

# Cobalt Co

## General:

Cobalt is an essential trace element for all multicellular organisms. It is essential for the catalytic center of the Vitamin B12 coenzyme. Cobalt is also an active nutrient for bacteria, algae, and fungi. Although cobalt is an essential element for life in minute amounts, higher levels can result in mutagenic and carcinogenic effects similar to nickel. Powdered cobalt in metal form is a fire hazard. After nickel and chromium, cobalt is a major cause of contact dermatitis.

Cobalt can enter the body by ingestion, inhalation, or through the skin. Exposure to cobalt metal dust is most common in the tungsten carbide industry but exposure to cobalt-containing compounds is also a risk. For example, in the 1960s, there were deaths in Belgium, the USA and Canada caused by drinking large amounts of beer that contained cobalt chloride or cobalt sulfate as a foam stabilizer (drinker's cardiomyopathy).

In the past, cobalt chloride was used to treat anemia, however several patients receiving cobalt therapy developed symptoms such as ataxia and palpitations. Toxic admission of cobalt salts can result in mucous membrane irritations, gastroenteric symptoms while in chronic exposure leads to heart muscle degenerations. A main deficiency symptom is macrocytic anemia (cobalamin deficiency).

The following tests are available:

- **Cobalt in serum /EDTA Blood**

Indication: suspicion of acute or chronic intoxication

Material: 1 ml serum or EDTA blood

TAT: 7-10 days\*

Method: ICPMS

Units: µg/l

Ref.- range: <0.9

- **Cobalt in Urine**

Material: 5 ml urine

TAT: 7-10 days\*

Method: ICPMS

Units:  $\mu\text{g/l}$

Ref.- range: <1.0

For complete list of laboratory test offered at Freiburg Medical Laboratory, please visit  
<http://www.fml-dubai.com/parameter-listings/>