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**Cardiac Hemodynamics in the Pathogenesis of Congenital Heart Disease and Aortic Valve Calcification**

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An improved understanding of the roles of hemodynamic forces play in cardiac development and the pathogenesis of cardiac disease will have significant scientific and clinical impact. I will focus on the role of fluid dynamics in congenital heart disease and aortic valve calcification. Congenital heart defects are the most common form of birth defect. Aortic valve calcification/stenosis is the third leading cause of adult heart disease and the most common form of acquired valvular disease in developed countries. Given the high incidence of these diseases and their associated morbidity and mortality, the potential translational impact of an improved understanding of cardiac hemodynamic forces is very large.

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