

The handwriting on the wall

The arterial wall consists of an inside layer of endothelium, which includes a thin layer of collagen/elastic fibers, as well as a smooth muscle and other connection tissue. These play a role regarding the elastic quality of this vessel. The endothelium can be considered an internal organ and is one of

the largest in the body. If it were spread over a flat area with the lining cells of the arteries, it would approximate the area of three football fields!!!

Nitric oxide gas released by the endothelial cells causes the relaxation of the arterial wall. Our vascular system can be divided into the large and the small arteries. It is the small arteries that have the greater resistance and act in conjunction



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with the capillaries to form a variable resistance that controls the rate of blood going to various tissues at any given moment in time. This depends on which tissue or organ needs more or less blood for any given function. The system of elastic conduits and high resistance terminals constitute a hydraulic filter that converts the intermittent output from the heart into a steady flow in the capillaries.

For the first time in medical history, the elasticity of the blood vessels can be determined by a simple test referred to as a CVP (Cardio Vascular Profile). Over the last several years, there have been over 500 research articles using this concept and now, it is perfected. With the use of a computer, automatic blood pressure device and specialized piece of equipment placed on the arm, one can assess stiffness (hardening) of the arteries.

It is known from much of the research that the less elastic and more stiff the vessels, the more potential for, not only high blood pressure, but also vascular disease. The blood pressure is the *result* of the

stiffness of the artery rather than the cause. Why focus on the blood pressure when one can have a better index; that is, vascular stiffness? The large blood vessels called C-1 and the small blood vessels, termed C-2 elasticity are the indices obtained non-invasively from the CVProfiler and paid for by most commercial insurance companies. The device is made by the Hypertensive Diagnostic Corporation in Eagan, Minnesota. At a recent medical symposium in Philadelphia, I met Mike Wallace and coerced him to come to Coffeyville and show me this instrument. Not only did he explain the device to my colleagues and staff, but he was kind enough to spend three quarters of an hour with me on the radio detailing it to the radio audience. I have performed the study on over 100 patients and found this extremely helpful in predicting who will and who will not need intervention to forestall and hopefully prevent a vascular event that will take most of us down.

Next week: The Profiler.