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## A theoretical analysis of a model for diabetes dynamics

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**Abstract.** In this paper, we make use of the theory of dynamical system in order to investigate the well-posedness of a model governing the spread of diabetes with the effect of treatment. The model consists of a system of nonlinear ordinary differential equations with a nonlinear incidence response. Positivity, boundedness, global existence and uniqueness of the solutions are established. In particular, Lyapunov stability theory and spectral methods are employed to investigate the stability of the disease free and endemic equilibria.

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