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## Brief Report: The Temporal Relationships Between Sleep, Cortisol, and Lung Functioning in Youth with Asthma

Margaret D. Hanson, MA and Edith Chen, PhD

Department of Psychology, University of British Columbia

All correspondence concerning this article should be addressed to Margaret D. Hanson, Department of Psychology, University of British Columbia, Vancouver, Canada. E-mail: [hansonm@psych.ubc.ca](mailto:hansonm@psych.ubc.ca)

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## ▶ Abstract

**Objectives** This study tested the directionality of the association between sleep and health outcomes in youth with asthma. **Method** Thirty-eight youth with asthma (aged 9–19) completed a daily diary study on sleep, asthma symptoms, peak expiratory flow (PEF) measures, and salivary cortisol samples. **Results** Greater quantity of sleep predicted lower PEF% [ $\beta(32) = -.33, p = .02$ ], and lower daily cortisol output [ $\beta(33) = -.31, p = .07$ ] the following day. Additionally, poorer self-reported sleep quality predicted more severe symptoms the next day [ $\beta(33) = .27, p = .05$ ]. In contrast, PEF%, cortisol, and asthma symptoms did not significantly predict self-reported sleep quantity or quality the next


night. **Conclusions** Results suggest that sleep may affect subsequent health outcomes, rather than asthma impacting subsequent sleep, indicating the potential benefits of targeting sleep behaviors in youth with asthma.

**Key words:** asthma; cortisol; sleep; youth.

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