

## INTRODUCTION AND METHODS

**Research objective:** Explore sex-specific correlations between psychomotor vigilance test median reaction times (ms) (PVTRT) and oximetry parameters (average blood oxygen saturation (%) (SpO<sub>2</sub>), time of blood oxygen saturation below 90% as percentage of total sleep duration (B90)) alongside traditional obstructive sleep apnea (OSA) risk factors and severity markers (apnea-hypopnea-index (AHI), oximetry desaturation index (ODI)).

**Data acquisition:** Self-applied home polysomnography, questionnaires, in-lab computer-based psychomotor vigilance test (PVT) (10 mins).

**Data analysis:** Correlation analysis including SpO<sub>2</sub>, B90, age, AHI, ODI and PVTRT. Split by sex.

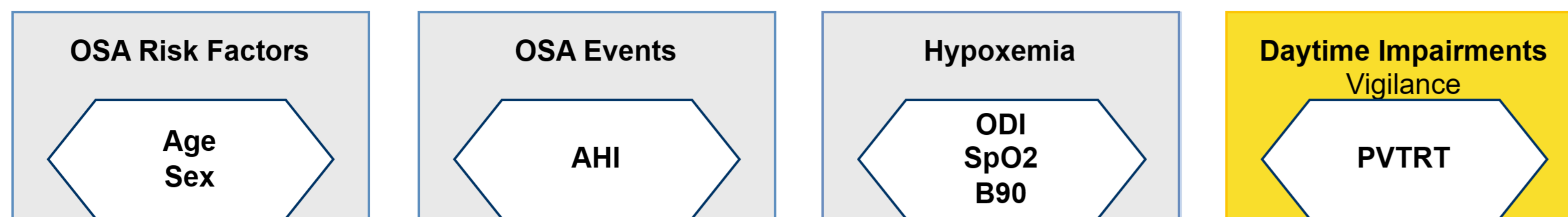


Fig. 1. Conceptual model of OSA-relevant factors (rectangle) and parameters (hexagon) assumed to relate to PVT.

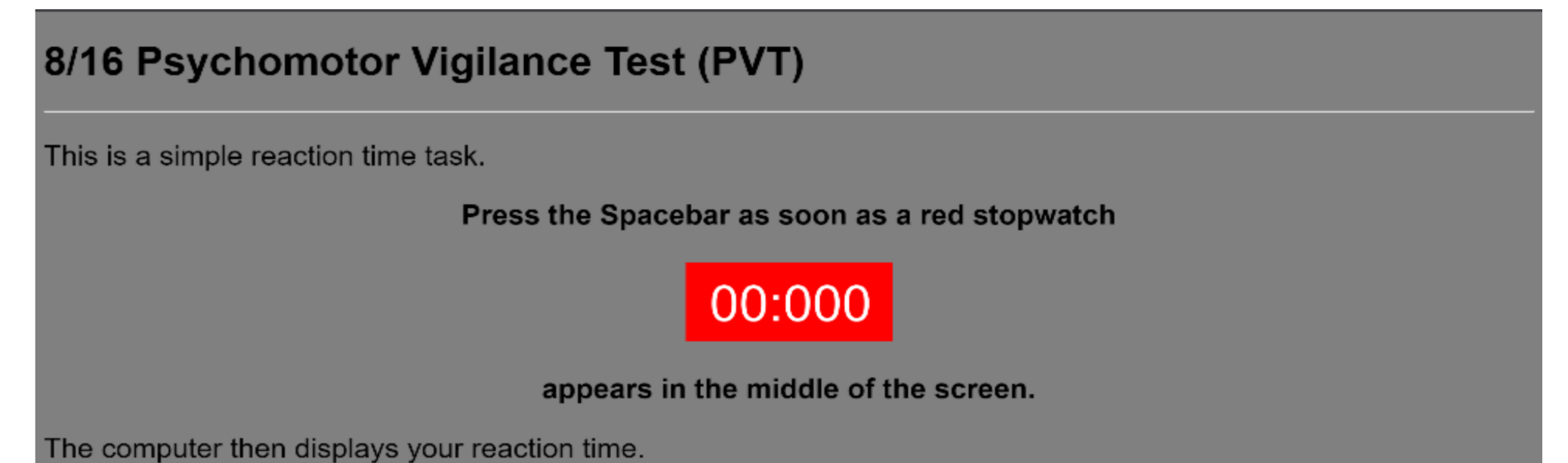


Fig. 2. computer-based PVT, instructions (excerpt).

Tab. 1. Parameters in groups split by sex, displayed as Mean with Standard Deviation.

