

# bioRHYTHM

## Sampling around the clock

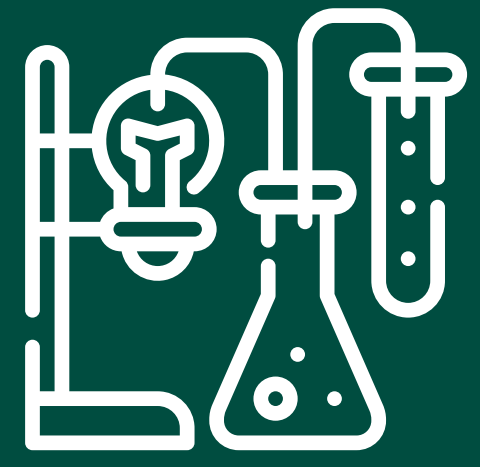
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## Rhythms characterise the metabolism of all living things

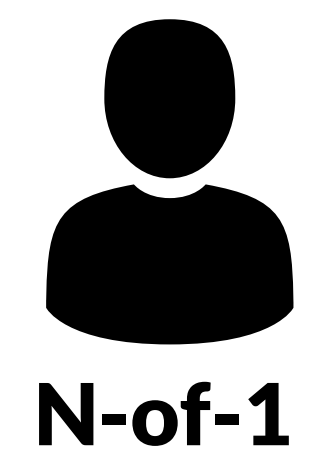


This creates a dynamic environment coordinated to maintain healthy homeostasis. Single time point measurements of single analytes therefore cannot provide complete information about the state of an organism.



We will use wearable technology 'at home' to explore relationships between endogenous oscillators (tissue free melatonin and cortisol) and rhythmic physiological outputs (glucose, sleep, activity) during normal day-to-day life.

