



SLEEP 2024

HOUSTON, TX
JUNE 1-5

Effects of Solriamfetol on Cognition in Patients with Excessive Daytime Sleepiness Associated With Narcolepsy

Yaroslav Winter, Geert Mayer,
Heike Benes, Lothar Burghaus,
Graham M.L. Eglit, Samantha
Floam, Gregory Parks, Ulf Kallweit

A JOINT MEETING

AASM American Academy of
SLEEP MEDICINE™

 Sleep Research Society®
Advancing Sleep & Circadian Science

Conflict of Interest Disclosures for Speakers

To review this speaker's disclosure information, please visit sleepmeeting.org.

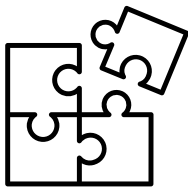
SLEEP 2024 Photography Policy



- Photography **IS NOT** permitted during this lecture, except on the Background and Conclusion slides
- Please use the QR code on the Introduction or Conclusions slides to obtain a PDF of the slides presented

Background: Narcolepsy and Cognition

- Narcolepsy is a chronic sleep disorder characterized by excessive daytime sleepiness (EDS)¹
- Brain fog and difficulty concentrating are common complaints among patients and significantly impact their quality of life²
- Patients often exhibit deficits in processing speed and attention, core cognitive functions³
- Cognitive impairment persists despite treatment with wake-promoting agents, and remains an unmet need

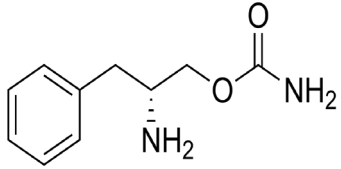


Scan QR code or access

<https://www.axsomecongresshub.com/APSS2024>

to view or download a PDF of this poster or access additional information and other Axsome Therapeutics presentations at APSS 2024.

Background: Solriamfetol and Cognition



- Solriamfetol (Sunosi[®]) is a dopamine-norepinephrine reuptake inhibitor with agonistic properties at the trace amine-associated receptor 1 (TAAR1) and serotonin 1A (5HT_{1a}) receptor¹
- Solriamfetol is approved for treatment of EDS associated with narcolepsy or obstructive sleep apnea (OSA)^{2,3}
- Solriamfetol improved cognitive performance in a clinical study of patients with OSA and EDS with cognitive impairment⁴
- Here we present cognitive outcomes of patients with narcolepsy and EDS treated with solriamfetol in a real-world setting



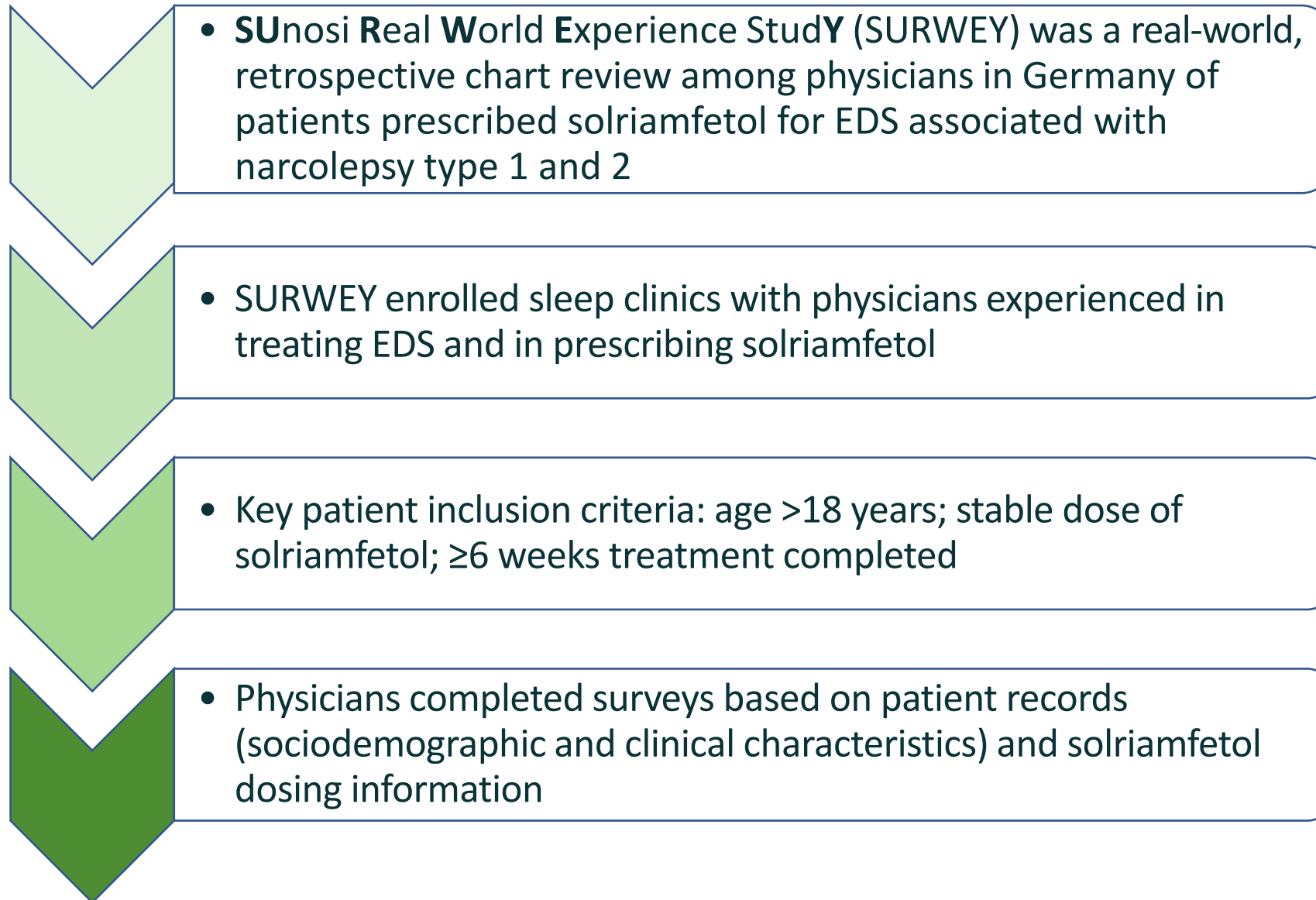
1. Gursahani H, et al W. *Sleep*. 2022;45(suppl 1): A329.

