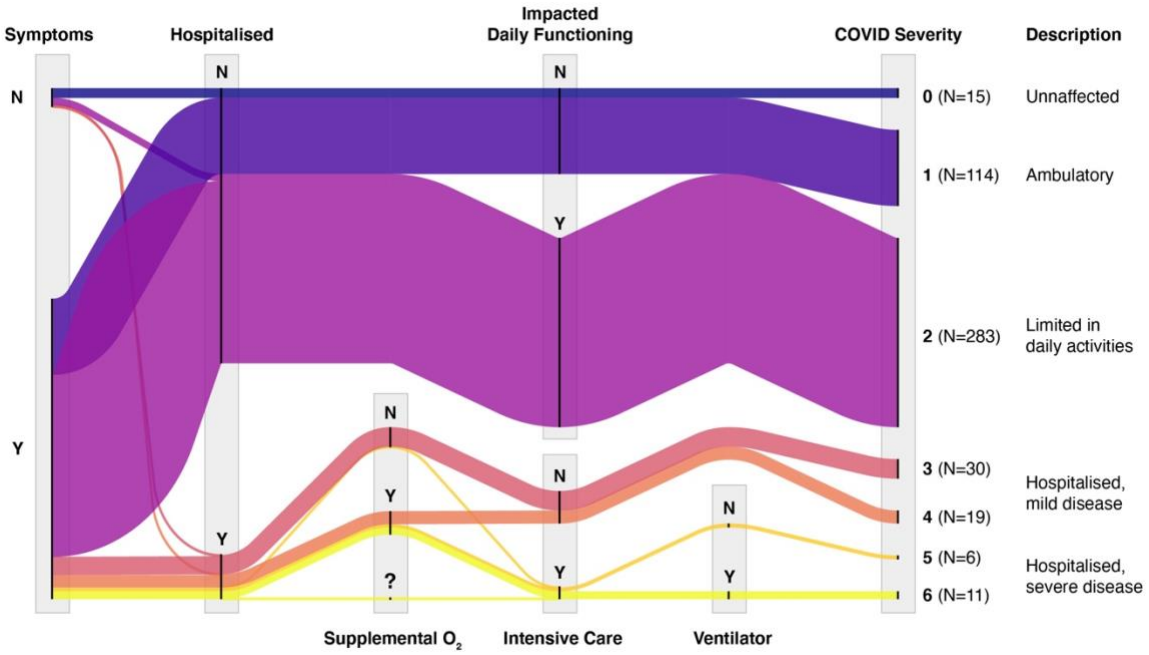
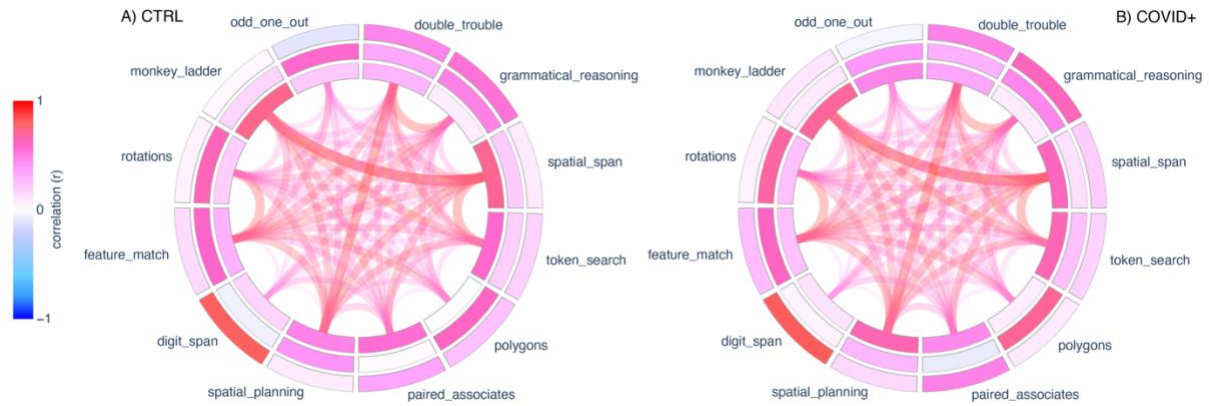
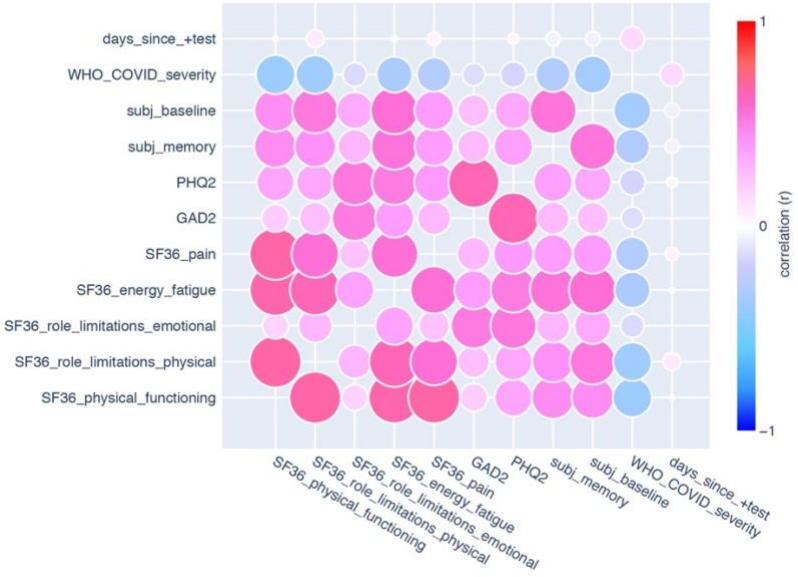
Figures



