



Objectively measured moderate-to-vigorous physical activity does not attenuate prospective weight gain among African-origin adults spanning the epidemiological transition.

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Background

- 2022 > 1 billion obese people worldwide [1]
- Global prevalence of physical inactivity remains relatively stable [2] while obesity prevalence rises
- Evidence regarding the role of habitual PA in preventing obesity and prospective weight loss remains conflicting [3-6]

AIM: Explore the association between objective MVPA and prospective weight change in 5 METS countries





Baseline: 2010 – 2011
Follow-up: 2017 – 2019





Participant characteristics – men

	Ghana		South Africa		Jamaica		Seychelles		United States	
	Baseline	Follow-up	Baseline	Follow-up	Baseline	Follow-up	Baseline	Follow-up	Baseline	Follow-up
Sample size	n=65		n=55		n=55		n=139		n=48	
Weight (kg)	64 (59-68)	65 (59-76)	63 (57-69)	64 (56-73)	70 (64-79)	74 (64-84)	80 (70-90)	85 (73-97)	87 (76-109)	85 (74-101)
BMI (kg/m ²)	22 (20-25)	23 (21-27)	21 (20-23)	22 (19-24)	23 (21-25)	24 (21-26)	27 (23-30)	28 (24-31)	30 (25-33)	28 (24-34)
Obese	2 (3)	4 (6)	1 (2)	2 (4)	2 (4)	4 (7)	30 (22)	47 (34)	24 (50)	17 (35)

Data are presented as median (interquartile range) or counts (percentage). BMI: body mass index.





Participant characteristics – women

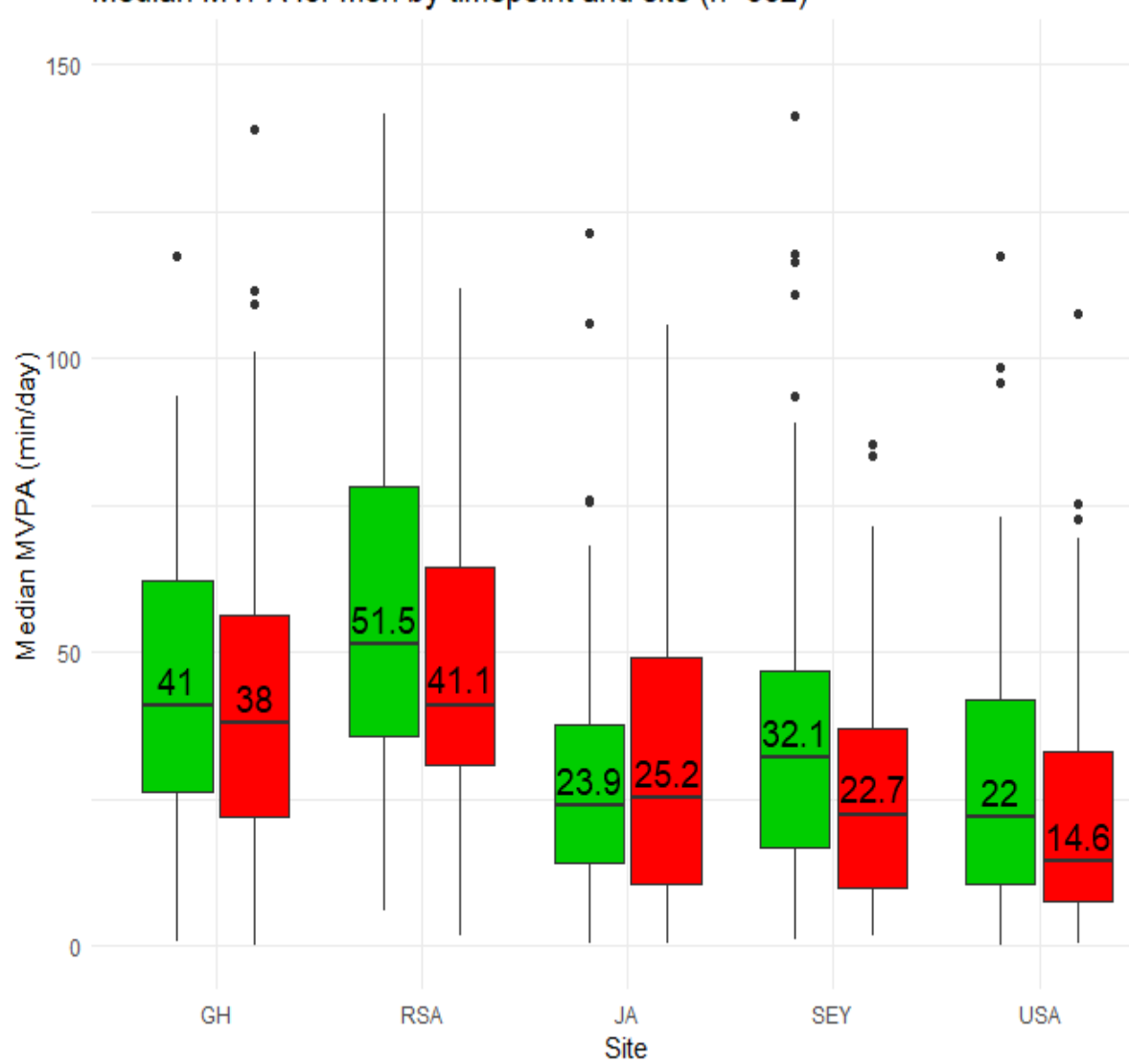
	Ghana		South Africa		Jamaica		Seychelles		United States	
	Baseline	Follow-up	Baseline	Follow-up	Baseline	Follow-up	Baseline	Follow-up	Baseline	Follow-up
Sample size	n=119		n=68		n=51		n=185		n=66	
Weight (kg)	63 (56-71)	72 (62-80)	79 (66-96)	83 (67-106)	74 (61-84)	82 (65-91)	69 (58-79)	76 (66-88)	97 (77-111)	97 (83-113)
BMI (kg/m ²)	25 (22-28)	28 (24-31)	32 (26-37)	32 (27-39)	29 (23-32)	32 (26-34)	27 (23-30)	30 (26-34)	35 (29-41)	36 (30-42)
Obese	20 (17)	42 (35)	37 (54)	41 (60)	22 (43)	31 (61)	50 (27)	86 (46)	46 (70)	49 (74)

