

# Small vessel changes in eye, kidney provide clues to risky heart rhythm

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People with damage in the small blood vessels of the retina and kidneys are at increased risk to develop the most common type of abnormal heart rhythm, according to research presented at the American Heart Association's Scientific Sessions 2013.

Atrial fibrillation raises the risk of stroke and causes heart-related chest pain or heart failure in some people.

Researchers in the Atherosclerosis Risk in Communities Study (ARIC) followed 10,009 middle-aged people for an average 13.6 years. Atrial fibrillation developed at a rate of:

- 5.7 incidences per 1,000 person-years in those with no retina or kidney changes.
- 8.9 incidences per 1,000 person-years in those with signs of small vessel damage in the retina, such as micro-bleeds or micro-aneurysms.
- 16.8 incidences per 1,000 person-years in those with signs of vessel damage in the kidneys, allowing tiny amounts of protein to be released into their urine (micro-albuminuria).
- 24.4 incidences per 1,000 person-years in those with both retinopathy and micro-albuminuria.

Though reasons for the association are unclear, changes in other vascular beds may serve as a representation of coronary micro-vascular changes and the observed association may be mediated via inflammation,

[endothelial dysfunction](#), autonomic dysfunction, and electro-mechanical remodeling, the researchers said.

Provided by American Heart Association

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