

## DfE proposal

### Fatigue in survivors of COVID-19

**PROPOSED SUPERVISORS:** Dr Gillian Prue, Dr Olinda Santin, Dr Neil Heron (CPH, General Practitioner and Sport and Exercise Medicine Consultant).

[This proposed project is connected to an NIHR application for Long COVID (due for submission 9 Dec), therefore there will be external advisors to the project: Prof Sam Ahmedzai, Prof Jane Hopkinson and Dr Barry Laird]

**BACKGROUND/RATIONALE:** Tackling “Long Covid” is a research priority.<sup>1</sup> Maxwell et al, have proposed four different syndromes, one of which has been described as post-viral fatigue.<sup>2</sup> The true prevalence of post-covid fatigue (PCF) is not known however conservative estimates suggest this may occur in 50% of patients.<sup>3</sup> With the UK having one of the highest per-capita rates of Covid-19, the potential health and economic implications of a high prevalence of PCF will be profound. There is now an urgency to better understand PCF and develop effective treatment strategies for this.

Systemic inflammatory response is central to both the outcome of covid-19 and a key therapeutic target. This is also seen in cancer, with the inflammatory status of the host related to survival and quality of life –including fatigue. We have extensive experience of effective management strategies for cancer-related fatigue (CRF), given the immediacy of the need to develop effective strategies for PCF, we are proposing the rapid repurposing of effective CRF interventions, to quickly develop effective PCF interventions. The multidimensional nature of CRF necessitates the adoption of a multimodal approach targeting key contributory factors (physical, emotional and mental well-being). We will repurpose and test a similar multimodal intervention targeted at the multi-dimensionality of PCF following the MRC guidelines for developing complex health service interventions.

**RQ:** Does personalised multimodal rehabilitation already known to modulate CRF improve PCF?

**AIM:** To develop a PCF rehabilitation programme and undertake a feasibility study of its use in individuals with PCF.

#### **OBJECTIVES:**

1. Phenotype characterisation of PCF, to facilitate a personalised approach to amelioration.
2. Refine and feasibility test a rehabilitation intervention for PCF patients by adapting the CRF model using the MRC guidelines for developing complex interventions.

**Study design:** Feasibility study as per MRC guidelines with embedded qualitative evaluation.

**Population:** PCF with no previous cancer diagnosis, or any other chronic illness known to cause persistent fatigue.

**Intervention:** Pretested CRF interventions (as per EXACT<sup>4</sup>/PRECISE<sup>5</sup>) repurposed for covid-19.

**Outcomes:** Primary outcome: Feasibility; Secondary outcomes: fatigue; physical activity levels/measures of functional capacity; psychological outcomes; health resource use.

1. Yelin D, Wirtheim E, Vetter P, et al. Long-term consequences of COVID-19: research needs. *Lancet Infect Dis* 2020;20(10):1115-17. doi: 10.1016/S1473-3099(20)30701-5 [published Online First: 2020/09/06]

2. NIHR. A dynamic review of the evidence around ongoing covid-19 symptoms (often called long covid). .

3. Carfi A, Bernabei R, Landi F, et al. Persistent Symptoms in Patients After Acute COVID-19. *JAMA* 2020;324(6):603-05. doi: 10.1001/jama.2020.12603 [published Online First: 2020/07/10]

4 Brown, M., Murphy, M., McDermott, L., McAnaney, H., O’Sullivan, J., Jain, S., Prue, G. (2019) Exercise for advanced prostate cancer: a multicomponent, feasibility, trial protocol for men with metastatic castrate-resistance prostate cancer (EXACT). *Pilot and Feasibility Studies*.

5 O’Connor, D., Brown, M., Prue, G. (2020) *PancREatic Cancer and Individualised Supervised Exercise (PRECISE): a feasibility trial protocol for patients with resectable pancreatic ductal adenocarcinoma. AMRC Open Research. 2, 11 p., 22.*