2. Sunosi[®] (solriamfetol) [Prescribing Information]. New York, NY. Axsome Therapeutics, Inc.

3. Sunosi[™] (solriamfetol) tablets Summary of Product Characteristics. Waterford, Ireland: TMC Pharma (EU) Limited; 2022.

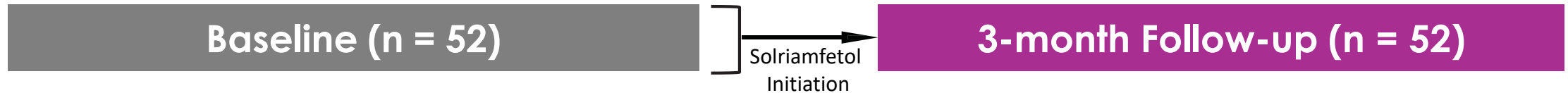
4. Van Dongen H, et al. Effects of Solriamfetol on Cognitive Function in Participants With Cognitive Impairment Associated With Excessive Daytime Sleepiness in Obstructive Sleep Apnea: Results of the SHARP Study; 2023 November 9-12; Neuroscience Education Institute Congress; Colorado Springs, CO.

Methods: SURWEY Study

- 
- **SU**nosi Real **W**orld **E**xperience Stud**Y** (SURWEY) was a real-world, retrospective chart review among physicians in Germany of patients prescribed solriamfetol for EDS associated with narcolepsy type 1 and 2
 - SURWEY enrolled sleep clinics with physicians experienced in treating EDS and in prescribing solriamfetol
 - Key patient inclusion criteria: age >18 years; stable dose of solriamfetol; ≥6 weeks treatment completed
 - Physicians completed surveys based on patient records (sociodemographic and clinical characteristics) and solriamfetol dosing information

Methods

- Analyzed a subgroup of patients (n = 52) with narcolepsy who underwent cognitive assessments prior to initiating solriamfetol and 3 months following
- Assessments were self-reported and objective, across multiple cognitive domains
- Results are pooled across dosages; most patients received less than 150 mg/day (maximum recommended dose)



Assessment	Domain	Modality
British Columbia Cognitive Complaints Inventory (BC-CCI)	Cognitive impairment	Self-reported
Test of Attentional Performance (TAP) Alertness subtests	Alertness	Objective
Wechsler Adult Intelligence Scale-IV (WAIS-IV) Coding subtest	Processing speed	Objective
Wechsler Memory Scale-IV (WMS-IV) Visual Reproduction I and II	Visual memory	Objective
Regensburger Word Fluency (RWT) S Words and Animals	Verbal fluency	Objective
Epworth Sleepiness Scale (ESS)	Sleepiness	Self-reported

- Mean age was 36.4 years
- 44.2% were female

Study Findings: Solriamfetol Treatment Improved Subjective Cognitive Function

- Patient-perceived cognitive complaints were evaluated with the British Columbia-Cognitive Complaints Inventory (BC-CCI)

