

Supplementary Online Content

Laird E, Rasmussen CL, Kenny RA, Herring MP. Physical activity dose and depression in a cohort of older adults in The Irish Longitudinal Study on Ageing. *JAMA Netw Open*. 2023;6(7):e2322489. doi:10.1001/jamanetworkopen.2023.22489

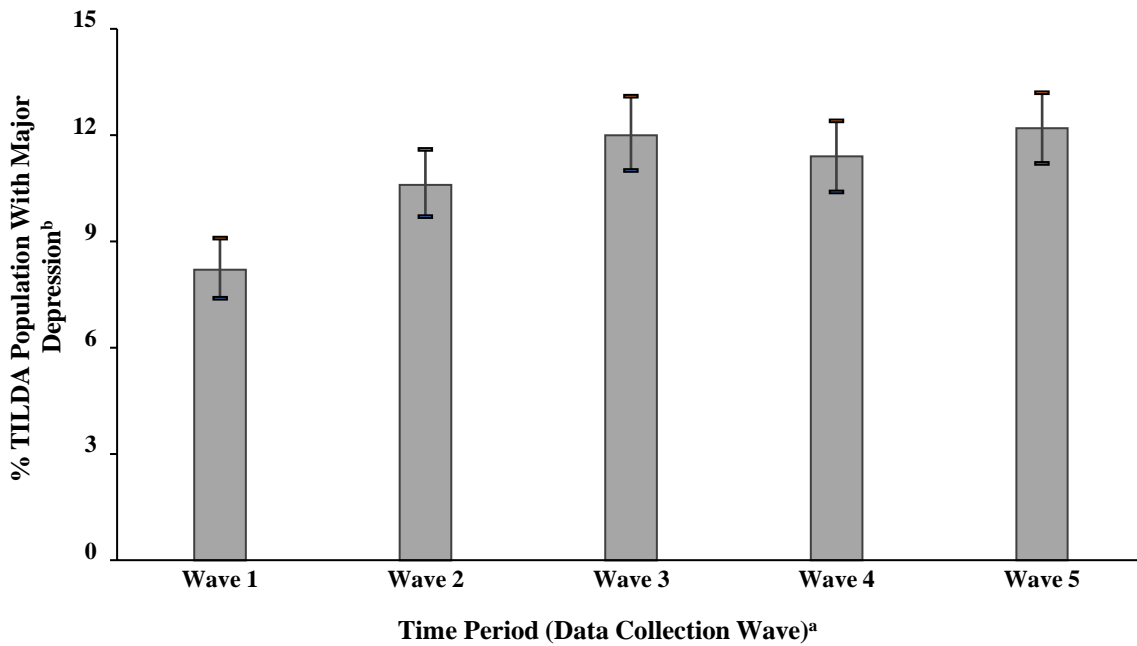
eFigure. The Major Depression Status of TILDA Participants (n = 4016) Across Data Collection Waves 1-5

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This supplementary material has been provided by the authors to give readers additional information about their work.



eFigure. The Major Depression Status Of TILDA Participants (n = 4016) Across Data Collection Waves 1-5.

^aValues at each Wave indicate mean percentage (%) with 95% Confidence Intervals

^bAt all Waves, depressive symptoms were measured using the short-form of Centre for Epidemiological Studies Depression (CES-D), with a score of ≥ 9 used to define clinically significant depression status. From Waves 2-5, the Composite International Diagnostic Interview quantified diagnosis of a Major Depressive Episode during the past 12 months; Major Depression was classified as either a CES-D ≥ 9 (at any Wave) and/or a diagnosis of Major Depressive Episode (Waves 2-5).

eTable 1. Adjusted Incident Rate Ratios For Associations Of All Included Variables With Depressive Symptoms And Adjusted Odds Ratios For Associations With Major Depression Status

