

Cotinine, Urine

Indications for Ordering

- Assess active exposure to nicotine
- Assess compliance with smoking-cessation programs

Test Description

Enzyme multiplied immunoassay technique

Tests to Consider

Primary test

[Cotinine Screen, Urine 2007081](#)

- Urine screening test for determining active exposure to nicotine and compliance with smoking-cessation programs
- Qualitative screen recommended for use in documenting abstinence from nicotine-containing products, such as in surgery qualification
- For determination of active or passive nicotine use, or for differentiation between nicotine replacement and tobacco use, quantitative nicotine and metabolites test is preferred

Related tests

[Nicotine and Metabolites, Urine, Quantitative 0092356](#)

- Assess active exposure to nicotine and compliance with smoking-cessation programs
- Use to confirm cotinine screening results
- Recommended for determination of active or passive nicotine use or for differentiation between nicotine replacement and tobacco use

[Nicotine and Metabolites, Serum or Plasma, Quantitative 0092361](#)

- Use to detect and monitor nicotine, cotinine, and trans-3'-hydroxycotinine in serum or plasma
- Serum or plasma testing may be useful when a valid urine specimen cannot be obtained (anuretic or dialysis)

Disease Overview

Clinical issues

- Cigarette smoking is a preventable cause of death
- Cigarette smoking is the most common form of drug addiction in the United States
- Long-term use of tobacco products is associated with the development of
 - Cancer
 - Heart disease
 - Stroke
 - Lung disease
- Monitoring of tobacco use during smoking-cessation programs and for insurance purposes has become common
 - Best screening test is cotinine

Physiology

- Nicotine has a short half-life and may not be an indicator of smoking status
- Cotinine is a major metabolite of nicotine (70-80%)
 - Half-life of ~16 hours
 - May be detected up to 7 days after nicotine exposure

Test Interpretation

Analytical sensitivity – 100 ng/mL

Results

- Concentration is not reported – this is a qualitative screen
- Positive result reported at 100 ng/mL

Limitations

- May not differentiate between passive and active nicotine exposure
- Will not differentiate nicotine exposure from nicotine replacement therapy and tobacco use
- Assay may crossreact with other nicotine metabolites