Supplemental material

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**SUPPLEMENT**

**Supplementary Table 1**. The associations between strength, function and cognition in men with prostate cancer treated with androgen deprivation

therapy (ADT; n=70), prostate cancer controls (PCON; n=52) and healthy controls (HCON; n=70) pooled.

| Variable | Leg press 3RM | Grip strength | Gait speed | 400m walk | TUGC |
|---|---|---|---|---|---|
| **Rey Auditory Verbal Learning Test** | | | | | |
| Immediate recall | **0.195*** | 0.111 | **0.159*** | **-0.300*** | **-0.272*** |
| Verbal learning | **0.184*** | 0.143 | **0.184*** | **-0.368*** | **-0.296*** |
| Delayed recall | 0.062 | 0.106 | 0.139 | **-0.298*** | **-0.189*** |
| **Digit span** | | | | | |
| Verbal recall | 0.146 | 0.106 | 0.138 | **-0.248**** | **-0.263*** |
| Verbal working memory | 0.131 | 0.102 | **0.191*** | **-0.153*** | **-0.240**** |
| **Trail making test** | | | | | |
| Visuomotor speed | **-0.274*** | **-0.246**** | **-0.294*** | **0.354*** | **0.284*** |
| Task switching | **-0.307*** | **-0.233**** | **-0.181*** | **0.331*** | **0.270*** |
| Executive function | **-0.277*** | **-0.194**** | -0.116 | **0.276*** | **0.225**** |
| **CogState** | | | | | |
| Simple reaction time | **0.244**** | **0.222**** | **0.195**** | **-0.202**** | **-0.252*** |
| Choice reaction time | **0.276*** | **0.317*** | **0.160*** | **-0.225**** | **-0.255*** |
| Working memory speed | **0.177*** | **0.183*** | **0.155*** | **-0.187*** | **-0.234**** |
| Working memory accuracy | **0.206*** | 0.106 | 0.040 | -0.090 | **-0.150*** |
| Executive function errors | **0.233**** | **0.242**** | **0.152*** | **-0.284*** | **-0.229**** |
| **CogState composite scores** | | | | | |
| Psychomotor-attention | **0.283*** | **0.307*** | **0.193**** | **-0.233**** | **-0.276*** |

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| Working memory-learning | 0.253** | 0.199** | 0.123 | -0.176* | -0.247*** |
| Global cognition | 0.338*** | 0.323*** | 0.205** | -0.292*** | -0.330*** |

