Exercise responses and mental health symptoms in COVID-19 survivors with dyspnoea

Kathryn M. Milne^{1,2}, Juthaporn Cowan^{3,4,5}, Michele R. Schaeffer^{1,6}, Nha Voduc³, Vicente Corrales-Medina⁴, Kim L. Lavoie^{7,8}, Julio A. Chirinos⁹, Joseph H. Puyat¹⁰, Sara J. Abdallah⁴, Jordan A. Guenette^{1,2,6}

ONLINE SUPPLEMENT

Supplementary Table 1. Dyspnea descriptor questionnaire.

DESCRIPTORS BREATHLESSNESS

CIRCLE AS MANY (OR AS FEW) OF THE DESCRIPTORS THAT APPLY TO HOW YOUR BREATHING FELT RIGHT AT THE VERY END OF EXERCISE:

- 1. My breath does not go in all the way
- 2. Breathing in requires effort
- 3. I feel that I am suffocating
- 4. I feel a need for more air
- 5. My breathing is heavy
- 6. I cannot take a deep breath in
- 7. My chest feels tight
- 8. My breathing requires more work
- 9. I feel a hunger for more air
- 10. I feel that my breathing is rapid
- 11. My breathing feels shallow
- 12. I feel that I am breathing more air
- 13. I cannot get enough air in
- 14. My breath does not go out all the way
- 15. Breathing out requires more effort

Supplementary Table 2. Multiple regression results for dyspnoea intensity and

unpleasantness at highest equivalent work rate.

Independent	Coefficient	SE	<i>P</i> -value
variable			
Dyspnoea intensity			
Intercept	-9.913	5.744	0.123
VO₂ peak, % pred	0.019	0.024	0.441
AT, %VO₂predmax	-0.020	0.048	0.691
V _E /VCO₂ nadir	0.282	0.120	0.047
D _L CO, % pred	0.039	0.026	0.170
HADS total	-0.023	0.061	0.714
SGRQ total	0.018	0.022	0.455
PSS	-0.166	0.071	0.048
ASI-R	0.019	0.014	0.199
IES-R total	0.426	0.452	0.374
Sex	-0.911	0.770	0.271
Age, years	-0.001	0.030	0.987
Smoking, pack	-0.073	0.039	0.100
years			
BMI, kg/m ²	0.025	0.044	0.589
Dyspnoea unpleasa	antness		
Intercept	-9.89	5.615	0.116
VO ₂ peak, % pred	0.003	0.023	0.906
AT, %VO₂predmax	0.016	0.047	0.747
V _E /VCO₂ nadir	0.305	0.117	0.032
D _L CO, % pred	0.026	0.025	0.339
HADS total	0.009	0.060	0.879
SGRQ total	0.027	0.022	0.259
PSS	-0.096	0.070	0.204
ASI-R	0.012	0.013	0.404
IES-R total	0.142	0.442	0.756
Sex	-0.721	0.753	0.366
Age	-0.023	0.030	0.452
Smoking, pack	-0.040	0.038	0.322
years			
BMI, kg/m ²	-0.005	0.043	0.915

Abbreviations: ASI-R, Revised Anxiety Sensitivity Index; AT, anaerobic threshold; BMI, body mass index; D_LCO , diffusing capacity of the lungs for carbon monoxide; HADS, Hospital Anxiety and Depression Scale; IES-R, Revised impact of Event Scale; PSS, Perceived Stress Scale; SGRQ, St. George Respiratory Questionnaire; $\dot{V}_E/\dot{V}CO_2$, ventilatory equivalent for carbon dioxide; $\dot{V}O_2$, oxygen uptake.