



Steve Hershman

Physical activity, sleep and cardiovascular health data for 50,000 individuals from the MyHeart Counts Study

Steven G. Hershman^{1,2}, Brian M. Bot^{id 3}, Anna Shcherbina¹, Megan Doerr³, Yasbanoo Moayed^{1,2,4}, Aleksandra Pavlovic^{1,2}, Daryl Waggott^{1,5}, Mildred K. Cho^{1,2,6}, Mary E. Rosenberger⁷, William L. Haskell⁸, Jonathan Myers^{1,2,14}, Mary Ann Champagne^{1,2}, Emmanuel Mignot⁹, Dario Salvi¹⁰, Martin Landray¹¹, Lionel Tarassenko¹⁰, Robert A. Harrington^{1,2}, Alan C. Yeung^{1,2,5}, Michael V. McConnell^{1,2,12} & Euan A. Ashley^{id 1,2,13}

Studies have established the importance of physical activity and fitness for long-term cardiovascular health, yet limited data exist on the association between objective, real-world large-scale physical activity patterns, fitness, sleep, and cardiovascular health primarily due to difficulties in collecting such datasets. We present data from the *MyHeart Counts* Cardiovascular Health Study, wherein participants contributed data via an iPhone application built using Apple's ResearchKit framework and consented to make this data available freely for further research applications. In this smartphone-based study of cardiovascular health, participants recorded daily physical activity, completed health questionnaires, and performed a 6-minute walk fitness test. Data from English-speaking participants aged 18 years or older with a US-registered iPhone who agreed to share their data broadly and who enrolled between the study's launch and the time of the data freeze for this data release (March 10 2015–October 28 2015) are now available for further research. It is anticipated that releasing this large-scale collection of real-world physical activity, fitness, sleep, and cardiovascular health data will enable the research community to work collaboratively towards improving our understanding of the relationship between cardiovascular indicators, lifestyle, and overall health, as well as inform mobile health research best practices.

Background and Summary

Mobile technology, in particular advances in smartphone sensors, offers an opportunity to evaluate and monitor cardiovascular health and fitness^{1,2} with unprecedented connectivity. Direct measurement of activity through “always-on”, low-power motion chips allows for objective, real-world measurements of physiologic parameters. The widespread use of smartphones globally could thus transform research in this area and potentially improve clinical outcomes^{3–7}.