FACTSHEET

Electrolytes

Electrolytes are present in our cells and blood. They are important in muscle contraction and relaxation and also help maintain your body's fluid balance.

Sodium and chloride

An electrolyte imbalance from low blood sodium has sometimes been reported in endurance athletes. Sodium is lost during sweating, and if it occurs over several hours, the amount may be significant. Sodium and chloride help maintain the volume and balance of all the fluid outside body cells, such as blood. Sodium helps transport nutrients into the cells so they can be used for energy production, tissue growth and repair. Sodium also functions in muscle contraction and nerve impulse transmission.

Sodium and chloride lost in sweat is about 33 per cent of their concentration in blood plasma. Side-effects of insufficient sodium include reduced performance, dizziness and fainting.

Potassium

Potassium is needed for nerve transmission, muscle contraction, glycogen formation, and is necessary in maintaining cardiovascular system function. Only about 1 per cent of potassium is lost through sweat, but after hard training, potassium can be lost in the urine. Because potassium is stored with glycogen in the muscle fibres, the breakdown of glycogen to supply energy to your muscles leads to an increased loss of potassium from the muscle cells.

Magnesium

Magnesium is found in all body cells, but mostly in bones, muscles and soft tissue. It is involved in nerve transmission, muscle contraction and in ATP. When magnesium levels fall too far, athletes risk developing muscle cramps. Low blood magnesium levels during exercise can cause muscle fatigue and irregular heartbeat. Magnesium deficiency can lead to dizziness, muscle weakness, irritability and depression.