

# Insomnia Research Is Coming of Age

Commentary on Carney et al. The consensus sleep diary: standardizing prospective sleep self-monitoring. *SLEEP* 2012;35:287-302.

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Sleep diaries have been an integral part of the assessment of insomnia (and other sleep disorders) for research and/or clinical purposes for several decades now. Sleep diaries are easy to apply and to fill out and not difficult to evaluate for the clinician and/or researcher who is administering it. A major reason for the success of sleep diaries in the field of insomnia lies in the fact that polysomnography (PSG), in contrast to other fields of sleep medicine, never became the diagnostic gold standard for insomnia. Probably at the core of this development is the frequently replicated finding that people with insomnia, when studied in the sleep laboratory with PSG, in many cases will display relatively modest reductions in PSG-derived sleep parameters (e.g., an average reduction of total sleep time of approximately 30 minutes). On the other hand, patients' subjective estimates of sleep onset latency (SOL), wake time after sleep onset (WASO), or total sleep time (TST) may deviate markedly from not only the ratings of non-insomnia cohorts, but also the patients' own PSGs, indicating a far more marked personal experience of disturbed sleep.<sup>1</sup> Furthermore, the widespread occurrence of insomnia and its high prevalence may have precluded PSG for economic reasons as a routine procedure in the diagnostic evaluation of insomnia.

Sleep diaries have filled this diagnostic gap. They not only come at low cost but also offer the possibility to study sleep behaviour over weeks or even months. Much of the work in the field of cognitive-behavioral treatment of insomnia (CBT-I) and in the arena of hypnotic treatment<sup>2</sup> has relied and still relies on data from sleep diaries. Typically, data presentation in such studies involves diary-based weekly or bi-weekly averages of sleep variables including SOL, WASO, and TST, which are displayed graphically and compared statistically to determine whether an intervention is effective or not in comparison to placebo.

A State of the Science conference<sup>3</sup> and a consensus meeting<sup>4</sup> highlighted and confirmed the important role of sleep diaries for insomnia research and clinical practice. One major drawback, however, was the fact that practically as many versions of sleep diaries were in use as there are research groups interested in insomnia. Based on the Pittsburgh insomnia conference<sup>4</sup> held in March 10-11, 2005, an international panel of 25 insomnia experts published a consensus report on recommendations for insomnia assessment stating clearly that sleep diaries constitute an important pillar of the diagnostic process, and they serve an essential role in the quantification of intervention effects for insomnia.

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In this issue of *SLEEP*, Carney and colleagues<sup>5</sup> summarize the efforts of a workgroup founded at the Pittsburgh insomnia conference for the purpose of designing a consensus sleep diary. Their important report describes the process and efforts underlying the creation of the first standardized version of a sleep diary with the aim of providing us with a powerful and widely accepted tool. Sleep diary versions collected from all 25 conference participants revealed that 16 different versions were in use. The group then set out to analyse the different versions and extract a core and optional version of a sleep diary and also a set of evening questions by communicating by phone, by in-person meetings, by incorporating a larger group of experts, and by engaging focus groups of patients. Furthermore a lexile analysis of the final version was run to determine the specific reading grade levels of the text. Overall, the sleep diary contained in the appendix of the publication by Carney et al. is the result of a carefully guided and transparent consensual process. Hopefully, the product will be used by insomnia researchers and clinicians in the future. There is no doubt that it will decisively add to the standardization and comparability of insomnia research world-wide.

As Carney and colleagues critically point out, the work is not yet finished with the publication of the consensus diary. Important issues concerning its reliability and validity will have to be dealt with. Hopefully, the consensus diary will be used by many research groups, which will make it possible to swiftly acquire datasets that can be used to determine the psychometric quality of the diary. A next important step will be the translation of the diary into other languages in order to facilitate its use in non-English speaking countries.

## CITATION

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## DISCLOSURE STATEMENT

Dr. Riemann has indicated no financial conflicts of interest.

## REFERENCES

1. Feige B, Al-Shajlawi A, Nissen C, et al. Does REM sleep contribute to subjective wake time in primary insomnia? A comparison of polysomnographic and subjective sleep in 100 patients. *J Sleep Res* 2008;17:180-90.
2. Riemann D, Perlis ML. The treatments of chronic insomnia: a review of benzodiazepine receptor agonists and psychological and behavioural therapies. *Sleep Med Rev* 2009;13:205-14.
3. NIH, National Institutes of health state of the science conference statement. Manifestations and management of chronic insomnia in adults, June 13-15, 2005. *Sleep* 2005;28:1049-57.
4. Buysse, DJ, Ancoli-Israel, S, Edinger, JD, Lichstein, KL, Morin, CM. Recommendations for a standard research assessment of insomnia. *Sleep* 2006;29:1155-73.
5. Carney CE, Buysse DJ, Ancoli-Israel S, et al. The consensus sleep diary: standardizing prospective sleep self-monitoring. *Sleep* 2012;35:287-302.