

# 9<sup>TH</sup> MULTIDISCIPLINARY INTERNATIONAL Conference of Biological Psychiatry

## «Stress and Behavior»

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### CONFERENCE PLENARY LECTURES

**PSYCHOSOCIAL STRESS VERSUS PHYSICAL  
ENVIRONMENT — INCREASED SENSOR  
RESPONSIVENESS AND LABILITY  
OF THE AUTONOMOUS NERVOUS SYSTEM  
IN PATIENTS WITH IDIOPATHIC CHRONIC PAIN  
AND ENVIRONMENTAL INTOLERANCE**

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Recent data of clinical and psycho-physiological studies indicated rather consistent pattern of modest (but significant on the group level) difference in stress related physiological indices between persons with idiopathic chronic pain and environmental intolerance. Although these pathological forms are characterized by a wide spectrum of non specific somatic and neurasthenic symptoms, sometimes very different in dynamics and essence — increased sensor responsiveness and engagement of the autonomous nervous system are rather common pathophysiological profile in these patients. The autonomic regulation showed distinctive trend towards increased tone of the sympathetic system even in so-called baseline (rest) conditions. Heart rate variability in time and frequency domain as well as spontaneous electrodermal activity were shown to be sensitive parameters in this respect. Surprisingly, there have been no clear relationships between degree of the sympathetic overtone and severity of symptoms. Description of reactivity was more complicated, since high individual variability in particular tests and lack of commonly accepted normatives for majority of functional tests dealing with visual, audio, somato-sensory stimulation, cognitive efforts and emotional loads, low-level physical loads. Nevertheless, with certain simplification one may state that patients with environmental intolerance and some forms of chronic pain have demonstrated increased sensitivity to flickering light, irritated noise, vibration. Facilitated reactions were typical for CNS (EEG, evoked potentials, sEMG) and ANS (heart rate variability, skin sympathetic response, local blood flow) parameters. No specific trends in reactions to mental tasks, exposure to magnetic fields or chemicals have been observed. Obtained physiological data indicate that imbalance of the autonomic regulation and increased responsiveness to sensor stimulation play essential role in the development of idiopathic pain and environmental intolerance; we also assume an incidence of the common, somatic» component of the pathogenesis and important role of cortical sensor processing and suprasegmental levels of ANS regulation.