

# Teaching NeuroImage: Non-24-Hour Sleep-Wake Rhythm Disorder

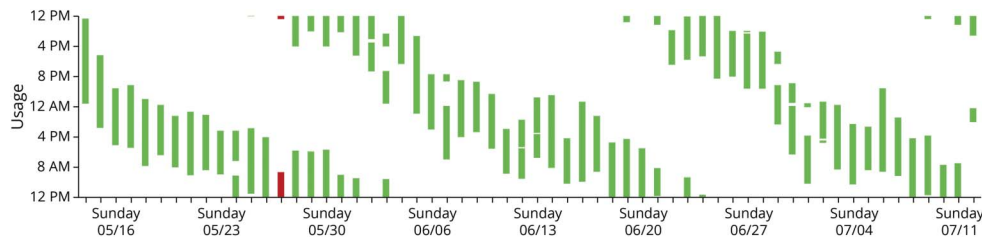
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**Figure** CPAP Adherence Report Demonstrating a Sleep Period That Begins Later Each Day



Each green bar represents 1 day of CPAP use with the top representing CPAP initiation, approximating sleep onset, and the bottom representing CPAP discontinuation, approximating end of sleep. The image produces a unique diagonal band appearance.

A 77-year-old woman with obstructive sleep apnea reported a lifelong difficulty with periods of severe nocturnal insomnia and daytime sleepiness. Wrist actigraphy, the diagnostic method of choice for circadian rhythm disorders, was not covered by insurance. A review of her CPAP data (Figure) demonstrated progressively later bedtimes with a period of greater than 24 hours, revealing the diagnosis of non-24-hour sleep-wake rhythm disorder. While common in unsighted individuals, non-24-hour sleep-wake rhythm disorder can occur in sighted people,<sup>1,2</sup> as was the case here. For patients on PAP therapy, adherence data can provide evidence of circadian rhythm disorders.

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## Disclosure

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## Appendix Authors

| Name                       | Location   | Contribution   |
|----------------------------|--|--|
| <b>Alan R. Tesson, MD</b>  | Department of Neurology, Duke University, Durham, NC | Drafting/revision of the manuscript for content, including medical writing for content, and analysis or interpretation of data |
| <b>Mir Mustafa Ali, MD</b> | Department of Neurology, Duke University, Durham, NC | Drafting/revision of the manuscript for content, including medical writing for content, and analysis or interpretation of data |

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## Appendix (continued)

| Name                             | Location   | Contribution  |
|----------------------------------|--|---|
| <b>Andrew Robert Spector, MD</b> | Department of Neurology, Duke University, Durham, NC | Drafting/revision of the manuscript for content, including medical writing for content, and study concept or design |

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2. Hayakawa T, Uchiyama M, Kamei Y, et al. Clinical analyses of sighted patients with non-24-hour sleep-wake syndrome: a study of 57 consecutively diagnosed cases. *Sleep*. 2005;28(8):945-952.

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