

# The Association between Trunk Fat Percentage and Arterial Stiffness

Sophia Kaczynski, Aiden J. Chantry, Jake C. Diana, Jeb F. Struder, Craig Paterson, Patricia Pagan Lassalle, Michelle L. Meyer, Feng-Chang Lin, Justin B. Moore, Lee Stoner, Erik D. Hanson.

## METHODS

### Study Design

- Cross-sectional observational study

### Participants:

**N=152 college-based young adults**

	Male (n=37) Mean (SD) / N (%)	Female (n=115) Mean (SD) / N (%)
Age (years)	20.75 (1.79)	20.77 (1.80)
Height (cm)	179.44 (9.07)	163.75 (6.80)
Weight (kg)	77.89 (14.99)	63.83 (13.57)
Total Body Fat (%)	22.79 (5.99)	32.43 (6.79)
Trunk Fat (%)	22.21 (7.46)	28.29 (7.66)
Ethnicity		
White	25 (68)	73 (64)
Non-white	10 (27)	36 (31)
Prefer not to disclose	1 (3)	3 (3)

### Predictor Variable

- Trunk fat percentage (DXA)

### Outcome Variable

- Carotid-femoral pulse wave velocity (cfPWV;  $m/s^2$ ) as a measure of arterial stiffness (VICORDER®)

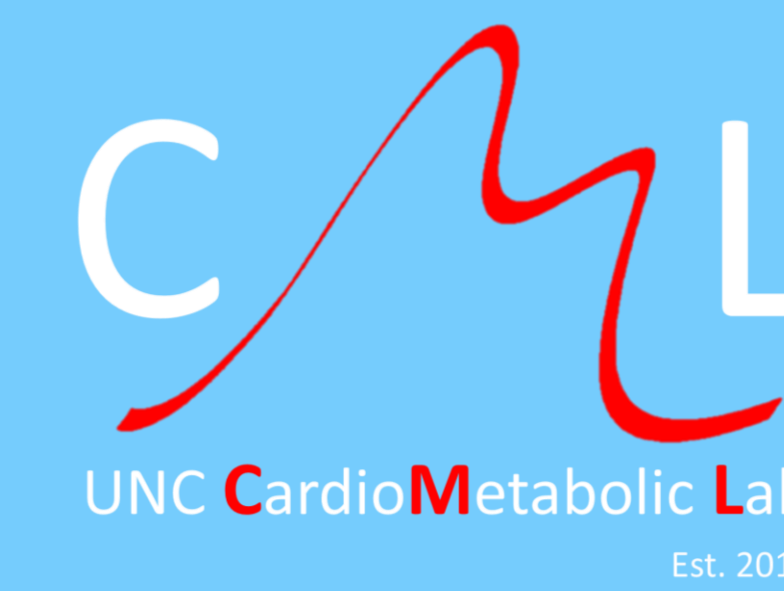
### Analysis

- Multiple linear regression (adjusted for race) using SPSS.

**Funding: R01HL162805A**



THE UNIVERSITY  
of NORTH CAROLINA  
at CHAPEL HILL



## PROBLEM

Pulse wave velocity (PWV) is a measure of arterial stiffness. A higher PWV independently predicts cardiovascular disease risk. Previous studies have demonstrated positive associations between adiposity and PWV, but have relied on bioelectrical impedance to assess adiposity (which is influenced by confounding factors like hydration) and brachial-femoral PWV (which is a sub-optimal measure of central arterial stiffness).

## OBJECTIVE

To investigate the association between trunk fat percentage and cfPWV.

## TAKE HOME

In this preliminary analysis, no association was found between adiposity and cfPWV. However, the opposing trends for males and females warrant further exploration, as this may offer additional mechanistic insight into sex-related disparities in cardiovascular disease risk.

