

Name: Ezenwobi Chiamaka Anne

Matric number: 18/mhs07/020

Department: pharmacology

Course code: BCH 204

Question: outline the toxicity value and deficiency manifestations of the following minerals:

A. Potassium

Toxicity: approximately 20-30% of ingested dietary is absorbed.

Deficiency manifestation: Muscle weakness, paralysis and mental confusion, acidosis, decreased intestinal tone and distension; cardiac arrhythmias; respiratory failure

B. Calcium

Toxicity: Excessive calcification of bone; calcification of soft tissues; hypercalcemia; vomiting; lethargy. The calcium concentration in normal individual is 9-11mg% .

Deficiency manifestation: Tetany, muscle cramps, convulsions, osteoporosis, rickets.

C. Magnesium

Toxicity: diarrhea; transient hypocalcemia. The concentration in normal individual is 30-40% .

Deficiency manifestation: Muscle spasms, tetany, seizures, convulsions; irritability; hyper- or hypoflexia

D. Chloride:

Toxicity: the concentration of chloride is 95- 105mEq/L.

Deficiency manifestation: Deficiency secondary to vomiting and diarrhea.

E. Iron

Toxicity: Hemochromatosis; hemosiderosis. The normal intake of iron is about 10-

20mg/day. Normal about 5- 10% of dietary iron is absorbed.

Deficiency manifestation: Microcytic anemia, a deficiency of iron causes a reduction in the rate of hemoglobin synthesis and erythropoiesis, and can result in iron deficiency anemia. Iron deficiency anemia is the commonest of all single nutrient deficiencies. The main causes are:

- Deficient intake: Including reduced bioavailability of iron due to dietary fiber, phytates, oxalates, etc.
- Impaired absorption: For example, intestinal malabsorptive disease and abdominal surgery.
- Excessive loss: For example, menstrual blood loss in women and in men from gastrointestinal bleeding (in peptic ulcer, diverticulosis or malignancy). Iron deficiency causes low hemoglobin resulting in hypochromic microcytic anemia in which the size of their blood cells are much smaller than normal and have much reduced hemoglobin content.