

Publication**Effect of E-Bike Versus Bike Commuting on Cardiorespiratory Fitness in Overweight Adults: A 4-Week Randomized Pilot Study****JournalArticle (Originalarbeit in einer wissenschaftlichen Zeitschrift)****ID** 4399165**Author(s)** Höchsmann, Christoph; Meister, Steffen; Gehrig, Damiana; Gordon, Elisa; Li, Yanlei; Nussbaumer, Monique; Rossmeyssl, Anja; Schäfer, Juliane; Hanssen, Henner; Schmidt-Trucksäss, Arno**Author(s) at UniBasel** [Hanssen, Henner](#) ; [Höchsmann, Christoph](#) ;**Year** 2018**Title** Effect of E-Bike Versus Bike Commuting on Cardiorespiratory Fitness in Overweight Adults: A 4-Week Randomized Pilot Study**Journal** Clinical Journal of Sport Medicine**Volume** 28**Number** 3**Pages / Article-Number** 255-265**Mesh terms** Adult; Bicycling, physiology; Cardiorespiratory Fitness; Female; Humans; Male; Middle Aged; Overweight; Oxygen Consumption; Sports Equipment, classification; Switzerland; Transportation, methods

To assess if active commuting with an electrically assisted bicycle (e-bike) during a 4-week period can induce increases in cardiorespiratory fitness measured as peak oxygen uptake ($V[\text{Combining Dot Above}]\text{O}_2\text{peak}$) in untrained, overweight individuals, and if these changes are comparable with those induced by a conventional bicycle.; Four-week randomized pilot study.; Controlled laboratory.; Thirty-two volunteers (28 men) participated. Seventeen {median age 37 years [interquartile range (IQR) 34, 45], median body mass index [BMI] 29 kg/m [IQR 27, 31]} were randomized to the E-Bike group and 15 [median age 43 years (IQR 38, 45), median BMI 28 kg/m (IQR 26, 29)] to the Bike group.; Participants in both groups were instructed to use the bicycle allocated to them (e-bike or conventional bicycle) for an active commute to work in the Basel (Switzerland) area at a self-chosen speed on at least 3 days per week during the 4-week intervention period.; $V[\text{Combining Dot Above}]\text{O}_2\text{peak}$ was assessed before and after the intervention in an all-out exercise test on a bicycle ergometer.; $V[\text{Combining Dot Above}]\text{O}_2\text{peak}$ increased by an average of 3.6 mL/(kg·min) [SD 3.6 mL/(kg·min)] in the E-Bike group and by 2.2 mL/(kg·min) [SD 3.5 mL/(kg·min)] in the Bike group, with an adjusted difference between the 2 groups of 1.4 mL/(kg·min) [95% confidence interval, -1.4-4.1; $P = 0.327$].; E-bikes may have the potential to improve cardiorespiratory fitness similar to conventional bicycles despite the available power assist, as they enable higher biking speeds and greater elevation gain.

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