# Hypnolog: Multi-Night Hypnogram Analysis for Enhanced Sleep Assessment

**Laurie Thiesse**[*1]**, Stephen Foerster**[1]**, René Gebel**[1]**, Jean-Yves Schaffhauser**[1]**, Antoine Viola**[1]
[1] PPRS, Colmar, France

## INTRODUCTION

Traditional polysomnography (PSG) is often limited to single-night assessments, which may not capture night-to-night variability in sleep stages, sleep latency, and total sleep time.

Somno-Art, a novel ambulatory sleep staging device has been developed to record and analyze sleep over multiple nights.

Additionally, an innovative tool has been designed to visualize hypnograms from multiple nights in a single comprehensive graph. The Hypnolog facilitates an intuitive understanding of sleep dynamics.

## METHOD

Somno-Art, designed for ease of use in an ambulatory setting, records detailed sleep data across consecutive nights.

The recorded data is processed to generate hypnograms, which are then integrated into a unified graphical representation.

## RESULTS

Previous publications demonstrated high accuracy of Somno-Art in staging sleep, comparable to traditional PSG.

The Hypnolog effectively visualizes sleep patterns, allowing for rapid identification of trends or anomalies in sleep stages, latencies, and duration.



### Patient without the CPAP on the first night



### Patient with subjective complaints of insomnia



### Patient with polyphasic sleep
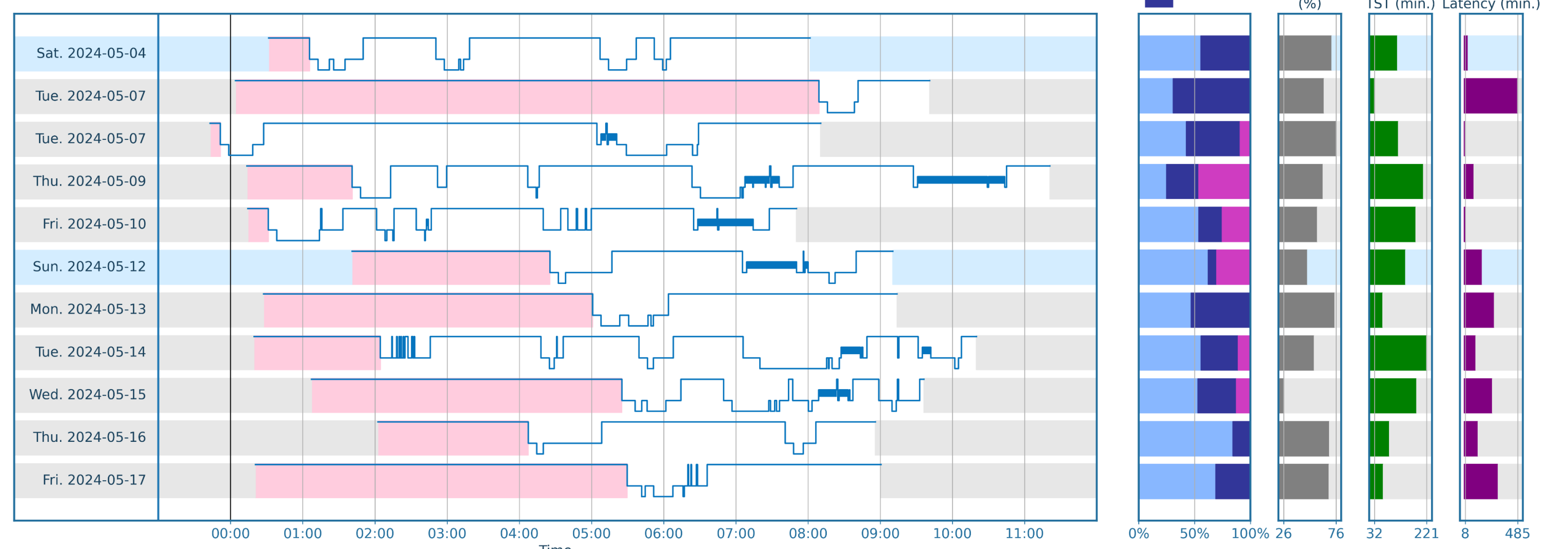


### Patient with daytime awakening treatment for residual drowsiness under CPAP



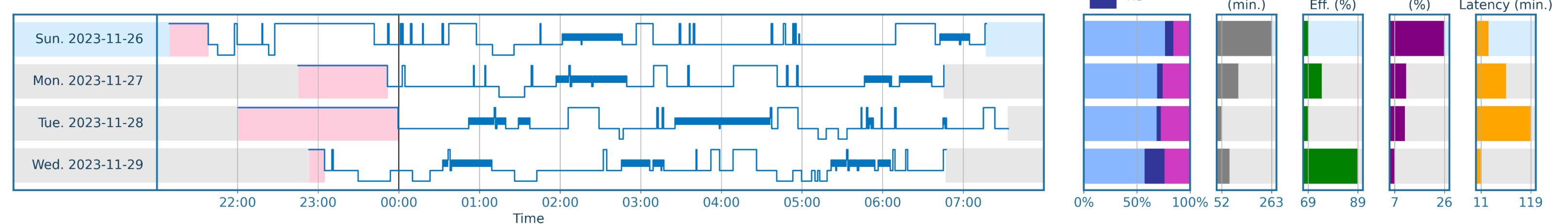### Other type of illustration:



