

11159

COVID-19 survivors are physically inactive with high levels of sedentary time, regardless of patient characteristics, disease severity or cardiac dysfunction

Van Bakel BMA Mr, Van Den Heuvel FMA Mr, Vos JL Mrs, Rotbi H Mrs, Bakker EA Mrs, Nijveldt R Professor, Thijssen DHJ Professor, Eijsvogels TMH Associate Professor

Radboud University Medical Center, Nijmegen, Netherlands (The)

Radboud University Medical Center, Radboud Institute for Health Sciences, Department of Cardiology, Nijmegen, Netherlands (The)

Radboud Institute for Health Sciences, Radboud University Medical Center, Physiology, Nijmegen, Netherlands (The)

Liverpool John Moores University, Research Institute for Sports and Exercise Sciences, Liverpool, United Kingdom of Great Britain & Northern Ireland

Funding Acknowledgements: Type of funding sources: Foundation. Main funding source(s): Dutch Heart Foundation

Background: More than 250 million cases of the coronavirus disease-2019 (COVID-19) infection were confirmed across the globe since 2020, leading to a substantial number of COVID-19 related hospital admissions. Many COVID-19 survivors experience long-term health consequences, but data on physical activity patterns and the impact on recovery post-infection are scarce.

Purpose: This study aimed to objectively assess physical (in)activity patterns among COVID-19 survivors and to explore the association with patient characteristics, disease severity and cardiac dysfunction. We hypothesized that COVID-19 survivors will demonstrate low volumes of physical activity and a high sedentary time, especially those with a more severe disease course (e.g. longer hospital duration; admission to intensive care), cardiac dysfunction, and persistent symptoms at 3-6 months post-discharge.

Methods: In this cross-sectional cohort study, we objectively assessed physical activity, sedentary behaviour and sleep duration for 24 hrs/day during 8 subsequent days in COVID-19 survivors at 3-6 months post-hospitalisation. Activity patterns were compared across pre-defined subgroups based on patient- and disease characteristics, cardiac biomarker release during hospitalisation, abnormal transthoracic echocardiogram regarding left- and right ventricular function and volumes at 3-6 months of follow-up, and persistence of symptoms post-discharge.

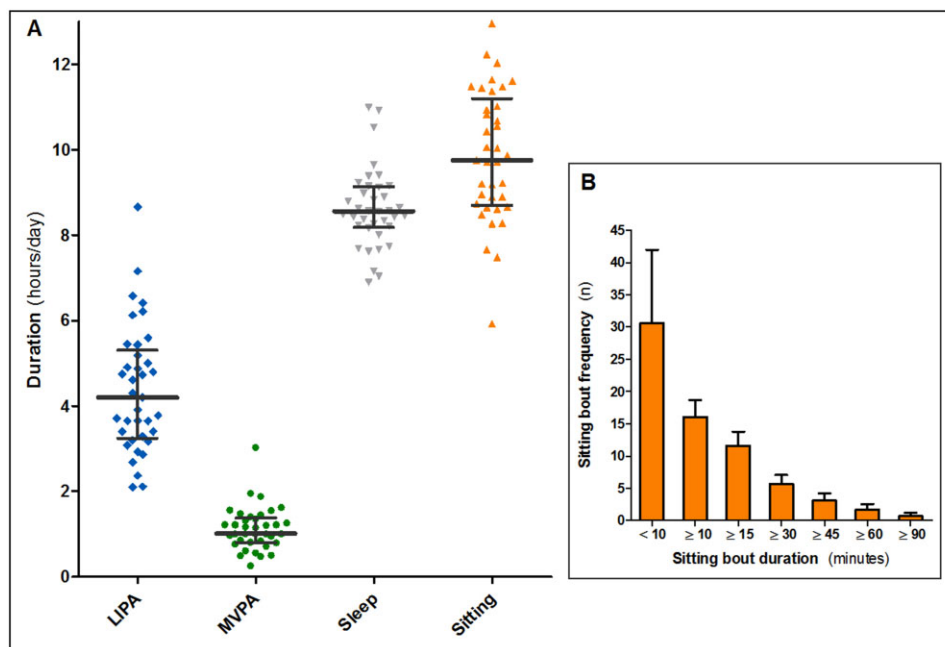
Results: Physical activity patterns were assessed in 37 patients (60 ± 10 years old; 78% male) at 125 [116; 132] days after discharge. Patients spent 4.2 [3.2; 5.3] hrs/day in light-intensity physical activity and 1.0 [0.8; 1.4] hrs/day in moderate-to-vigorous intensity physical activity. Median sleep duration was 8.6 [8.2; 9.1] hrs/day. Time spent sitting was 9.8 [8.7; 11.2] hrs/day, which was accumulated in 6.0 [4.7; 6.9] prolonged sitting bouts (≥ 30 min) and 41.4 [31.5; 48.1] short sitting bouts (< 30 min, Central Figure). No differences in activity patterns were found across subgroups, but sleep duration was slightly higher in women versus men (9.2 vs 8.5 hrs/day, $p=0.03$) and patients with versus without persistent symptoms (9.1 vs 8.3 hrs/day, $p=0.02$).

Conclusions: COVID-19 survivors are physically inactive for most of their time at 3-6 months post-hospitalisation. Physical (in)activity patterns are not impacted by patient- nor disease characteristics, underlining the need for a uniform approach for re-activation of COVID-19 survivors.

Central Figure.

A: objectively measured light-intensity physical activity (LIPA), moderate-to-vigorous intensity physical activity (MVPA), sleep duration and sedentary time in COVID-19 patients at 3-6 months post-hospitalisation (median and interquartile range).

B: sitting bout frequency (mean + standard deviation).



Central Figure