



Ultrasound Determination of Vascular Age

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WARF: P02313US

Inventors: James Stein

The Wisconsin Alumni Research Foundation (WARF) is seeking commercial partners interested in developing an improved method of determining an individual's vascular age.

Overview

Coronary heart disease is a leading cause of morbidity and mortality in the United States. A key challenge facing the cardiology community is the identification of high-risk individuals who would benefit from aggressive medical therapy. Traditional risk assessment models, such as the Framingham global risk assessment, fall short because they only estimate the short-term risk of coronary heart disease and not an individual's overall risk.

The Invention

A UW-Madison researcher has combined direct measurements of atherosclerotic burden with existing risk paradigms to determine an individual's "vascular age." Atherosclerotic burden is determined from measurements of carotid artery intimal-media thickness (CIMT) acquired by high-resolution ultrasound – a non-invasive, highly reproducible technique for detecting and quantifying atherosclerosis. CIMT was combined with population-based nomograms from the Atherosclerosis Risk in Communities Study (1993. *Stroke* 24:1297-1304) to create mathematical algorithms for determining vascular age, which in turn is used in conjunction with traditional risk assessment models to improve evaluation of individual coronary heart disease risk.

Applications

- Allows determination of an individual's vascular age

Key Benefits

- Promises to accurately identify high-risk individuals needing more aggressive medical therapy

Additional Information

For More Information About the Inventors

- [James Stein](#)

Publications

- Stein J.H., Fraizer M.C., Aeschlimann S.E., Nelson-Worel J., McBride P.E. and Douglas P.S. 2004. Vascular Age: Integrating Carotid Intima-Media Thickness Measurements with Global Coronary Risk Assessment. *Clin. Cardiol.* 27, 388-392.

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