

Medical Biochemistry
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Emem Umoh Ephraim

Potassium

Toxicity value: A potassium level higher than 5.5 mmol/L is critically high, and a potassium level over 6 mmol/L can be life-threatening.

Deficiency manifestation

- Weakness and fatigue
- Muscle cramps and spasm
- Digestive problems
- Heart palpitations
- Muscle aches and stiffness
- Breathing difficulties

Calcium

Toxicity values: The Toxic Condition of Hypercalcemia and Hypercalciuria
Hypercalcemia occurs when serum calcium levels are 2.63 mmol/L or greater depending on normative laboratory values.

Deficiency manifestations

- * Numbness.
- * Tingling Fingers.
- * Muscle cramps.
- * Lethargy.
- * Poor appetite.
- * Weak or brittle fingernails.
- * Difficulty swallowing.
- * Fainting.

Magnesium

Toxicity values : Magnesium toxicity develops after serum concentrations exceed 1.74 – 2.61 mmol/L

Deficiency manifestations

- * nausea
- * vomiting
- * loss of appetite

- * tiredness
- * weakness

Chloride

Toxicity values: The normal serum range for chloride is 96 to 106 mEq/L, therefore chloride levels at or above 110 mEq/L usually indicate kidney dysfunction.

Deficiency manifestations

- * excessive fatigue.
- * muscle weakness.
- * breathing problems.
- * frequent vomiting.
- * prolonged diarrhea.
- * excessive thirst.
- * high blood pressure

Iron

Toxicity values: Toxic effects begin to occur at doses above 10–20 mg/kg of elemental iron. Ingestions of more than 50 mg/kg of elemental iron are associated with severe toxicity. In terms of blood values, iron levels above 350–500 $\mu\text{g/dL}$ are considered toxic, and levels over 1000 $\mu\text{g/dL}$ indicate severe iron poisoning.

Deficiency manifestations

- * Extreme fatigue.
- * Weakness.
- * Pale skin.
- * Chest pain or shortness of breath.
- * Headache
- * Dizziness
- * Cold hands and feet.
- * Inflammation or soreness of your tongue.
- * Brittle nails.