**TITLE**

**Summary**

**Background**:

**Methods**:

**Results**:

**Conclusions:**

[250 words]

**Keywords**

**INTRODUCTION**

**METHODS**

**Study Sample** – As part of the UK Biobank project biomedical information pertaining to 500,000 people were collected. This data included details regarding environment, behaviour, and in-depth genetic information. Of these individuals accelerometry data was collected for over 100,000 of them. The response rate was 44.8%, and the median wear time of each device was 6.9 days. (Doherty, 2017)

**Confounding Factors**

**Accelerometry –** The accelerometry data was collected by the use of Axivity AX3 wrist-worn triaxial accelerometers. The raw accelerometry data was then resampled across all three axes at 100Hz where it was then calibrated to local gravity using the methods described by van Hees. Magnitude data was then extracted from the raw data by using the Euclidean norm, and then signal processing methods were used to reduce gravitational and machine noise. Finally the data was epoched into windows of 5 seconds.

**Chronotype**

**Urbanisation**

**Statistical Analysis –** As part of the statistical analysis of the data several non-parametric quantities were calculated from the data including interdaily stability, intradaily variability and relative amplitude. In addition to this periodograms were generated to allow quantitative analysis of whether the data displayed circadian rhythms.

**RESULTS**

(Table 1 here)

(Figure 1 here)

(Figure 2 here)

(Figure 3 here)

(Table 2 here)

**DISCUSSION**

**Implications**

**Strengths and Limitations**

**Conclusions**

**ACKNOWLEDGEMENTS**

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**AUTHORS CONTRIBUTION**

**Supplementary Material**

S1 Tables

S2 Supplementary Methods

**REFERENCES**