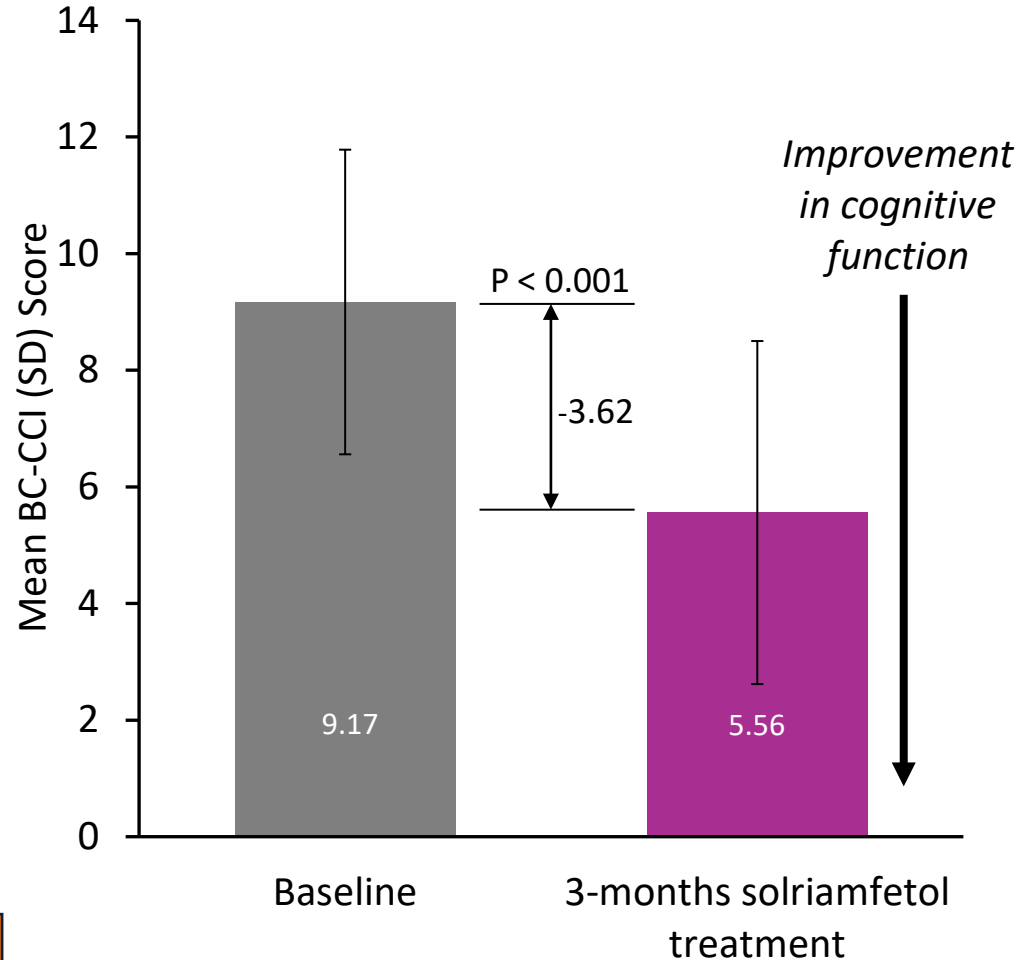
6 Cognitive Complaint Items

Participants were asked to rate their **problems with concentration, memory, and thinking skills** during the past 7 days. Questions included:

1. Forgetfulness/memory problems
2. Poor concentration
3. Trouble expressing thoughts
4. Trouble finding the right word
5. Slow thinking speed
6. Trouble figuring things out or solving problems

A 4-point scale (0–3) was used with higher scores indicating greater cognitive impairment:

