# *GEN54 - Validation of the vertebral tortuosity index as a new imaging biomarker to predict adverse cardiovascular events in connective tissue disorders*

**OBJECTIVE**: To determine if higher VTI is associated with earlier first cardiac surgery, aortic dissection, and death in children and young adults

## ORGANIZATION


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## BACKGROUND AND RATIONALE

Vascular tortuosity is a common finding in connective tissue disorders, especially in single gene mutations. We have identified a new potential imaging biomarker, the vertebral artery tortuosity index (VTI), that in pilot research appears to be an independent indicator of risk for aortic dissection and other adverse cardiovascular events in children and young adults. In our initial study of 90 patients with connective tissue disorders, higher VTI was independently associated with earlier cardiac surgery, even when accounting for genetic diagnosis and aortic size. Higher VTI was also associated with earlier dissection and death.

## DESIGN

*Method:*
- To determine if higher VTI is associated with earlier first cardiac surgery, aortic dissection, and death in children and young adults
- To determine if VTI significantly changes over time

*Inclusion criteria:*
- Subjects age 0-50 years that have undergone CT or MR angiography of the chest, neck, or brain.

*Samples:*
- None

*Data:*
- Organ system review
- Medication use
- Genetic
- Demographics
- Imaging
- Family History
- Surgical

## CONCLUSIONS

*Results:*
- *Results pending*