

Vitamin B1 Thiamine

General:

Biochemistry: Vitamin B1 is water-soluble and is found almost exclusively as thiamine pyrophosphate. Thiamine pyrophosphate is a co-enzyme for the decarboxylation of pyruvate (alpha-ketoglutaric acid, pyruvate derivatives of valine, leucine and isoleucine) and the transketolase reactions.

Physiology: Thiamine is resorbed rapidly in the intestine and transformed into thiamine pyrophosphate (co-enzyme) predominantly in the liver. It is further biotransformed by dephosphorylation in the kidney and partly secreted as free vitamin or as conjugated sulfate ester. Thiamine is of importance for all organs using pyruvate and lactate as energy sources or show a high carbohydrate turnover or a high requirement for acetylic groups (nerve cells).

Occurrence: grain or grain products, flour, meat, liver, yeast, egg, milk, vegetables, roots. Thiamine is destroyed easily by heating (cooking).

Clinical symptoms:

Neurological: polyneuropathy, neuritis, areflexia, paresis vocal cord paralysis, neuromuscular degeneration ("dry form" of Beri-Beri);

Cardial: cardiac insufficiency, tachycardia, edema of lower extremities and effusions in serous cavities ("wet form" of Beri-Beri);

Hypervitaminoses are rare. Symptoms: headaches, cramps, paralysis, arrhythmia.

Indication: Suspicion of deficiency/ or over-dosage.

Material: 3 ml EDTA blood

Preanalytics: light protected dispatch is highly recommended ! No plasma !

TAT: 5-7 days*

Method: HPLC

Units: ng/ml

Ref.- range: 20 - 100

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