



## Doppler Sound Database: A Useful Aid for Clinicians



A research grant from the Uργο Foundation will enable a University of Huddersfield expert to build up a digital library of the different foot and leg artery sounds recorded during the Doppler ultrasound procedure. The £10,000 grant to Andrew Sharpe, a podiatrist who is now a Lecturer Practitioner at the university, is for a 12-month project that will see him compile recordings of dozens of foot and leg scan sounds – plus sounds from the groin and behind the knee.

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Doppler ultrasound is a portable, non-invasive, quick and relatively cheap way of assessing limb arterial disease, known to be a precursor to cardiovascular disease such as heart attack and stroke, of which the first symptoms could be leg pain. However, a lack of accuracy, reliability or confidence on the part of the user can falsely reassure patients that there is no disease present, so that they miss out on potentially life-saving treatment.

What the clinician (Doppler user) does is listen for three basic sounds, known as tri-phasing, bi-phasing and mono-phasing. In a healthy artery there will be both backward and forward blood flow. As an artery reduces with age, there will be a forward flow with a slight back flow. But if a single flow is detected, then that signifies a real reduction and the possibility of cardiovascular problems.

“The issue that users face is the distinction between a clear double sound and a flat single sound. You are listening for that extra blip and it is down to whether you pick it up,” said Sharpe, adding that confidence comes from experience and practice.

Suppliers of Doppler ultrasound devices do supply audio examples, but the new sound database being created by Sharpe will be an important, widely available aid, boosting and refreshing knowledge gained by clinicians during their training. Each sound in the library will have accompanying case histories. The library will be obtainable via the web. It is also planned to develop a smartphone app.

Sharpe stresses that the digital library is not intended as a tool for gaining initial competency. “Practitioners should already know what they are listening for. The library will give them increased exposure to sounds and help with their overall confidence. It will also be a self-teaching tool for an experienced clinician.”

Source: [University of Huddersfield](#)  
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