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Chronome/chrone

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"Chronome," derived from chronos (time), nomos (rule, law) and in the case of biological chronomes, chromosome, describes features in time, just as cells characterize the spatial organization of life. The chronome complements the genome (derived from gene and chromosome). The chronome consists of 1) a partly genetic, partly developmental, partly environmentally influenced or synchronized spectrum of rhythms; 2) stochastic or deterministic chaos; 3) trends with growth, development, maturation and aging in health and/or trends with an elevation of disease risk, illness and treatment in disease; and 4) unresolved variability. The chronome is genetically coded: it is environmentally synchronized by cycles of the socio-ecologic habitat niche and it is influenced by the dynamics of the interplanetary magnetic field.

The chronome constituents, the chrones, algorithmically formulated endpoints, are inferentially statistically validated and resolved by the computer.

Chronomes and their chrones 1) quantify normalcy, allowing an individualized positive health quantification; 2) assess, by their alterations, the earliest abnormality, including the quantification of an elevated risk of developing one (or several) disease(s), chronorisk, by the alteration of one or several chrones; and 3) provide, by the study of underlying mechanisms, a rational basis in the search for measures aimed at the prevention of any deterioration in properly timed, mutually beneficial environmental-organismic interactions.

1. Cornélissen G., Halberg F. (1992) Broadly pertinent chronobiology methods quantify phosphate dynamics (chronome) in blood and urine. Clin. Chem. 38: 329–333