A common practice in laboratories specialising in cycling related research is to modify stationary ergometers to allow for a more cycling specific lateral movement of the bicycle ergometer. Few studies have validated the need for such modifications.

AIM: The aim of the present study was to compare power output in two types of sprint cycling tests performed either on a stationary ergometer or a mobile ergometer. To identify possible differences in performance related to the specificity of the ergometer. METHODS: Eight male competitive cyclists age 21.3 (18-28) years, weight 74.4 (62-94) kg, height 178 (173-185) cm volunteered for the study. Each cyclist performed 3 low speed sprints from a standing start (LSS) and 3 high speed sprints (HSS) from a rolling start (100 rpm) on each ergometer on separate days in a counterbalanced crossover design. The stationary ergometer was a Monark 894E Peak Bike ergometer equipped with a SRM Training System professional Powermeter and the mobile ergometer was a Scott CR1 road racing bicycle equipped with the same SRM Powermeter. Sprints on the stationary ergometer were performed in a laboratory setting and sprints on the mobile ergometer were performed on a 400 m outdoor running track. All sprints on the stationary ergometer were performed against a load of 10, 12.5, 15% bodyweight. LSS sprints on the mobile ergometer were performed in a 53 X 17 gear and HSS were performed with gear changes allowed and freely chosen initial gear. Peak power output (PPO) for each sprint was recorded as the highest 0.5 second value and mean power output (MPO) was recorded as the highest 5.5 seconds value.

RESULTS: There was no difference in the PPO or MPO between the two types of sprints. However there were large intraindividual differences between performance on the two ergometers. For one of the subjects the difference was 23% between the two ergometers. The correlation for MPO was 0.83 and 0.89 for the LSS and HSS respectively. This suggests that modification of ergometers to allow for lateral movement is justified.

Keywords: Ergometry, Anaerobic Power