

Publication**Does obesity attenuate the beneficial cardiovascular effects of cardiorespiratory fitness?****Journal Article (Originalarbeit in einer wissenschaftlichen Zeitschrift)****ID** 4479522**Author(s)** Königstein, Karsten; Infanger, Denis; Klenk, Christopher; Hinrichs, Timo; Rossmeissl, Anja; Baumann, Sandra; Hafner, Benjamin; Hanssen, Henner; Schmidt-Trucksäss, Arno**Author(s) at UniBasel** [Hinrichs, Timo](#) ; [Infanger, Denis](#) ; [Klenk, Christopher](#) ; [Königstein, Karsten](#) ; [Rossmeissl, Anja](#) ; [Baumann, Sandra](#) ; [Hafner, Benjamin](#) ; [Hanssen, Henner](#) ; [Schmidt-Trucksäss, Arno](#) ;**Year** 2018**Title** Does obesity attenuate the beneficial cardiovascular effects of cardiorespiratory fitness?**Journal** Atherosclerosis**Volume** 272**Pages / Article-Number** 21-26

Higher cardiorespiratory fitness is associated with lower pulse wave velocity and arterial stiffness in normal weight individuals, and this has not been examined in obese individuals. It is unclear whether an altered body composition acts as a modifier of the association between cardiorespiratory fitness and arterial stiffness. We examined the association between peak oxygen uptake and brachial-ankle pulse wave velocity and analysed whether body composition attenuates this association in obese middle-aged individuals.; Bio-impedance analysis-derived body composition assessment in 212 healthy and sedentary either overweight or obese individuals was followed by measurement of brachial-ankle pulse wave velocity and spirometric peak oxygen uptake. Multivariate analysis was performed to analyse the association between peak oxygen uptake and brachial-ankle pulse wave velocity and to assess the moderating effect of several body composition-related interaction terms (BMI, total body mass, body fat mass, waist circumference, waist-to-height ratio) on this association.; Peak oxygen uptake was inversely associated with brachial-ankle pulse wave velocity ($\beta = -0.059$, 95% CI $= -0.099$; -0.018 , $p = 0.005$). Testing for the impact of different body composition-related interaction terms on this association showed no significance, 95% CI lateralized towards positivity.; This study shows an inverse association between cardiorespiratory fitness and arterial stiffness in middle-aged obese individuals. We also found a tendency towards an attenuating impact of an obese body composition on this association. Physical fitness seems to be a stronger modulator of cardiovascular risk than body composition but the success of training efforts may be compromised by obesity.

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