Data are Pearson's correlation coefficient. P<0.05, **P<0.01, ***P<0.001. Visuomotor speed (Trail making Test part A), Task Switching (Trail making Test part B), Executive Function (Trail making Test part B-A); Immediate recall (Rey Auditory Verbal Learning Test [RAVLT] trial 1); Verbal learning (RAVLT trial 1-5 inclusive); Delayed recall (RAVLT trial 7); Verbal recall (Digit Span forwards); Verbal working memory (Digit Span backward). CogState measures: Simple reaction time (DET speed); Choice reaction time (IND speed); Working memory speed (ONB speed), Working memory accuracy (ONB accuracy), Visuospatial executive function (GML errors); Psychomotor-attention (DET and IDN); Working-memory and learning (OCL and ONB), Global cognition (DET, IDN, and OCL)
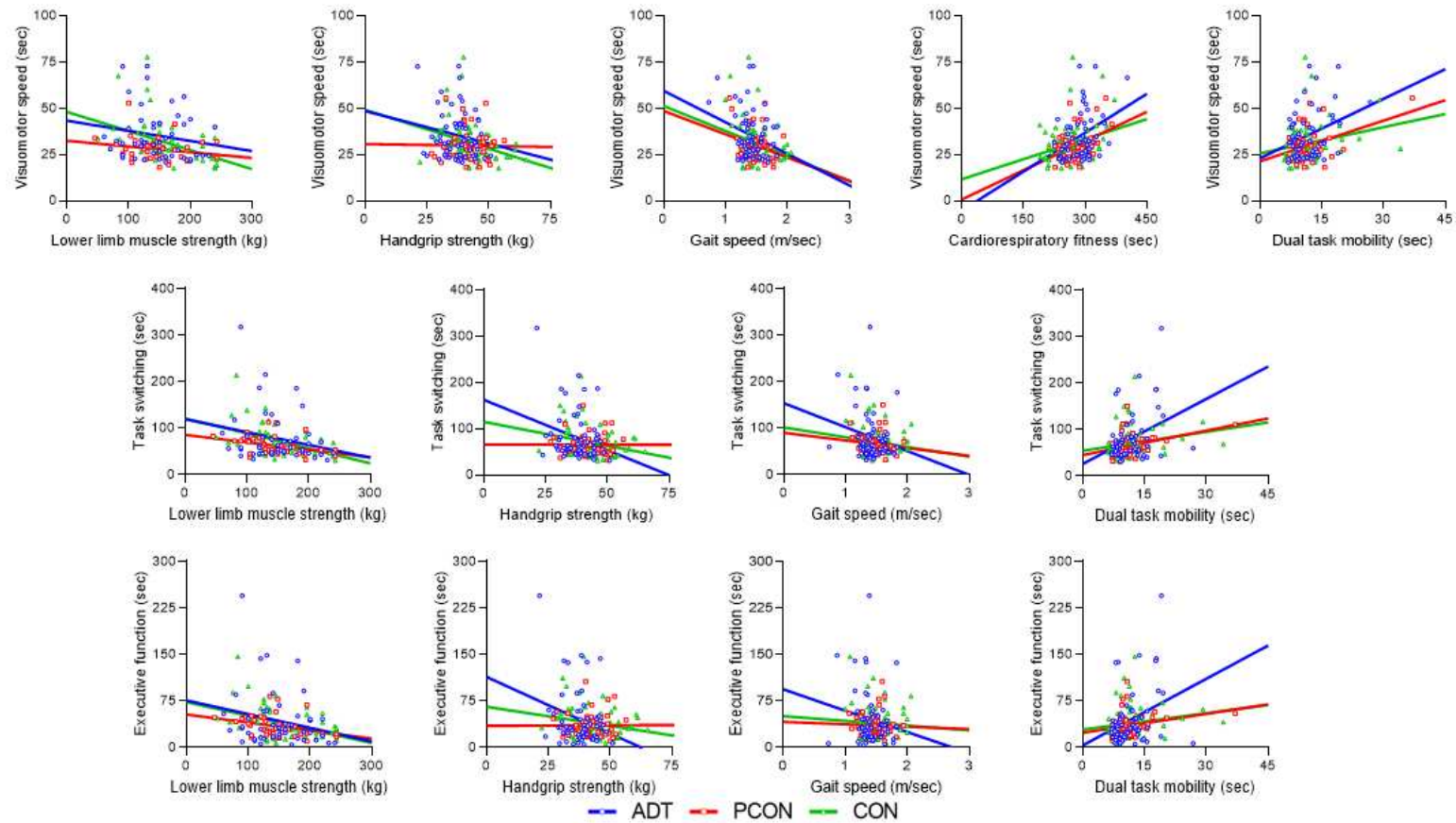
**Supplementary Figure 1**. Scatterplots of the relationship between measures of lower limb muscle strength (leg press three-repetition maximum), handgrip strength (handheld dynamometry), gait speed (4m usual walk), cardiorespiratory fitness (400m walk) and dual-task mobility (timed-up-

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and-go with cognitive task) and visuo-motor speed (trail making test A), task switching (trail making test B), executive function (trail making test

