

# Balneology in Third Millenium. Romanian Vision for the future

## Authors:

**Olga Surdu; Roxana Elena Tucmeanu; Traian –Virgiliu Surdu; Sibel Mujdaba; Monica Surdu; Daniela Profir; Liliana Elena Stanciu; Viorica Marin**

# History

## How long is balneo history?

- It is difficult to assess since balneo/hydrotherapy dates, because archaeological evidence from the Stone and Bronze Age, have been found all over Europe near hot springs, lakes, rivers, seas, witnessing about habitation
- Ancient people used for healing elements from the proximity: soil (earth, clay, mud), herbs, waters, wood, tree bark;
- **Using natural therapeutic factors is as long as humanity is;**

## Neolithic Age 5500 – 6000 BC

Near Techirghiol Lake and Black Sea discoveries



Near Danube River discoveries

## *Romanian balneal resources*

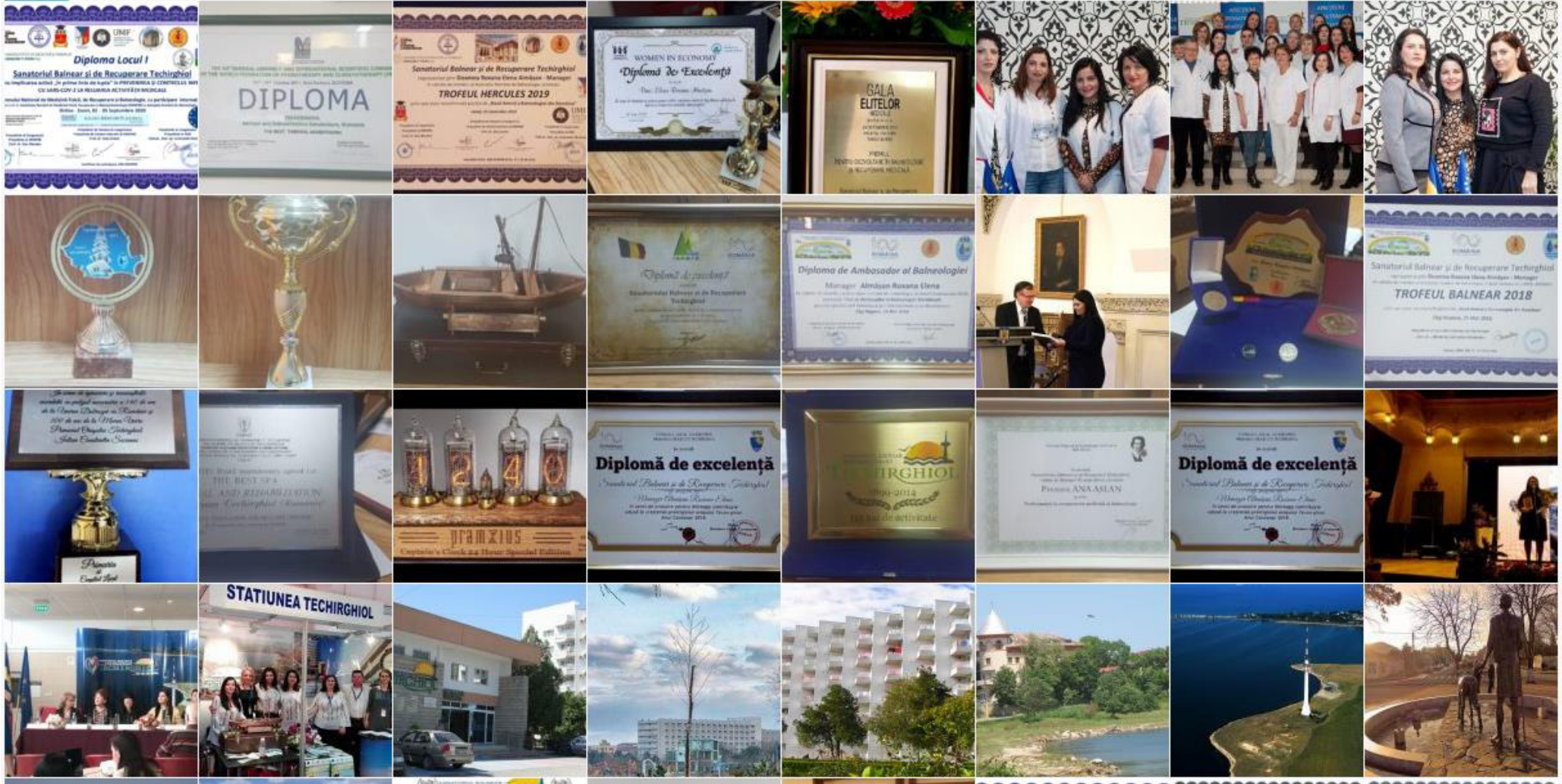
**climate** (relief, hydrology and vegetation)  
including **salt mines and caves microclimate**