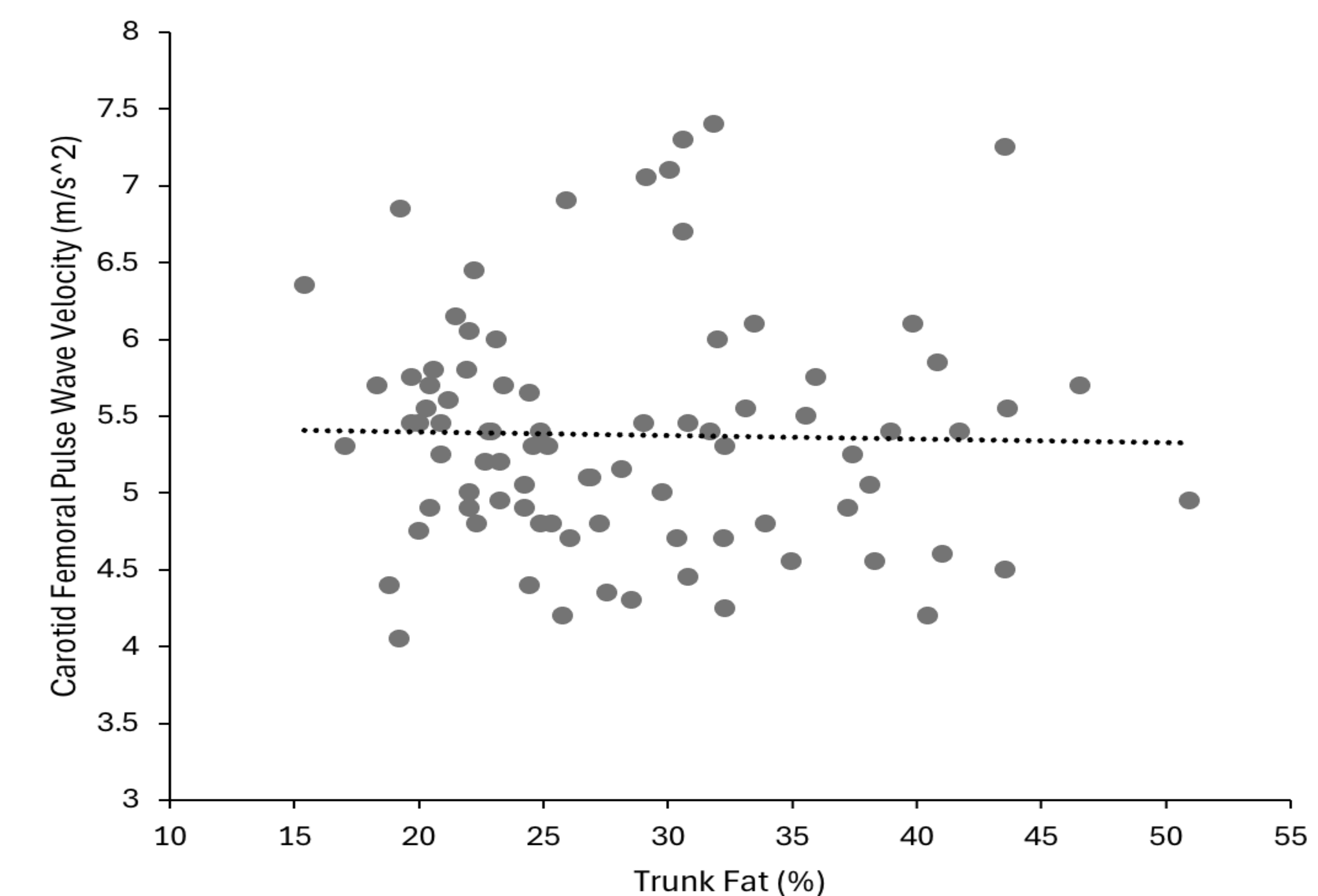
**Email:** [skaczynski.unc.edu](mailto:skaczynski.unc.edu)  
**Lab:** <https://unc-cml.weebly.com/>

## RESULTS

There was not a significant relationship between trunk fat % and cfPWV in our total sample with males and females combined ( $\beta = -0.004$ ,  $p = 0.641$ , 95% CI =  $-0.023$  —  $0.014$ ).

Based on established sex differences in trunk fat % found in the literature, we have presented our results separately for males and females.

- **Figure 1:** No significant relationship emerged between trunk fat % and cfPWV in females ( $\beta = -0.002$ ,  $p = 0.867$ , 95% CI =  $-0.023$  —  $0.020$ ).



- **Figure 2:** No significant relationship emerged between trunk fat % and cfPWV in males ( $\beta = 0.003$ ,  $p = 0.866$ , 95% CI =  $-0.030$  —  $0.035$ ).

