The influence of the underground salt chambers microclimate of the Salt Mine in Wieliczka o chosen physiological parameters, lipid balance and hormones which regulate it.

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**Introduction**

Subterraneotherapy consists in the exposure of patients to intensive physical, chemical and biological stimuli of a complex nature and synergistic biodynamics, present only deep underground.

**Aim**

Evaluation of the effect of the microclimate of the salt chambers on selected physiological parameters (diastolic and systolic blood pressure, heart rate, temperature, body weight and fatty tissue content), the level of blood lipids (total cholesterol, LDL cholesterol, HDL cholesterol, triglycerides), and the level of selected hormones (triiodothyronine, growth hormone, cortisol and serotonin).

**Material and Methods**

The study group consisted of 43 healthy individuals aged from 20 to 43 years. The study was carried out in the salt chamber “Wessel Lake” in the Salt Mine in Wieliczka, located 135 m below ground, on the third level of the mine. Study participants were exposed to the climate of the subterranean salt chamber for 14 days. They spent 6.5 hours underground each day and required two climate changes every day. During each session in the salt chamber the following measurements were completed in each of the participants: diastolic and systolic blood pressure, heart rate, body temperature (15 minutes after reaching the chamber, after 2 hours of the session and 15 minutes before leaving), and two measurements of body weight and fatty tissue content. Determination of blood serum lipid and selected hormones content was completed on the day before the therapy started, and after its end.

**Results**

The study demonstrated: statistically significant increase of systolic and diastolic blood pressure, reduction of body temperature, increase of body weight and in fatty tissue content, no effect of the subterranean atmosphere on heart rate was demonstrated; statistically significant increase of the growth hormone level, reduction of cortisol level, increase in serotonin level, no effect of the subterranean atmosphere on the level of triiodothyronine was demonstrated; statistically significant reduction of total cholesterol, reduction of LDL cholesterol, increase of HDL cholesterol, no effect of the subterranean atmosphere on the level of triglycerides was demonstrated.

**Conclusion**

The resort therapy in the underground salt chambers of Wieliczka Salt Mine has a favorable effect on lipid metabolism and may constitute an adjunct therapy for patients with lipid metabolism disorders.