

## **Recent Guidelines Related to Arterial Stiffness and Pulsatile Hemodynamics in the US**

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We will discuss recent guidelines by the American Heart Association regarding the nomenclature, methods, utility, and limitations in the application of arterial stiffness to cardiovascular risk assessment. We will also mention some aspects of recent guidelines/position documents by the American Society of Hypertension and the American Society of Echocardiography. We will discuss the value of carotid-femoral PWV and the various methods available for its measurement, including arterial tonometry, tonometry/cuff-based hybrid devices, ultrasound and magnetic resonance imaging. The guidelines do not support “single-point” brachial cuff-based measures of pulse wave velocity. The role of confounders in the measurement of carotid-femoral pulse wave velocity, such as mean arterial pressure will also be discussed. We will also discuss the value of aortic pressure-flow relations to evaluate pulsatile hemodynamics. In particular, the AHA guidelines place more value on wave separation analysis as opposed to augmentation index to assess wave reflections. Other indices of left ventricular afterload (such as aortic characteristic impedance and total arterial compliance) are also informative, whereas effective arterial elastance, a commonly measured and reported parameter, is strongly discouraged. Future perspectives in arterial stiffness research will be discussed.