


Lynn Do, PharmD, Clinical Pharmacist

## Biotin

### Patient Information

As of this writing, Biotin is still being investigated for its role in multiple sclerosis. Ask your provider for the most up to date information.

<p>USED FOR</p>	<ul style="list-style-type: none"> <li>• Multiple sclerosis (MS), including relapsing-remitting and progressive MS.</li> <li>• Biotin will not cure MS. It may help to improve walking distance and slow disease progression.</li> </ul>
<p>HOW IT WORKS</p>	<ul style="list-style-type: none"> <li>• Biotin may help support nerve cells under stress. It also aids fatty acid synthesis, which may lead to myelin production.</li> <li>• Biotin is Vitamin H or B7, a water soluble vitamin that supports energy metabolism and production in the body</li> </ul>
<p>DOSE</p>	<ul style="list-style-type: none"> <li>• Biotin 300mg capsule by mouth once daily or 100mg by mouth 3 times a day,</li> <li>• In 3 randomized controlled trials, Biotin 100mg 3 times a day was the dose found to be effective in reducing disability in progressive MS.</li> </ul>
<p>HOW IT IS SUPPLIED</p> 	<ul style="list-style-type: none"> <li>• Biotin is available over-the counter (OTC) in various forms without a prescription at local and online drug stores. OTC doses of 5mg or 10 mg.would require up to 30 to 60 pills per day and is not recommended.</li> <li>• Products that have the United States Pharmacopeia (USP) Verified Mark on the label guarantee its safety and quality.</li> <li>• Biotin can also be obtained at a compounding pharmacy with a prescription.</li> </ul>
<p>HOW IT IS GIVEN</p>	<ul style="list-style-type: none"> <li>• Biotin may be taken with or without food.</li> </ul>
<p>OTHER SOURCES OF BIOTIN</p>	<ul style="list-style-type: none"> <li>• Biotin can be found in brewer's yeast; cooked eggs, especially egg yolk; sardines; nuts (almonds, peanuts, pecans, walnuts) and nut butters; soybeans; other legumes (beans, black-eyed peas); whole grains; cauliflower; bananas; and mushrooms.</li> <li>• Raw egg whites contain a protein called Avidin that interferes with the body's absorption of biotin.</li> </ul>

STORAGE	<ul style="list-style-type: none"> <li>• Biotin may be kept at room temperature. Keep the medication away from direct sunlight, extreme heat, or cold.</li> </ul>
COMMON SIDE EFFECTS	<ul style="list-style-type: none"> <li>• Generally there are no side effects or minimal side effects with taking Biotin</li> </ul>
DRUG INTERACTIONS	<ul style="list-style-type: none"> <li>• Before starting or stopping ANY medication or supplements, please notify your pharmacist to check for interactions.</li> <li>• Certain anticonvulsants, antibiotics, and cholesterol medications can lower body biotin levels</li> </ul>
LAB INTERACTIONS	<ul style="list-style-type: none"> <li>• Biotin can affect the accuracy of MANY blood tests including common tests for a heart attack (Troponin level). Inform any health care providers you are taking Biotin especially if there is a concern for a heart attack.</li> <li>• We recommend holding Biotin for 3 days BEFORE lab tests and resuming following the blood draw.</li> </ul>
MONITORING	<ul style="list-style-type: none"> <li>• Lab work will not be required for Biotin</li> </ul>
MORE INFORMATION	<ul style="list-style-type: none"> <li>• Websites: <a href="http://www.nationalmssociety.org">www.nationalmssociety.org</a></li> <li>• Clinical Trials:       <ol style="list-style-type: none"> <li>1. Tourbah A, et al. MS-SPI study group. <a href="#">MD1003 (high-dose biotin) for the treatment of progressive multiple sclerosis: A randomised, double-blind, placebo-controlled study</a>. Mult Scler. 2016;13;1719-31.</li> </ol> </li> <li>• Research study:       <ul style="list-style-type: none"> <li>○ If you are a patient at UCSF MS center, we may be interested in having you participate in research to better understand the effects of biotin in MS patients.</li> <li>○ A larger confirmatory study with 600 patients with progressive MS is currently underway <a href="https://clinicaltrials.gov/ct2/show/NCT02936037?term=biotin&amp;recrs=af&amp;drow=2&amp;rank=10">https://clinicaltrials.gov/ct2/show/NCT02936037?term=biotin&amp;recrs=af&amp;drow=2&amp;rank=10</a></li> <li>○ If you are interested in participating, please contact the clinical trial coordinator at UCSF: Naomi Okinishi ph: 415-502-7604.</li> </ul> </li> </ul>