

Dr. Buteyko started the section about the cleansing reaction in his small manual "Method of volitional elimination of deep breathing" (Guide for Training), with the explanation of main pathological mechanisms that undermine human health:

### 1. Physiological Grounds for Clearance Reaction

Deep respiration interferes with metabolic processes in cells, causes oxygen starvation, eliminates vital substances from the body (sodium, potassium, calcium, phosphorus) to compensate internal alkaline shifts, distorts immune reactions and results in the accumulation of incompletely oxidized products and substances which come into contact with incoming protein allergens and can provoke allegro-pathological responses.

Deep respiration impairs the functioning of kidneys, liver, intestines and other organs. As a result, a large amount of metabolites is accumulated in the organism, i.e. incompletely oxidized products, waste salts, residual drugs, toxins which cause focal infections, elevate the blood cholesterol and enhance calcium and phosphorus depositions in joints and blood vessels etc.

With the liquidation of deep respiration the metabolic processes become normal improving the excretory functions and clearing the body of harmful products.... [end of quote]

He obviously claims that elimination or deficiency in essential minerals causes abnormal immune reactions and accumulation of free radicals and other toxic substances in the body. In the practical section (the last part of his manual), Buteyko suggests following practical actions in relation to cleansing reactions:

The teacher must prepare a patient for the reaction to occur so that the latter would not have been frightened, convince him to continue with training and try to eliminate the symptoms by means of the VCDB method. In some cases such symptoms are not eliminated but on the contrary get more vividly expressed after the training. It testifies to an accelerated reaction and serves as an indication for retaining the achieved training intensity. Yet the training must not be interrupted otherwise the depth of respiration will grow and the clearance reaction will not be completed. If the depth of respiration returns to initial level, then the disease will also come back. This concerns primarily such symptoms as headaches, retrosternal and other pains associated with sodium, potassium and, occasionally, with other (magnesium, calcium, phosphorus) ions deficit which have been eliminated from the organism by deep breathing. In this case the teacher will recommend corresponding preparations: sodium chloride (0,5 teaspoonful), potassium (1 g), magnesium sulfate (2 g) per glass of water (drink in little swallows until the symptoms disappear or become weaker), a teaspoonful of chalk, 2-3 tablets of calcium glycerophosphate (chew to crushes) etc. ... [end of quote]

It becomes clear here that essential minerals play a central role in the reduction of severity of the cleansing reaction. Furthermore, many other Russian Buteyko sources (written by other Russian MDs practicing the Buteyko method) speak about the precursors (early signs of the cleaning reaction). In this Buteyko manual, they are discussed in Part 2: Precursors of a Clearance Reaction.

What happens in the human body at these times? Why does the human organism require certain time to start the cleansing reaction? Surely, in case of deficiency in main minerals, the human body will try to accumulate the required minerals in order to initiate the cleansing reaction that requires minerals in order to chelate waste products out of the human organism.

Hence, there are certain in-built physiological and biochemical mechanisms that are able to borrow required minerals from their use in current physiological processes so that to eliminate harmful substances. This is done even in cases of limited or insufficient supply of nutrients and with increased temporary deficiency in these minerals.

It is also known that Russians did not teach testing and use of supplements of essential macro-minerals during breathing retraining. Taking supplemented minerals, for historical and cultural reasons, has not been popular in the USSR and Russia. There are four macro-minerals (sodium, potassium, calcium, and magnesium) which are required for the human body on the daily basis. Sodium can be obtained with regular consumption of sea salt; potassium is abundant in vegetables, grains, nuts, legumes, and seeds. Hence, one can use extra sea salt during the reaction and eat more cooked vegetables during hard times (low CPs does not allow eating most raw foods due to lack of patience in the students). However, it is much more difficult to get enough Ca and Mg.

It is suggested here that cleansing reaction can be avoided or almost nullified when the student takes sufficient doses of Ca and Mg, as well as make steps to prevent morning hyperventilation (the situation that leads to severe losses in useful electrolytes). It requires also certain skills from the teacher to provide right explanation and tests in order to check presence of nutritional deficiencies and find optimum doses of supplements.

Best wishes, Artour.