Data are presented as median (interquartile range) or counts (percentage). BMI: body mass index.

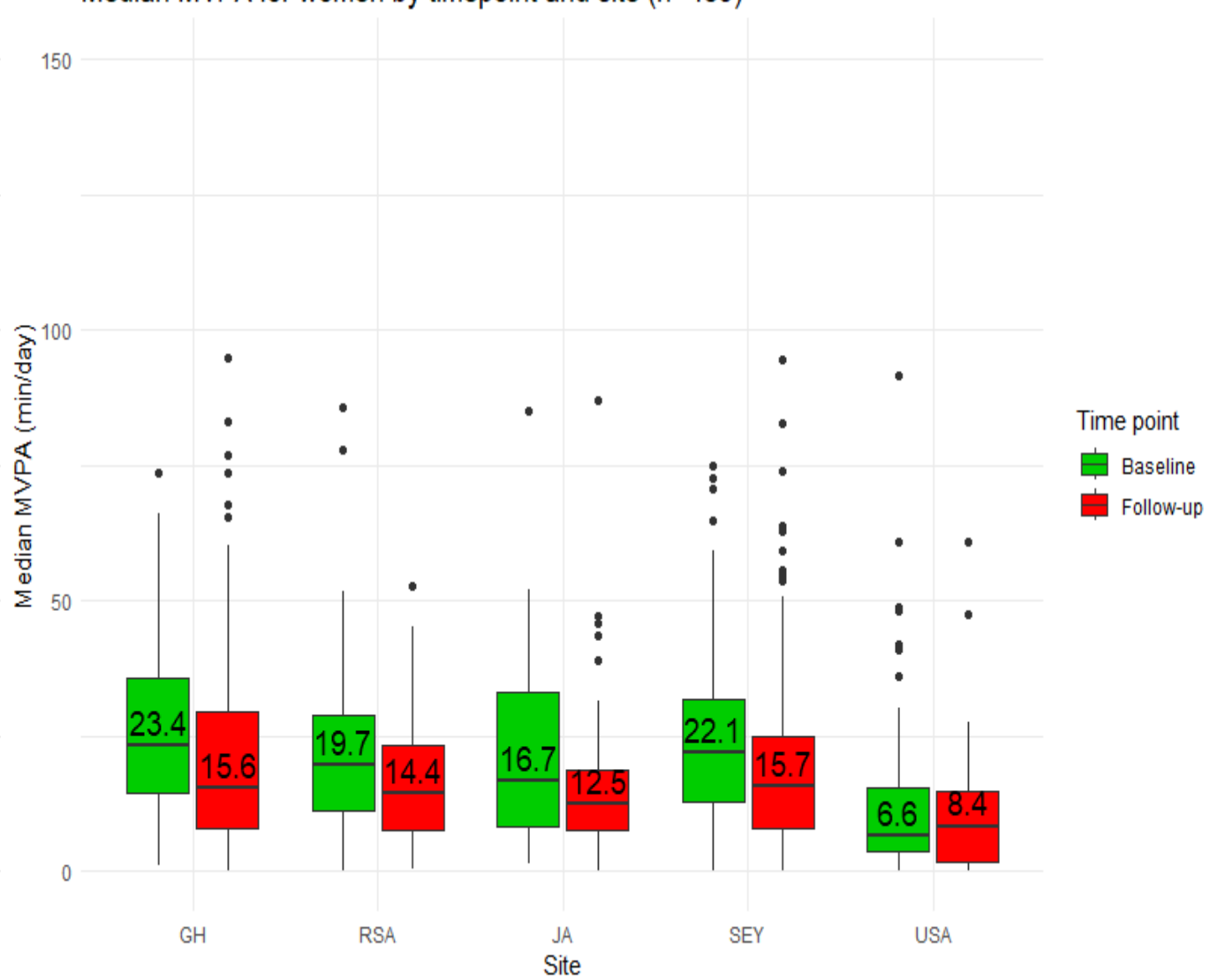




Median MVPA for men by timepoint and site (n=362)



Median MVPA for women by timepoint and site (n=489)