## CONCLUSION

Somno-Art, the innovative ambulatory sleep staging device, combined with the multi-night hypnogram visualization tool, provides a robust assessment of sleep architecture over multiple nights, potentially leading to better diagnosis and personalized treatment of sleep disorders.
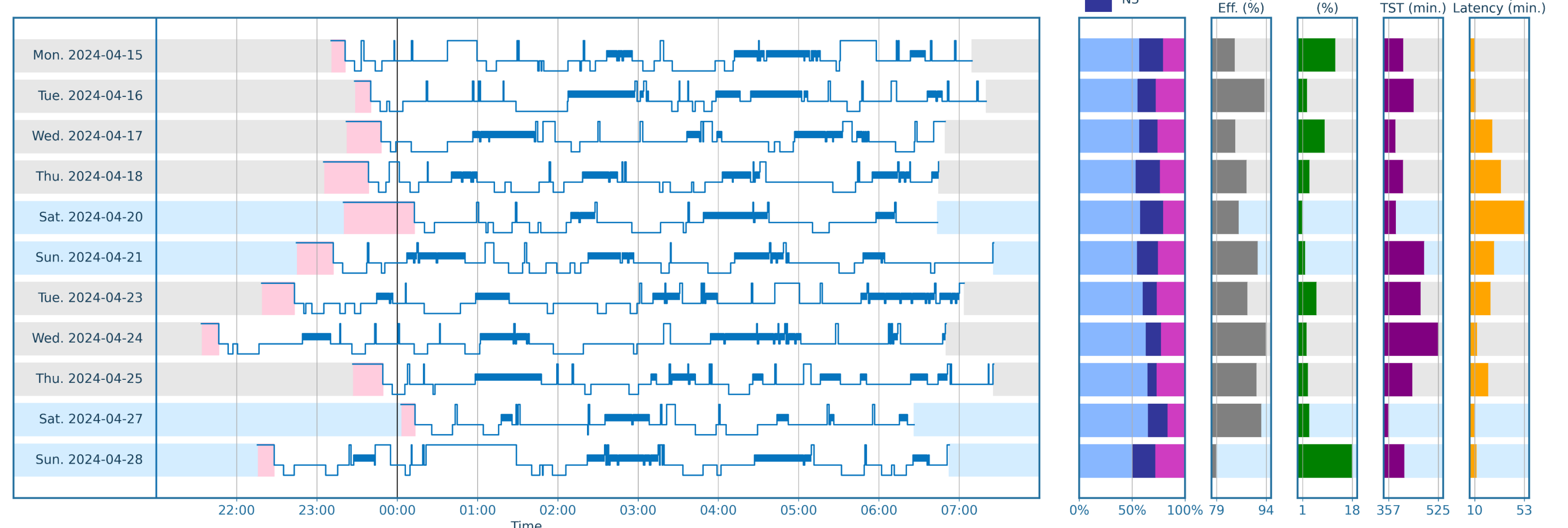
This user-friendly tool captures and displays longitudinal sleep data. It supports improved clinical decision-making and patient outcomes by offering significant potential for the titration of medications or CPAP through dose adjustments based on detailed hypnogram data.

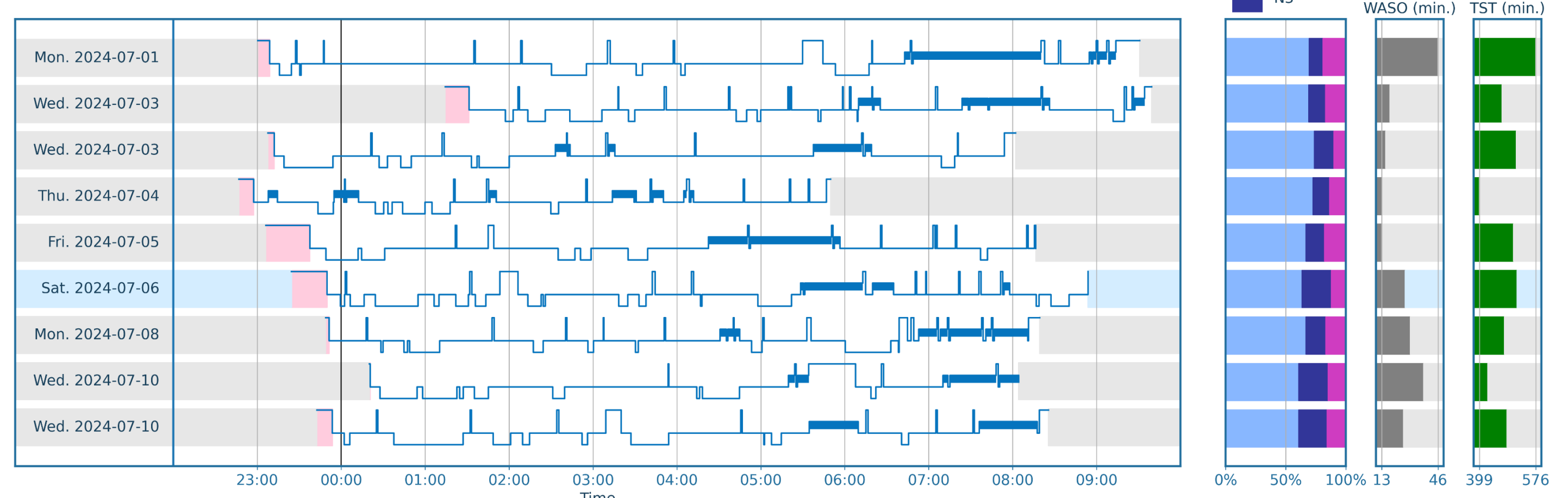Future research will focus on further validation and the application of this tool in various clinical settings.