

P-152

**First results of “Catch the (pulse) wave” -
Is pulse wave velocity in children feasible to measure with an oscillometric device?**

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Objective:

Measuring arterial stiffness parameter by pulse wave velocity (PWV) is recommended by the European Society for Hypertension and European Society of Cardiology. PWV is already well established for risk stratification in adults. However, there is a lack of information in children. Fast and easy measurement devices are especially attractive for risk screening in pediatric populations. Therefore the aim of our study was to assess the feasibility of an oscillometric device (Mobil-O-Graph, IEM, Stolberg, Germany) in evaluating vascular stiffness parameters in children.

Patients and methods:

In November 2011, 95 school children with a median age of 14.0 years (42 girls, range 8.1 – 19.7 years) without severe diseases were included into the study. The measurements took place in a pediatrician practice. Cuffs were chosen in dependence of upper-arm circumference (5 different cuffs were used). The measurements start after 5 minutes of rest in supine position on the left upper arm.

Results:

Valid measurements were obtainable in 91 of the 95 children (96%). There was a significant increase of the PWV with age ($r = .215$, $p = .041$) and BMI-SDS ($r = .281$, $p = .007$).

Conclusions:

The measurement of pulse wave velocity using the Mobil-O-Graph device is also feasible in children. Since our data indicates that PWV increases with age and BMI-SDS the aim of future research needs to be establishment of references values for children and adolescents.