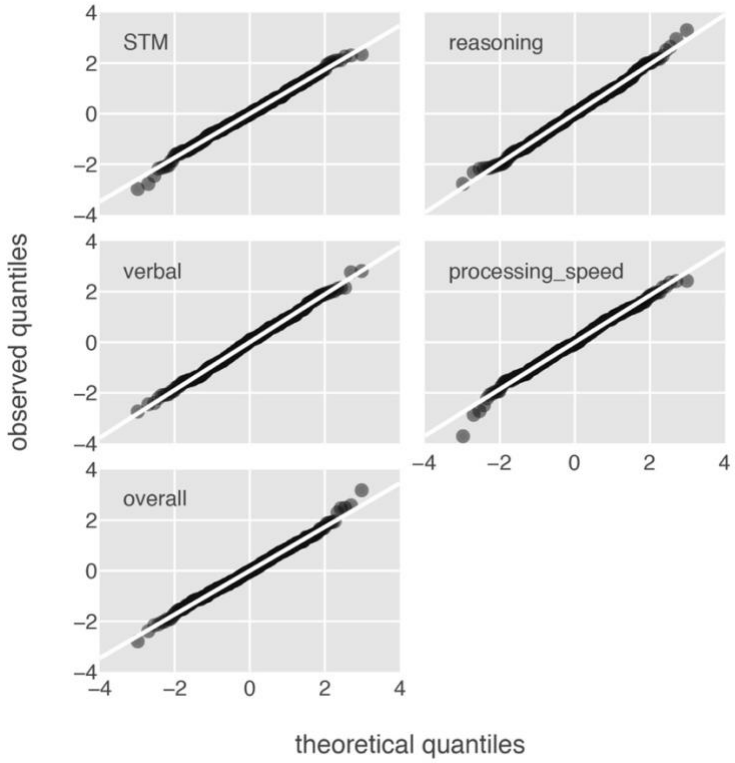
Supplementary Figure 1: Response rate to each COVID-related item on the questionnaire, where the number of participants that responded *"Yes"* (Y), "*No"* (N), or *"I don't know"* (?) is proportional to the height of the response node (i.e., the vertical black line). Coloured bands correspond to groups of participants that were assigned the same WHO COVID severity score (0-6) according to their responses to these questions, which can be observed by following each coloured band through the response nodes. The figure also depicts the sequence of questions that each group was asked; for example, the unaffected group (score = 0, dark blue band) selected none of the listed symptoms, were not hospitalised (and therefore not asked about ICU, etc.) and were not impacted in their daily functioning.



