

## Methods of Nonlinear Dynamics for the Analysis of Heart Rate Variability

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The main goal of the research is development of system for analysis of heart rate variability with methods of nonlinear dynamics. For this task were explored main algorithms for qualitative and quantified estimation of 24-hours heart rate regularity. Also, was developed software where the Kolmogorov's algorithm was used, Poincare equation, approximate entropy, flicker noise, distribution bar chart, and Lorenz diagram. The results of calculation could be use for defining the diagnostic signs of human health state on the basis of daily heart rate regularity estimation.

Implementation and its perspectives - method implementation is provided for groups of people with the risk of sudden death, and also for overload regimes estimation in the group of practically healthy people. The method does not requite load tests, and the observation after the state of human cardiovascular systems is held in the mode of natural functioning The main perspectives of implementation are: 'health medicine', sportive medicine, control of organism response on high psycho-emotional and/or physical load, sudden cardiac death risk estimation.