

ASCLS Mission:

The mission of ASCLS is to make a positive impact in health care through leadership that will assure excellence in the practice of laboratory medicine.



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**Your Safety and Service Experience
Are Important To Us!**

Laboratory Patient Safety Tips:

Drug-related Laboratory Test Interference For Providers



What is Drug-related laboratory test interference?

- Both prescription and over-the-counter (OTC) drugs can cause laboratory test results to be incorrect (false increase or decrease).
Note: The amount of result increase or decrease may be dose dependent.
- Incorrect results can lead to diagnosis and treatment errors that could harm the patient. Prior to laboratory testing, it is important to identify if your patients are taking any OTC supplements or prescription drugs.
- This guide identifies some of the more common laboratory test results which may be impacted by drug interferences.

Test Abbreviations

ACE: angiotensin-converting enzyme
AST: aspartate aminotransferase
ALT: alanine aminotransferase
CEA: carcinoembryonic antigen
CGM: continuous glucose monitors
DHEA-S: dehydroepiandrosterone sulfate
Free T3: free triiodothyronine
Free T4: free thyroxine
FSH: follicle-stimulating hormone
HBcAb: hepatitis B core antibody
HBsAb: hepatitis B surface antibody
HBsAg: hepatitis B surface antigen
HCV Ab: hepatitis C antibody
HCG: human chorionic gonadotropin
IgE: immunoglobulin E
IgM: immunoglobulin M
INR: international normalized ratio
LH: luteinizing hormone
PAM: pralidoxime
PSA: prostate-specific antigen
PT: prothrombin time
PTH: parathyroid hormone
SAT: stool antigen test
TIBC: total iron-binding capacity
TSH: thyroid stimulating hormone
UBT: C-urea breath test

For additional test information visit Lab Tests Online:
<https://labtestsonline.org/>

For herbal supplement information visit the
 National Institutes of Health (NIH)
 'Herbs at a Glance' website:

<https://nccih.nih.gov/health/herbsataglance.htm>

Visit the FDA MedWatch website to view clinically
 important safety information:

<https://www.fda.gov/safety/medwatch-fda-safety-information-and-adverse-event-reporting-program>

OVER-THE-COUNTER (OTC) DRUGS

OTC Drug	Laboratory Test Potentially Affected
Biotin (Vitamin B7) <i>Sources of biotin naturally occur in foods and can be found in multi-vitamin, B-complex, and biotin only supplements.</i>	<u>False Mild Increase:</u> Free T4, FreeT3, Testosterone, Estradiol, Cortisol, IgE <u>False Moderate Decrease:</u> TSH, FSH, LH, Insulin, Autoantibodies, Vitamin B12, Folate, Vitamin D, PSA, CEA, HCG, PTH, Thyroglobulin, Ferritin, DHEA-S, Hepatitis A IgM, HBsAg, HBsAb, HBcAb, HCV Ab <u>False Decrease:</u> Troponin (method dependent)
Acetaminophen Red Wine	<u>False Increase:</u> CGM Interference
Herbal Supplements	
Chan Su Lu-Shen-Wan Dan Shen Asian and Siberian Ginseng "Cleansing" Herbal Supplements	<u>False Mild Increase:</u> Digoxin
Kava-Kava	<u>False Mild Increase:</u> AST, ALT, Bilirubin
St. John's Wort	<u>False Mild Decrease:</u> Theophylline, Digoxin
Caffeine	<u>False Mild Increase:</u> Metanephrines
Others	
Nicotine	<u>False Mild Increase:</u> Fatty Acids, Aldosterone, Cortisol, Tumor Markers, ACE

PRESCRIPTION DRUGS

Prescription Drug	Laboratory Test Potentially Affected
Amiodarone Cotrimoxazole Daptomycin Erythromycin Omeprazole NSAIDS Propranolol Telavancin	<u>False Mild Increase:</u> PT and INR
High-dose glucocorticoids Dopamine/ Dobutamine Octetide	<u>False Mild Decrease:</u> TSH
Imipenem/ Cilastatin (Primaxin)	<u>False Positive:</u> Galactomannan
IV administered Vitamin C	<u>False Mild Increase:</u> Glucometer Results
Ciprofloxacin Chloroquine Quinine	<u>False Mild Increase:</u> Urine Protein
PAM salts for organophosphorus poisoning	<u>False Severe Increase:</u> Glucose
Cephalosporin	<u>False Positive:</u> Urine Glucose Urine Ketone Direct Coombs Test
Psychotropic Drugs	<u>False Positive:</u> Pregnancy Tests Drug Screening
Contrast Media <i>Prior to having laboratory specimens collected it is recommended to wait at least 4 hours after contrast media is administered.</i>	ACE Protein levels (blood) Calcium Creatinine TIBC Zinc Magnesium Selenium
Proton Pump Inhibitors (PPI) omeprazole, lansoprazole, dexlansoprazole, rabeprazole, pantoprazole, esomeprazole, esomeprazole	<u>False Negative:</u> UBT SAT <u>False Positive:</u> UBT (long-term use)
Spirolactone	<u>False Increase:</u> Digoxin
Labetalol Ranitidine	<u>False Positive:</u> Amphetamines
Rifampin	<u>False Positive:</u> Opioids
Lisinopril Albuterol Atenolol	<u>False Increase:</u> CGM Interference