Each hour spent watching TV daily increases the risk of developing diabetes by 3.4 percent

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Each hour spent watching TV daily increases the risk of developing diabetes by 3.4%, concludes a study published in *Diabetologia* (the journal of the European Association for the Study of Diabetes). The study, on the effects of sedentary or 'sitting' time on diabetes risk, is by Dr Bonny Rockette-Wagner (lead author) and Dr Andrea Kriska (senior author) from the University of Pittsburgh, PA, USA, and colleagues.

In this new research, the authors used data from participants in the

Diabetes Prevention Program (DPP) study (published in 2002 and funded by the National Institute of Digestive and Diabetes and Kidney Diseases [NIDDK] section of the US National Institutes of Health [NIH]). That study enrolled 3,234 overweight US adults (1996-1999) of at least 25 years of age with the goal of delaying or preventing type 2 diabetes in high risk individuals with either a metformin drug or lifestyle intervention. Previous work has already suggested that the lifestyle intervention was successful at reducing the incidence of diabetes and achieving its goals of 7% weight loss and 150 minutes per week of moderate intensity activity (such as brisk walking).

What is not known is whether this lifestyle intervention effort had any impact on time spent sitting (being sedentary). Previous results suggest that it is unclear if interventions focusing on increasing physical activity also reduce time spent sitting. This new study examined whether the DPP lifestyle intervention, which was shown to be effective at increasing physical activity, also decreased self-reported sitting time. The effect of sedentary behaviour on diabetes development was also examined.

Prior to the intervention, total time spent watching TV was not found to be significantly different between the placebo, metformin, and lifestyle groups of DPP (around 140 minutes per day in all three groups). The daily total of time spent sitting at work plus TV time was also not significantly different across groups (between 410 and 423 minutes per day) when the study began.

For the lifestyle participants, a reduction in reported TV watching time throughout follow-up was observed for all participant subgroups including age, sex, work status, race/ethnicity, obesity status, or those achieving the weight and/or activity goal(s). Similarly, the lifestyle group had the greatest reduction in mean time spent in TV watching time plus time sitting at work during follow-up. The combined average reduction in TV watching and time sitting at work was 9, 6, and 37 min/day for the

placebo, metformin and lifestyle groups respectively.

The authors then investigated the impact of sedentary behaviour over time on diabetes incidence. For participants in all treatment arms, the risk of developing diabetes increased approximately 3.4% for each hour spent watching TV after adjustment for age, sex, treatment arm and time-dependent leisure physical activity. This association was reduced when time-dependent weight was added to the model (to a 2.1% increased risk of developing diabetes per hour of watching TV, which was not statistically significant) suggesting that subsequent changes in body weight may account for some of the relationship between sitting behaviour changes and diabetes development.

"These findings are particularly noteworthy because a decrease in sitting occurred despite the absence of programme goals aimed at reducing sitting," said senior author, Dr Kriska. "It is likely that a lifestyle intervention programme that incorporates a specific goal of decreasing sitting time would result in greater changes in sitting and likely more health improvements than are demonstrated here. Finally, these results should inform future intervention efforts that already focus on goals of increasing activity and reducing weight to also consider emphasising sitting less."

Provided by Diabetologia

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