



# Biotin interference

Laboratory update | April 2018

## High-dose biotin intake may cause interference with laboratory test results

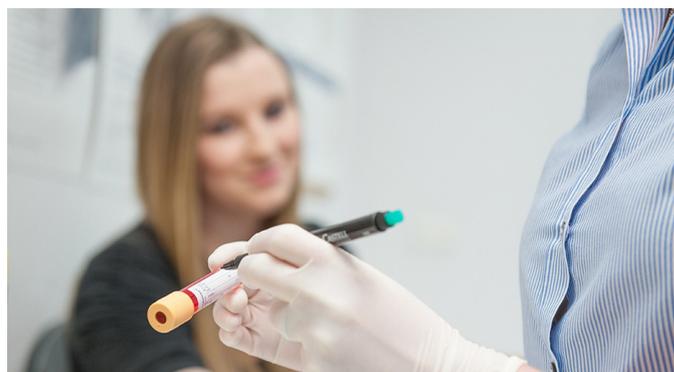
The potential for both endogenous and exogenous substances to produce artefactual changes in laboratory results is well recognised. Causes of analytical artefact include haemolysis, lipaemia, paraproteins, heterophile antibodies and ingested agents such as biotin (vitamin B7).

It is important to note that biotin has no effect upon commonly requested biochemistry tests, such as electrolytes, urea, creatinine and liver function tests. For some immunoassay-based methods, however, biotin has always been a potential cause of interference with tests that use biotin-streptavidin in their matrix. Although these assays are not affected by ingestion of low-dose biotin, taking high-dose biotin prior to blood collection may cause significant interference with test results.

The use of high-dose biotin (300 mg/day) is becoming increasingly common in the treatment of multiple sclerosis. In addition, some patients may be taking high-dose biotin (>5 mg/day) as an alternative health supplement for hair, skin and nails. Therefore, clinicians should be alert to the possible impact of biotin upon test results reported on their patients.

All medical practitioners need to be aware that high doses of biotin (>5 mg/day) can interfere with a number of laboratory immunoassays causing spurious test results.

Sonic Healthcare laboratories have performed extensive investigations on the effect of high-dose biotin on different tests. The interference varies according to the dose and time of ingestion, ranging from subtle abnormalities to significant artefactual changes. Measured values can either be increased or decreased depending on the design of the assay used, so that false-positive or false-negative test results may occur.



It should be noted that the majority of immunoassay tests performed at the main laboratory of Douglass Hanly Moir Pathology are unaffected by high-dose biotin. Any tests that are potentially susceptible to high-dose biotin interference will be identified on our reports.

In most patients, biotin is effectively cleared from the system within 72 hours, depending upon the dose and time of ingestion, and will not interfere with test results after this time.

To limit the risk of spurious results:

- ▶ Ask if your patient is taking biotin before sending them for a blood test. Biotin should be withheld for at least three days prior to any blood test that is susceptible to biotin interference.
- ▶ Include 'ON BIOTIN THERAPY' in the clinical notes on the request form and the amount taken, as well as the date and time of last dose, if known.

As a general rule, when you receive a pathology report that is not in accord with clinical assessment, then the laboratory should be contacted so that possible artefactual causes can be identified for the unexpected test results. In particular, if you need to exclude the potential effect of high-dose biotin on reported test results or require any further information, please contact our Chemical Pathologists on (02) 9855 5312.