

## Old and Novel Concepts for Novel Physiotherapies

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### Journal of Novel Physiotherapies

Journal of Novel Physiotherapies (JNP) is a pioneer in the complex field of novel physiotherapies. Such therapies must be described, evaluated and implemented in medical clinics, health centers and everyday life and correlated with the classical ones, and for these reasons JNP is a very useful tool.

Formulated as a broad-based journal with free and rapid dissemination [4], JNP can improve human health, well-being and quality of life.

### Concepts of classic physiotherapies

Physiotherapy (physical therapy), a health care profession, acts in all four stages of the medical tetrad: prophylaxis, diagnosis, treatment-intervention and rehabilitation, with the final goal of increasing the human movement potential and the quality of life. That is why physiotherapy is an important and very complex field of action, as preventive, abortive-cure and recovery therapies [5]. Treating the consequences stemming from diseases, such as pain and functional deficiencies, together with general and regional recovery, are major objectives of physiotherapy.

On the other hand, physical therapy, as medical science, studies the action mechanisms of physical factors (movement, pressure, massage, traction and physical exercises; needle stimulation-acupuncture; water, bath and thermal springs, mud, fango and body wraps; warmth and heat, light and sun; climatology; electricity and electric stimulation, magnetic field) on human health and diseases, for prophylaxis, treatment and recovery purposes.

In Romania, Europe, cities with medical universities (Bucharest, Cluj-Napoca, Iași, Timișoara, Craiova, Arad, Oradea, Sibiu, Brașov, Galați and Constanța) have in their academic curricula a specific discipline, which extends the domains of physiotherapy, namely balneo-physio-kinotherapy and medical recovery.

Classic physiotherapies encompass three fundamental principles.

The first, *Primum non nocere* (First, do no harm) is one of the main percepts of medical ethics, with extension to normative and applied ethics, and it is derived from the Hippocratic Oath. This Latin aphorism is logically connected to other Latin phrases:

-*Cura te ipsum* (Take care of your own self or Cure yourself), injunction which urges physicians to care for and heal themselves first, before dealing with patients, and

-*Principiis obsta, sero medicina paratur cum mala per longas convalvere moras* (Stop it at its start, it's late for medicine to be prepared when disease has grown strong through long delays, Publius Naso Ovidius, *Remedia Amoris*, 91), [6].

The second is the holistic principle. Any physical factor (natural or artificial) affects the whole organism, which in its turn replies as a whole. Thus, holistic medicine emphasizes the importance of the whole and the interdependence of its parts.

The third is the individualization rule - personalized medicine. Any therapeutic physical factor acts in a nonspecific manner. The human body reacts, responses and adapts. These changes are assessed as therapeutic results. Physiotherapy must be a personalized medical specialization, because physical therapy has increased efficacy when is applied taking into account the specific characteristics of each human organism.

### Concepts of novel and modern physiotherapies

Novel and modern physiotherapies are undergoing a permanent,

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fast and extensive progress. As scientific and medical field, physical therapy develops itself by synergistic advancement of technology, medicine and informatics. Also, medical research, teaching and practice are rapidly expanding. New concepts, methods and therapeutic evaluations are appearing in medicine and health care.

Novel concepts from adjacent medical fields are becoming part of the physiotherapy practice.

Physical therapy and the palestric (movement) concept [7] can mutually optimize each other in the improvement of human life quality. Pro-longevity life styles [8] can be consolidated by using physical therapy, while increased vulnerability and stress from senescence [9] can be reduced by balneo-physio-kinetotherapy. These papers create the premises for aging deceleration by use of physiotherapies.

Downward causation [10,11], an original paradigm introduced by Denis Noble in systems biology and physiology, can explain and elucidate good results after physiotherapy.

Downward forms of causation [10]:

- higher levels trigger off cell signalling;
- higher levels control gene expression;
- protein machinery reads gene;

can elucidate and complete many mechanisms of action in physiotherapeutic procedures.

Some of the central ideas of The Music of Life [11], presented as principles of systems biology:

- biological functionality is multi-level;
- the theory of biological relativity: there is no privileged level of causality;
- there are many more to be discovered; a genuine theory of biology does not yet exist;

can be applied to develop new concepts and techniques for novel physiotherapies.

Physical activation (i.e. exercise), [12] induces cerebral activation with improvement of cognitive responses to psychological stress. This may be a mechanism and an explanation of well-being and general recovery after physiotherapies.

Thus, integrative paradigms and interdisciplinary concepts in medical sciences can contribute to increase the efficacy of novel physical therapies.

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