- 0 = Not at all
- 1 = Some
- 2 = Quite a bit
- 3 = Very much



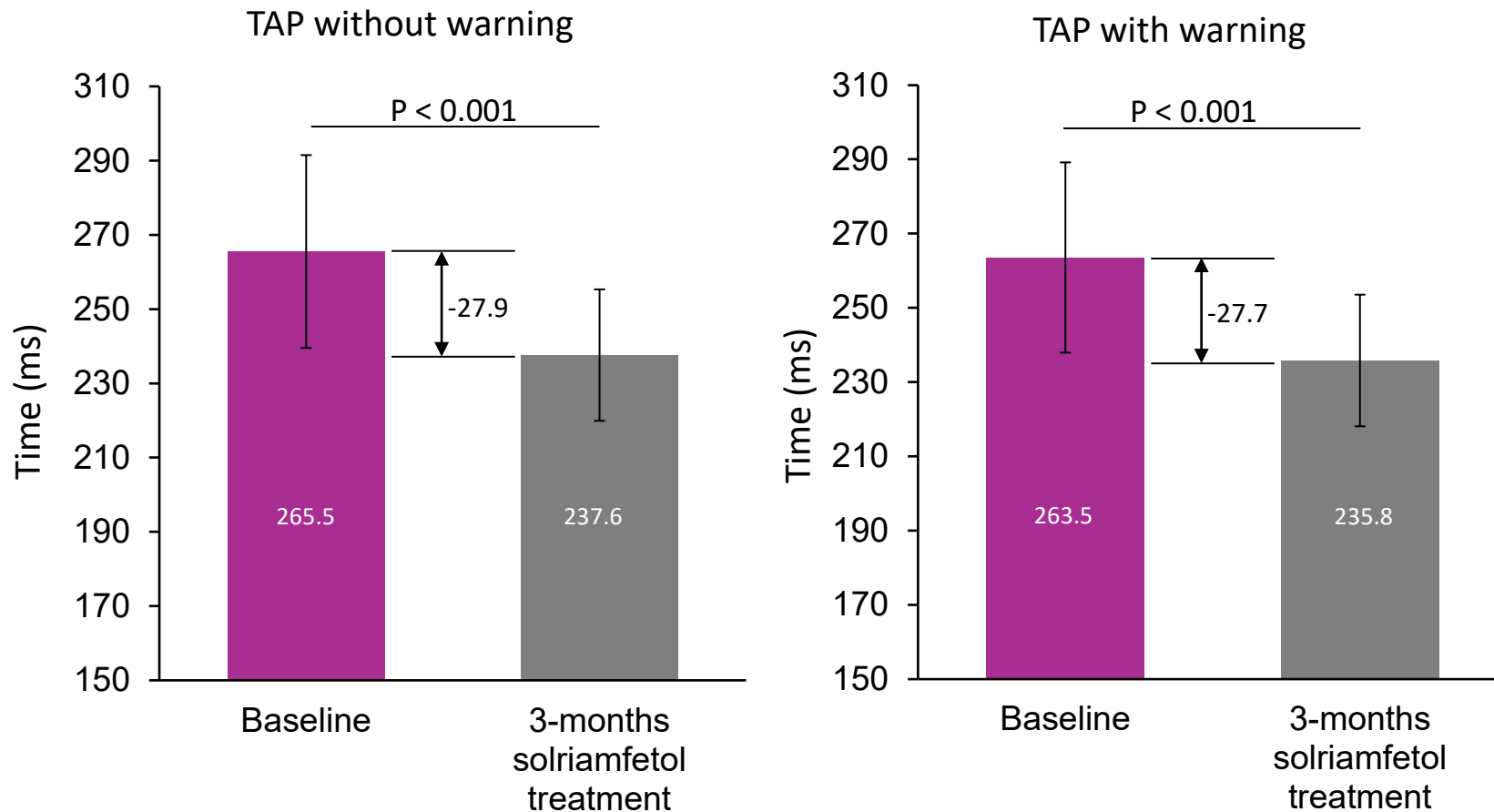
Solriamfetol significantly improved subjective cognitive function by 3.62 points (39.4%)

*Baseline scores indicated moderate cognitive complaints prior to solriamfetol treatment

Total Score	0-4	5-8	9-14	15-18
	No Complaints	Mild	Moderate	Severe

Study Findings: Solriamfetol Improved Alertness

- Test of Attentional Performance (TAP) assesses multiple attentional functions, including alertness¹
 - Previously used to assess cognitive deficits in patients with narcolepsy²



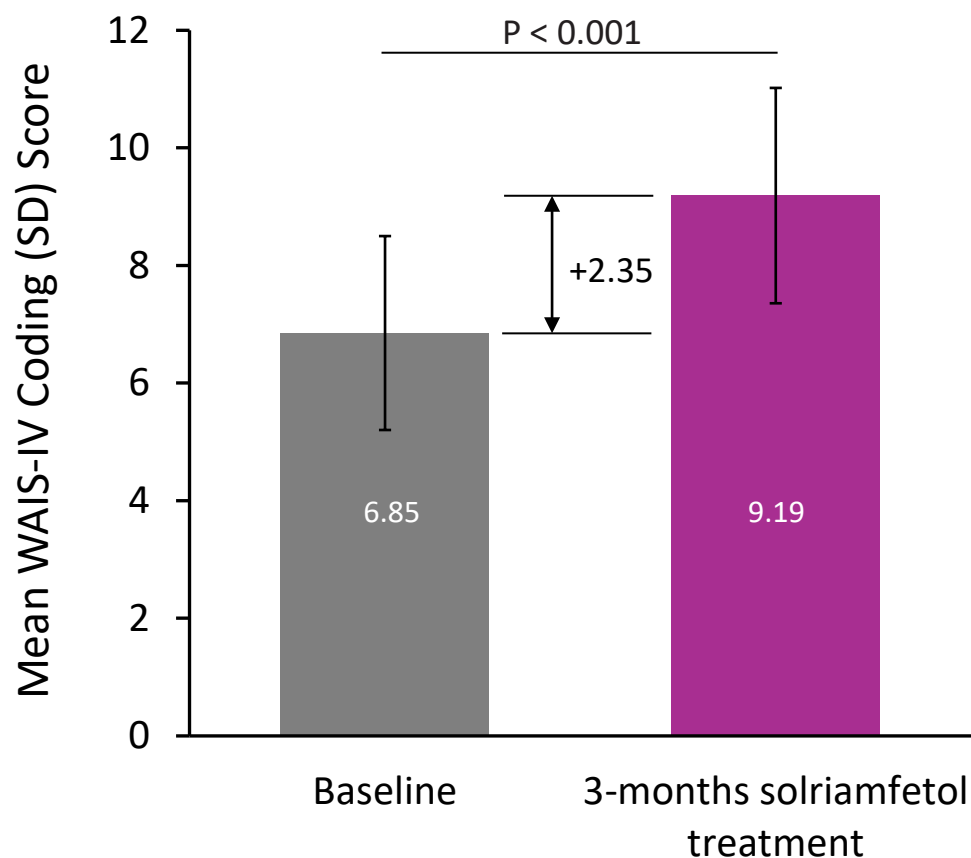
Solriamfetol significantly improved alertness in the TAP regardless of warning signal (10.5% for both)

