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DEPARTMENT: NURSING

MATRIC NO: 18/MHS02/074

COURSE: BCH 204

1) OUTLINE THE TOXICITY VALUES AND DEFICIENCY MANIFESTATIONS OF THE FOLLOWING MINERALS

- **POTASSIUM**
- **CALCIUM**
- **MAGNESIUM**
- **CHLORIDE**
- **IRON**

POTASSIUM

Toxicity values

This is called hyperkalemia, or high potassium. A normal range of potassium is between 3.6-5.2 millimoles per liter of blood. A potassium higher than 5.5mmol/L is critically high and a potassium level over 6mmol/L can be life-threatening.

Deficiency manifestation

Deficiency typically occurs when your body loses a lot of fluid. Common signs and symptoms of potassium deficiency include weakness and fatigue, muscle cramps, muscle aches and stiffness, tingles and numbness, heart palpitations, breathing difficulties, digestive symptoms and mood changes.

CALCIUM

Toxicity values

Hypercalcemia is a condition in which the calcium level in the blood is above normal. A normal serum calcium level is 8-10mg/dL (2-2.5mmol/L). A calcium level greater than 10.5mg/dL(>2.5mmol/L) can be life-threatening

Deficiency manifestation

Muscle problems,extreme fatigue, nail and skin symptoms,osteopenia and osteoporosis, painful premenstrual syndrome, dental problems, depression, kidney stones, dehydration, bone pain,abdominal pain.

MAGNESIUM

Toxicity values

Normal serum magnesium concentrations range between 0.75 and 0.95 millimoles per liter (mmol/L). Hypomagnesemia is defined as a serum magnesium level less than 0.75mmol/L.

Deficiency manifestation

Tremor, poor coordination, muscle spasms, loss of appetite, personality changes, nystagmus, high blood pressure, muscle twitches and cramps, asthma, irregular heartbeat, mental disorders, fatigue and muscle weakness.

CHLORIDE

Toxicity values

The normal adult value for chloride is 97-107mEq/L. Any other value above or below that is considered toxic to health.

Deficiency manifestation

Fatigue, muscle weakness, excessive thirst, dry mucous membranes, high blood pressure, renal tubular acidosis, vomiting.

IRON

Toxicity values

Toxic effects begin to occur at doses above 10-20mg/kg of elemental iron. Ingestions of more than 50mg/kg of elemental iron are associated with severe toxicity. In terms of blood values, iron levels above 350-500µg/dL are considered toxic and levels over 1000µg/dL indicate severe iron poisoning.

Deficiency manifestation

Extreme fatigue, weakness, pale skin, chest pain, headache, fast heartbeat, shortness of breath, dizziness, cold hands and feet, inflammation, soreness of tongue, brittle nails, poor appetite.