

In Fight Against COVID-19, Physical Activity Falls Off a Cliff — Drastic change in worldwide daily step counts since March

by [Nicole Lou](#), Staff Writer, MedPage Today
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Fitness tracker data from around the world illustrated how each country's response to COVID-19 affected physical activity among residents.

In the first 10 days after the World Health Organization's March 11 declaration that COVID-19 was officially a global pandemic, smartphone users worldwide showed a 5.5% decrease in mean daily steps (287 fewer steps).

In the first 30 days, mean daily steps dropped 27.3% (1,432 fewer steps), reported the group led by Geoffrey Tison, MD, MPH, of the University of California San Francisco. Their paper was published online in the *Annals of Internal Medicine*.

"This is unfortunate, since physical activity is associated with health and well-being. And, while we do not have direct data, it is plausible that physical activity may be associated with decreased risk of COVID-19 itself, since individuals with chronic conditions (e.g., heart disease, diabetes, hypertension, obesity -- all of which are improved by physical activity) are at higher risk of COVID-19," commented I-Min Lee, MD, ScD, of Harvard Medical School and Brigham and Women's Hospital.

"Additionally, moderate exercise has been shown to augment host immunological defense mechanisms, potentially lowering the risk of infection with COVID-19," added Lee, who was not involved with the study.

"The effect of social distancing measures on overall physical activity, an important determinant of health, should be considered, particularly if prolonged social distancing is required," study authors urged.

Change in step counts varied across countries, likely reflecting the variation in COVID-19 timing, regional enforcement, and behavior change, they noted.

For example, [people in Italy](#) had a 48.7% maximal decrease in daily steps, whereas those [in Sweden](#) showed only a 6.9% maximal reduction in steps. The difference may have stemmed from government responses, as Italy issued a lockdown on March 9, whereas Sweden has yet to implement such a measure.

"Countries that, to date, have had relatively low COVID-19 infection rates and have therefore not instituted lockdowns, such as South Korea, Taiwan, and Japan, have still exhibited decreases in overall step count," Tison and colleagues said.

Step count data were drawn from a convenience sample of more than 455,000 unique users of the free wellness app Argus. Users were [located in 187 countries](#) based on the IP addresses of their devices.

Apple smartphones provided the bulk of step count measurements (92%), with Android devices filling in the rest.

Tison's team acknowledged the potential of sampling bias and measurement error in the dataset. Variability in smartphone carry and use habits may have also affected the information that they gathered. Moreover, they were unable to assess activity intensity or capture non-stepping exercise.

"It will be interesting to see if the physical activity patterns observed here will impact [population-level cardiometabolic health](#) independent of COVID-19 status as a result. Additionally, it will be important to establish if cardiovascular/aerobic fitness (perhaps assessed via VO₂) is protective against COVID-19 related morbidity moving forward," commented Sarah Messiah, PhD, MPH, of UTHealth School of Public Health in Dallas, in an email.

"This is an interesting natural experiment that has health implications for global and regional populations, and especially those with [underlying chronic health conditions](#) who are particularly vulnerable to COVID-19-related morbidity and mortality and who may depend on routine physical activity as a preventive measure," according to Messiah.

"Currently, as regions in the U.S. vacillate between opening back up, and locking back down, these study findings have immediate implications as well," she added.



[Nicole Lou](#) is a reporter for MedPage Today, where she covers cardiology news and other developments in medicine.

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Disclosures

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