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Modelling Immunity.

The ability of an infectious pathogen to invade and persist in a population is affected by the existence of immunity in individuals, and in the population itself. Mathematical models of infectious diseases have typically ignored the dynamic effects of different levels of immunity in disease spread. As such, the predictive capacity of models of population infection and control is limited. In this talk I will give an overview of immunity modelling in immunology. The immunological models will be used to inform population-level distributions of immunity. Distributions of immunity gained from infection and vaccination against COVID-19 in populations will be quantified. (Received January 13, 2022)