerous products marketed for hair growth, but how effective is it? There is very little data to show that biotin can impact hair growth in the general population, and the side effects of biotin can be deleterious, including impacting blood assay testing, causing nausea, and increasing the risk of acne.

Biotin is a B vitamin (B7) that is found in a wide variety of foods, from eggs to fish and grains to vegetables. Biotin is an important vitamin that helps the body break down protein, fats, and carbohydrates. Biotin receives some attention attributed to hair health and growth due to its role in producing keratin. Keratin is a protein that assists development of nails, skin, and hair. While some studies have shown that a lack of biotin can lead to hair loss, deficiencies of biotin are exceedingly rare. A normal diet is typically sufficient for providing biotin in the absence of a genetic disorder such as Biotinidase Deficiency [BTD].

Despite the popularity that biotin has in the hair industry, there are several risks and complications that can arise from the substance. For example, some assays used for determining blood chemistry (such as thyroid hormone, vitamin D, or troponin) and some cancer detection procedures may be affected by biotin. Having high levels of biotin can interfere with test results, giving erroneous values which could lead to inappropriate care for the patient. Hypothetically, if a patient has a hypoactive or hyperactive thyroid, and begins taking biotin as a part of the effort to reduce hair loss, the excess biotin could directly affect the lab tests to understand thyroid function, which could hinder the provider from finding the root cause of the hair loss, much less hinder the provider from addressing the thyroid¹.

The intake of excess biotin can cause several other unwanted issues or concerns. Biotin, like many multivitamins in general, tends to be difficult on the stomach, potentially causing nausea, vomiting, diarrhea, and stomach cramps. Biotin can also react with certain medicines and the processing of medicines by the liver; notably, biotin can weaken the effect of certain medications, such as those for epilepsy (phenytoin, primidone, or phenobarbital). Additionally, Biotin overdose can also lead to insomnia and excessive thirst.

There are other reports of the negative effects of biotin, including increased acne. Biotin and the acne-fighting vitamin B5 are both absorbed through the gastrointestinal system. But when the digestive system is not able to absorb as much B5 due to the system overload in processing the increased biotin, B5 may not be able to properly fight against the acne it once did. This can result in flare-ups.

Our goal in the Votesse formulation was to create a product specifically designed to promote hair growth without adding unnecessary ingredients. Each ingredient in the formulation has been chosen with safety in mind, which is why we have excluded excess fillers and biotin.

¹Rosner et al (2019) Cureus 11(8):e5470