1. Naumann A, et al. *J Sleep Res.* 2006;15(3):329-38.
2. Nin V, et al. *J Neurol Disord.* 2022;10:12.

*Baseline scores indicated impaired attention prior to solriamfetol treatment

Study Findings: Solriamfetol Improved Processing Speed

- Processing speed was evaluated using the Coding subtest (a variation of the Digit Symbol Substitution Test) of the Wechsler Adult Intelligence Scale-IV (WAIS-IV), a multi-component IQ test¹
 - Previously used to measure cognitive deficits in patients with narcolepsy²

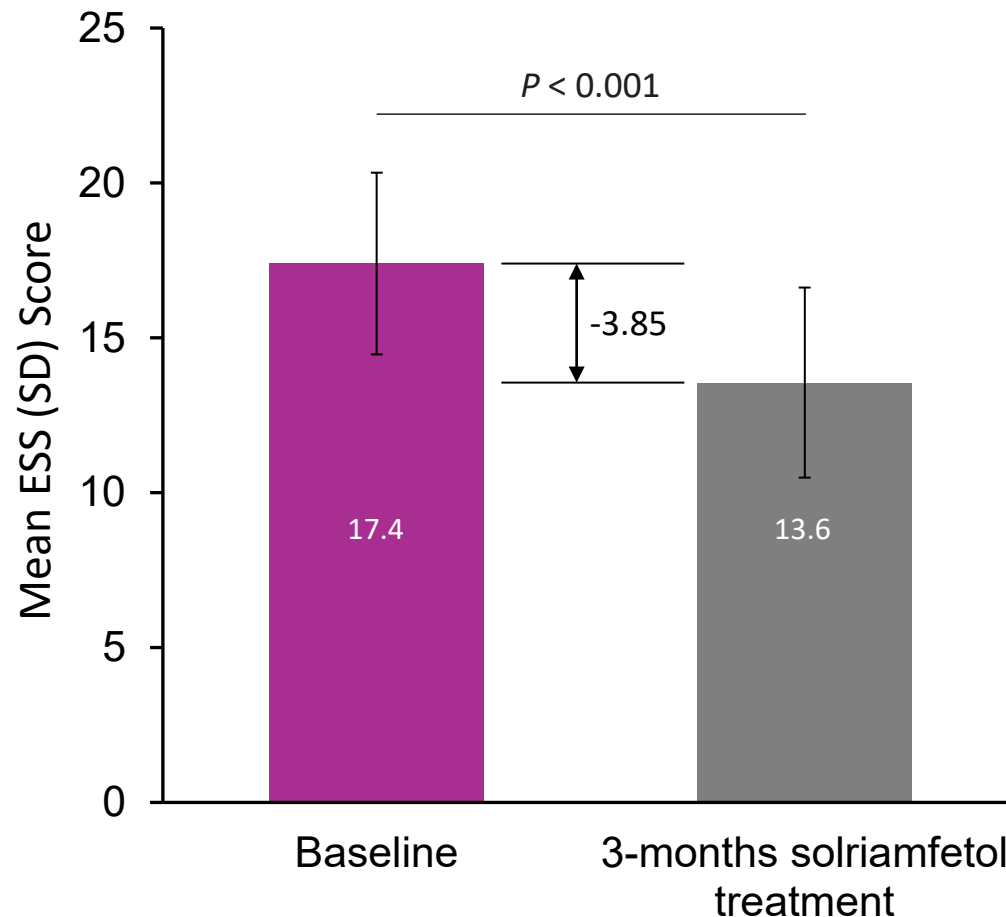


Solriamfetol statistically significantly improved processing speed by 2.35 points (34.3%)

*Baseline score indicated impaired processing speed prior to solriamfetol treatment

Study Findings: Solriamfetol Reduced Excessive Daytime Sleepiness

- EDS was assessed with the Epworth Sleepiness Scale (ESS), a self-report questionnaire



