

**Date:** December 15, 2016  
**To:** All Zones, Physicians, Nurse Managers, Laboratory Managers and Staff  
**From:** AHS Laboratory Services  
**Re:** Biotin Interference with Laboratory Testing

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**PLEASE POST OR DISTRIBUTE AS WIDELY AS APPROPRIATE**

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**Key Messages:**

High dose Biotin supplementation can interfere with many of the laboratory tests offered throughout the province. This can result in falsely low, falsely high, or invalid results.

**Why this is important:**

Biotin is a water soluble vitamin that may be listed under the names of biotin, biotine, vitamin H, vitamin B7 or coenzyme R and has a recommended daily allowance of 30-70 micrograms ( $\mu\text{g}$ ) per day; most multivitamins contain about 30  $\mu\text{g}$  of biotin. Recently, biotin has been taken in high doses as an oral supplement to improve hair, skin and nail health. High doses of biotin are also used to provide supportive treatment for individuals with mitochondrial metabolic disorders and multiple sclerosis. High doses of biotin are considered to be greater than 1 mg (1000  $\mu\text{g}$ ) per day.

Many tests offered throughout the province are based on immunoassays that are impacted by the presence of large amounts of biotin. This is because these assays utilize the interaction of biotin with streptavidin as part of their measurement. Biotin interference may lead to falsely low, falsely high, or invalid results, depending on the immunoassay design. Some examples of impacted assays include (but are not limited to) the high sensitivity Troponin T and  $\beta\text{hCG}$  assays at Calgary Laboratory Services as well as urine pregnancy screening tests used across the province (within the lab as well as point of care settings).

It has been shown that biotin doses greater than 1 mg (1000  $\mu\text{g}$ ) per day can produce sufficient levels of biotin in the blood to cause the above described interferences. We therefore recommend that patients abstain from taking biotin for 48 hours before specimen collection. For more information about biotin and its effect on a specific test, please contact your local laboratory.

**Action Required:**

We recommend that patients abstain from taking biotin for 48 hours before specimen collection.

**Inquiries may be directed to:**

For more information about biotin and its effect on a specific test, please contact your local laboratory.

**This bulletin has been reviewed and approved by:**

Dr. Carolyn O'Hara, Interim Provincial Medical Director, Alberta Health Services.