

# The Role of Alterations in the SLC2A10, ELN and FBLN5 Genes in the Likelihood of Developing Tortuous Arteries

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Tortuosity is defined as the bending and twisting of blood vessels, hindering the efficiency of blood flow to their respective organs and tissues. Researchers frequently report the condition in elderly populations and label it as a risk factor for transit ischemic attacks. Aging, atherosclerosis, and hypertension, among other conditions, have been linked to the development of tortuous arteries. Multiple studies have focused on surgical interventions aimed to eliminate or alleviate the symptoms. However, its etiology is still not widely understood, especially from a genetic perspective. The current study aims to determine the genetic predisposition of developing tortuous arteries based on alterations in SNPs in the SLC2A10, ELN, and FBLN5 genes. The study will examine eight human cadavers for the presence of tortuosity in the subclavian, external and internal carotid, splenic, external and internal iliac arteries. DNA samples will be extracted using the phenol-chloroform procedure, and sequences of SLC2A10, ELN, and FBLN5 will be screened by next-generation sequencing, and compared to normal reference genomes. Data of the association of genotypic frequency and the phenotype of tortuous arteries will be analyzed by performing logistic regression at a significance level of  $\alpha = 0.05$ . The results will provide insight into possible genes that may increase the probability of developing tortuosity. The findings of the study will be presented in the fall of 2018.