

COVID-19 reminds us strongly of the necessity of physical activity: step on!

Maarten H Moen 

LESS ACTIVE, EVEN WITHOUT DISEASE: TIME TO STEP UP OUR GAME

You see, it's that easy!', I was thinking. I looked down at my iPhone and discovered that cycling 30 min twice a day added 6000 steps to my daily count. I badly needed those steps to improve my daily average to what I perceived as reasonable. Often, and especially after a busy day of work, my step count was not something to be proud of. During the COVID-19 lockdown period, several of my friends complained about gaining extra Corona-Weight. I wondered why that was. Were they eating more? Or was their eating unchanged compared to normal life, and were they just moving less? The odds were high that their daily activity, and hence their step count, had plummeted.

It turns out they are not alone. An article in *Nature* from 2017 investigated step count in a global study.¹ The authors did so using phone data from 68 million days in 717 527 people. The daily step-count worldwide was, on average, 4961 steps. Positive exceptions were Hong Kong and Ukraine, with 6880 and 6107 steps, respectively. Poorer examples were present as well, with Indonesia at 3513, and the Saudi Arabia totalling 3807.

JAMA published a paper in March 2020, that, with the *Nature* article still fresh in mind, is both powerful and worrying.² In this paper, several thousand Americans, older than 40, were followed up for 10 years after their activity was measured between 2003 and 2006. It turned out that better daily step-counts were associated with a decreased mortality risk. To provide you with some details, more steps per day reduced the annual mortality rate. Compared with 4000 steps per day, 8000 steps per day lead to a halving of the mortality risk (HR 0.49, 95% CI 0.44 to 0.55). If people achieved 12 000 steps per day, there was a further reduction (HR 0.35, 95% CI 0.28 to 0.45). Mortality risk reduction was the largest up to 8000 steps per day, while more steps per day does give moderate further reduction.

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WHAT IS THE IMPACT OF COVID-19 ON ACTIVITY?

A recent study in the *Annals of Internal Medicine* investigated if people's step count has changed during the COVID-19 period.³ Data from smartphones using Apple or Android algorithms from 455,404 unique users from 187 countries was used. Lots of differences were found between countries, possibly/probably based on national lockdown policies. After 11 March 2020, when WHO declared COVID-19 a pandemic, a worldwide reduction of 27% (1432 steps per day) was seen during the first month. When the study terminated data collection on 1 June, most countries still exhibited a reduced step count. Leaving us in doubt when the global activity patterns will get up to speed again.

After reading these articles, I grabbed my phone, and invited many friends in different app groups to join me for a bike ride. Technically not to increase the step count, but with the noble aim to get them off their butts. I also directed them towards this issue of the BJSM, which is packed with studies looking at the effect of activity and exercise under different circumstances

BSJM ISSUE LOADED WITH ACTIVITY

An excellent paper to read in this issue is the systematic review by Oliveira *et al.* (see page 1188). They summarised studies that used an activity tracker as an

intervention in people aged 60 years and over. The authors found that compared with usual care, no intervention, or a wait-list control group, the group with an activity tracker racked up an extra 1558 steps a day. A huge finding with lots of clinical implications.

A big question is: how to help people move more and become more active? My award of the most beautiful title of this issue goes to 'One small step for man, one giant leap for men's health: a meta-analysis of behaviour change interventions to increase men's physical activity' (see page 1208). This review shows that behaviour interventions can be effective, with an average gain of 980 steps per day.

Getting a dog is another possible intervention to increase daily activity. Thirteen articles are reviewed by Rhodes *et al* (see page 1202), and they concluded that a dog led to increased activity as well, with a median effect size *d* of 0.28.

With this good news show in favour of 'more activity is better', the paper by Blond *et al* is important too (see page 1195). Sometimes, at birthday parties for example, the grander public's perception is that exercise is good, but that too much exercise might harm you. For those people, this article is a good reminder that there is no evidence that even lots of exercise, up to 5–7 times the recommended amount, is harmful. In contrast, these amounts of activity reduce all-cause mortality too.

A bonus study by Amaro-Gahete (see page 1233) shows us that, at the same time as decreasing our mortality, exercise also increases our antiageing Klotho protein. Possibly, just sharing this fact with our patients may help motivate them to increase their activity levels quickly.

While I have highlighted several articles above, I urge you to read further as this issue is packed with much more high-quality work.

STIMULATE POPULATIONS' ACTIVITY EVEN MORE

So, let's refresh our minds. Exercise and activity are good. Very good and important. We know that. But why then is the average global step count only around 5000? And COVID-19 is reducing the step count even further. In most European countries, the peak of the first COVID-19 wave seems over, while in other continents, the disease is still raging. No matter what the situation is, even anticipating a second wave of disease, remaining active is vital. This is not only to stimulate one's immune system and decrease the chance of getting infected with the SARS-CoV-2

virus, but also to be as healthy as possible later on in life.

When COVID-19 reached the Netherlands, a working alliance was formed by the Dutch Association for Sports Medicine (Vereniging voor Sportgeneeskunde (VSG)), the Royal Dutch Football Association (KNVB), several Academic medical centres (Amsterdam University Medical Centre), Knowledge Center for Sports and Exercise (Kenniscentrum Sport en Bewegen) and the Dutch Olympic and Paralympic Committee (NOC*NSF). They provided the Dutch population with sports and exercise advice in times of COVID-19 (<https://nocnsf.nl/media/2521/sport-en-beweegtips-in-tijden-van-het-coronavirus.pdf>). Our government posted this information on their website too. It is our obligation in times of COVID-19 to help educate people on the importance of activity and exercise. Always, but

especially now. And with that, we might develop better leverage to extend this increased activity and exercise awareness into a healthy future. Have a good read!

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