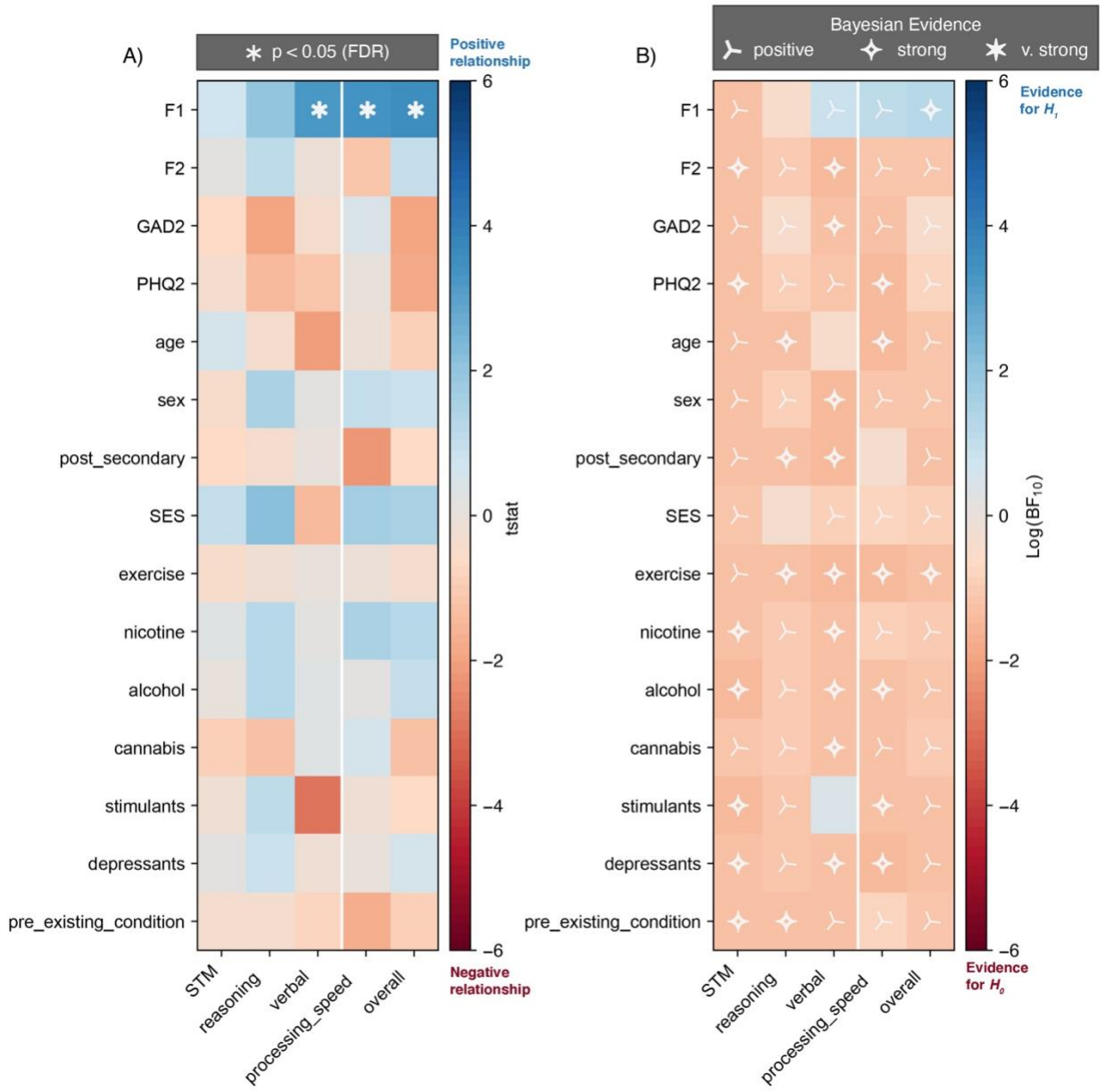
Supplementary Figure 2: Principal components analysis of cognitive tests scores in the two groups produced qualitatively similar factor solutions, with similar groupings of tests on each of the three factors. A) Control group (N=7,832) and B) COVID+ group (N=478).



