Supplementary Materials (Online Only)

Tier 2 Confirmatory Analyses: Mechanisms Associated with Sluggish Cognitive Tempo

Alertness Deficits, Working Memory Slips, and Sleepy/Tired Symptoms

We repeated the Tier 1 analyses, separately for the K-SCT alertness, working memory slips, and sleepy/tired subscales. Reporting is condensed for readability and summarized in Table S1.

Sluggish cognitive tempo alertness deficits

Parent-reported alertness deficits. The best fitting final model included faster inhibition speed (B = -0.68) and slower working memory speed (B = 1.06) as predictors of higher parent-reported alertness deficits (BF_{10} = 73.49; R^2 = .12). There was significant evidence *against* effects of drift rate (BF_{01} = 5.38), response caution (BF_{01} = 5.25), and non-decision time (BF_{01} = 4.40); the evidence against shifting speed was inconclusive (BF_{01} = 1.35).

Teacher-reported alertness deficits. The best fitting final model included slower working memory manipulation speed only (B = 1.07) (BF_{10} = 3.06; R^2 = .05). There was significant evidence *against* effects of drift rate (BF_{01} = 4.24), non-decision time (BF_{01} = 3.28), inhibition speed (BF_{01} = 3.78) and shifting speed (BF_{01} = 3.99); there was insufficient evidence to rule out effects of response caution (BF_{01} = 2.02).

Sluggish cognitive tempo working memory slips

Parent-reported working memory slips. The best fitting final model included lower SES (B = -0.05) and slower working memory speed (B = 0.52) as predictors of higher parent-reported working memory slips (BF_{10} = 7.74; R^2 = .08). There was significant evidence *against* effects of drift rate (BF_{01} = 3.40), non-decision time (BF_{01} = 3.99), and shifting speed (BF_{01} = 8.72); there was insufficient evidence to rule out effects of response caution (BF_{01} = 2.84) and inhibition speed (BF_{01} = 2.91).

Teacher-reported working memory slips. The best fitting final model included slower working

memory manipulation speed (B = 0.68) and inhibition speed (B = 0.93) as predictors of higher teacher-reported working memory slips (BF_{10} = 29.13; R^2 = .10). There was significant evidence *against* effects of drift rate (BF_{01} = 3.72), non-decision time (BF_{01} = 4.15), and shifting speed (BF_{01} = 3.46); there was insufficient evidence to rule out an effect of response caution (BF_{01} = 1.70).

Sluggish cognitive tempo sleepy/tired symptoms

Parent-reported sleepy/tired symptoms. The best fitting final model included faster inhibition speed (B = -0.35) as the only predictor of higher parent-reported sleepy/tired symptoms, but support for this model failed to reach prespecified evidence thresholds (BF_{10} = 2.15; R^2 = .04). There was significant evidence *against* effects of drift rate (BF_{01} = 3.42), non-decision time (BF_{01} = 4.08), and working memory speed (BF_{01} = 3.86); there was insufficient evidence to rule out effects of response caution (BF_{01} =2.12) and shifting speed (BF_{01} = 1.94).

Teacher-reported sleepy/tired symptoms. The best fitting final model included slower working memory manipulation speed (B = 0.41) as the only predictor of higher teacher-reported sleepy/tired symptoms, but support this model failed to reach prespecified evidence thresholds (BF_{10} = 2.88; R^2 = .05). There was significant evidence *against* effects of non-decision time (BF_{01} = 4.28), inhibition speed (BF_{01} = 3.81), and shifting speed (BF_{01} = 3.68); there was insufficient evidence to rule out effects of response caution (BF_{01} =1.39) and drift rate (BF_{01} = 1.72).

Table S1. Exploratory analyses for sluggish cognitive tempo subscales

	Higher *parent*-reported sluggish cognitive tempo (SCT) symptoms associated with:			Higher *teacher*-reported sluggish cognitive tempo (SCT) symptoms associated with:		
	Alertness	WM Slips	Sleepy/Tired	Alertness	WM Slips	Sleepy/Tired
Demographics						
Age	**Evidence Against**	*Evidence Against*	*Inconclusive Evidence Against*	**Evidence Against**	*Inconclusive Evidence Against*	*Inconclusive Evidence Against*
Gender	**Evidence Against**	**Evidence Against**	*Inconclusive Evidence Against*	**Evidence Against**	**Evidence Against**	*Evidence Against*
SES	Inconclusive Support For	<u>Lower</u>	*Evidence Against*	Evidence Against	Evidence Against	*Inconclusive Evidence Against*
Processing Speed						
Drift rate (v)	**Evidence Against**	**Evidence Against**	*Evidence Against*	**Evidence Against**	**Evidence Against**	*Inconclusive Evidence Against*
Response caution (a)	*Evidence Against*	*Inconclusive Evidence Against*	Inconclusive Evidence Against	*Inconclusive Evidence Against*	*Inconclusive Evidence Against*[2]	Inconclusive Evidence Against
Nondecision time (t0)	**Evidence Against**	**Evidence Against**	**Evidence Against**	**Evidence Against**	**Evidence Against**	**Evidence Against**
Executive Functioning Speed						
Inhibitory control	<u>Faster</u>	Inconclusive Evidence Against	Inconclusive Support For	Evidence Against	<u>Slower</u>	Evidence Against
WM manipulation	**<u>Slower</u>**	**<u>Slower</u>**[1]	Evidence Against	**<u>Slower</u>**[1]	**<u>Slower</u>**	Inconclusive Support For
Set shifting	*Inconclusive Evidence Against*	**Evidence Against**	*Inconclusive Evidence Against*	*Evidence Against*	**Evidence Against**	*Evidence Against*

Note: Descriptors (higher, lower, faster, slower) for significant predictors ($BF_{10} \geq 3$) are <u>underlined</u> and based on interpretation of B-weight direction to indicate correspondence with <u>higher</u> levels of sluggish cognitive tempo (SCT) symptoms. B-weights are conceptually 0.00 for predictors showing significant support for the null hypothesis of no effect. **Bolded** cells indicate findings with significant support (BF_{10} or $BF_{01} \geq 3$) that are consistent across parent and teacher models. *Italicized* cells may also be consistent across models, with both models showing evidence in the same direction but at least one failing to reach preset significance thresholds. WM = working memory.
[1] Significant effect that did not survive control for the overlap between sluggish cognitive tempo symptoms and cross-informant ADHD-Inattentive symptoms. [2] Significant support for response caution ($BF_{10} = 11.83$) prior to adding executive function speed to the model.