

Poster presentation

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## Visceral fat is associated with an adverse increase in the thickness of the wall of the ascending thoracic aorta

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### Introduction

An abnormal increase in ascending aortic wall thickness (AOWT) identifies individuals at increased risk for adverse cardiovascular outcomes. Disease states causing increased AOWT invoke changes that are also present in individuals with larger amounts of intraperitoneal (IP) fat.

### Hypothesis

IP fat is associated with an increase in ascending AOWT, after accounting for other risk factors that promote aortic wall thickness.

### Methods

240 participants (mean age 69 + 9 years, 50% female) with risk factors for cardiovascular disease underwent magnetic resonance imaging measures of AOWT and abdominal fat (subcutaneous [SC] + IP + retroperitoneal [RP]). Linear regression was used to identify associations between AOWT and subtypes of fat after accounting for confounding factors.

### Findings

When comparing the 1st and 4th quartiles of IP fat (1st quartile mean = 59 + 2.5 cm<sup>3</sup>, 4th quartile mean = 245 + 5.5 cm<sup>3</sup>), the minimum, maximum, and mean AOWT was 15% ( $p = 0.002$ ), 18% ( $p = 0.001$ ), and 18% ( $p < 0.001$ ) larger, respectively, in the 4th quartile relative to the 1st quartile. Higher IP fat was associated with higher AOWT in participants  $<$  or  $\geq$  65 years of age (Figure 1). There were

similar associations with RP fat, but no relationship was found between AOWT and SC fat. In the multivariate model, IP fat remained associated with minimum, maximum, and mean AOWT after accounting for age, gender, height, diabetes, hypertension, and coronary artery disease ( $p = 0.01$ ,  $0.01$  and  $0.01$ , respectively).

### Conclusion

IP fat is independently associated with an abnormal increase in ascending AOWT, a condition associated with adverse cardiovascular events.

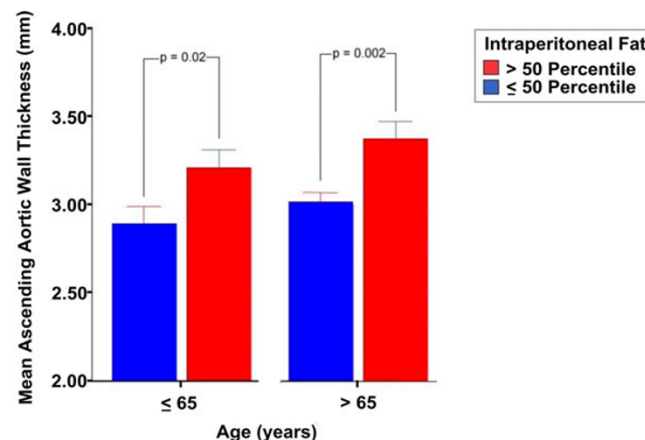


Figure 1