



# FOCUS ON RESEARCH

## **Excessive Sitting, in Prolonged Bouts, in Children and Adolescents: Developing a Sound Evidence Base for Future Interventions**

**Researchers** Prof JJ Reilly (PI), Prof AJ Adamson, Dr KN Parkinson, Prof MS Pearce, Dr L Basterfield (Grantholders); Dr XC Janssen, Mrs JK Reilly (Researchers)

**Aims** 'Sitting behaviour' (both the time spent sitting and the number of breaks in sitting time) has an important influence on risk of developing diabetes, heart disease and stroke, and some cancers, in adults. There is almost no research evidence on how sitting behaviour develops in children and adolescents.

This study aimed to answer the following research questions: how much time do children and adolescents normally spend sitting?; to what extent is their sitting time broken up?; how does sitting behaviour change with age between 7-15 years?; what factors affect changes in sitting behaviour?; is sitting behaviour likely to increase risk of obesity in children and adolescents, and is this just due to lack of exercise or something related to sitting itself?

**Project Outline & Methodology** Sitting behaviour was measured in 381 study participants over a week at age 15-16 years. These measures were combined with measures made in the same study participants when they were aged 7, 9, and 12. Changes in their body fatness were also measured over the same period.

We identified what normal sitting behaviour was in this sample, how sitting behaviour changed over the 8 years, why sitting behaviour changed, and whether changes in sitting behaviour across the eight years influenced changes in body fatness.

### **Key Results**

On average, children spent just over half of their waking time sitting at age 7, and this had increased to three-quarters of their waking time by age 15, an increase of about 24 minutes per day in sitting for every year. These levels are

similar to adults, who spend about 60-70% of their waking time seated. Sitting also became more prolonged, with fewer breaks in sitting as participants got older. Sitting behaviour changes occurred in all types of study participants, but were slightly worse in girls than boys.

Study participants with the greatest increases in sitting time with age also had the greatest increases in body fatness with age.

**Conclusions** Sitting behaviour gives cause for concern even by age 7, and gets steadily worse during childhood and adolescence.

**What does this study add to the field?** This is the first evidence on changes in sitting behaviour across childhood and adolescence.

This is also the first evidence that sitting behaviour is harmful during childhood and adolescence (not just in adulthood).

**Implications for Practice or Policy** This study strengthens the case for sitting behaviour as a new target of public health policy and surveillance (monitoring) in Scotland, and suggests that efforts to change sitting behaviour should begin in childhood.

**Where to next?** The study should help lead to research and policy interventions to change sitting behaviour. It should also help inform the planning of these interventions, by providing data on normal sitting behaviour of children and adolescents.

**Further details from:** Prof John J Reilly (john.j.reilly@strath.ac.uk).