Title: 24-h movement guidelines during middle adolescence and their association with glucose outcomes and type 2 diabetes mellitus in adulthood

Antonio García-Hermoso[a,*], José Francisco López-Gil[b], Yasmin Ezzatvar[c], Robinson Ramírez-Vélez[a], Mikel Izquierdo[a]

[a] Navarrabiomed, Hospital Universitario de Navarra (HUN), Universidad Pública de Navarra (UPNA), IdiSNA, Pamplona 31008, Spain

[b] Health and Social Research Center, Universidad de Castilla-La Mancha, Cuenca 16007, Spain

[c] Department of Nursing, Universitat de València, Valencia 46010, Spain

* **Corresponding author.**

  Email: antonio.garciah@unavarra.es

Running head: Adolescent movements and diabetes at adulthood

Supplementary Table 1. Descriptive characteristics of the analyzed study sample at Waves I–II (1994–1996) (n = 12,355)

Characteristic	n (%) or mean $\pm$ SD
Sex (women)	6443 (52.1)
Age(year)	15.37 ±1.38
Body mass index(kg/m^2)	26.36 ±5.94
Race category	
White	8253 (68.0)
Black	2802 (23.1)
Native American	239 (2.0)
Asian	838 (6.9)
Guideline component met	
Physical activity	2513 (20.3)
Screen time	3218 (26.0)
Sleep duration	4479 (36.3)
Physical activity and screen time	637 (5.2)
Physical activity and sleep duration	1044 (8.5)
Screen time and sleep duration	1110 (9.0)
None	4673 (37.8)
All 3 guidelines	263 (2.1)

Supplementary Table 2. Descriptive characteristics of the analyzed study sample at follow-up (n (%) or mean $\pm$ SD)

	Wave IV (2008–2009) ($n = 8913$)	Wave V (2016–2017) ($n = 3457$)
Sex (women)	4917 (55.8)	2068 (60.10)
Age (year)	28.34 $\pm$ 1.35	38.02 $\pm$ 1.80
Body mass index (kg/m^2)	29.11 $\pm$ 7.70	30.53 $\pm$ 7.82
Waist circumference (cm)	97.60 $\pm$ 17.52	97.37 $\pm$ 19.03
Highest education achieved		
High school or less	2054 (23.0)	584 (16.9)
Vocational or some college	3956 (44.4)	1431 (41.5)
College degree or higher	2903 (32.6)	1432 (41.5)
Alcohol consumption		
Former drinker	2753 (38.4)	1516 (42.3)
Smoking status		
Current user	3248 (36.7)	858 (24.0)
Hypertension		
Systolic blood pressure (mmHg)	124.12 $\pm$ 13.3	122.09 $\pm$ 14.1
Diastolic blood pressure, (mmHg)	78.68 $\pm$ 10.0	79.18 $\pm$ 10.4
Hypertension stage I and II	1514 (17.4)	1660 (48.2)
C-reactive protein (mg/dL)	4.89 $\pm$ 8.5	4.01 $\pm$ 6.3
Glucose homeostasis		
Fasting glucose (mg/dL)	106.65 $\pm$ 29.4	94.11 $\pm$ 31.9
Glycated hemoglobin	5.59 (0.7)	5.35 (0.9)
Fasting glucose $\geq$ 126 mg/dL	686 (7.7)	221 (6.4)
Non-fasting glucose $\geq$ 200 mg/dL	88 (0.9)	41 (1.2)
Glycated hemoglobin $\geq$ 6.5%	401 (4.5)	79 (2.3)
Self-reported history of diabetes except during pregnancy	134 (1.5)	124 (3.6)
Anti-diabetic medication-use	133 (1.4)	79 (2.3)
Joint classification of diabetes[a]	598 (6.7)	274 (7.9)

[a] Respondents were flagged as having evidence of diabetes if they met at least one of the following criteria: fasting glucose $\geq$ 126 mg/dL, non-fasting glucose $\geq$ 200 mg/dL, glycated hemoglobin $\geq$ 6.5%, self-reported history of diabetes except during pregnancy, or anti-diabetic medication use in the previous 4 weeks.