

## Patient-Specific Simulations of the Hemodynamics in the circle of Willis

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### **Abstract:**

The circle of Willis is an arterial network at the base of the brain and is the main supplier of blood to the brain. Around 1-6% of the general population develop aneurysms in or near this circle during a lifetime. These aneurysms may rupture and cause a stroke. The clinicians dilemma when discovering aneurysms (often accidentally) is that the risk of rupture is low, probably in general less than 1% annually, treatment is associated with a certain risk, and patient-specific risk assessment is difficult. Computational hemodynamics seem as a promising tool that may aid clinicians in determining the risk of rupture in each individual case. In this talk we will discuss the clinical problem, show some patient-specific simulations, and also discuss the accuracy of these simulations with respect to the accuracy of the medical data.