Supplementary Figure 3: Pair-wise correlations between health-related measures in COVID+ participants (N=478). Correlations along the diagonal (i.e., r = 1.0) are not shown. Red and blue colours indicate positive and negative correlations, respectively. A larger node size and stronger colour intensity indicate stronger correlations.



Supplementary Figure 4: Quantile-quantile (*"QQ"*) plots of the residuals from linear regression models that predict each composite cognitive scores from the two health factors – physical (F1) and mental (F2) health – in the COVID+ sample (N=478). Statistics related to those regression models are presented in Table 3 (see main text).



Supplementary Figure 5: Pair-wise correlations between variables of interest, using **A)** frequentist and **B)** Bayesian statistics. In both panels, the rows are regression parameters used to predict cognitive scores (columns). However, each variable is considered in isolation of the others – that is, the simple regression of each cognitive score on to a single predictor variable. **A)** *T*-statistics for each parameter estimate. Blue indicates a positive *t*-statistic (and estimated parameter greater than 0) whereas red indicates the converse. Stars indicate significant effects, $p < 0.05$, corrected for multiple comparisons using the False Discovery Rate (FDR) across all *t*-tests in the panel. **B)** Bayes Factors comparing the regression model that predicted each cognitive score from a single variable to a null (intercept-only) model. Blue cells indicate support for the alternative hypothesis ($BF_{10} > 1$), and warm cells indicate support for the null hypothesis ($BF_{10} < 1$). Symbols provide a heuristic interpretation for the given BF: positive (BF_{10} 3-20), strong, (BF_{10} 20-150), or very strong ($BF_{10} > 150$) evidence for H_1 (labels not shown for BFs that support the null hypotheses)

Tables

Supplementary Table 1: Classification criteria for the WHO COVID-19 severity scores obtainable given the questionnaire items (see Table 1) in this study. Percentages (of participants in each WHO category) are relative to the entire COVID+ sample. Y/N indicates the response "Yes" or "No". Green indicates the option associated with better health, whereas red indicates the response associated with poorer health.

Description	Question	Yes / No	WHO Score	Count
Unaffected	Symptoms	N	0	15 (3.1%)
	Hospital	N		
Ambulatory	Symptoms	Y	1	114 (23.8%)
	Daily Routine	Y		
	Hospital	N		
Limited in activities	Symptoms	Y	2	283 (59.2%)
	Daily Routine	N		
	Hospital	N		
Hospitalised, mild disease	Hospital	Y	3	30 (6.3%)
	Supplemental O_2	N		
	Intensive Care	N		
	Hospital	Y	4	19 (4.0%)
	Supplemental O_2	Y		
	Intensive Care	N		
Hospitalised, severe disease	Hospital	Y	5	6 (1.3%)
	Intensive Care	Y		
	Ventilator	N		
	Hospital	Y	6	11 (2.3%)
	Intensive Care	Y		
	Ventilator	Y		

Supplementary Table 2: Factor loadings of health-related measures from COVID+ participants (N = 478)

			Factor	
variable	**mean**	**(SD)**	**F1**	**F2**
SF36_physical_functioning	69.48	29.13	0.84	0.01
SF36_role_limitations_physical	37.08	43.03	0.78	0.11
SF36_role_limitations_emotional	56.35	43.23	0.25	0.61
SF36_energy_fatigue	33.91	23.98	0.78	0.30
SF36_pain	66.74	26.07	0.69	0.15
GAD2	2.11	1.95	0.20	0.75
PHQ2	2.00	1.86	0.37	0.73
"How would you rate your memory? (0-5)	2.28	1.01	0.58	0.23
"*…are back to your baseline level of cognitive functioning?"*	*32.23% "Yes"*		0.616	0.609
WHO COVID severity	1.97	1.03	-0.47	-0.02
(approximate) days since most recent test	93.39	67.88	-0.02	0.03
eigenvalue			4.67	1.48
% variance explained			32.53	15.49

Extraction method: Factor analysis with Varimax rotation.