**mineral/thermal waters**  
(for bathing and drinking cure)

**mud/peat/clay**

**gases**





# Characteristics of the Romanian Balneal Medicine

- 1. Long history;
- 2. abundance of natural resources (mineral/thermal waters, mud, gases, climat, including microclimat from former salt mine) and thermal infrastructure/patrimony;
- 3. Intrinsic unity of balneal medicine with physical and rehabilitation medicine; the unity of specialty is not only an idea but a methodological concept having a specific educational pathway.
- 4. coherence of education programmes and training for physicians, therapists, all types of personnel working in thermal station;
- 5. implication in social and economic challenge;

# Characteristics of balneal medicine in Romania

## Balneal medicine - allopathic, integrative, integrated, holistic medicine

- **Allopathic medicine** – prescription for drinking cure is identical to drugs prescription- source, dose/kg, rithm/day, before or after meal, number of days; for bathing cure: source, temperature, immersion level, duration, number of days;
- **Integrative medicine** - to choose the best solution for the patient from all available fields of knowledge: allopath, complementary and/or alternative medicine, paramedicine, **updated with new scientific progress and discoveries** such as: mechanism of action and physiological/pathophysiological effects of balneotherapy on the inflammation's mediators, oxidative stress and hormonal secretion, epigenetics, physics – entropy, etc.
- **Integrated medicine** – with other specialties: geriatrics, nursing, that are particularly **concerned with the enhancement of the quality of life - healthy ageing and balneo geriatrics**; Yet, chronic disease, frailty, and disability tend to become more prevalent at older ages, so that a population with a higher life expectancy may not be healthier and may need friendly methods of treatment that balneal medicine is able to offer
- **Holistic medicine** - stimulates the human's body forces of adaptation and defence. Crystallizing of the medical concept of quality of life together with the rediscovering the virtues of holistic medicine and of values of some therapeutic remedies from traditional medicine of different cultures have been leading to recall the interest for balneal medicine that have the physiological/physio pathological support of its effects in the adaptation mechanisms of human body and offers a high level of improving quality of life of patients with different ailments. **The quality of life itself is a holistic concept**, too, that involves four essential dimensions: **physical condition and the capacities/performances**, **psychological wellbeing** (self-esteem, opinion about own appearance, cognitive performances, interpersonal relationship), **position and social relationship** and **economical status**

# Characteristics of balneal medicine in Romania

## related items

- **well-being; fitness** - presence/ absence and/or abatement/elimination of disease risk factors, (especially) the ones associated to the "civilization pathology;
- **stress/ (di-)stress** – including its relationship to premature/ pathologic ageing and its negatively connexion with quality of life; (Di-)stress is a concept of paramount importance, negatively related to the quality of life, well-being and not only;
- Moreover, an **optimal state of physical well-being requires** not only the mere absence of illness, of risk factors and/or of physical di-stress, but also a **state of moderate physical performance** = fitness, defined as “good health or physical condition, especially as the result of exercise and proper nutrition or **the extent to which an organism is adapted to, or able to produce offspring, in a particular environment.**
- Thus, **the great importance of anti-stress/ relaxation**, active prophylactic, fitness, rejuvenation/ anti-ageing, balneal/ SPA procedures/ professionally related to balneal/thermal courses, **is thus obviated**, in the modern society by afore discussion.

# challenge for Romanian balneologist – bring balneology and balneal medicine in XXIst century

## **inter - multy- and transdisciplinary approach:**

- ❖ **Fundamental and applied research – new horizons** - physics and biophysics (thermodynamics, entropy, energy, radiations, nanoparticles), mathematics (risk analysis, mathematical modelling), IT (virtual reality, augmented reality, artificial intelligence, machine learning), cell and molecular biology, genetics, epigenetics, genomics, immunology, neurosciences, hormesis;
- ❖ **Clinical applications – new horizons** – immunology, oncology, geriatrics, paediatrics, etc.



# Conclusion

Balneal medicine`s approach, in unified, holistic and integrative manner, and in conjunction with PRM represents an appropriate/beneficial Romanian pathway to bring balneology in third millenium

**Thank you for your attention**