Lead Pb

General:

Lead can affect almost every organ and system in the body. In the human body, lead inhibits porphobilinogen synthase and ferrochelatase, preventing both porphobilinogen formation and the incorporation of iron into protoporphyrin IX, the final step in heme synthesis. This causes ineffective heme synthesis and subsequent microcytic anemia. At lower levels, it acts as a calcium analog, interfering with ion channels during nerve conduction. This is one of the mechanisms by which it interferes with the CNS.

The main target for lead toxicity is the nervous system, both in adults and children. Long-term exposure of adults can affect the nervous system to a significant extent. It may also cause weakness in fingers, wrists, or ankles, slight increases in blood pressure and anemia.

Exposure to high lead levels can severely damage the brain and kidneys in adults or children and ultimately cause death. In pregnant women, high levels of exposure to lead may cause miscarriage. Chronic, high-level exposure in men can severely affect sperm production.

About 90% of the lead is incorporated in bone as lead phosphate. Lead in blood is mainly bound to erythrocytes and is approximately 100 times more concentrated than in plasma. A lead determination in serum/plasma is therefore not useful. EDTA blood shows the most reliable values. High concentrations of lead are found in emissions, water pipes, color industry, cooking utensils and wine. Children absorb more lead than adults. Side effects are hypochromic microcytic, sideroachrestic anemia with maculation of erythrocytes (aggregation of ribosomes).

The following tests are available:

- **Lead in blood**

Indication:	Intoxication
Material:	3ml Heparin blood
TAT:	7-10 days*
Method:	IPMS
Units:	µg/l
Ref.- range:	male : < 40 female : < 30

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- **Lead in urine**

Indication: Intoxication
Material: 10 ml urine
TAT: 7-10 days*
Method: IPMS
Units: µg/l
Ref.- range: see report
Note: blood testing is recommended

- **Lead in stool**

Material: 5 g stool
TAT: 7-10 days*
Method: AAS
Units: µg/kg
Ref.- range: <420

- **Lead in hair**

Indication: Intoxication
Material: 250 mg hair
TAT: 7-10 days*
Method: IPMS
Units: µg/g
Ref.- range: see report

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