Supplementary Table 3: Factor loadings of CBS test scores - control participants (N = 7,832)

			factor		
score	**mean**	**(SD)**	**STM**	**reasoning**	**verbal**
spatial_span	5.66	1.06	0.71	0.20	0.08
grammatical_reasoning	17.93	5.19	0.07	0.49	0.55
double_trouble	25.46	15.10	0.29	0.34	0.47
odd_one_out	15.89	2.07	0.20	0.59	-0.10
monkey_ladder	7.70	1.16	0.72	0.16	0.03
rotations	76.35	34.99	0.19	0.63	0.05
feature_match	114.38	29.47	0.30	0.60	0.14
digit_span	6.67	1.40	0.17	-0.06	0.81
spatial_planning	19.15	9.82	0.49	0.42	0.08
paired_associates	4.67	0.99	0.57	0.02	0.36
polygons	41.48	21.86	0.00	0.61	0.24
token_search	7.23	2.12	0.59	0.19	0.18
eigenvalue			3.76	1.06	0.98
% variance explained			18.48	17.69	12.09

Extraction method: Principal Component Analysis (PCA) with Varimax rotation.

Supplementary Table 4: Factor loadings of CBS test scores – COVID+ participants (N = 478)

			factor		
score	**mean**	**(SD)**	**STM**	**reasoning**	**verbal**
spatial_span	5.62	0.99	0.63	0.12	0.20
grammatical_reasoning	17.04	5.43	0.08	0.47	0.63
double_trouble	19.29	15.49	0.35	0.30	0.49
odd_one_out	15.78	1.99	0.48	0.41	-0.04
monkey_ladder	7.49	1.16	0.70	0.09	0.10
rotations	73.31	35.44	0.24	0.68	0.06
feature_match	110.18	32.00	0.24	0.61	0.26
digit_span	6.65	1.27	0.10	0.05	0.82
spatial_planning	18.87	8.31	0.65	0.28	0.15
paired_associates	4.50	0.93	0.46	-0.08	0.49
polygons	37.55	22.11	0.07	0.70	0.08
token_search	7.84	1.73	0.65	0.24	0.17
		eigenvalue	4.05	1.05	1.02
		% variance explained	20.12	16.44	14.37

Extraction method: Principal Component Analysis (PCA) with Varimax rotation.

Supplementary Table 5: Tucker's congruence coefficient was used to assesses the similarity of factor interpretations produced by PCA analysis of the control and COVID+ groups' cognitive test data. A value > 0.95 implies that the factors can be considered equal between groups. The analysis was performed with and without a Procrustes transformation that maximizes the similarity between the factor loading matrices.

procrustes	**STM**	**reasoning**	**verbal**	**processing_speed**
No	0.970	0.976	0.974	0.998
Yes	0.980	0.987	0.983	0.999

Supplementary Table 6: Linear regression parameters modelling the relationship between demographic variables and physical (F1) and mental (F2) health factor scores. *P*-values and confidence intervals are Bonferroni-corrected (N=8). Bold entries indicate significant effects ($p_{adj} < 0.05$).

