Software to aid analysis of longitudinal vascular ultrasound images, to determine vascular diameter and intima-media thickness, as well as their changes as depicted in brachial and carotid arterial ultrasound images.

Quantitative analysis of endothelial function via measurement of Flow Mediated Dilatation (FMD) of brachial arteries.

Quantitative analysis of Intima-Media Thickness (IMT) in carotid arteries.

For clinical use - FDA 510(k) number K033266.

Research version (for investigational use only) has been used for epidemiologic and clinical studies since 1998.

Supports multiple image formats: DICOM, AVI, TIF, CRI, JPEG, BMP, RAW.

Comprehensive, configurable reporting in Microsoft-Excel or SAS formats.

Efficient and intuitive user interface running under Microsoft Windows.

Highly automated analysis of brachial ultrasound image sequences - each frame analyzed in fraction of a second.

ECG gated or non-gated sequences.

Continuous measurement of brachial diameters (M- to M-line) in all frames.

Adaptive analysis algorithms with built-in multi-stage quality control.

Widely used in epidemiologic studies.

Independently validated … signed diameter errors: 0.034 ± 0.066 mm.

Bland Altman statistic:

FMD assessment - deflation diameter sequence chart example.

Reports are compatible with Excel and SAS.
2 VASCULAR TOOLS 5 AND CARDIOVASCULAR DISEASE

- Cardiovascular disease is the primary cause of death in the Western World
- Stroke and heart attack are frequently the first visible symptoms.
- Vascular Tools 5 contribute to quantitative assessment of cardiovascular risk, disease extent, and outcome

- Users
  - Cardiologists, Neurologists, Radiologists, Vascular Surgeons, Family physicians, Clinical trial researchers, Drug development researchers
  - Research use includes: Framingham Study, Muscatine Study, & studies at more than 70 leading research universities in the US, Europe, Asia

3 CAROTID ANALYZER 5

- Highly accurate and automated measurement of IMT and diameter of carotid arteries
- IMT measurement of near and far walls in carotid common, carotid internal, and carotid bifurcation
- Mean and maximum IMT reported for each frame
- Independently validated, signed error of mean IMT -0.007 ± 0.07 mm
- Signed error max IMT -0.07±0.09mm
- Carotid Analyzer 5 outperforms previously published approaches … comparison of mean and max IMT measurement errors:

- Diameter and IMT measurement in image sequences

![Diagram of carotid artery analysis](image-url)