

Early Screening of and Reversing Atherosclerosis

Atherosclerosis is a disease of the arteries, which is responsible for about 50% of all disease-related death in the industrialized world. It is thus crucial to gain information about any changes in arterial health as early as possible. One of the first signs of atherosclerosis is a decreased functioning of the arterial endothelium, which is called endothelial dysfunction (ED). The result of ED is the stiffening of the arteries (*i.e.* the lack of appropriate vasodilation), whose consequence is inadequate circulation, thereby, an insufficient oxygen and nutrition supply to organs and tissues.

There are several methods in clinical practice to assess arterial health. There are invasive techniques that, however, are costly, require a clinical setting and are usually used to observe localized lesions that appear at later stages of atherosclerosis. Other less costly, non-invasive methods (such as Shygmocore, Arteriograph, Pulse Tracer, etc..., which aim to diagnose non-localized alterations in arterial function) are unfortunately unreliable, due to both some conceptual and technical problems.

The generally accepted method to determine ED is based on the measurement of the so-called flow-mediated (vaso)dilation (FMD) by ultrasound techniques. This method however requires special expertise, it is rather costly and is not suitable to screen larger number of patients. We, at DigitalMed, have developed a highly reliable, non-costly alternative to assess FMD, a diagnostic tool that is based on near infrared plethysmography and allows ED diagnosis of a relative large number of patients within a short period of time. The details regarding the background and the operation of this non-invasive, cost-efficient technique will be discussed.

There is no medication available to treat or cure atherosclerosis. On the other hand, literature data and our own studies suggest that the progress of atherosclerosis can be brought to a stop and can even be reversed by certain life-style and dietary changes. After reviewing literature data, our own studies on some ingredients of dietary supplements, such as anthocyanidines, procyanidines and resveratrol, will be discussed.