



Int'l Seminar On Hydrotherapy

Thermal & Mineral Waters

Tehran May 6-7, 2000

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## ABSTRACTS OF PAPERS

### SELECTED FOR PRESENTATION

### IN THE 35TH SEMINAR ON HYDROTHERAPY

### THERMAL & MINERAL WATERS

(MAY 6-7, 2000)

35th SITH INTERNATIONAL SEMINAR ON HYDROTHERAPY,  
THERMAL AND MINERAL WATERS

TEHRAN, IRAN - May 6-7 2000.

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**"MINERAL, WATERS DIFFERENT TYPES AND  
THEIR ACTION IN THE HUMAN BODY".**

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ABSTRACT

Mineral Waters - Classification

From the scientific point of view, "Mineral waters are natural solutions which, owing to geological conditions giving rise to their formation, at the source show a true physico-chemical dynamism to which their therapeutic action is largely due"

Mineral waters have been classified according to their physical and chemical properties. Temperature, organoleptic characteristic, radioactivity, etc. are physical properties often used to classified mineral water. Since 1911 the chemical criteria to classified mineral waters have been admitted by most of the countries.

A water is called mineral water if there is a residue of Ig/L or more, and oligomineral or of low mineralization waters when that residue is less than Ig/L .

We classified waters chemically according to the predominant ions and indicate

those cations which have pharmacodynamics properties.

Minero-medicinal waters contain:

- a) dominant chemical elements (more than 20% of mineral constituents anions and cations expressed in mEq);
- b) special elements which give water peculiar characteristics or minor ionic constituents over a determinate quantity, and
- c) trace elements, which are present in very small amounts, easily revealed today with spectrographic or chromatographic analyses. Every element that exists in nature can be found at least in trace amounts in mineral waters.

All those elements are in perfect equilibrium in each water and it is considered that they must be constant, without change. This is a special characteristic of the natural medicinal waters.

Nevertheless, the water of thermal or mineral spring, when discharged at the land of its surface, is subjected to a considerable change in temperature and pressure, and as a result of this change some of the dissolved material of the water may be dropped from solution. Some spring waters contain rather large amounts of chemically reduced dissolved species, such as ferrous iron or hydrogen sulfide. On exposure of the water to atmospheric oxygen such solutes oxidized and deposited.

## THERAPEUTIC EFFECTS

The effect of spa therapy is created not only by the therapeutic action of mineral waters and the way of application, internal or external use, but also by such accompanying factors as the change of environment, the influence of climate, the diet, the physical activity and rest prescribed and controlled, and the physical and mental relaxation from the stress and strain of every day life.

Even the therapeutic action of mineral water alone in very complicated and many physical and chemical factors, such as temperature, hydrostatic and hydrodynamic pressure, buoyancy, and chemical constituents of mineral water, play a role.

Nevertheless, the most important aspect of spa treatment must be the effect of the mineral water constituents, when being absorbed from the intestine or through the skin. Different conditions of penetration through the skin are commented.

The most fundamental aspect of spa therapy is mineral water bathing using tubs or pools and it should be emphasized that, the main effects in these techniques are the influences of the water temperature and the mechanical factors, such as hydrostatic pressure, buoyancy, viscosity and frictional resistance to underwater exercise.

All those above-mentioned different factors can act, as well, as a kind of a non-specific stimulus therapy giving as a result, if the treatment is long enough (3 or 4 weeks), an improvement of capacities of response and self-healing potentials of the organism against endogenous and exogenous abnormal stimuli, and a better adaptation and normalization.