

»Stress is a scientific concept which has suffered the mixed blessing of being too well known and too little understood.«

Hans Selye

Stress is a phenomenon that has quite different meanings for the psychologist, psychotherapist, physician, biologist, social scientist and economist. However, the consensus on the attitude that stress is one of the most important social, medical, biological and psychological phenomena of our age could be easily achieved. From the point of view of a biologist, stress could be defined as a state of disturbed dynamic equilibrium or homeostasis and the response of living systems to numerous and diverse stress-eliciting factors (stressors) is considered to be one of the most important and evolutionary conserved adaptive processes ensuring survival under unfavorable conditions. The biologists study stress at different levels of biological organization from molecular, through cellular and organismal, to the level of population and perform their studies on the whole lot of different cells and organisms, from bacteria to man. An astonishing similarity of stress responses among phylogenetically distant species, and the universality of the mecha-

nisms coping with various insults, including physical, chemical, biological, psychological and social stressors, has been observed. Yet, each stressor also leaves behind its own »fingerprint«.

The understanding of the biology of stress originates from the pioneering works of Hans Selye, the author of general adaptation theory, and Walter Cannon, who conceived the fight-or-flight reaction. Thereafter, the knowledge on stress on a set of integrated cascades in the nervous, endocrine and immune defense systems, and on the cellular and molecular mechanisms conferring protection against various insults has rapidly and massively accumulated. The saying »Understand stress and you will understand medicine« has become a reality nowadays, as the impact of stress on health and on predisposition to diseases such as cancer, infection, rheumatoid arthritis, heart disease, high blood pressure and mental disorders is understood better than ever.

Gordana Matić

Institute for Biological
Research, Belgrade