

A MATHEMATICAL MODEL OF GLUCOSE HOMEOSTASIS IN CHAD CONTEXT

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Abstract: During these decades, mathematical modeling has become a key domain in science, especially in biomedical sciences. It allows for an experimental and rigorous approach. Thanks to mathematical modeling, the glucose-insulin system could be materialized, which is also theoretical, in order to analyze and interpret it and to predict the results. Many of the mathematical models of the glucose-insulin system have emerged in recent years. In literature, there are models that show the role of physical activity and response of mathematical model to glucose-insulin system dynamics. We propose the mathematical model of ordinary differential equations to investigate simple homeostasis generated by the dynamics of physiological parameters of the glucose-insulin system during physical activity for a healthy subject. Model parameters are estimated using a nonlinear optimization