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# International Society for Pathophysiology

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## 2009 International Symposium for Pathophysiology

### Teaching

Recognizing the necessity to cope with changes and to accommodate the rapidly transforming, high technology-dependent practice of biomedical education, as the integral key to the long-term success,

and

due to a necessity to improve biomedical education concerning its scope, quality and quantity in the postgenomic era with reference to enhanced advances in scientific, methodological, diagnostic and conceptual views and perspectives on the nature of disease

the 2009 International Symposium for Pathophysiology Teaching (ISPT-2009) held at Shanghai (November 20-23, 2009) adopted the following

## ISPT 2009 Resolution Concerning the Trends and Practice in Pathophysiology Teaching/Learning

### 1. Study Mission

Relevant knowledge of natural pathobiological processes of human diseases is being generated from **clinical and basic sources of information**. The aim and scope of the pathophysiological approach is to integrate and to dig out both relevant preclinical and clinical data which may contribute to a more profound understanding of a patient's condition. Understanding of

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etiopathogenetic pathways within the body is a reliable foundation for a diagnostic data evaluation as well as for a selective and targeted therapeutic intervention.

## 2. Academic Forms

**General pathophysiology** should be focused on the common pathways of etiological factors and pathogenetic processes, covering all major types of bodily reactions (such as hypoxia, stress, shock, inflammation, carcinogenesis, fluid and electrolyte disorders, etc) regardless of the organic system involved. Both syllabus and teaching methodology should be focused on etiopathogenetic clusters, branching, parallel pathways and self-regulatory nature of nonlinear complex systems. A general pathophysiology course should enable integrative and comprehensive dealing with postgenomic molecular data quantities, and their integration into classical views of etiology and pathogenesis.

**Nosology or special pathophysiology** of individual disease/disorder entities, and **organ-system pathophysiology** should be jointly provided by the specialists in the pathophysiology department and individual branches of medicine. Since the mission of clinical medicine is direct application of knowledge to "restore health and to secure a better quality of life for the chronically ill and disabled", the underlying etiology and pathogenesis is critical for the optimal treatment and outcomes. At the same time, nosology itself is a unique resource on the clinical nature of human disease mechanisms which contribute to the general concepts and understanding of human bodily processes.

Both nosology and general pathophysiology should devote an appropriate time share of teaching/learning efforts to the **experimental aspects**

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**of the problem** provided by various models, along with the **clinical natural course of the same problem**. Scientific, diagnostic and computing methodologies impose inherent limits to the outcomes and data. Therefore, a comprehensive study of pathophysiology should take into consideration the available data, their intrinsic quality and contextual role in the diseases. Undergraduate, postgraduate and residency education (and others) should follow the same etiopathogenetic principles, both in study contents and appropriate curricular forms.

## 3. Teaching Staff Profile

An optimal professional development of academic staff in pathophysiology should include a combination of **MD-study, PhD-study, postdoctoral training and clinical residency**. Active scientific research and active clinical practice are both prerequisites and the driving forces for the contemporary teaching/learning of pathophysiology. Such a teacher profile may ignite student's enthusiasm to search for deeper and more complete elaboration of clinical problems.

## 4. Department Setup

An optimal department of pathophysiology in medical school should be a part of university hospital, or should hold close functional relationship with it. It should be composed of teaching and laboratory research and clinical facility. It should be equipped with appropriate information technology and conduct research activities. Clinical work and experimental research, done side by side, bring together two major resources of a given pathobiological problem. Such institutional scheme promotes a synthetic view and interpretation of underlying etiopathogenesis.



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## 5. Curricular Position

University governance, academic policy makers and education stakeholders should be aware of these advantages and enforce the **curricular visibility, outline of subject contents, appropriate positioning and time allocation for pathophysiology**. Teaching of general and special pathophysiology may help to overcome the lasting problem of compartmentalization tendency of medical practice which takes place in parallel with the exponential growth of scientific data with potential relevance in clinical medicine. Pathophysiology is a natural bridge which reduces the growing dichotomy.

## 6. Multidisciplinary Integration

Pathophysiological vertical (hierarchical levels of organismic organization), horizontal (of various organic systems) and longitudinal (referral to a time in natural history) integration of heterogeneous data and pertinent relations **generates a reliable frame of reference for disease appreciation**. The broad integration adds to **upgrading the quality of clinical interpretation**. It facilitates the permeation of evidence-based medicine into daily clinical life. It contributes to understanding the etiopathogenetic foundations of pharmacological, surgical and/or technological interventions.