



Kalispell Regional  
Medical Center  
KALISPELL REGIONAL HEALTHCARE

# LABORATORY NEWS

**SPOTLIGHT: Biotin Assay Interference**

**AUGUST 2019**

## **Important Note...For this newsletter**

**24 hours before the blood tests mentioned in this article: Do not** take any supplements containing biotin or Vitamin B7 which are commonly found in hair, skin- nail supplements, and multi-vitamins.

Sufficient Biotin concentrations in serum can lead to falsely decreased results.

❖ **This is an update addressing the September 2017 FDA warning**

The KRMC Laboratory would like to inform clinicians that some laboratory immunoassay testing can be affected by high levels of biotin in a patient's serum/plasma. Thinking it is a contributor to keratin, some patients have begun taking large doses of biotin to improve their hair, nails and skin. Also, some clinicians may prescribe high-dose biotin in the treatment of multiple sclerosis or dermatologic conditions.

Over-the-counter formulations are available in a variety of names, including vitamin B7, vitamin H, and coenzyme R. These formulations can contain nearly 1,000 times as much of the Institute of Medicine recommended adult daily dose of 30 mcg.

Many modern immunoassays contain biotin along with streptavidin. Samples from patients taking mega doses of biotin can produce falsely increased or falsely decreased results, depending on the assay mechanism. As such, it is important for physicians to remind patients to refrain from taking mega doses of biotin for at least **24 hours prior** to immunoassay test collection.



In the link below, Dr. Brooke Katzman, a co-director of the hospital clinical lab and POC lab at Mayo, shares a story about the importance of detecting biotin interference and how the lab was able to prevent an unnecessary procedure on a patient because they suspected biotin interference.

<https://news.mayocliniclabs.com/2018/08/09/brooke-katzman-ph-d-discusses-the-effects-of-biotin-on-lab-tests-in-aacc-laboratories/>

### KRMC Tests affected by high level doses of Biotin concentrations are listed below

Decreased Results		False Negative	Increased Results
CA 125	SYPHILIS Ab IgG/IgM	Hepatitis B Core, IGM	B12
CEA	MYOGLOBIN	Hepatitis A, IGM	CORTISOL
CKMB	BNP.1		ESTRADIOL
FERRITIN	PROLACTIN		FOLATE
FSH	PSA		PROGESTERONE
Intact PTH	BETA HCG		VITAMIN D, 25 OH Total
LH	TROPONIN		
	TSH		

- ❖ A Mayo Medical Laboratories Immunoassay test list affected by Biotin has been attached to this newsletter.
- ❖ An FDA Safety Communication has been attached to this newsletter



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# Mayo Clinic Laboratories

## Biotin Interference Test Listing

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### Mayo Clinic Laboratories

#### Test Name

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Creatine Kinase(CK) MB Isoenzyme, S

ROMA Score

Adrenocorticotrophic Hormone, P

Calcitonin, S

Beta-CrossLaps (B-CTX), S

Thyroglobulin, Tumor Marker

Thyroglobulin, FNA, Lymph Node

Thyroglobulin Reflex to MS or IA

Insulin, S

Insulin, Free and Total, S

Osteocalcin, S

PTH, FNAB, Needle Wash

T3 (Triiodothyronine), Total, S

Thyroxine-Binding Protein Electro

Thyroid Autoantibodies Profile, S

Thyroglobulin Antibody, S

Thyrotropin Receptor Ab, S

Thyroperoxidase Ab, S

Human Epididymis Protein 4, Serum

Macroprolactin, Serum

Carbohydrate Antigen 19-9 (CA 19-9), Serum