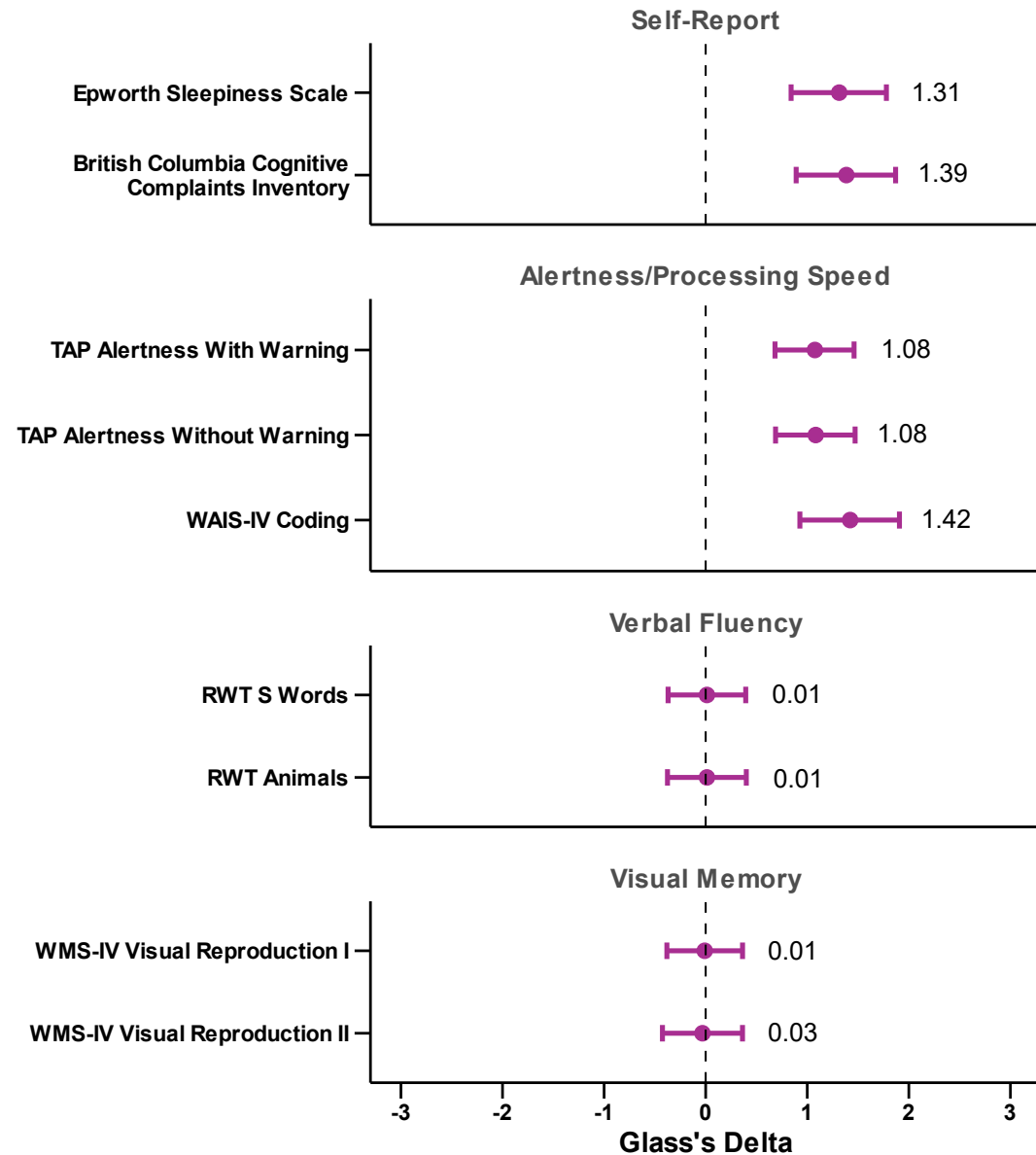
**Solriamfetol
statistically significantly
improved excessive
daytime sleepiness**

*Baseline scores indicated severe excessive daytime sleepiness prior to solriamfetol treatment

