Table B.1.e. Type 2 diabetes incidence: Association between physical activity and Type 2 diabetes incidence among adults
See the Supplementary materials for description of evidence of US PAGAC 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		
Boyer 2019 *(12)* Low	27 prospective cohort studies N=1,150, 574	No serious risk of bias	Serious inconsistency	Serious indirectness	Serious imprecision	None	Studies examined the relationship between PA and type 2 diabetes in specific racial/ethnicity groups. Duration of follow-up ranged from 2 to 28 years. Method of diabetes ascertainment ranged considerably including medical records, reports of medication or insulin use, OGT tests, FBG, or self-report. A reduced risk of **developing diabetes** was found when comparing the **highest vs. lowest levels of PA** among non-Hispanic whites (RR = 0.71 [95% CI 0.60 to 0.85], 8 studies, n=238,719), Asians (RR = 0.76 [95% CI 0.67 to 0.85], 16 studies, n=928,319), Hispanics (RR = 0.74 [95% CI, 0.64 to 0.84], 3 studies, n=10,817), and American Indians (RR = 0.73 [95% CI 0.60 to 0.88], 4 studies, n=7,022). The effect among non-Hispanic blacks was not statistically significant (RR = 0.91 [95% CI 0.76 to 1.08], 5 studies, n=30,452).	VERY LOW[a]
Dinu 2019 *(19)* Low	4 prospective cohort studies N=102,077	Serious risk of bias	Serious inconsistency	Serious indirectness	No serious imprecision	None	All studies evaluated the effects of mixed mode (cycling and/or walking) active commuting on health outcomes. Exposure levels of active commuting were variably reported as minutes spent walking or cycling for transportation per day, as dichotomized variables (yes or no), or as METs with the reference category as no active commuting in most studies. Follow-up ranged from 4 to 25 years. There was no significant association between **active commuting** and **diabetes incidence** compared with those participating in no active commuting (RR = 0.0.78 [95% CI 0.60 to 1.03], 4 studies).	VERY LOW[b]
Paudel 2019 *(54)* Low	3 cross sectional studies N=14,902	Serious risk of bias	No serious inconsistency	Serious indirectness	Serious imprecision	None	Examination of the association between PA and incidence of T2D among South Asian adults. All 3 studies found no association between total PA and T2D.	VERY LOW[c]

Abbreviations: CI = confidence interval; FBG = fasting blood glucose; OGT = oral glucose tolerance; PA = physical activity; NR = not reported; RR = risk ratio; T2D = type 2 diabetes

† 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 inconsistency in direction of effects, serious indirectness in comparisons, and serious imprecision in pooled estimates of effects
[b] Certainty of evidence downgraded given serious risk of bias (not appropriately adjusting for confounding), serious inconsistency in effects between studies and statistical heterogeneity and indirectness in comparisons of exposures
[c] Certainty of evidence rated as very low according to authors given serious risk of bias and serious imprecision. Serious indirectness is also present given variability in comparisons