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Circadian rhythm of exhaled biomarkers in health and asthma

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Exhaled volatile chemicals and fractional exhaled nitric oxide oscillate over 24 h, highlighting the importance of time of day in diagnostic sampling and suggesting potential applications for chronotyping. <http://bit.ly/2YZGXbH>

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To the Editor:

Circadian rhythms regulate and reflect many biological processes. Investigating circadian variability in biomarkers is important since the diurnal variability of any potential biomarker must be quantified and controlled in research and clinical practice. Time of day is particularly important in inflammatory diseases such as asthma, which are linked to exaggerated circadian rhythms. Airway narrowing in asthma is greatest at around 04:00 h and coincides with an increase in symptoms; asthma deaths are also more likely to occur at this time [1, 2]. Likewise eosinophilic airway inflammation peaks in the morning, with clinical implications for biomarker-guided steroid therapy [3].