Variables	Depressive symptoms			Major Depression status		
	Continuous model	IRR (95% CI)		OR (95% CI)		
		3 dose PA model	5 dose PA model	Continuous model	3 dose PA model	5 dose PA model
Age, y	1.00 (1.00-1.00)	1.00 (1.00-1.00)	1.00 (1.00-1.00)	0.98 (0.96-0.99)	0.97 (0.96-0.99)	0.97 (0.96-0.98)
Sex ^a						
Female	1.31 (1.24-1.39)	1.31 (1.24-1.39)	1.30 (1.23-1.38)	1.90 (1.57-2.30)	1.87 (1.55-2.26)	1.85 (1.53-2.24)
Education level ^a						
Secondary	0.88 (0.81-0.94)	0.88 (0.82-0.95)	0.88 (0.82-0.95)	0.73 (0.57-0.93)	0.74 (0.58-0.94)	0.74 (0.58-0.94)
Tertiary	0.86 (0.80-0.92)	0.87 (0.81-0.94)	0.87 (0.81-0.94)	0.59 (0.46-0.75)	0.61 (0.47-0.78)	0.61 (0.48-0.78)
Lifestyle factors ^a						
Current smoker	1.12 (1.04-1.20)	1.11 (1.04-1.19)	1.11 (1.04-1.19)	1.97 (1.56-2.50)	1.97 (1.56-2.49)	1.96 (1.55-2.48)
Alcohol issue	1.19 (1.13-1.26)	1.19 (1.13-1.26)	1.20 (1.13-1.27)	1.40 (1.12-1.74)	1.41 (1.13-1.76)	1.41 (1.13-1.76)
Anti-depressant use	1.34 (1.25-1.43)	1.34 (1.26-1.43)	1.34 (1.26-1.43)	5.38 (4.31-6.73)	5.37 (4.30-6.71)	5.36 (4.29-6.70)
Time period ^a						
Wave 2	0.92 (0.88-0.96)	0.92 (0.88-0.96)	0.92 (0.88-0.97)	1.45 (1.19-1.77)	1.48 (1.21-1.80)	1.49 (1.22-1.81)
Wave 3	1.15 (1.09-1.20)	1.14 (1.09-1.19)	1.14 (1.09-1.19)	1.75 (1.43-2.13)	1.72 (1.41-2.11)	1.72 (1.41-2.11)
Wave 4	1.15 (1.09-1.20)	1.14 (1.09-1.19)	1.14 (1.09-1.20)	1.81 (1.47-2.23)	1.80 (1.47-2.22)	1.81 (1.47-2.23)
Wave 5	1.19 (1.13-1.25)	1.18 (1.12-1.24)	1.18 (1.12-1.24)	2.03 (1.63-2.53)	2.03 (1.63-2.52)	2.03 (1.63-2.53)
PA dose (MET.min.week ⁻¹)						
Continuous, min/wk	1.00 (1.00-1.00)	-	-	1.00 (1.00-1.00)	-	-
3 dose PA						
Low PA	-	[Reference]	-	-	[Reference]	-
Moderate PA	-	0.95 (0.90-1.00)	-	-	0.58 (0.45-0.75)	-
High PA	-	0.81 (0.78-0.84)	-	-	0.56 (0.48-0.65)	-
5 dose PA						
0	-	-	[Reference]	-	-	[Reference]
1-<600	-	-	0.94 (0.89-0.99)	-	-	0.86 (0.69-1.06)
600-<1,200	-	-	0.93 (0.88-0.99)	-	-	0.56 (0.43-0.73)
1200-<2400	-	-	0.84 (0.80-0.89)	-	-	0.59 (0.47-0.74)

eTable 2. Adjusted Incident Rate Ratios For Associations Of All Included Variables With Depressive Symptoms In Those With And Without Chronic Disease

