

# Principles of treatment of acid-base balance disorders

## Treatment of metabolic acidosis

The treatment of more severe metabolic acidosis is usually **sodium bicarbonate**, either parenterally as part of a complex infusion therapy or orally. The advantage of enteral administration is that the body is left to regulate the absorption of bicarbonates, so there is no need to worry so much about excessive alkalization. On the other hand, this pathway is slower and less effective, and resorption may be impaired in more severe patients.

Milder and chronic metabolic acidosis is often treated by the administration of organic acids and their salts. Bicarbonates are actually formed by their metabolism in the citrate cycle. The condition is good liver function. The most commonly used are lactate (eg lactated Ringer's infusion solution) and citrate (eg in oral rehydration solutions used to treat diarrheal diseases)

If acidosis and acidemia have lasted for a long time, the pH of the indoor environment must be adjusted slowly.

*It should be borne in mind that the respiratory center responds to  $pCO_2$  as an acid-base sensor:  $CO_2$  diffuses from the blood into an environment rich in  $HCO_3^-$ , so that a buffer is formed. Its pH depends on the current  $pCO_2$ . Nerve endings respond to the acidity of the environment. In case of acidosis lasting several days, the respiratory center is over-regulated. A sharp alkalization of the internal environment could lead to the respiratory center behaving as in hypocapnia - hyperventilation - : it would lead to respiratory depression, even to respiratory insufficiency.*

## Treatment of metabolic alkalosis

The treatment of metabolic alkalosis is most often based on the administration of saline. While in the blood the concentration of sodium cations is higher than the concentration of chloride anions, in saline both ions are in a ratio of 1: 1. By administering physiological solution, we supply the body with an excess of chlorides. This displaces the bicarbonates in the ionogram and corrects the alkalosis.

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