

Supplementary methods

DEMOGRAPHIC AND CLINICAL DETAILS OF THE SAMPLE

The resting state data for this study was obtained from the sample of participants from Blomberg et al. (2021). Adults volunteered for the study through advertisements posted in campus, clinics, and online social media platforms. To assess inclusion criteria, all applicants were required to fill in a digital questionnaire regarding age, health, handedness, alcohol/substance use, diagnosis/es and medications. Applicants were excluded if they did not meet age requirements (18-50 yrs); were dominantly left-handed; had medical/psychiatric conditions/disabilities that could affect the quality of the data (e.g., severe acute psychiatric disorders; ASD or hearing loss); reported frequent use of alcohol/substances; or were medicated with medication that could affect arousal levels (e.g., neuroleptics, sedatives, and/or opioids). In addition, applicants with an ADHD diagnosis were only included if either medicating with central stimulants and prepared to undergo a 48 *hrs* washout period prior to testing or were currently unmedicated for their ADHD.

Outside of the scanner and in a quiet room, clinical assessments of attention, ADHD-symptom severity, and the presence of comorbid disorders and problems with substance abuse were investigated in more detail by way of the d2-R Test of Attention (Brickenkamp et al., 2010), the 18-item Adult ADHD Self-Report Scale (ASRS) v.1.1 (Kessler et al., 2005; Rodriguez et al., 2007) and the Mini-International Neuropsychiatric Interview (MINI) 7.0.2 DSM-5 for ADHD studies (Sheehan et al., 1998) respectively. Individual scores for the ASRS were calculated by summing scores from items associated with self-reported attentional difficulties (Part A: 1 – 4; Part B: 1 – 5), hyperactivity/impulsivity problems (Part A: 5 – 6; Part B: 6 – 12), as well as the sum of all 18 items as a general index of symptom severity. Standard scoring procedures were used for each index in the d2-R and MINI. Pure-tone audiometry at six frequencies ranging from 0.25 *kHz* to 8 *kHz* was also used to screen participants for normal (< 20 *dB* HL) hearing thresholds (in accordance with: American Speech-Language-Hearing Association, 2005). Participants also completed two complex working span tests: the Size-comparison span test (Sörqvist et al., 2010) as a measure of both working memory gating and maintenance; and the Reading span task (Rönnberg et al., 1989) to measure working memory maintenance, procedures for which are published in Blomberg et al. (2019). See Table S1 for more descriptive details of the sample.

Table S1 Demographic and clinical details of the sample.

	Controls (<i>n</i> = 17)	ADHD (<i>n</i> = 17)	Group comparisons
Current/highest education level	<i>N</i>	<i>N</i>	
Upper secondary	1	4	
Undergraduate	14	13	
Postgraduate	2	-	
Hearing acuity (dB)	<i>M</i> (<i>SD</i>)	<i>M</i> (<i>SD</i>)	<i>F</i>-test
Pure-tone average	-2.5 (4.1)	-0.3 (7.4)	Welch's $F(1, 25.3) = 1.4, ns$
d2-Test Attention (standard score)	<i>M</i> (<i>SD</i>)	<i>M</i> (<i>SD</i>)	<i>F</i>-test
Concentration	103 (7.1)	100 (9.0)	Welch's $F(1, 30.4) = 1.3, ns$
Processing speed	103 (15.6)	106 (15.2)	$F(1, 32) = .31, ns$
Precision	100 (9.9)	97 (11.6)	$F(1, 32) = .63, ns$
ASRS v.1.1 (aggregate score)	<i>M</i> (<i>SD</i>)	<i>M</i> (<i>SD</i>)	<i>F</i>-test
Inattention	12.8 (4.7)	27.5 (3.9)	$F(1, 32) = 97.1, p < .000$
Impulsivity	11.9 ⁺ (5.7)	23.0 (8.1)	$F(1, 31) = 20.6, p < .000$
Combined	24.6 ⁺ (9.2)	50.5 (11.5)	$F(1, 31) = 49.5, p < .000$
MINI 7.0.1 for ADHD studies	<i>N</i>	<i>N</i>	
Inattentive	1	6	
Impulsive	-	-	
Combined	-	11	
Working memory span	<i>M</i> (<i>SD</i>)	<i>M</i> (<i>SD</i>)	<i>F</i>-test
Size-comparison span	.51 (.12)	.46 (.16)	Welch's $F(1, 24.8) = 1.4, ns$
Reading span	.71 (.12)	.63 (.23)	$F(1, 32) = 1.3, ns$

⁺ Mean derived from 16 out of the 17 Controls as item 8 (Part B) was missing for one of the participants.

SUPPLEMENTARY REFERENCES

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