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Effects of prolonged sitting and its interruptions on chronic low-grade inflammation on adults: A systematic review

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Chronic systemic inflammation; sedentary behaviour; interleukin; C-reactive protein; cytokines; prolonged sitting; interrupted sitting.

Background. Chronic systemic inflammation (CSI) is linked with pathogenesis of chronic disease risk including type 2 diabetes, obesity, cardiovascular diseases and cancer. However, there is dearth of evidence to inform the stakeholders about the pooled effect of excessive sedentary behaviour or its interruptions, which may alter the CSI in adults. Our systematic review will aim to find the evidence behind the sedentary behaviour interventions on CSI. Methods. Five databases (Scopus, PubMed, Web of Science, Cochrane Central Register of Controlled Trials, Ovid Medline and CINAHL) will be searched for studies examining the influence of excessive sitting or its interruptions on CSI markers (Interleukin; C-Reactive Protein, Cytokines), its dose, gender differences and context specific settings. Studies that included healthy working, adult population will be examined by two independent reviewers. Results. The study quality will be assessed by QualSyst tool and Cochrane Risk of Bias tools using Revman 5.4. The mean effect size of the sitting interventions on CSI markers will be presented after exploring for potential publication bias. Appropriate visualisation of the effects of the outcome measures of interest will be assessed through Forrest plots to assess the direction, consistency and size of the intervention. Conclusions. Potential associations between excessive sitting and the effects of interruption interventions on CSI will be explored after assessing the quality of the studies.