Study Findings: Sleepiness and Cognition

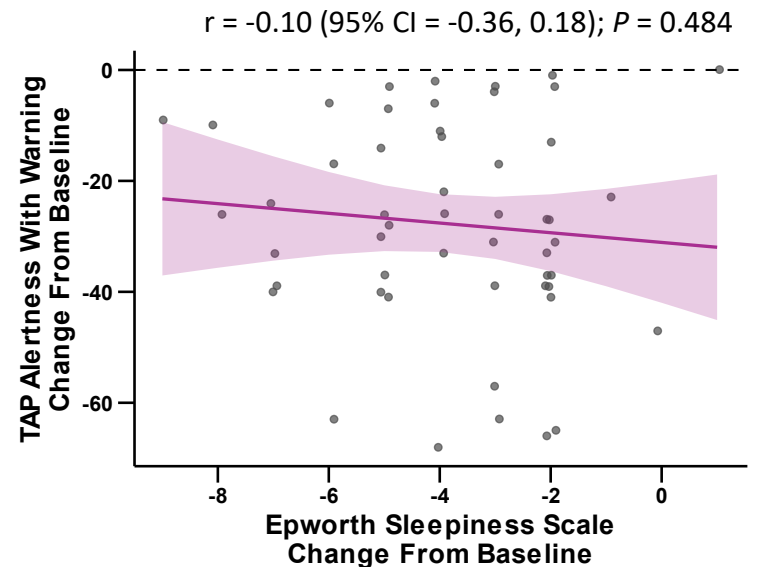
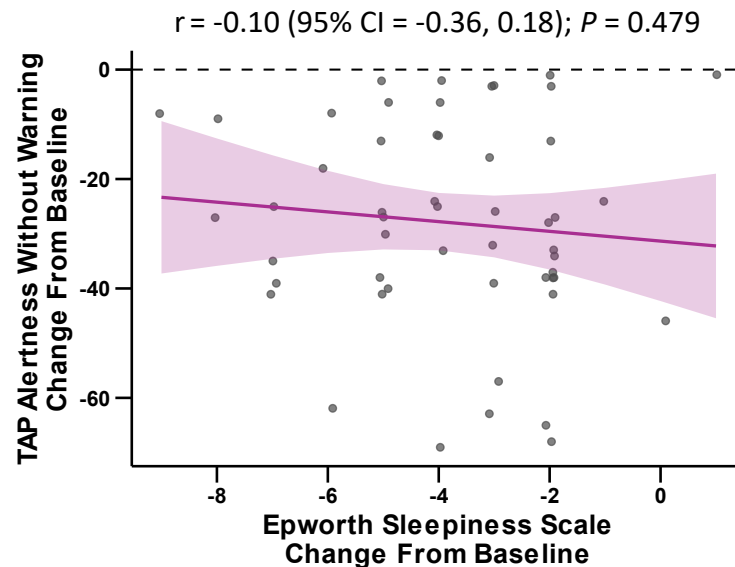
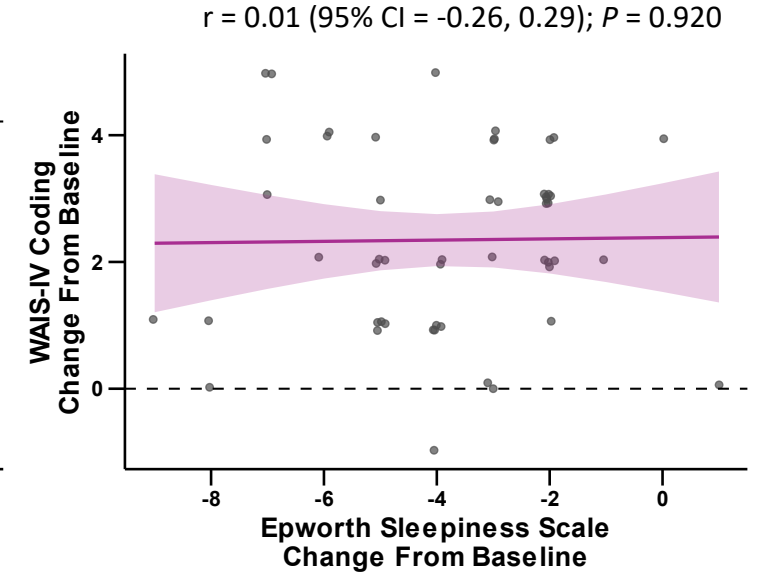
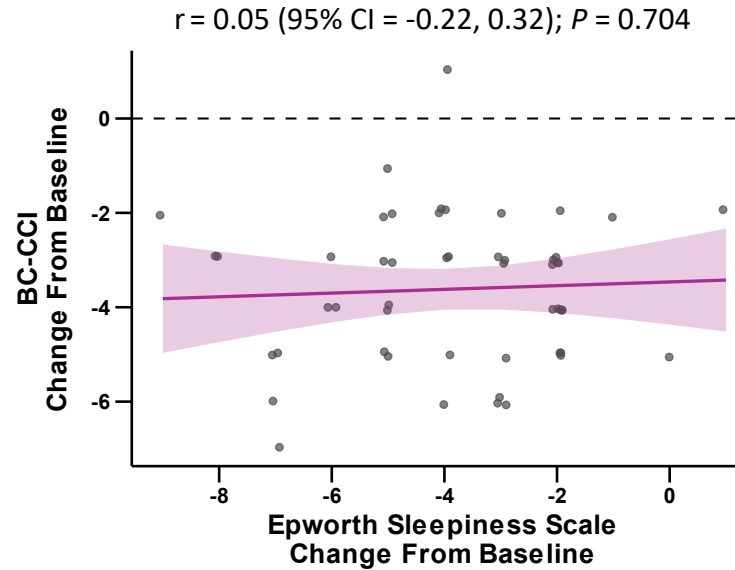
Solriamfetol improved sleepiness, subjective cognitive function, alertness, and processing speed

No meaningful effects on verbal fluency or visual memory



Study Findings: Reduction in Sleepiness not Predictive of Cognitive Improvement with Solriamfetol

