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# Mathematical Modeling of Left Ventricular Remodeling Post-Myocardial Infarction with and without Treatment

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# **Mathematical Modeling of Left Ventricular Remodeling Post-Myocardial Infarction with and without Treatment**

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New mathematical models of the left ventricular remodeling after myocardial infarction (MI) are studied. First we consider a model that consists of a system of nonlinear ordinary differential equations. It represents the interactions among heart cells and the immune system post-MI and without any medical interventions. Next, we consider a system that models the regeneration process of cardiomyocytes under constant oxygen supply and different possible medical interventions. Moreover, qualitative analysis of the models and numerical simulations are given.