



Dynamic Modelling of Boosting the Immune System and Its Functions by Vitamins Intervention

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Abstract: The purpose of this paper is to demonstrate numerically the effect of modern diet on the functions of the immune system such as modifying, identifying and inhibiting the pathogens in an unhealthy model by the intervention of vitamins within thirty days. This paper used ordinary differential equations to formulate the model which contains two populations: one of normal cells in the presence of immune cells and the other with variables of vitamins as external factors. The paper proved that switching back to a healthy diet from a modern pattern diet resulted in a decrease in the percentage of deadly diseases as well as prevention from rapid growth of pathogens. In conclusion, the immune system functionality is directly proportional to the type of diet consumed. In the case of the Western-style diet, it has a detrimental effect on the immune system.

Keywords: *dietary; weakened immune system; boost immune system; vitamins consumption; nonlinear dynamic system.*

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