DV	IV	β	*t*	*df*	p_{adj}	CI	ΔR^2	f^2	BF_{10}
F1	age	**-0.01**	**-3.2**	**473**	**0.012**	**(-0.020, -0.002)**	**0.020**	**0.022**	**7.65**
	male	**0.57**	**5.91**	**473**	**< 0.001**	**(0.304, 0.832)**	**0.067**	**0.074**	**> 1000**
	post_secondary	0.1	0.91	473	1.000	(-0.212, 0.422)	0.002	0.002	0.07
	SES	0.06	0.36	473	1.000	(-0.403, 0.523)	0.000	0.000	0.05
F2	age	**0.01**	**2.82**	**473**	**0.040**	**(0.000, 0.019)**	**0.016**	**0.017**	**2.46**
	male	0.15	1.52	473	1.000	(-0.120, 0.418)	0.005	0.005	0.15
	post_secondary	**0.4**	**3.36**	**473**	**0.007**	**(0.072, 0.719)**	**0.023**	**0.024**	**12.94**
	SES	-0.37	-2.17	473	0.242	(-0.846, 0.099)	0.009	0.010	0.49

DV – dependent variable, IV – independent variable, β - estimated coefficient; t - t-statistic; df – t-statistic degrees of freedom; p_{adj} - adjusted p-value; CI - confidence intervals; f^2 - Cohen's f

Supplementary Table 7: Two-sample *t*-test results comparing COVID+ participants, grouped into tercile bins based on F1, against the control sample; "worse", "average", and "better" correspond to the 0%-33%, 33%-66%, and 66%-100% percentile bins (higher F1 associated with better physical health). P-values and confidence intervals are Bonferroni corrected (N=15), and bold entries indicate significant effects ($p_{adj} < 0.05$).

F1_bin	score	difference	*t*	*df*	p_{adj}	CI	BF_{10}
worse	STM	0.01	0.09	164.26	1.000	(-0.214, 0.228)	0.09
	reasoning	**-0.35**	**-4.06**	**162.69**	**0.001**	**(-0.614, -0.095)**	**284.49**
	verbal	**-0.34**	**-4.57**	**165.24**	**< 0.001**	**(-0.566, -0.120)**	**> 1000**
	processing_speed	**-0.51**	**-6.31**	**162.81**	**< 0.001**	**(-0.745, -0.267)**	**> 1000**
	overall	**-0.36**	**-4.80**	**163.11**	**< 0.001**	**(-0.589, -0.138)**	**> 1000**
average	STM	0.07	1.04	164.70	1.000	(-0.139, 0.289)	0.15
	reasoning	-0.12	-1.55	164.14	1.000	(-0.346, 0.109)	0.29
	verbal	-0.19	-2.48	165.29	0.210	(-0.408, 0.037)	1.81
	processing_speed	**-0.24**	**-3.23**	**163.87**	**0.022**	**(-0.452, -0.019)**	**14.76**
	overall	-0.10	-1.60	164.95	1.000	(-0.298, 0.090)	0.31
better	STM	0.09	1.42	168.38	1.000	(-0.095, 0.269)	0.24
	reasoning	-0.12	-1.68	166.18	1.000	(-0.331, 0.092)	0.35
	verbal	-0.03	-0.32	165.51	1.000	(-0.261, 0.210)	0.09
	processing_speed	-0.14	-2.03	165.68	0.657	(-0.343, 0.065)	0.67
	overall	-0.02	-0.31	165.89	1.000	(-0.216, 0.175)	0.09

t - t-statistic; df – degrees of freedom; p_{adj} - adjusted p-value; CI - confidence intervals

Supplementary Table 8: Linear regression parameters modelling the relationship between cognitive scores and physical (F1) and mental (F2) health factor scores. *P*-values and confidence intervals are Bonferroni-corrected for 15 comparisons, and bold entries indicate significant effects ($p_{adj} < 0.05$). *Nuisance variables were included as covariates of no interest.*