	Age	AHI	ODI	SpO <sub>2</sub>	B90	PVTRT
Female (n= 52)	40.4 (12.6)	8.3 (8.9)	8.5 (7.9)	94.1 (1.5)	2.9 (9.1)	325.5 (65.2)
Male (n = 60)	40.4 (13.8)	16.1 (13.4)	15.4 (12.6)	93.3 (1.8)	6.0 (14.3)	310.4 (42.7)

## RESULTS

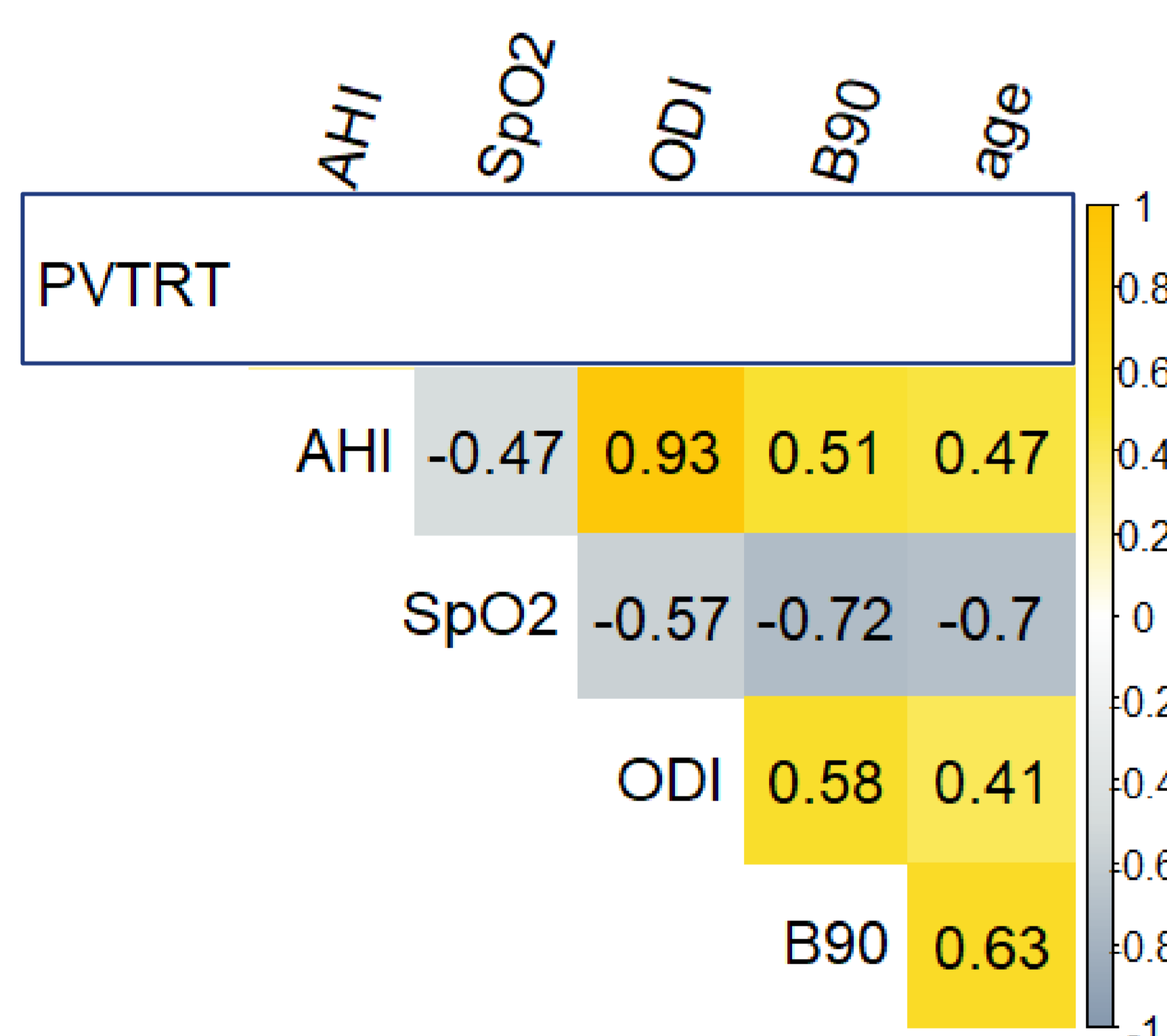


Fig. 3. Correlation matrix in female participants.

