

Age- and Sex-Specific Reference Values of MRI-derived Aortic PWV and Comparison with Carotid-femoral PWV



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BACKGROUND

Aortic pulse wave velocity (AoPWV) : measure of arterial stiffening related to ageing and marker of cardiovascular events.

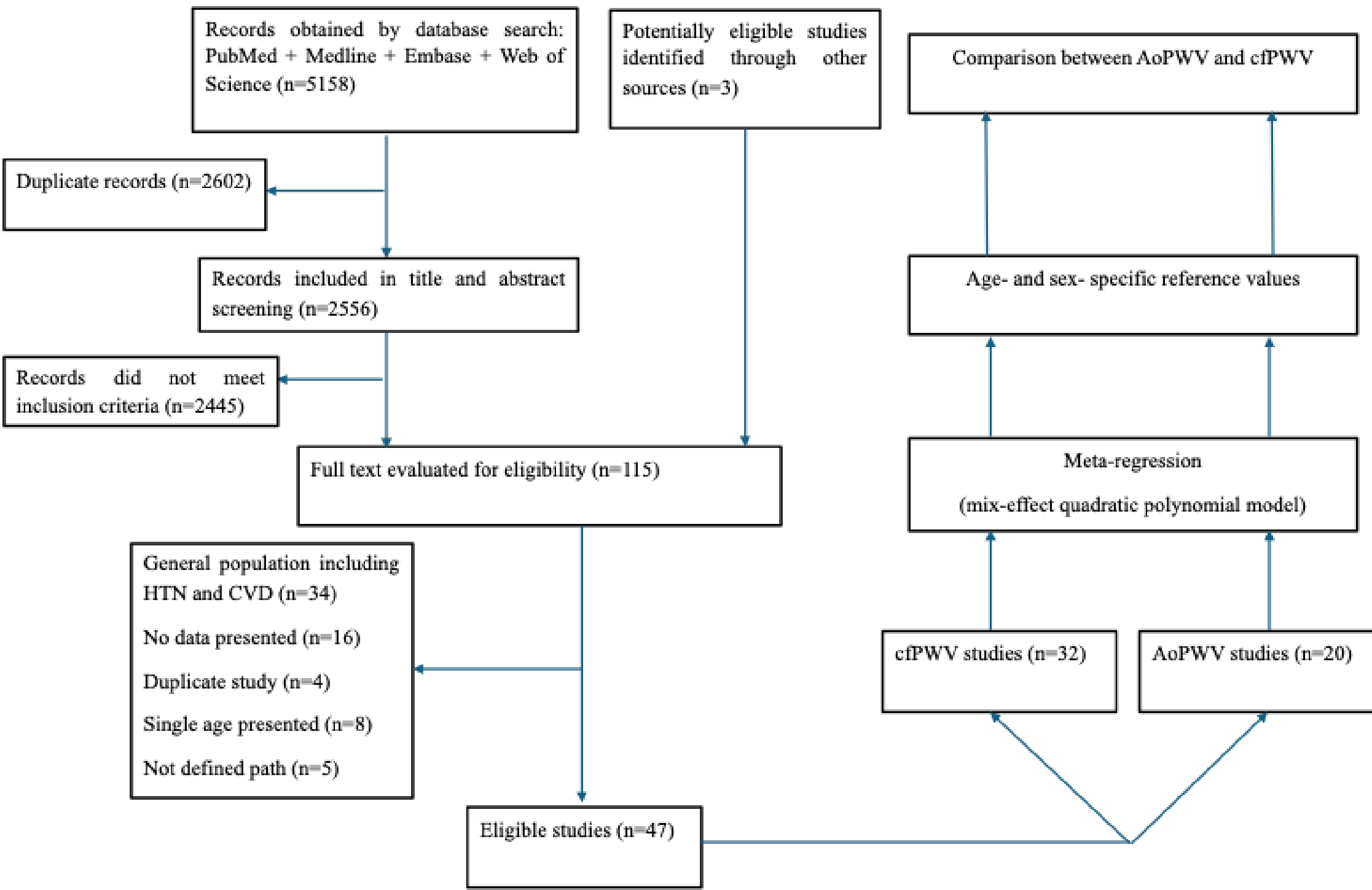
- Increasingly being measured by phase contrast magnetic resonance imaging (MRI).
- Fewer population data on MRI-derived AoPWV** than on carotid-femoral PWV (cfPWV) and **reference values have not been established.**

