

# Numerical Analysis of Blood Flow in the Human Aorta and Bypass Grafts

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Blood flow is complex due to the presence of curves, multiple branches, non-Newtonian flow, and pulsating effect. Even when an individual receives a bypass which saves the patient, several years later a new bypass may be required due to graft failure. There are two different approaches for multiple bypass grafts, and clinical observations are inconclusive as to which approach is better. The aim of this study is to provide a systematic numerical approach considering different effects (curves, branches, non-Newtonian behavior, and pulsation) individually, and then integrating them together. The final goal is to better understand the geometrical effects of bypass graft.