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Editorial: Forgotten Electrolytes and the Heart

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Editorial: Forgotten Electrolytes and the Heart

Electrolytes play a key role in myocardial function. While there has been much agreement and attention given to potassium and magnesium, some important trace elements have been practically neglected in cardiac physiology and nutrition. It is, however, of considerable importance to understand that electrolytes constitute vital minerals which have to be part of our daily diet. Electrolytes and trace elements are found in all of the compartments of the body. The more important ones are well-known to everybody: sodium, potassium, magnesium, and calcium. Ideal nutrition is difficult to achieve and intake of supplements makes it easier to maintain an equilibrium of electrolytes in the human body.

Calcium, for example, is important for osteogenesis as well as for muscle contraction. Cellular calcium overload, in turn, can lead to malignant arrhythmias. Magnesium, on the other hand, participates in more than 360 biochemical reactions of the body and magnesium-free diet leads to death in laboratory animals within a short period of several months. There is, however, a number of other electrolytes, minerals, and trace elements of equal importance: iodine salts are the key to thyroid function, thus to growth, vitality, metabolism, and play a role in the context of wound healing. Selenium, for example, constitutes an important essence of vital enzymes, is needed for detoxification of various poisons and free radicals (e. g. mercury). Copper is used by numerous enzymatic reactions as a co-factor and participates in structural proteins of the nervous system. Molybdenum is, like iron, essential in oxygen transport. Manganese ions participate in enzymatic reactions against oxygen-free radicals, in clotting, and the control of sex hormones. Zinc is involved in immunological

processes, wound healing, counteracts toxic effects of heavy metals and lack of zinc can be the source of various dermatological problems including loss of hair. Bromide is helpful in the context of deep relaxation and acts bactericidal. Sulphur is a fungicide, antioxidant and is essential in building up certain proteins. Even chrome is of considerable importance – an essential factor in metabolism.

Serious disturbances in electrolyte balance can lead to complex symptoms and may result in death.

Disturbances in the balance of electrolytes result mainly from nutrition, but also from diuretics, kidney dysfunction, or disturbances of the gastrointestinal tract. Deficits must be discovered by the physician in time and equilibrated. It is equally important to find and treat the source of such an electrolyte imbalance.



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*Yours faithfully,
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