Coronavirus diaries: silver linings, challenges and opportunities emerge from the dark clouds

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Recent times have brought considerable challenges for physical activity. Key opportunities for active lifestyles have been removed by major infrastructural changes, including the closure of leisure facilities, schools, public parks and places of work, suspension of outpatient clinical exercise services, and restricted ability for individuals to leave their homes. Concerns about the negative health impacts of enforced inactivity during lockdown were clearly apparent in several excellent review papers that spelled out the fine detail (e.g. Narici *et al.*, 2020; Nieman *et al.*, 2020). Sir Muir Gray even expressed his concerns that the lockdown could lead to a deconditioning pandemic (Gray, 2020).

On the flipside, positive, profile-raising messages about the physical and mental health benefits of physical activity have been an ever-present silver lining accompanying the coronavirus cloud. Chief Medical Officer Professor Chris Whitty led the charge during the daily coronavirus briefing in early April when he said, "There is no situation, there is no age, there is no condition where exercise is not a good thing; so anything that can be done to encourage people and allow people to take exercise is clearly a good thing." Celebrities rose to the challenge with daily home exercise routines transmitted via You Tube, which showed families how physical activity can present opportunities to spend quality time together. Others captured the hearts of the nation as they, themselves, became celebrities through the medium of physical activity. Zimmer-frame shuttle-walking (Captain Sir Thomas Moore), "stair-climbing" Mount Sulivan (Mrs Margaret Payne) and laps around the garden (Mr Dabirul Choudhury) became feats of human endurance for nonagenarians and centenarians who inspired people of all ages and abilities to get moving in their quests to raise funds for worthy causes.

At the policy level, we saw the Government pledge £2 billion of infrastructure funding to double the amount of cycling and increase the amount of walking by 2025. This *body blow* to bureaucratic incrementalism was hailed as a, "'once in a generation change' to the way people travel in Britain" by the Transport Secretary (Daily Briefing, 9 May 2020). This is an unprecedented example of the pandemic prising open avenues of opportunity for physical activity that would normally have taken campaigners years to achieve! And what better platform for this major new impetus for active travel than news of a 17% reduction in daily global $C0_2$ emissions, half of which was attributable to a reduction in surface transport (Le Quéré *et al.*, 2020), and markedly lower nitrogen dioxide levels in Europe (Watts & Kommenda, 2020). Coupled with a severely reduced public transport capacity, personal safety concerns associated with the latter, and an immediate £250M government cash injection for local councils to widen pavements and establish pop-up cycle lanes across the country, the stage must now surely be set for transformational change - mustn't it? Transport for London estimate a 10-fold increase in cycling distances travelled and a 5-fold increase in walking as a result of these incentives (Quinn, 2020).

However, weekly Sport England survey data (Sport England, 2020) during the first 6 weeks of lockdown brought some perspective to the scale of the challenge. A gender gap in physical activity levels soon became apparent, with 38% of females reporting being less active than usual compared to 30% of males by week 4. The data also showed that other pre-pandemic inequalities were being "maintained or strengthened." Those living alone, ethnic minority groups, older people, and individuals on low income, living with long-term conditions or self-isolating all reported finding it harder to remain active. This early evidence of the impact of Covid-19 reflects the persistence of physical activity inequalities and clearly highlights the need for targeted approaches aimed at understanding and addressing the specific needs of different groups. Adding to this challenge, the continued need for social distancing post-lockdown could prove to be a powerful demotivating force for some who rely on social support or group-based supervised exercise to achieve healthy activity levels. The Sport England survey data showed that 84% of gym subscribers were keen to return when facilities are open again, just as the dangers of vigorous intensity group-based exercise classes were surfacing from South Korea (Jang *et al.*, 2020).

A notable opportunity to emerge from the pandemic is the important role that exercise professionals could play in the long-term rehabilitation needs of people severely affected by the virus. Telehealth (healthcare services delivered via remote technologies) is likely to play a major role in supporting patients back to recovery - and the time seems right for remote support strategies to *step up to the plate* on many different levels. Effective remote support will not only help to prevent virus transmission but as the NHS National Medical Director, Professor Stephen Powis, pointed out, by reducing travel to appointments it will protect the environment and be more convenient for patients (Daily Briefing, 29 May 2020). An important challenge for exercise science is to understand how engagement with remote support for home exercise and physical activity can be optimised, perhaps in conjunction with practical, user-friendly home exercise resources (e.g. Move More Sheffield, 2020; WHO, 2020). Those recovering from the pathological and deconditioning effects of coronavirus and other sectors of the population (including the shielded and other patient groups), where social isolation has become a huge barrier to physical activity, would all stand to benefit.

Another challenge for exercise science is tackling the question of why some people are more likely to develop severe Covid-19 illness than others (acknowledging the potential confounder of increased exposure risk). *Genotype or phenotype* was the marrow of a rhetorical question posed by Deputy Chief Medical Officer, Professor Jonathan Van-Tam, when he asked whether a middle-aged, svelte, half-marathon runner from the Black, Asian and Minority Ethnic (BAME) community is at any greater risk of serious Covid-19 disease than a younger, inactive, overweight diabetic from a white ethnic group (Daily Briefing, 9 May).

This pandemic has brought an inescapable *pause for thought* and introspection for many. When Covid-19 commanded our attention, it showed us what is possible and challenged us to do things differently. As society reboots and we *hope hard* for a vaccine that will bring back a sense of normality, let's spare some hope for a *new normal* that includes a positive legacy for physical activity. Has there ever been a better opportunity for transformational change? ■

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