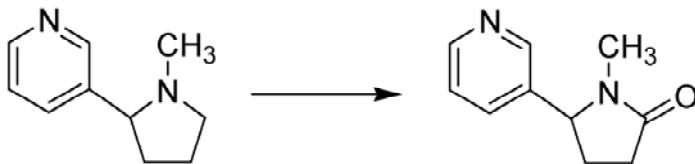


Cotinine

Test Name: Cotinine (Low Range) or
Passive Smoke Test™
Test Code: 1199
CPT Code: 83887

Description: Cotinine is the major metabolite of nicotine and its presence in the body is a specific indicator of exposure to the chemicals of tobacco smoke. The half-life of cotinine is about 20 hours and its concentration in the urine reflects exposure to tobacco smoke during the past few days prior to specimen collection. Assays to measure cotinine have in the past only been used to verify a person's non-smoker status. However, the IBT Laboratories assay is unique since it is both quantitative and sufficiently sensitive to be useful in determining nicotine exposure in non-smokers.



Nicotine

Cotinine

Method: The presence of cotinine in urine is determined by a Cotinine Direct ELISA. The ELISA is based upon the competitive binding to antibody of enzyme-labeled antigen and unlabeled antigen, in proportion to their concentration in the reaction mixture. The concentration of each sample is determined from a standard curve. The urine ELISA assay was validated and its performance characteristics determined by IBT Laboratories. The test is appropriate for medical use only.

Units Reported: Nanograms/mL (i.e. ng/mL)

Specimen Requirements: 2 mL untimed urine, samples should be shipped overnight at ambient temperatures. For samples held longer than 24 hours, freeze and ship on wet or dry ice.

Reference Ranges: A moderate to heavy smoker will generally have urinary cotinine values in the 500 to 4500 ng/mL range. Non-smokers who are exposed to tobacco smoke will have cotinine concentrations proportional to the extent of exposure. It should be noted that the ingestion of nicotine containing foods such as eggplant and tomato does not result in significant elevations of urinary cotinine. There is an overlap region between light active smokers and heavy passive exposure.

The following *arbitrary* categories of exposure are provided as a qualitative guide to interpret the results.

<u>Category</u>	<u>Urinary Cotinine Concentration</u>
Passive Smoker	
Not Detected	< 10 ng/mL
Low Exposure	10 - 14 ng/mL
Moderate Exposure	15 - 40 ng/mL
Heavy Exposure	> 40 ng/mL
Active Cigarette Smoker	
Light Smoker	150 - 500 ng/mL
Moderate Smoker	500 - 2500 ng/mL
Heavy Smoker	> 2500 ng/mL

Indication for test: The purpose of the low range cotinine assay is to determine the extent of an individual's exposure to tobacco smoke. Several studies have shown the importance of passive smoke exposure and asthma symptoms, especially in children.

References:

- ❑ Chilmoczyk BA et al. Association between exposure to environmental tobacco smoke and exacerbations of asthma in children. N Engl J Med 1993; 328: 1665-1669.
- ❑ Oddeze C, et al. Urinary cotinine and exposure to parental smoking in a population of children with asthma. Clin Chem 1999; 45: 505-509.
- ❑ Otsuka R. et al. Acute effects of passive smoking on the coronary circulation in healthy young adults. JAMA 2001; 286: 436-441.
- ❑ Glantz SA and Parmely WW. Even a little secondhand smoke is dangerous (editorial). JAMA 2001; 286: 462-463.
- ❑ Morkjaroenpong V et al. Environmental tobacco smoke exposure and nocturnal symptoms among inner-city children with asthma. J Allergy Clin Immunol 2002; 110:147 - 153.

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