

## PERIODIC VACCINATION STRATEGIES IN THE REINFECTION SIRI MODEL

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For diseases in which vaccination is not compulsory, individuals take into account different aspects when deciding between to vaccinate or not. Namely, the decision depends on the morbidity risks from both vaccination and infection, and also depends on the probability of being infected, which varies with the course of the disease and the decisions of other individuals.

Using some basic game theoretical concepts, we study the evolution of the individual vaccination strategies depending upon the morbidity risks and upon the parameters of the basic reinfection SIRI model. In [1], it was introduced the evolutionary vaccination dynamics for an homogeneous vaccination strategy of the population. Here, we introduce the dynamical evolution of the morbidity risks and observe the arise of periodic vaccination strategies.

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### **References**

- [1] Martins, J., & Pinto, A. (2017). *Bistability of Evolutionary Stable Vaccination Strategies in the Reinfection SIRI Model*. Bull Math Biol, 79, 853–883.