DV	IV	β	*t*	*df*	p_{adj}	CI	ΔR^2	f^2	BF_{10}
STM	F1	0.04	0.87	464	1.000	(-0.089, 0.163)	0.002	0.002	0.07
	F2	0.01	0.31	464	1.000	(-0.109, 0.135)	0.000	0.000	0.05
reasoning	F1	0.07	1.38	464	1.000	(-0.075, 0.208)	0.004	0.004	0.12
	F2	0.06	1.29	464	1.000	(-0.077, 0.197)	0.003	0.004	0.11
verbal	F1	**0.15**	**3.24**	**464**	**0.020**	**(0.013, 0.286)**	**0.021**	**0.023**	**9.45**
	F2	-0.01	-0.25	464	1.000	(-0.143, 0.121)	0.000	0.000	0.05
processing_speed	F1	**0.14**	**3.12**	**464**	**0.029**	**(0.008, 0.275)**	**0.020**	**0.021**	**6.54**
	F2	-0.05	-1.10	464	1.000	(-0.177, 0.081)	0.002	0.003	0.09
overall	F1	**0.13**	**3.11**	**464**	**0.030**	**(0.007, 0.257)**	**0.020**	**0.021**	**6.26**
	F2	0.04	1.01	464	1.000	(-0.080, 0.162)	0.002	0.002	0.08

Covariates of no interest: *1) age; 2) sex; 3) post-secondary education; 4) SES; 5) a pre-existing medical condition (diabetes, obesity, hypertension, stroke, heart attack, or memory problems); 6) weekly exercise; consumption of 7) nicotine, 8) alcohol, 9) cannabis, 10) other stimulants, 11) other depressants*

DV - dependent variable, IV - independent variable, β - estimated regression coefficient; t - t-statistic; df - degrees of freedom; p_{adj} - adjusted p-value; CI - confidence intervals; f^2 - Cohen's f

Supplementary Table 9: Two-sample *t*-test results comparing non-hospitalised to hospitalised COVID+ participants. Positive differences indicate higher scores for the non-hospitalised group. Confidence intervals and p-values are Bonferroni corrected (N=7), and bold entries indicate significant effects ($p_{adj} < 0.05$).

score	difference	*t*	*df*	p_{adj}	CI	BF_{10}
F1	**0.50**	**3.92**	**88.55**	**0.001**	**(0.149, 0.855)**	**189.99**
F2	-0.03	-0.21	84.41	1.000	(-0.412, 0.354)	0.15
STM	-0.18	-1.57	86.14	0.847	(-0.502, 0.138)	0.46
reasoning	0.33	2.44	85.62	0.116	(-0.042, 0.693)	2.40
verbal	0.13	1.10	93.73	1.000	(-0.192, 0.448)	0.26
processing_speed	0.29	2.13	82.47	0.251	(-0.084, 0.656)	1.23
overall	0.14	1.10	82.10	1.000	(-0.210, 0.488)	0.26

t - t-statistic; df - degrees of freedom; p_{adj} - adjusted p-value; CI - confidence intervals

Supplementary Table 10: Two-sample *t*-test results comparing each of the COVID+ non-hospitalised and hospitalised groups to the control sample. *p*-values and confidence intervals are Bonferroni corrected (N=10), and bold entries indicate significant effects ($p_{adj} < 0.05$).

Hospitalised	score	difference	*t*	*df*	p_{adj}	CI	BF_{10}
No	STM	0.03	0.71	460.89	1.000	(-0.092, 0.154)	0.07
	reasoning	**-0.15**	**-3.09**	**451.14**	**0.021**	**(-0.291, -0.013)**	**6.50**
	verbal	**-0.17**	**-3.38**	**456.54**	**0.008**	**(-0.305, -0.028)**	**16.29**
	processing_speed	**-0.25**	**-5.49**	**450.44**	**< 0.001**	**(-0.384, -0.123)**	**> 1000**
	overall	**-0.14**	**-3.31**	**453.74**	**0.010**	**(-0.265, -0.021)**	**12.93**
Yes	STM	0.21	1.96	66.18	0.541	(-0.103, 0.529)	0.84
	reasoning	**-0.48**	**-3.83**	**65.93**	**0.003**	**(-0.840, -0.116)**	**148.69**
	verbal	-0.29	-2.77	66.45	0.073	(-0.604, 0.015)	5.14
	processing_speed	**-0.54**	**-4.26**	**65.78**	**< 0.001**	**(-0.908, -0.172)**	**789.47**
	overall	-0.28	-2.36	65.83	0.212	(-0.630, 0.065)	1.91

t - t-statistic; df - degrees of freedom; p_{adj} - adjusted p-value; CI - confidence intervals

Supplementary Table 11: Results of linear regression analyses predicting cognitive scores from: physical (F1) and mental (F2) health factor scores, and hospitalisation status (1 = hospitalised group). *P*-values and confidence intervals are Bonferroni corrected for 15 comparisons, and bold entries indicate significant effects ($p_{adj} < 0.05$).

