

CLAHRCBITE

Brokering innovation through evidence

Fitness moderates glycaemic responses to sitting (and light activity breaks)



Results

Those with lower fitness have worse glycaemic profiles while sitting and subsequently benefit more from breaking up their sitting time.

Who needs to know?

- Patients
- Public

What did we do:

In summary, 36 healthy volunteers were recruited from the general public.

Each participant underwent an exercise 'fitness' test followed by two experimental treatment conditions:

1. Prolonged sitting
2. Prolonged sitting with light walking breaks every 30 min.

Standardised breakfast and lunch meals were provided and blood samples were taken at multiple time-points following each meal. This allowed researchers to quantify the post-meal blood glucose spike and compare between treatment conditions.

What we found and what does this mean:

Those with higher fitness demonstrate lower 'more favourable' post-meal blood glucose levels while sitting, whereas those with lower fitness are required to break up their sitting with light physical activity breaks in order to experience healthier post-meal glycaemic responses.

Reducing exaggerated rises in blood glucose following a meal is highly important given

their association with the development of Type 2 Diabetes, Cardiovascular Disease, Obesity and atherosclerosis.

What next:

Recommendations and interventions aimed at breaking up prolonged bouts of sitting would have greater benefit if aimed at those with lower fitness (which represents the vast majority of society). Those with high fitness may be better served by interventions aimed at maintaining fitness across the lifespan.

Those with 'unavoidable' sedentary occupations should be encouraged to build fitness through exercise engagement to protect themselves from unhealthy glycaemic responses while sitting.

Evidence:

For further details regarding this research, please see the following publication:

McCarthy, M., Edwardson, C. L., Davies, M. J., Henson, J., Bodicoat, D. H., Khunti, K., Dunstan, DW., James, JA. and Yates, T., 2017. Fitness Moderates Glycemic Responses to Sitting and Light Activity Breaks. *Medicine and Science in Sports and Exercise*. 49(11), 2216 - 2222.

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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