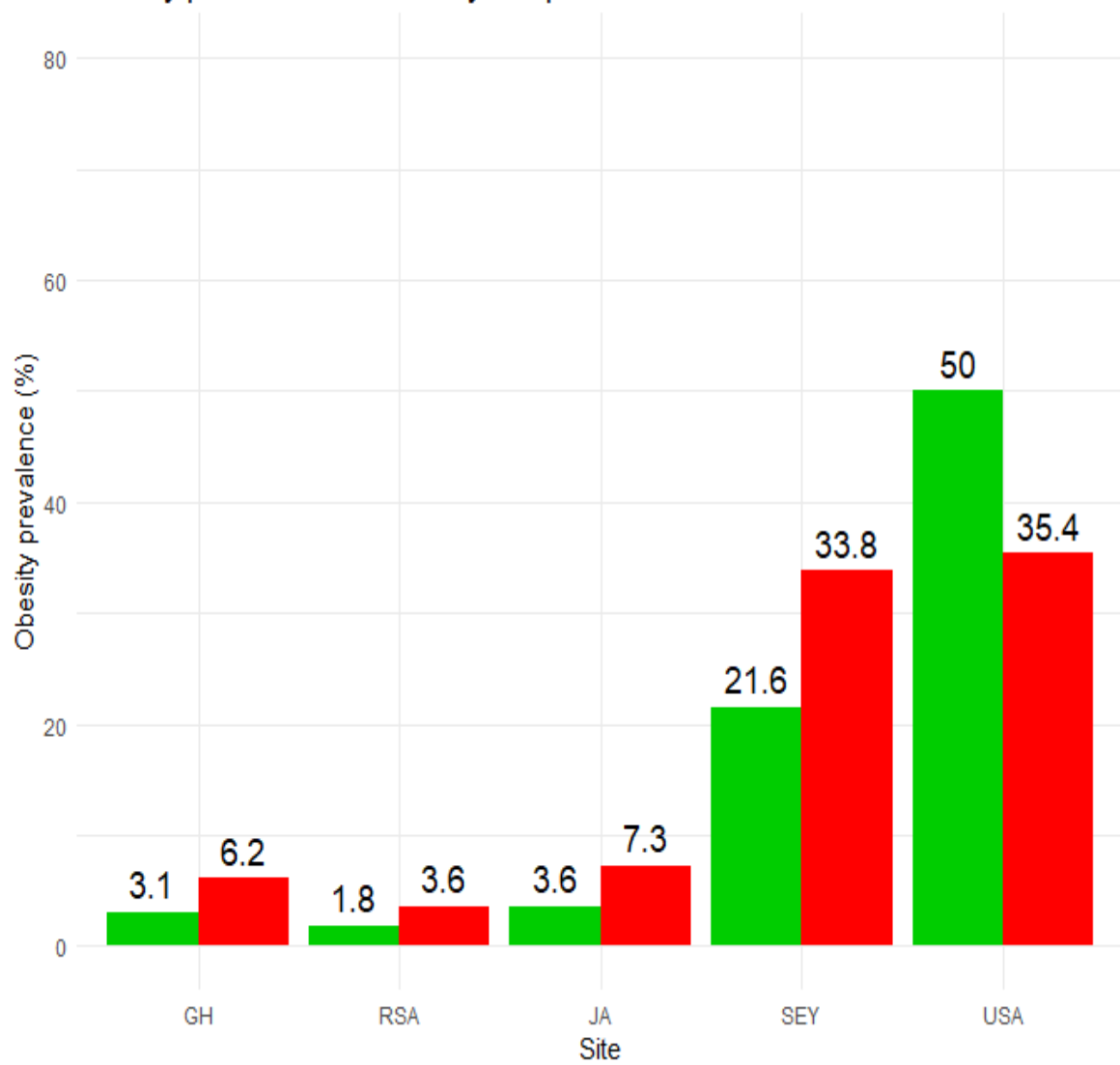


Time point
■ Baseline
■ Follow-up

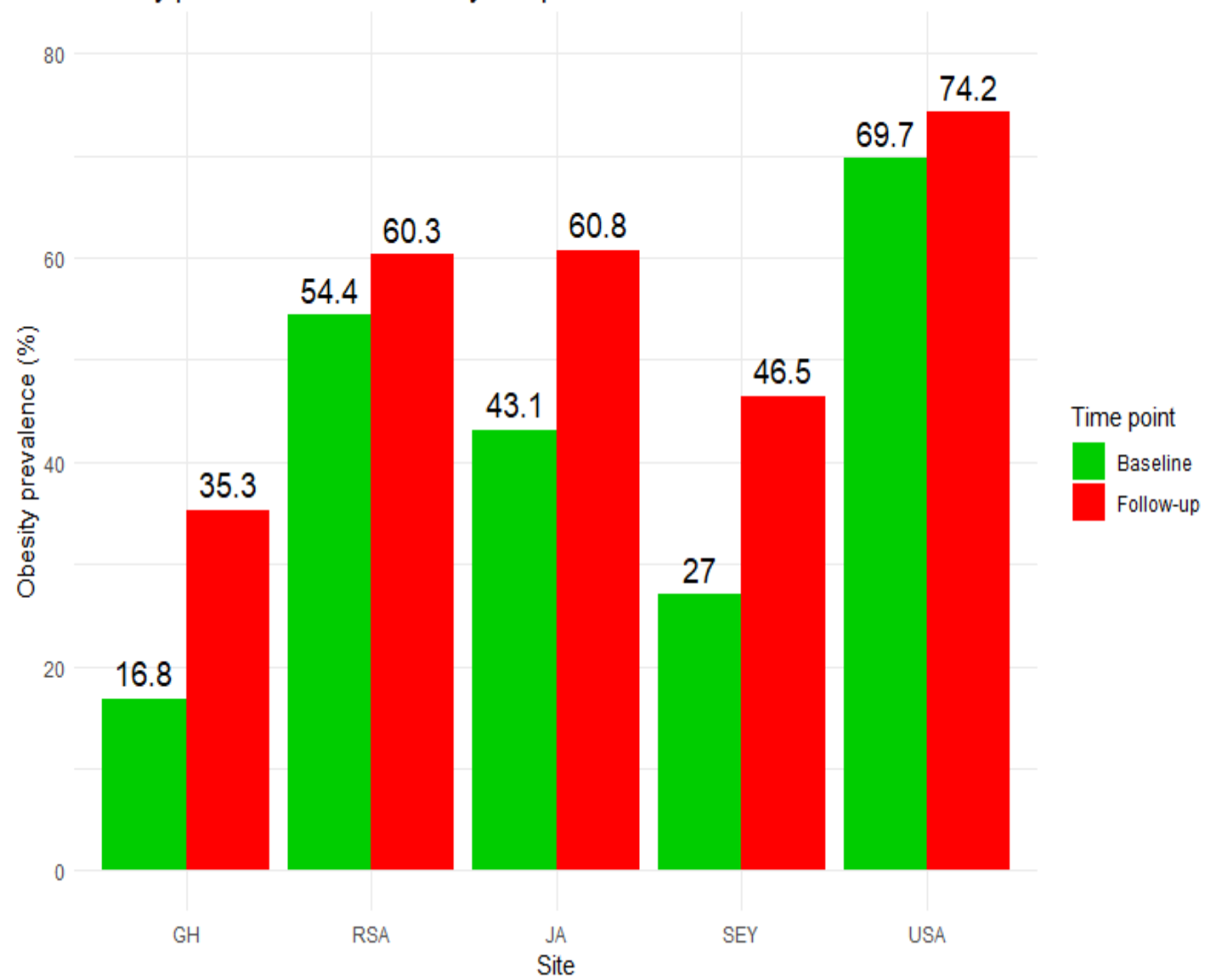




Obesity prevalence for men by timepoint and site



Obesity prevalence for women by timepoint and site

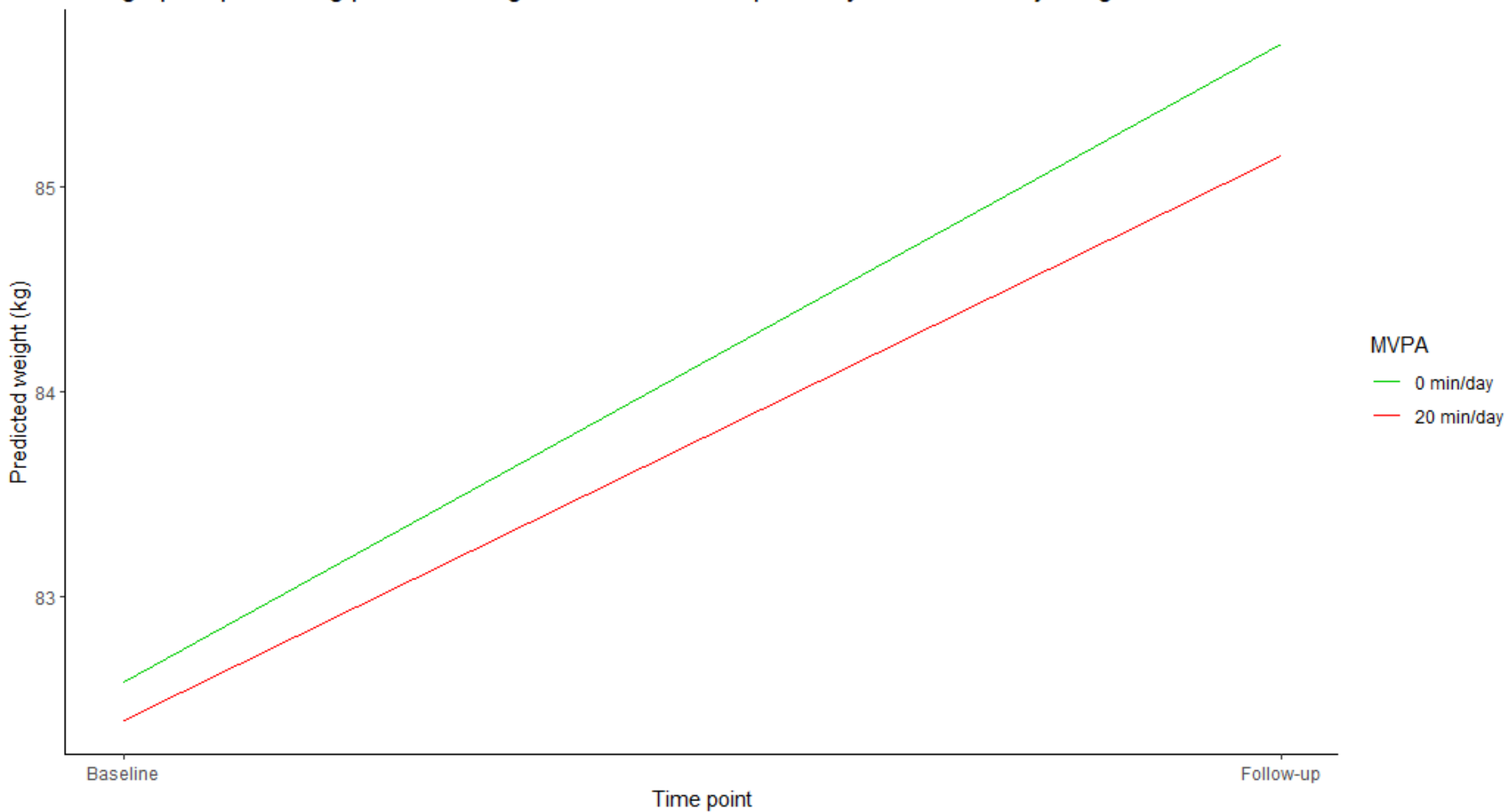




		Model 1a: multivariable without interaction		Model 1b: multivariable with interaction	
		Estimate (95% CI)	p-value	Estimate (95% CI)	p-value
MVPA		-0.63 (-1.22; -0.04)	0.04	-0.29 (-0.99; 0.41)	0.41
Sex (female)		-3.71 (-5.59; -1.83)	<0.001	-3.66 (-5.55; -1.78)	<0.001
