

PULSE WAVE ANALYSIS IN AMATEUR CYCLISTS: WHY WE SHOULD FIRST BIKE (AND THEN EAT ALL THE S'MORES)

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Pulse wave velocity (PWV) is the most studied technique to assess arterial stiffness in population-based studies. The present pilot study was purported to compare the pulse wave analysis results in amateur cyclists and medical students using the Mobil-O-Graph equipment. The following parameters were measured in each participant: pulse wave velocity, augmentation index and pressure, peripheral and central blood pressure and vascular age. The two groups were matched for age and body mass index. The values of PWV (5.63 ± 0.53 vs. 5.09 ± 0.48 m/s, $p=0.033$), augmentation pressure (AP: 10.62 ± 5.92 vs. 4.63 ± 3.17 mmHg, $p=0.011$) and diastolic blood pressure (DBP: 75 ± 6.74 vs. 68 ± 6.64 mmHg, $p=0.039$) were significantly higher in the first group as compared to the second. However, the augmentation index was increased in 37.5% of the cyclists vs 45.45% of the students when considering the normal values for age. PWV was normal for age in all the participants of the first group and increased for age in 27% of the members of the second group. Early vascular aging was detected in 37.5% of the amateur cyclists and 63.63% of the medical students. In conclusion, increased arterial stiffness and early vascular aging are more common in medical students as compared to amateur cyclists. Larger studies are needed to confirm the results of this pilot study.

Keywords: cyclists, pulse wave velocity, augmentation index, arterial stiffness, vascular age