ESS score improvements were not predictive of improvements in multiple measures of cognition



Conclusions

- In this retrospective, real-world study, cognitive performance was assessed in patients with EDS associated with narcolepsy
- Solriamfetol treatment for 3 months improved:
 - Patient-reported cognitive function
 - Alertness and processing speed
 - Excessive daytime sleepiness
 - Cognitive performance
- These results indicate solriamfetol has the potential to improve cognitive function in patients with EDS associated with narcolepsy

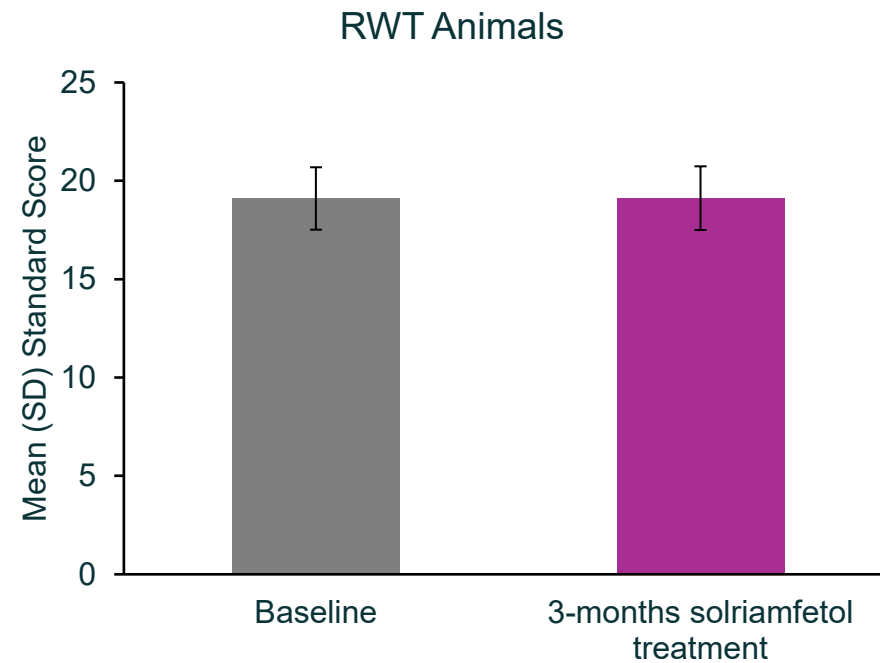
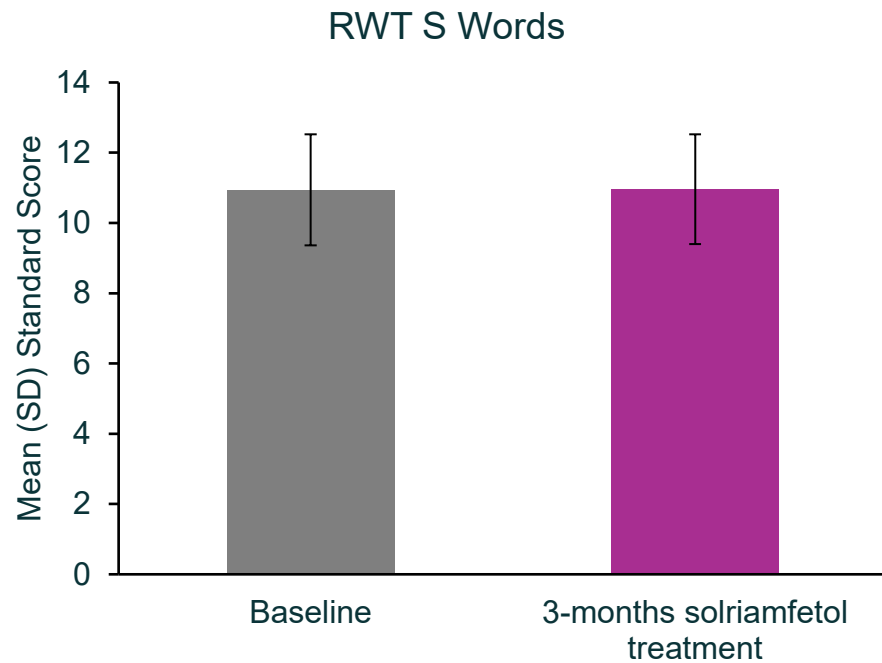


Scan QR code or access
<https://www.axsomecongresshub.com/APSS2024>
to view or download a PDF of this poster or access
additional information and other Axsome
Therapeutics presentations at APSS 2024.

Backup slides

Results: Verbal Fluency

- Verbal fluency was assessed with the Regensburger Word Fluency Test, subtests S Words and Animals
- No impairment in verbal fluency was observed at baseline, and no change was observed with solfriamfetol treatment



Results: Visual Memory

- Visual memory and retention were assessed with the Wechsler Memory Scale Visual Reproduction subtests I and II
- No impairment in visual memory was observed at baseline, as measured by either test