Variables	With chronic Disease (MET.min.week ⁻¹) IRR (95% CI)			Without chronic Disease (MET.min.week ⁻¹) IRR (95% CI)		
	Continuous model	3 dose PA model	5 dose PA model	Continuous model	3 dose PA model	5 dose PA model
Age, y	1.00 (0.99-1.00)	1.00 (0.99-1.00)	1.00 (0.99-1.00)	0.99 (0.98-1.00)	0.99 (0.99-1.00)	0.99 (0.98-1.00)
Sex*						
Female	1.29 (1.22-1.37)	1.29 (1.22-1.37)	1.29 (1.21-1.36)	1.25 (1.11-1.41)	1.26 (1.12-1.43)	1.26 (1.11-1.42)
Education level*						
Secondary	0.89 (0.82-0.96)	0.89 (0.83-0.97)	0.90 (0.83-0.97)	0.96 (0.80-1.15)	0.97 (0.81-1.15)	0.96 (0.80-1.14)
Tertiary	0.84 (0.78-0.91)	0.86 (0.79-0.93)	0.86 (0.79-0.93)	0.99 (0.83-1.19)	1.00 (0.84-1.20)	1.00 (0.83-1.19)
Lifestyle factors*						
Current smoker	1.14 (1.06-1.23)	1.14 (1.06-1.23)	1.14 (1.06-1.23)	1.11 (0.95-1.29)	1.10 (0.94-1.29)	1.09 (0.93-1.27)
Alcohol issue	1.19 (1.12-1.26)	1.19 (1.12-1.27)	1.19 (1.12-1.27)	1.24 (1.08-1.43)	1.25 (1.09-1.44)	1.24 (1.08-1.43)
Anti-depressant use	1.31 (1.23-1.40)	1.31 (1.23-1.40)	1.32 (1.23-1.41)	1.76 (1.43-2.15)	1.75 (1.43-2.15)	1.75 (1.43-2.15)
Time period*						
Wave 2	0.92 (0.87-0.97)	0.92 (0.87-0.97)	0.92 (0.88-0.97)	0.97 (0.87-0.97)	0.96 (0.85-1.08)	0.96 (0.86-1.08)
Wave 3	1.17 (1.11-1.22)	1.16 (1.10-1.22)	1.16 (1.10-1.22)	1.17 (1.11-1.22)	1.14 (1.01-1.29)	1.14 (1.01-1.29)
Wave 4	1.16 (1.10-1.22)	1.15 (1.10-1.21)	1.16 (1.10-1.22)	1.16 (1.10-1.22)	1.16 (1.02-1.32)	1.16 (1.02-1.33)
Wave 5	1.21 (1.14-1.28)	1.20 (1.13-1.27)	1.20 (1.14-1.27)	1.21 (1.14-1.28)	1.21 (1.05-1.39)	1.21 (1.05-1.40)
PA dose (MET.min.week ⁻¹)						
Continuous, min/wk	1.00 (1.00-1.00)	-	-	1.00 (1.00-1.00)	-	-
3 dose PA						
Low PA	-	[Reference]	-	-	[Reference]	-
Moderate PA	-	0.93 (0.88; 0.99)	-	-	1.04 (0.89-1.21)	-
High PA	-	0.79 (0.76; 0.83)	-	-	0.90 (0.82-0.99)	-
5 dose PA						
0	-	-	[Reference]	-	-	[Reference]
1-<600	-	-	0.95 (0.90-1.01)	-	-	0.86 (0.74-0.99)
600-<1,200	-	-	0.92 (0.87-0.98)	-	-	1.00 (0.85-1.16)
1200-<2400	-	-	0.82 (0.78-0.87)	-	-	0.99 (0.87-1.13)
≥2,400	-	-	0.77 (0.73-0.80)	-	-	0.80 (0.72-0.90)

Abbreviations: PA, physical activity; IRR, incidence rate ratio; CI, confidence interval.

