

# CLAHRCBITE

Brokering innovation through evidence

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## Movement behaviours and associations with daily glucose levels



### Results

Being more physically active was associated with lower daily glucose variability measures in those with low fitness.

### Who needs to know?

- Clinicians and other healthcare professionals
- Researchers

### **What did we do:**

This study monitored 29 individuals over 14 days using activity and interstitial flash glucose devices. Daily minutes spent sedentary, in light activity, and moderate to vigorous physical activity (MVPA) were associated with daily mean glucose, standard deviation of glucose (whether data points were close or far away from the mean), and mean amplitude of glycemic excursions (MAGE) (the average of glucose deviations for a given day).

### **What we found and what does this mean:**

Accounting for age, sex, activity monitor wear time, and percentage body fat in lower fitness individuals, a greater amount of sedentary time per day was associated with a higher mean, standard deviation and MAGE of daily glucose. Conversely, being more physically active was associated with lower glucose variability, representing the acute physiological benefits of being more physically active.

### **What next:**

This research has revealed an association between daily minutes of behaviour and glucose variability measures. The next step would be to identify within day occurrences of this relationship to act as educational moments. This in turn could help people link the acute physiological benefits of being more physically active.

### **Evidence:**

Kingsnorth AP, Whelan ME, Sanders JP, Sherar LB, Esliger DW. Using Digital Health Technologies to Understand the Association Between Movement Behaviors and Interstitial Glucose: Exploratory Analysis JMIR Mhealth Uhealth 2018;6(5):e114  
DOI: 10.2196/mhealth.9471  
PMID: 29724703  
PMCID: 5958285

## **What is NIHR CLAHRC EM?**

NIHR Collaborations for Leadership in Applied Health Research and Care (CLAHRCs) are collaborations between the NHS, universities and local organisations. Our goals are to conduct applied health research across the East Midlands and translate our research findings into improved outcomes for the public.

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