DV	IV	β	*t*	*df*	p_{adj}	CI	ΔR^2	f^2	BF_{10}
	F1	0.04	1.02	474	1.000	(-0.078, 0.160)	0.002	0.002	0.08
STM	F2	0.01	0.15	474	1.000	(-0.111, 0.123)	0.000	0.000	0.05
	Hospital	0.20	1.74	474	1.000	(-0.141, 0.545)	0.006	0.006	0.21
	F1	0.07	1.50	474	1.000	(-0.066, 0.203)	0.005	0.005	0.14
reasoning	F2	0.05	1.06	474	1.000	(-0.085, 0.180)	0.002	0.002	0.08
	Hospital	-0.29	-2.22	474	0.403	(-0.682, 0.096)	0.010	0.010	0.54
	F1	**0.14**	**3.09**	**474**	**0.031**	**(0.006, 0.268)**	**0.020**	**0.020**	**5.43**
verbal	F2	-0.01	-0.34	474	1.000	(-0.144, 0.114)	0.000	0.000	0.05
	Hospital	-0.06	-0.46	474	1.000	(-0.437, 0.319)	0.000	0.000	0.05
	F1	**0.13**	**3.13**	**474**	**0.028**	**(0.008, 0.262)**	**0.020**	**0.021**	**6.04**
processing_speed	F2	-0.06	-1.37	474	1.000	(-0.183, 0.067)	0.004	0.004	0.12
	Hospital	-0.22	-1.74	474	1.000	(-0.584, 0.150)	0.006	0.006	0.21
	F1	**0.13**	**3.26**	**474**	**0.018**	**(0.013, 0.250)**	**0.022**	**0.022**	**9.26**
overall	F2	0.03	0.70	474	1.000	(-0.089, 0.145)	0.001	0.001	0.06
	Hospital	-0.07	-0.64	474	1.000	(-0.417, 0.269)	0.001	0.001	0.06

DV - dependent variable, IV - independent variable, β - estimated coefficient; t - t-statistic; df - t-statistic degrees of freedom; p_{adj} - adjusted p-value; CI - confidence intervals; f^2 - Cohen's f

Supplementary Table 12: Bayes factors (BF_{10}) for each variable (rows) and cognitive score (columns) that compares a model containing the predictor of interest to the null model (i.e., intercept-only model). BF_{10} greater than 1.0 indicates support for the alternative hypothesis, such that the variable of interest adds explanatory power for that cognitive score. Bold items indicate (at least) positive (BF > 3.0) evidence for a correlation between the variable and the cognitive score.

variable	STM	reasoning	verbal	processing_speed	overall
F1	0.06	0.34	**7.66**	**12.57**	**20.23**
F2	0.05	0.09	0.05	0.08	0.07
GAD2	0.05	0.31	0.05	0.05	0.31
PHQ2	0.05	0.13	0.08	0.05	0.21
age	0.05	0.05	0.37	0.05	0.07
sex	0.05	0.16	0.05	0.08	0.07
post_secondary	0.06	0.05	0.05	0.49	0.05
SES	0.08	0.47	0.13	0.17	0.14
exercise	0.05	0.05	0.05	0.05	0.05
nicotine	0.05	0.11	0.05	0.15	0.10
alcohol	0.05	0.09	0.05	0.05	0.08
cannabis	0.07	0.10	0.05	0.05	0.10
stimulants	0.05	0.08	3.06	0.05	0.06
depressants	0.05	0.06	0.05	0.05	0.05
pre_existing_condition	0.05	0.05	0.06	0.19	0.07