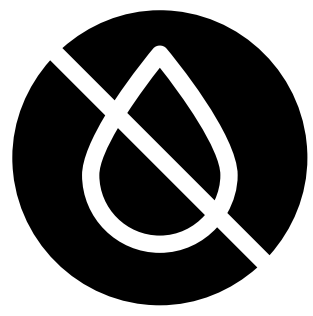
### Design and hypotheses



N-of-1



At home

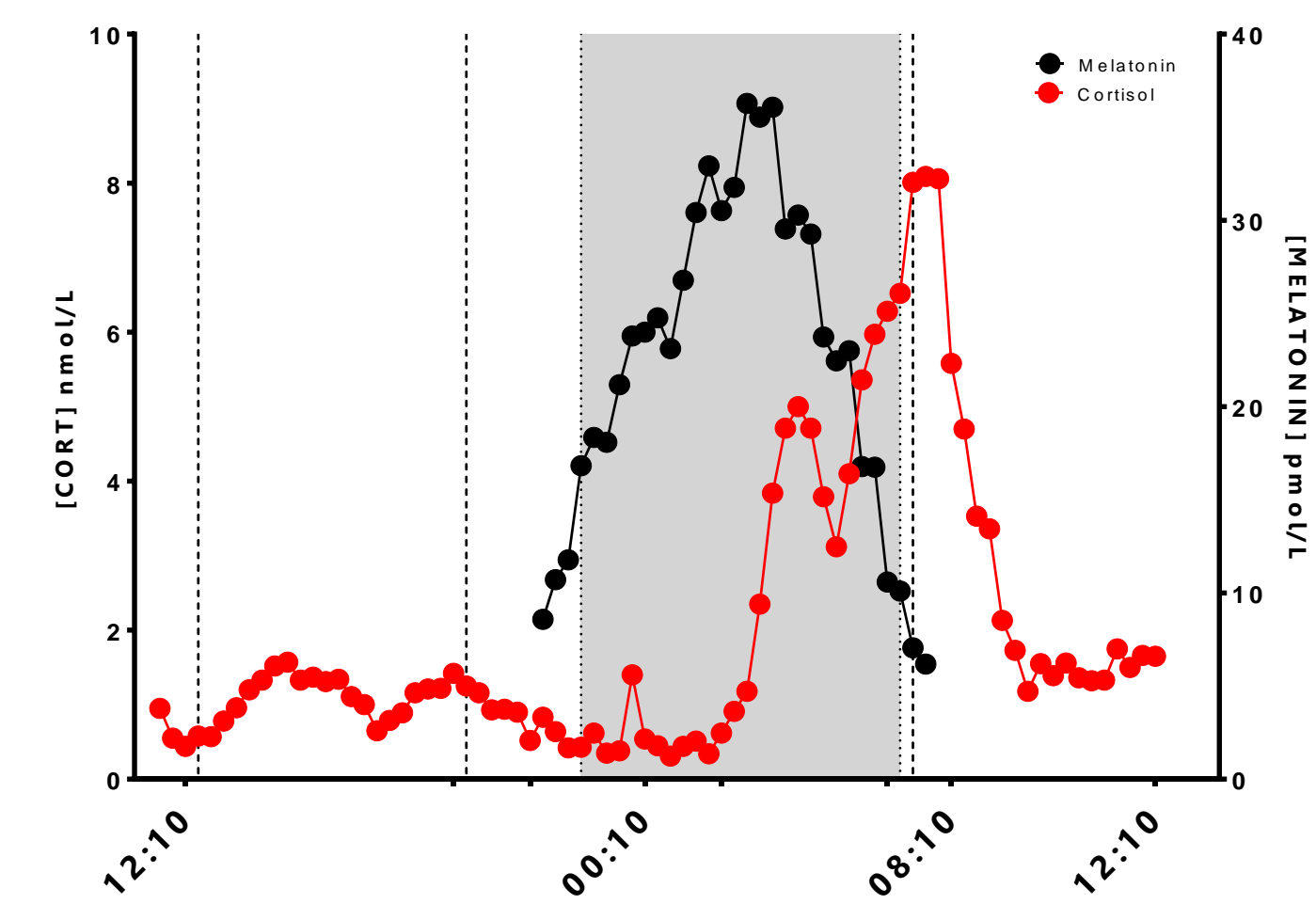


No blood

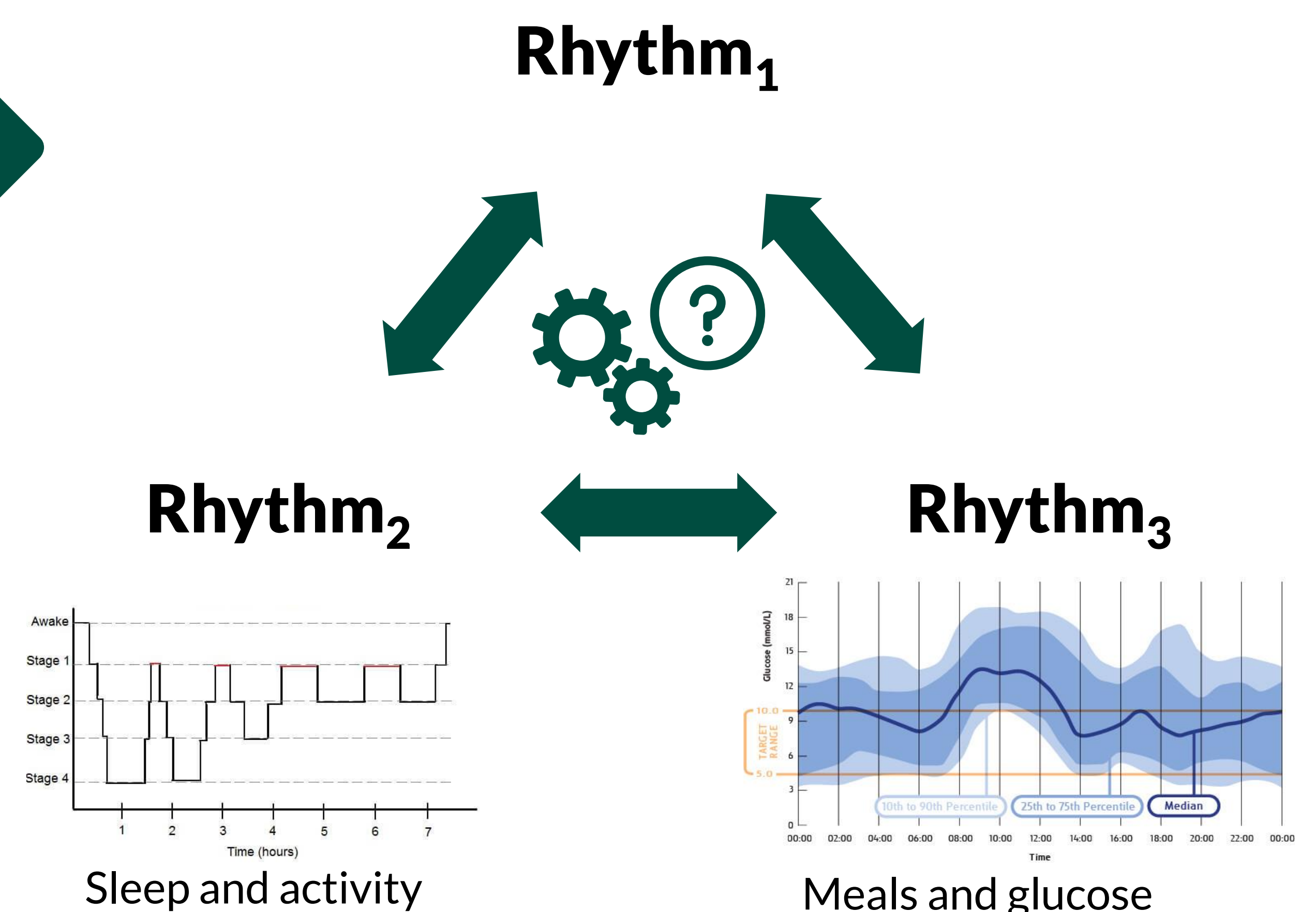
- Hormone rhythms will be detected by microdialysis
- Tissue free melatonin will be suppressed by night-time blue light
- Wearable devices will provide rhythmic information about activity, sleep, and glucose in relation to time of day, meals, and hormone levels



### Methods and analysis



High frequency free cortisol + melatonin by U-RHYTHM ambulatory microdialysis



<http://bit.ly/bioRHYTHM>



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