B-A) in men treated with androgen deprivation therapy (ADT), prostate cancer controls (PCON) and non-PCA controls (CON). ^ P<0.05 compared

to CON.
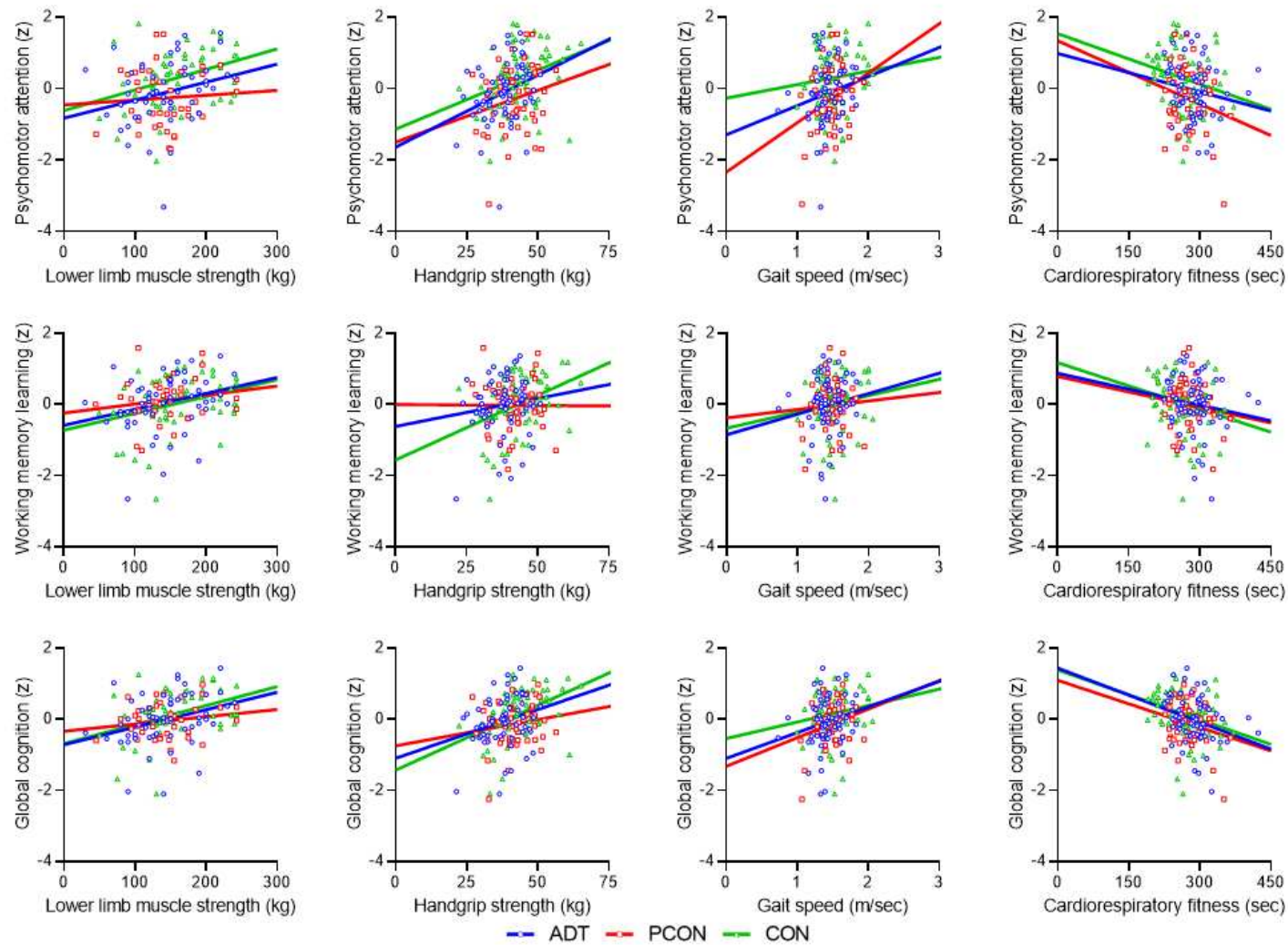
**Supplementary Figure 2.** Scatterplots of the relationship between measures of lower limb muscle strength (leg press three-repetition maximum), handgrip strength (handheld dynamometry), gait speed (4m usual walk), cardiorespiratory fitness (400m walk) and dual-task mobility (timed-up-and-go with cognitive task) and Cogstate psychomotor-attention composite score, Cogstate working memory-learning composite score and Cogstate global cognitive function score in men treated with androgen deprivation therapy (ADT), prostate cancer controls (PCON) and non-PCA controls (CON). ^ P<0.05 compared to CON.