*Reference categories: age [continuous], sex [reference, male], wave [reference, baseline], education [reference, primary], smoking status [reference, non-smoker], alcohol issue [reference, none], anti-depressant medication use [reference, non-user].

eTable 3. Adjusted Odd Ratios For All Included Variables With Major Depression Status In Those With And Without Chronic Disease

Variables	OR (95% CI)			OR (95% CI)		
	Continuous model	3 dose PA model	5 dose PA model	Continuous model	3 dose PA model	5 dose PA model
Age, y	0.97 (0.96-0.98)	0.97 (0.96-0.98)	0.97 (0.96-0.98)	0.94 (0.91-0.97)	0.94 (0.91-0.97)	0.94 (0.91-0.97)
Sex*						
Female	1.78 (1.45-2.18)	1.76 (1.44-2.15)	1.74 (1.43-2.13)	1.93 (1.24-3.00)	1.83 (1.17-2.84)	1.83 (1.18-2.85)
Education level*						
Secondary	0.72 (0.56-0.93)	0.73 (0.57-0.94)	0.74 (0.57-0.95)	1.11 (0.57-2.16)	1.08 (0.56-2.09)	1.08 (0.56-2.09)
Tertiary	0.60 (0.46-0.78)	0.62 (0.48-0.81)	0.62 (0.48-0.81)	0.71 (0.36-1.42)	0.71 (0.36-1.42)	0.71 (0.36-1.43)
Lifestyle factors*						
Current smoker	2.12 (1.64-2.73)	2.12 (1.64-2.73)	2.11 (1.63-2.72)	1.46 (0.85-2.51)	1.43 (0.83-2.46)	1.43 (0.83-2.47)
Alcohol issue	1.26 (1.00-1.60)	1.27 (1.00-1.62)	1.28 (1.01-1.62)	2.19 (1.31-3.66)	2.22 (1.32-3.71)	2.22 (1.32-3.72)
Anti-depressant use	5.12 (4.05-6.48)	5.11 (4.04-6.45)	5.10 (4.03-6.45)	9.34 (4.74-18.40)	9.37 (4.76-18.43)	9.37 (4.76-18.45)
Time period*						
Wave 2	1.43 (1.15-1.77)	1.45 (1.17-1.80)	1.46 (1.17-1.81)	1.92 (1.12-3.28)	1.97 (1.15-3.38)	1.97 (1.14-3.38)
Wave 3	1.75 (1.41-2.17)	1.72 (1.39-2.14)	1.72 (1.39-2.14)	2.37 (1.34-4.17)	2.35 (1.33-4.15)	2.35 (1.33-4.15)
Wave 4	1.82 (1.46-2.28)	1.80 (1.44-2.25)	1.81 (1.45-2.26)	2.41 (1.30-4.46)	2.46 (1.32-4.56)	2.46 (1.32-4.57)
Wave 5	2.02 (1.59-2.55)	2.01 (1.58-2.54)	2.01 (1.59-2.55)	3.16 (1.63-6.11)	3.22 (1.66-6.24)	3.22 (1.66-6.24)
PA dose (MET.min.week ⁻¹)						
Continuous, min/wk	1.00 (1.00-1.00)	-	-	1.00 (1.00-1.00)	-	-
3 dose PA						
Low PA	-	[Reference]	-	-	[Reference]	-
Moderate PA	-	0.57 (0.43-0.75)	-	-	0.62 (0.31-1.24)	-
High PA	-	0.57 (0.49-0.68)	-	-	0.57 (0.49-0.68)	-
5 dose PA						
0	-	-	[Reference]	-	-	[Reference]
1-<600	-	-	0.84 (0.67-1.06)	-	-	1.00 (0.56-1.80)
600-<1,200	-	-	0.55 (0.42-0.73)	-	-	0.62 (0.30-1.26)
1200-<2400	-	-	0.62 (0.49-0.80)	-	-	0.54 (0.29-1.00)
≥2,400	-	-	0.52 (0.43-0.63)	-	-	0.57 (0.36-0.91)

Abbreviations: PA, physical activity; OR, odds ratio; CI, confidence interval.

*Reference categories: age [continuous], sex [reference, male], wave [reference, baseline], education [reference, primary], smoking status [reference, non-smoker], alcohol issue [reference, none], anti-depressant medication use [reference, non-user]