

18/MHS061049 BCh 204

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QUESTION

1. Outline the toxicity values and deficiency manifestation of the following minerals

a. ~~POTASSIUM~~ POTASSIUM: Toxicity values of potassium - normal level in the range of 3.5-5.0mM, while levels of 6.3-8.0mM (severe hyperkalemia) resulting in death due to cardiac arrhythmias or cardiac arrest.

- DEFICIENCY MANIFESTATIONS: muscle cramps, weakness and fatigue, heart palpitation, difficulty in breathing.

b. CALCIUM - Hypercalcemia occurs when serum calcium levels are 10.5mg/dL (also expressed as 2.63mmol/L)

- DEFICIENCY MANIFESTATION: hypercalcemia, osteoporosis, cataracts

c. MAGNESIUM: Toxicity values - symptoms of magnesium toxicity develop after serum concentrations exceed 1.74-2.61mmol/L. E.g.

hypomagnesemia is defined as serum magnesium level < 0.75mmol/L

- DEFICIENCY MANIFESTATION - nausea, hypotension, ileus, depression

d. CHLORIDE - Chloride levels above 106 could point to toxicity values in humans in animal models of chloro kidney problems such as renal tubular acidosis
DEFICIENCY MANIFESTATION - Hypochloremia

e. IRON - Toxic effects occur at doses above 10-20mg/kg of elemental iron. Ingestion of more than 50mg/kg are associated with severe toxicity. Iron level above 350-500mg/dL are considered toxic.

- DEFICIENCY MANIFESTATION - Paleness, Shortness of breath, headache, Restless legs