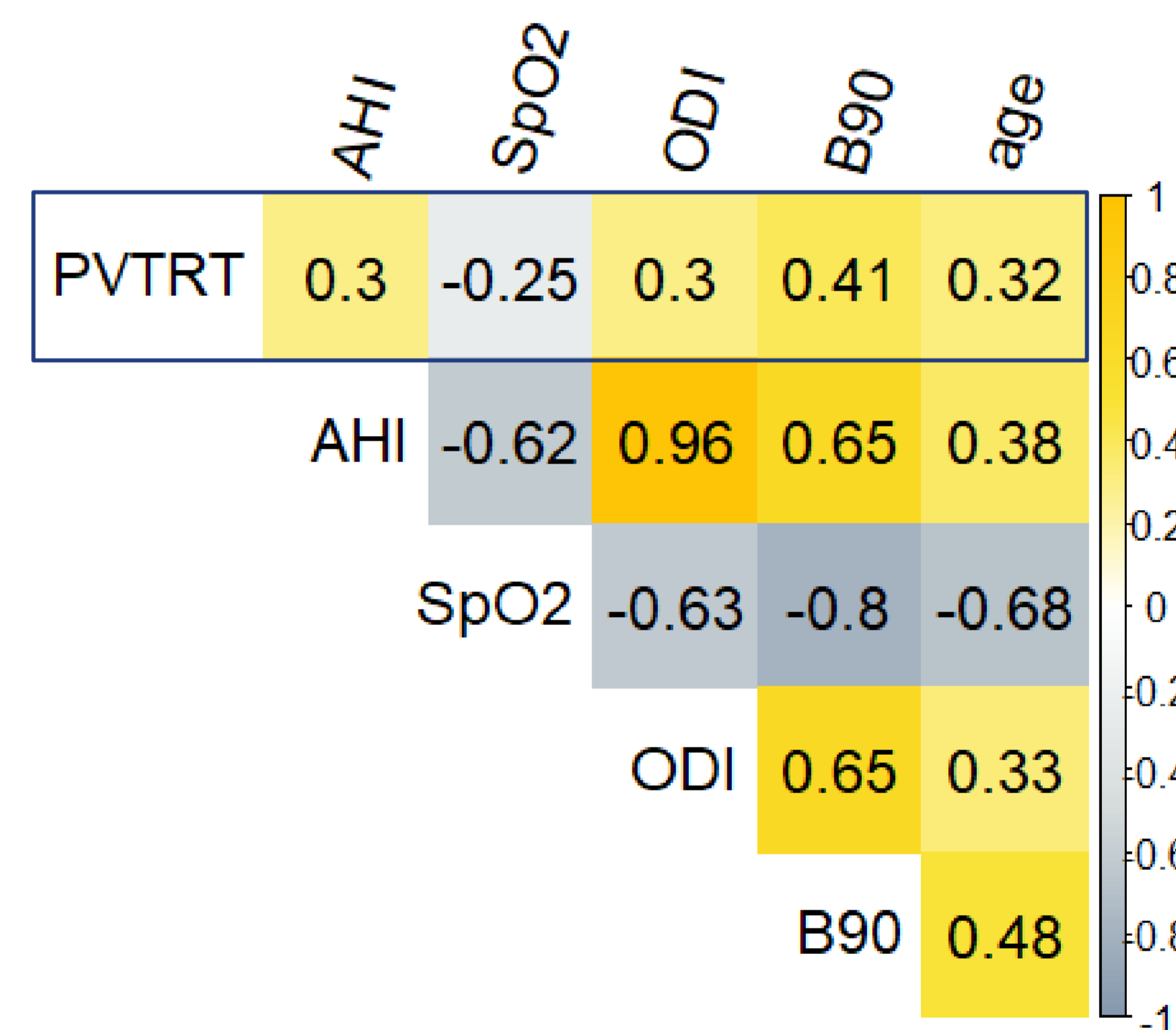


Fig.4. Correlation matrix in male participants.

### Females

- No significant correlations ( $p > .05$ ) between PVT and any other parameters

### Males

- Significant correlations between PVT and all other parameters ( $p < .05$ )
- Strongest correlation with PVT: B90

## CONCLUSION

### Oximetry parameters

- Oximetry parameters seem linked to vigilance impairments in males with OSA
- Underlying mechanisms need investigation

### AHI critique

- AHI widely criticized as OSA severity marker: unspecific, insufficient outcome predictor<sup>1</sup>
- Results provide perspectives in search of improved OSA severity markers

### OSA sex gap

- Results differ between sexes
- OSA has been found to differ between sexes previously<sup>2</sup>
- OSA research must consider sex differences to provide equity in treatment

### Limitations

- OSA severity overall lower in females: correlations not detected?

## REFERENCES

<sup>1</sup> Pevernagie, D. A., Gnidovec-Strazisar, B., Grote, L., Heinzer, R., McNicholas, W. T., Penzel, T., Randerath, W., Schiza, S., Verbraecken, J., & Arnardottir, E. S. (2020). On the rise and fall of the apnea-hypopnea index: A historical review and critical appraisal. *Journal of sleep research*, 29(4), e13066.

<sup>2</sup> Ayub, S., & Won, C. H. (2019). Obstructive sleep apnea in women. *Journal of Sleep Medicine*, 16(2), 75-80.

## ACKNOWLEDGEMENTS and CONTACT

This research was carried out as a part of the Sleep Revolution project, which has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 965417.

Contact: Renée Marie Asbach, r.asbach@studserv.uni-leipzig.de

<https://esleepeurope.eu/>