

Cover legend: **George P. Chrousos**; a member of The Editorial Academy of  
The International Journal of Oncology



Dr George P. Chrousos is Professor of Pediatrics and Endocrinology Emeritus, Holder, UNESCO Chair on Adolescent Health Care, and Director, University Research Institute on Maternal and Child Health and Precision Medicine at the National and Kapodistrian University of Athens. Professor Chrousos pioneered studies that elucidated the potent effects of stress on the organism at the behavioral, neuroendocrine, cellular and molecular levels, and performed groundbreaking research on human development, particularly in early life and the years of puberty and adolescence.

Dr Chrousos has performed a body of influential original experimental, translational and clinical studies on the universally pathogenic impact of a chronically activated stress system on human health. He identified and functionally characterized the molecular mechanisms underlying the pervasive stress hormone-mediated effects of chronically disrupted homeostasis on human mental and somatic health. His discoveries of the pathogenic mechanisms through which chronic stress causes and/or aggravates the ‘chronic non-communicable diseases’, promotes inflammation, increases vulnerability to certain cancers and infections, and accelerates aging, have had a major impact on the science and practice of medicine.

Dr Chrousos demonstrated that chronically disturbed homeostasis and chronodisruption - anytime during the entire human lifespan - lead to the over-production and/or increased action of stress and inflammatory mediators, and cause and/or exacerbate the progressively deteriorating with age ‘chronic stress and inflammation syndrome’. This nosological entity not only includes the classic chronic non-communicable diseases, but also a broad host of other disorders, affecting a large percentage of living individuals, amounting to hundreds of millions of human beings. This syndrome consists of

psychological and somatic manifestations. The former symptoms and signs include dysphoria, anxiety, a depressive affect, eating disturbances and various psychosomatic symptoms, as well as chronic pain and fatigue, while the latter include overweight/obesity, visceral obesity/sarcopenia, hypertension, the ‘cardiometabolic syndrome’, osteopenia/osteoporosis, smoldering (para)inflammation and immune dysfunction, autoimmune and allergic disorders, sleep disturbances and accelerated aging. At the same time, this syndrome is associated with an increased vulnerability to infections and an increased risk of developing certain types of cancer.

Dr Chrousos conceptually synthesized the qualitatively identical selective evolutionary and developmental stressors, which are exerted, respectively, upon our species' phylogeny and individual ontogeny, and associated them etiologically with our very common genetic and/or epigenetic propensities to the aforementioned chronic pathologies. Furthermore, he elucidated the molecular and cellular mechanisms of action of glucocorticoids and their intricate interactions with other cell signaling systems, and introduced tissue glucocorticoid sensitivity and resistance and their circadian variation as key causative factors in human pathology, contributing to the aforementioned pandemic ‘chronic stress and inflammation syndrome’.

The major significance of Dr Chrousos's work is reflected by his impressive international citations (>189,000), H-Index (>208) and >1700 peer reviewed publications (1978-2023). Notably, today he is the most cited endocrinologist and one of the 100 most quoted biomedical scientists worldwide. His work has been included in major biomedical sites and textbooks and has influenced Pediatrics, Internal Medicine, Oncology, Psychology/Psychiatry, Reproductive Medicine, Sleep Medicine, Surgery and the basic sciences. Professor Chrousos has markedly expanded upon the pioneering work of his great predecessors, stress physiologists Walter Cannon and Hans Selye, and has made equally major contributions to contemporary medicine.

Dr Chrousos has received numerous major awards. Amongst these are the Fred Conrad Koch Award, the highest honor of the US Endocrine Society, the Transatlantic Alliance Award by both the US Endocrine Society and the European Society of Endocrinology for his scientific contributions in both continents, as well as the Bodossaki ‘Aristeion’ Prize, a top honor for scientific accomplishments in Greece. He is an elected member of the Academia Europaea and the *US National Academy of Medicine*.

Dr Chrousos's work is summarized in selected complete review publications: Gold PW, Goodwin F and Chrousos GP: Clinical and biochemical manifestations of depression: relationship to the neurobiology of stress. (Part I and Part 2). *N Engl J Med* 319: 348-353 and 319: 413-420, 1988; Chrousos GP and Gold PW: The concepts of stress and stress system disorders: overview of physical and behavioral homeostasis. *JAMA* 267: 1244-1252, 1992; Chrousos GP: The hypothalamic-pituitary-adrenal axis and immune-mediated

inflammation. *N Engl J Med* 332: 1351-1362, 1995; Chrousos GP: Stress and disorders of the stress system. *Nat Rev Endocrinol* 5: 374-381, 2009; Zannas AS and Chrousos GP: Epigenetic programming by stress and glucocorticoids along the human lifespan. *Mol Psychiatry* 22: 640-646, 2017; Agorastos A and Chrousos GP: The neuroendocrinology of stress: the stress-related continuum of chronic disease development. *Mol Psychiatry* doi: 10.1038/s41380-021-01224-9, 2021.