AIM

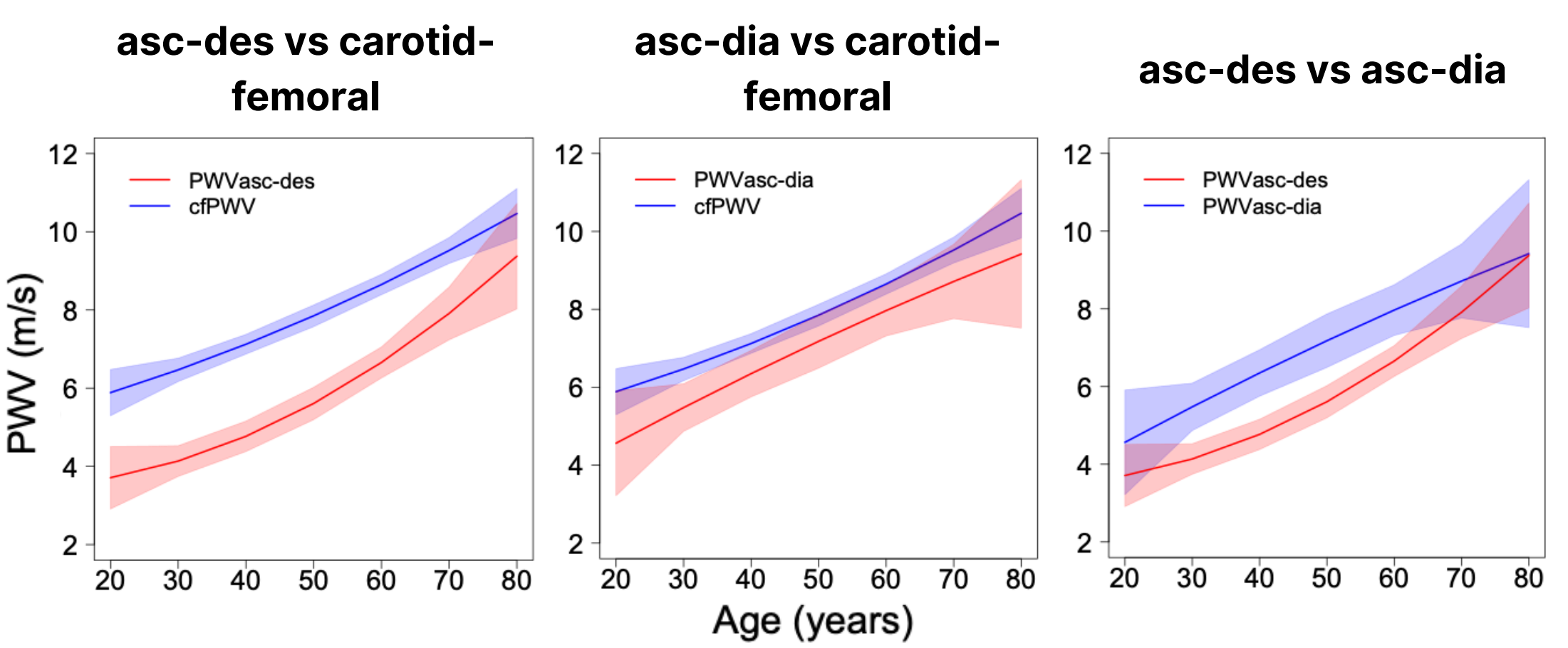
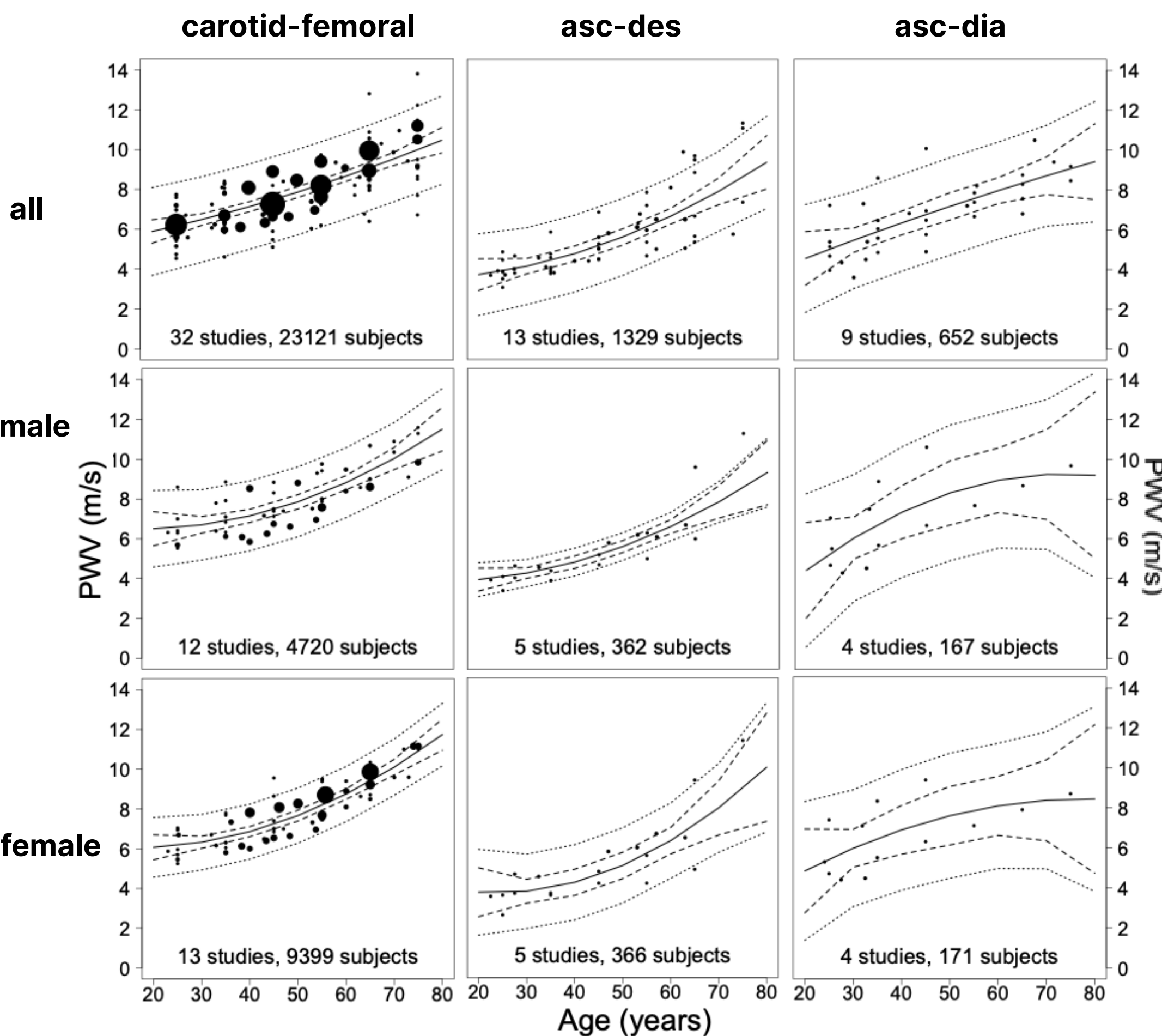
Perform a systematic review and meta-analysis of published studies.

- To establish **age- and sex- specific reference values** for MRI-derived **AoPWV: AoPWVasc-des** from ascending to descending aorta, and **AoPWVasc-dia** from ascending to diaphragm aorta.
- To contrast AoPWV** with those for cfPWV.

