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A simulation of the relationship between sense perception, brain function, the autonomic nervous system and physiological systems, and how this leads to pathological onset

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This article highlights Grakov's mathematical model of the autonomic nervous system, the fundamental concepts which have been deployed in the development of this model, and illustrates their incorporation into a developed and validated software technology (Strannik). This article highlights a number of scientifically significant issues which are often ignored in medical research yet which have enormous scientific significance e.g. the influence of sensory input and/or light, the psychological and psychophysiological correlates of stress, that the body's key physiological parameters are neurally regulated, and that genetic changes are often the consequence and not solely the cause of autonomic dysfunction. A greater understanding of such factors leads to the first mathematical model of the autonomic nervous system and

physiological systems by incorporating an understanding of the significance of sensory input, in particular of colour perception, and of the functional organization of the brain and the autonomic nervous system i.e. of neural networks and organ networks. The EC's Human Brain Project effectively provides a specification for such a new generation of medical technology and enables us to illustrate that the Strannik technology developed by I.G.Grakov already meets the key aims and objectives of this project. In particular (i) that it can screen patient health in a level of detail and sophistication which is unprecedented in modern medicine, and (ii) that it can be deployed with significant therapeutic effect. This enables us to address fundamental limitations facing researchers because of their reliance upon contemporary biochemical test measurements.

Biography

Graham Ewing completed his BSc Chemistry from Northumbria University, England. He is the CEO of Mimex Montague Healthcare, a private limited company which was established to commercialize the Strannik technology developed by Dr Igor Grakov, the coauthor and Technical Director of Mimex Montague Healthcare. He has published more than 80 papers in reputed journals and/or presentations at international medical conferences; two books; several book chapters; and articles which have been published in the popular press.

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