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Systems diagnosis of chronic diseases, explored by metabolomics and ultra-weak photon emission

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STELLINGEN

1. Systems biology offer new insights for understanding chronic disease by integrating various sets of information, derived from metabolomics and ultra-weak photon emission. (Chapter 1, 5)
2. Metabolomics is a powerful systems-based approach for studying comprehensive pathophysiological mechanisms in chronic disease. (Chapter 2, 3)
3. In the case of chronic rheumatoid arthritis (in mice) metabolic perturbations occur at a system-level including inflammatory-, ROS-related oxylipins and amine-related levels as can also be observed by ultra-weak photon emission. (Chapter 4)
4. Integrating datasets of small molecule metabolite concentrations in living systems with ultra-weak photon emission reveal the relationship between metabolic processes and non-invasive detection of ultra-weak photon emission. (Chapter 4, 6)
5. Health is an ability to adapt and to self-manage, while disease is loss of resilience to this ability. (Huber et al. BMJ, 2011)
6. UPE research will allow a better understanding of complex dynamical systems. (Van Wijk et al. J. Photochem. Photobiol. B, 2014)
7. A system biology-based diagnosis can be used to capture phenotype information, leading towards a scientific basis for a more refined patient characterization, new diagnostic tools and personalized health strategies. (Jan van der Greef et al. Planta Med., 2010)
8. The concepts of Chinese medicine might sound alien to Western ears, but some principles are found to match scientific perspectives based on dynamic organization. (Peng Tian, Nature, 2011)
9. Macroscopic and microscopic perspectives are both very relevant for understanding the health-disease regime.
10. There is no limit to knowledge, nor any satiety in studying life.