Age (baseline)		0.04 (-0.12; 0.21)	0.560	0.04 (-0.12; 0.21)	0.60
Obese		18.20 (16.61; 19.79)	<0.001	18.17 (16.57; 19.76)	<0.001
Time (follow-up)		2.61 (2.02; 3.20)	<0.001	3.11 (2.14; 4.08)	<0.001
Site (in reference to US)					
	Ghana	-20.61 (-24.31; -16.91)	<0.001	-20.66 (-24.36; -16.96)	<0.001
	South Africa	-15.70 (-20.09; -11.30)	<0.001	-15.75 (-20.15; -11.35)	<0.001
	Jamaica	-14.76 (-19.29; -10.24)	<0.001	-14.77 (-19.30; -10.25)	<0.001
	Seychelles	-12.89 (-16.56; -9.22)	<0.001	-12.92 (-16.59; -9.25)	<0.001
Interaction between physical activity and time (follow-up)					
	MVPA:time			-0.53 (-1.28; 0.22)	0.16
MVPA: moderate-to-vigorous intensity PA; CI: confidence interval					



Line graph representing predicted weights at different time points by MVPA after adjusting for covariates





Conclusion

- In our study, irrespective of PA levels, the trend was for everyone to gain weight.
- While PA may be important for health, it may not be enough/sufficient to slow weight gain over time.





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