

**Pulse wave shape analysis of the cardiovascular system using high signal resolution**

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The aim of this study was to carry out the FMD (flow – mediated dilatation) and NID (nitroglycerin-induced dilatation) tests in the case of patients with hypertension by using new measurement method – High Signal Resolution Pulse Wave (HSR PW). The paper presents new diagnostic method HSR PW which was used to evaluate the pulse wave in patients with arterial hypertension. HSR-PW is a method based on increasing the resolution of the pulse wave signal, recorded during a standard test using the Fourier Transform. The study involved twenty-four patients with hypertension and fifteen healthy people as a control group. The analysis showed that changes of the shape of the pulse wave in HSR PW took place in both groups conducting the FMD and NID tests. The HSR PW method proved to be more sensitive to changes in the body than the standard pulse oximeter and therefore may increase clinical practicability.