**AUGOYE OMESIRI**

**ANATOMY**

**18/MHS01/094**

**BCH 204 MINERALS**

Outline the toxicity valve and the deficiency manifestation of the following mineral

1. **Potassium: Toxicity Value**

 toxicity signs, including excess salivation, muscular tremors of legs, and excitability were observed with potassium doses greater than .58 g of potassium per kilogram body weight. Three of five calves given 1.73 g of potassium per kilogram, three of four calves given 2.31 g of potassium per kilogram, and one calf given 2.88 g of potassium per kilogram body weight died.

With a small number of calve, oral sodium infusions increased plasma sodium in proportion to the dose, but plasma potassium remained relatively constant. Sodium infusions of 2.12 and 2.16 g of sodium per kilogram body weight were fatal.

potassium level higher than 55.5m mol/L is critically high

**Deficency Manifestation**

Weakness and fatigue

Digestive problem

Muscle cramps

Heart Palpitations

Breathing problem

Numbness

1. **Iron: Toxicity Vaue**

Ingestion of less than 20 mg/kg of elemental iron is non-toxic. Ingestion of 20 mg/kg to 60 mg/kg results in moderate symptoms. Ingestion of more than 60 mg/kg can result in severe toxicity and lead to severe morbidity and mortality. The amount of elemental iron ingested is different depending on the formulations of iron salts. The most common iron formulations are 325 mg ferrous sulfate tablets, which contains 20% (or 65 mg) of elemental iron per tablet; 300 mg ferrous gluconate tablets, which contain 12% (or 36 mg) of elemental iron per tablet; and 100 mg ferrous fumarate tablets, which contain 33% (or 33 mg) of elemental iron per tablet. Prenatal vitamins may contain 60 to 90 mg of elemental iron per tablet. Children's vitamins vary from 5 to 19 mg of elemental iron per tablet

**Deficiency Manifestation**

The signs and symptoms of an iron deficiency depend on whether the patient is anaemic, and if so, how fast the anaemia develops. In cases where anaemia develops slowly, the patient can often tolerate extremely low concentrations of red blood cells (< 100 g/L) for some weeks before developing any symptoms. The first symptoms to appear are due to low delivery of oxygen to tissues, and may include:

* Lethargy
* Weakness
* Poor concentration
* Shortness of breath
* Palpitations.
1. **CALCIUM: Toxicity Value**

Asma calcium concentration is maintained within the approximate reference range of 8.8-10.5 mg/dL (2.20-2.62 mmol/L) so that raised plasma calcium (hypercalcemia) is usually diagnosed if plasma calcium is >10.5 mg/dL (>2.62 mmol/L) and severe, potentially life-threatening hypercalcemia is roughly defined as plasma calcium >14.4 mg/dL (>3.60 mmol/L).

**Deficiency Manifestation of Calcium**

A low blood level of calcium (hypocalcemia), which can make the nervous system highly irritable, causing spasms of the hands and feet (tetany), muscle cramps, abdominal cramps, overly active reflexes.

1. **Magnesium: Toxicity value**

Magnesium levels between 7 and 12 mg/dL can impact the heart and lungs, and levels in the upper end of this range may cause extreme fatigue and low blood pressure. Levels above 12 mg/dL can lead to muscle paralysis and hyperventilation. When levels are above 15.6 mg/dL, the condition may result in a coma.

**Deficiency Manifestation of Magnesium**

lower [calcium](https://www.medicalnewstoday.com/articles/248958.php) levels in the blood, known as hypocalcemia, lower [potassium](https://www.medicalnewstoday.com/articles/287212.php) levels in the blood called hypokalemia, numbness and tingling in the extremities, cramps and muscle contractions, seizures, personality changes ,abnormal heart rhythms, coronary spasms.

1. **Chloride: Toxicity value**

Hypochloremia (or Hypochloraemia) is an electrolyte disturbance in which there is an abnormally low level of the chloride ion in the blood. The normal serum range for chloride is 97 to 107 mEq/L. It rarely occurs in the absence of other abnormalities. It is sometimes associated with hypoventilation.

**Deficiency Manifestation**

Excessive fatigue, muscle weakness, breathing problems, frequent vomiting, prolonged diarrhea, excessive thirst, high blood pressure.