

## Computational Fluid Dynamics Study of the Effects of Mechanical Forces in Cerebral Aneurysms

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**Abstract :** Cerebral Aneurysms are the ballooning and defect that occurs in the arteries of the brain. This ballooning might enlarge in size due to mechanical forces and could lead to rupture and death. Computational Fluid Dynamics has been used in the recent years in creating a link between engineering sciences and medical sciences. In this paper, the effects of mechanical forces on cerebral aneurysms will be studied. Results of this study show that mechanical forces could lead to rupture of the aneurysm and could lead to death. High mechanical forces including stresses up to 1.7 MPa could pop aneurysms and lead to a brain hemorrhage.

**Keywords :** computational fluid dynamics, numerical, aneurysm, mechanical forces

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