METHODS



RESULTS

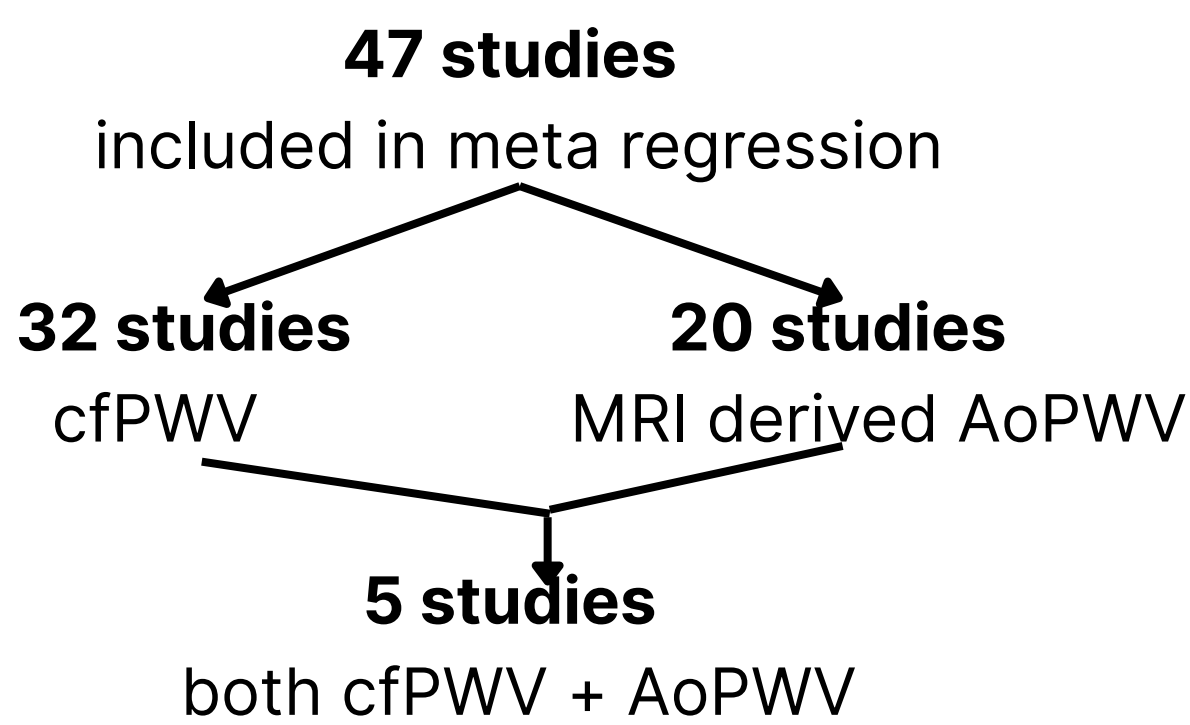


PWV values and differences between AoPWV with cfPWV: mean±SE (95%CI)

Age (years)	AoPWVasc-des (m/s)	AoPWVasc-dia (m/s)	cfPWV (m/s)	Dcf-ades (m/s)	Dcf-adia (m/s)
20-29	3.9±0.27	4.92±0.45	6.17±0.21	2.27 (1.60-2.94)	1.25 (0.28-2.22)
40-49	5.16±0.21	6.49±0.33	7.48±0.14	2.32 (1.83-2.81)	0.99 (0.29-1.69)
70-79	8.62±0.49	8.48±0.65	9.98±0.23	1.36 (0.30-2.42)	1.50 (0.15-2.85)

TAKE-HOME MESSAGE

- MRI-derived AoPWV increases with age and is comparable with established cfPWV.**
- These age-specific reference values provide an **important foundation for interpreting MRI-derived aortic stiffness in research (including the creation of virtual subjects within VITAL)** and future clinical applications.
- Further population and disease-specific studies** are needed before clinical interpretation can be established.



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