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## Environmental Mineralogy and Human Health Effects of Natural and Table Salt

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The most essential role in mineral-digestive transport and metabolism is played by table salt, i.e. halite. It is necessary for the replenishment of hydrochloric acid in gastric juice. It has antiseptic features but also can exert harmful influence by salt balance disturbance. Usually a man consumes 7-9 kg of table salt annually. Hence, during a normal life he consumes more than a half-ton of this mineral.

True table salt is a complex mineral system including dozens of other soluble and insoluble minerals together with halite. Since a man during his life eats 5-7 kilograms of insoluble and hardly soluble minerals, which are not dissolved during the process of digestion, it is obvious that their entry to digestive tract can cause mineral-induced pathogeneses, similar to those induced by mineral dust.

We studied several dozens of samples of table salt obtained by different technological methods from deposits of different geological types and ages. These salts are provided in domestic and international market by Russia, Byelorussia and Spain.

Possible negative influence may be connected with the physical properties of mineral particles or with the form and structure of mineral individuals and aggregates. We classified potentially "dangerous" individuals and aggregates of insoluble minerals from the position of prediction of their influence on human organism by a number of conditional groups with such names as needles, knives, sponges, etc. This classification is operative, not strict, but it allows us judging new features of table salt that were not taken into account before and may be considered as ecological risks.

Solar pond and sea salt may contain various aerosol inclusions with radioactive particles. It is obvious that utilization of such salt produced during the period of Chernobyl accident (May 1986) is absolutely unreasonable. Consuming such salt we absorb several super-capacity, very local generators of radiation in the form of highly active "hot" particles from graphite aerosol cloud precipitated in salt-bearing basins. Due to generation of permanent and very intensive radiation, such particles, as well as other radioactive products of nuclear explosions, produce irreversible changes, including cellular and genetic changes.

The analysis of composition of insoluble mineral residue of table salt testifies to the fact, that this common food product is not so simple, and sometimes it can have negative side effects. In any case it is necessary to regard it as an active environmental mineralogical factor influencing on human health.

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