

Table B.2.d. Type 2 diabetes incidence: Association between sedentary behaviour and Type 2 diabetes incidence among adults (in alphabetical order by author)

[See the Supplementary materials](#) for description of evidence of US PAGAC (24) by outcome

Systematic review evidence Review credibility	No. of studies/ Study design No. of participants	Quality Assessment					Description of evidence Summary of findings	Certainty
		Risk of bias	Inconsistency	Indirectness †	Imprecision	Other		
Ahmad 2017 (1) Moderate	1 prospective cohort, 1 case-control, 2 cross-sectional N=158,964	No serious risk of bias	No serious inconsistency	Serious indirectness	Serious imprecision	None	All four studies suggested that greater sedentary time is associated with higher prevalence of diabetes. The one prospective cohort study (n=1,376) found an 84% increased risk for developing diabetes in the highest quartile of TV and sitting time. One cross-sectional study (n=617) found that the odds of diabetes was 43% (OR = 1.43 [95% CI, 0.72 to 2.82]) greater in those sitting ≥ 185 min/day vs. < 185 min/day and were over four times greater (OR = 4.23 [95% CI 2.13 to 8.41]) in those watching ≥ 85 min/day or TV compared to those with < 85 min/day. One cross-sectional (n=156,316) and one case-control study (n=655) reported higher proportions of diabetes among those watching TV almost every day (vs. those watching TV once a week or less) and those in sedentary activities longer than 215 min/day (vs. < 70 min/day), respectively.	VERY LOW ^a
Bailey 2019 (3) Moderate	5 prospective cohort studies N=4,575	No serious risk of bias	No serious inconsistency	Serious indirectness	No serious imprecision	None	Mean age of sample ranged from 44 to 64 years and mean follow-up ranged from 2.7 to 13 years. All studies used a single-item self-report measure of total daily sitting time; cutpoints for categories of sitting time were not consistent across studies (range for highest sitting category was ≥ 7.1 hrs to 16 hrs/day and range for the lowest sitting category was < 4 hrs to < 8 hrs/day). All studies but one adjusted for physical activity. Higher total daily sitting time was associated with significantly increased risk of diabetes when not adjusted for PA levels (HR = 1.13 [95% CI, 1.04 to 1.22]) and with adjustment for PA (HR = 1.11 [95% CI, 1.01 to 1.19]).	MODERATE ^b
Patterson 2018 (19) Low	11 prospective cohort studies N=400,292	No serious risk of bias	No serious inconsistency	Serious indirectness	No serious imprecision	None	Mean follow-up was 8.9 years (range, 2 to 31 years). Most studies assessed sedentary behaviour via self-report, 3 included objective measurement via accelerometer. Categories used by the study authors to define levels of sedentary behaviour varied considerably across studies. Increased total sitting time and TV viewing (linear RR for a 1 hr/day increase in sedentary behaviour) was associated with an increased risk of diabetes (total sitting time: RR=1.10 [95% CI, 1.00 to 1.01], 4 studies and TV viewing time: RR=1.09 [95% CI, 1.07 to 1.12], 6 studies) after adjustment for level of PA, but there was no evidence of a significant linear association.	MODERATE ^b

Abbreviations: CI = confidence interval; hrs = hours; min = minutes; NR = not reported; OR = odds ratio; PA = physical activity; RR = risk ratio; ST = sedentary time; TV = television

† Serious indirectness indicates measurement of intermediate/indirect outcomes or heterogeneity in exposures and comparisons assessed; certainty of evidence was not always downgraded for indirectness if it was not judged to impact the certainty in the findings for the outcome evaluated in the review

^a Certainty of evidence downgraded given serious indirectness in measures of sedentary behaviour and serious imprecision in measures of effects

^b Certainty of evidence upgraded given no significant study limitations