Supplementary Method 1

Measurement of flow mediated vasodilation (FMD)
A single observer who was blinded to the study protocol performed flow mediated vasodilation (FMD) measurements. FMD was measured with an ultrasound system (HP SONOS 5500; Philips, Bothell, WA, USA) equipped with a 7.5 MHz linear transducer. After 20 minutes of rest in a supine position in a temperature-controlled room (22–24°C) the study arm of each patient was comfortably immobilized in an extended position to allow consistent recording of the brachial artery 2 to 4 cm above the antecubital fossa. Three adjacent measurements of baseline end-diastolic brachial artery diameter were made at single two-dimensional frames. A pneumatic tourniquet was inflated to 200 mm Hg with obliteration of the radial pulse. After 5 minutes, the cuff was rapidly deflated and the change in luminal diameter of the brachial artery in response to increased blood flow was measured. The maximally dilated diameter was calculated as the average of three consecutive measurements of the maximum diameter. Next, endothelium-dependent vasodilation (EDV) was calculated as the percent change of the arterial diameter compared to the baseline diameter. After keeping the subject lying down for 15 minutes, endothelium-independent vasodilation (EIDV) was measured by determining the change in luminal diameter of the brachial artery in response to 0.6 mg of nitroglycerine. Continues collection of B-mode scanning images of the brachial artery was recorded to Super-VHS videotape for subsequent blinded analysis. The lag times from the baseline to initial reaction and peak reaction were defined as initial reaction time (IRT) and peak reaction time (PRT), respectively.