



The International Study of Childhood Obesity, Lifestyle and the Environment

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Rationale and Design



Assessment of Physical Activity and Diet



**Associations Between Physical Activity,
Diet and Obesity**

CULTURE & DIET



CULTURE & PHYSICAL ACTIVITY





The primary aim of ISCOLE is to determine the relationships between lifestyle behaviours and obesity in a multi-national study of children, and to investigate the influence of higher-order characteristics such as behavioural settings, and the physical, social and policy environments, on the observed relationships within and between countries.

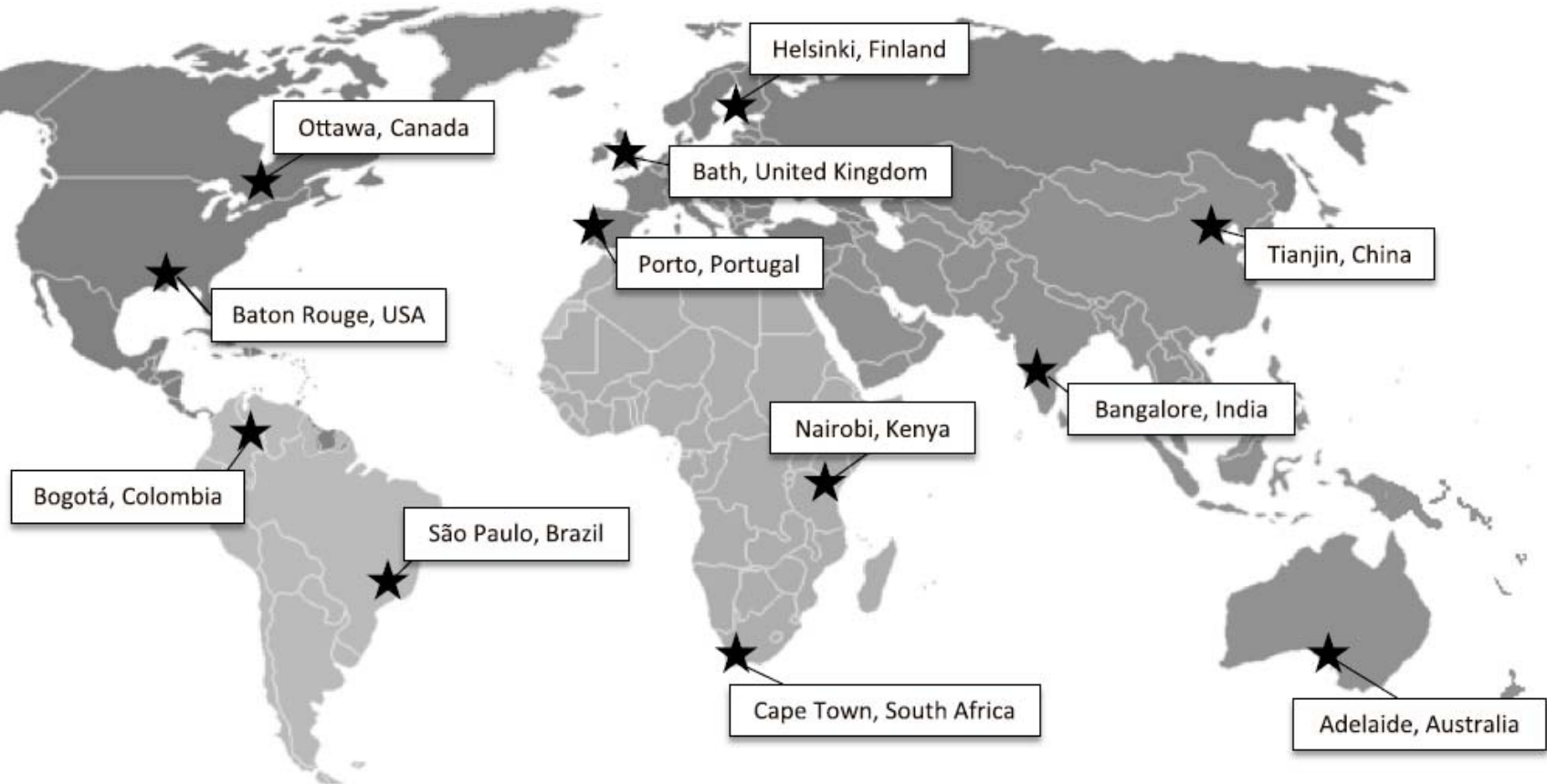
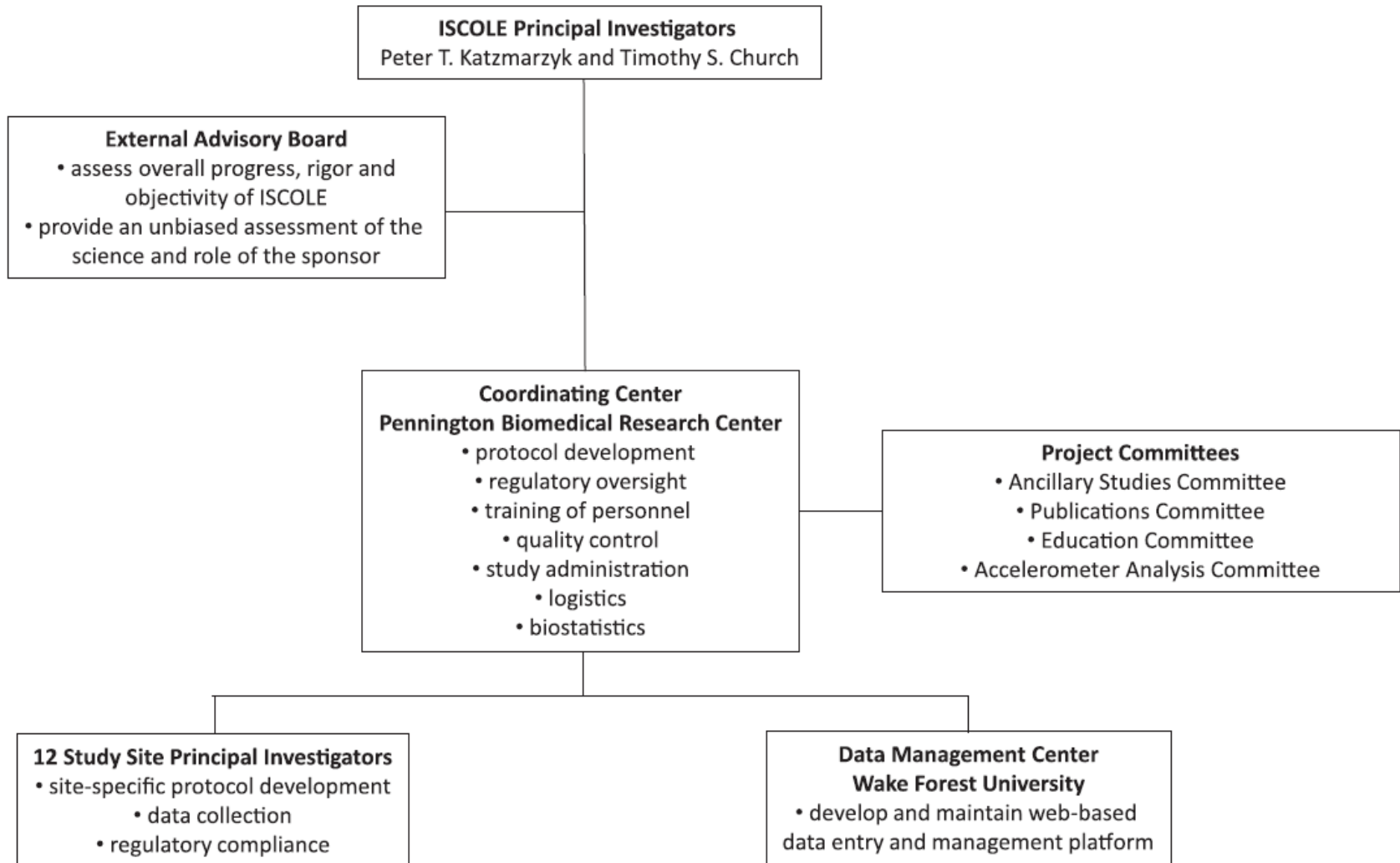
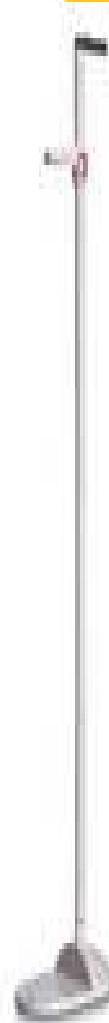


Figure 1 Geographic distribution of the International Study of Childhood Obesity, lifestyle and the environment (ISCOLE) sites.

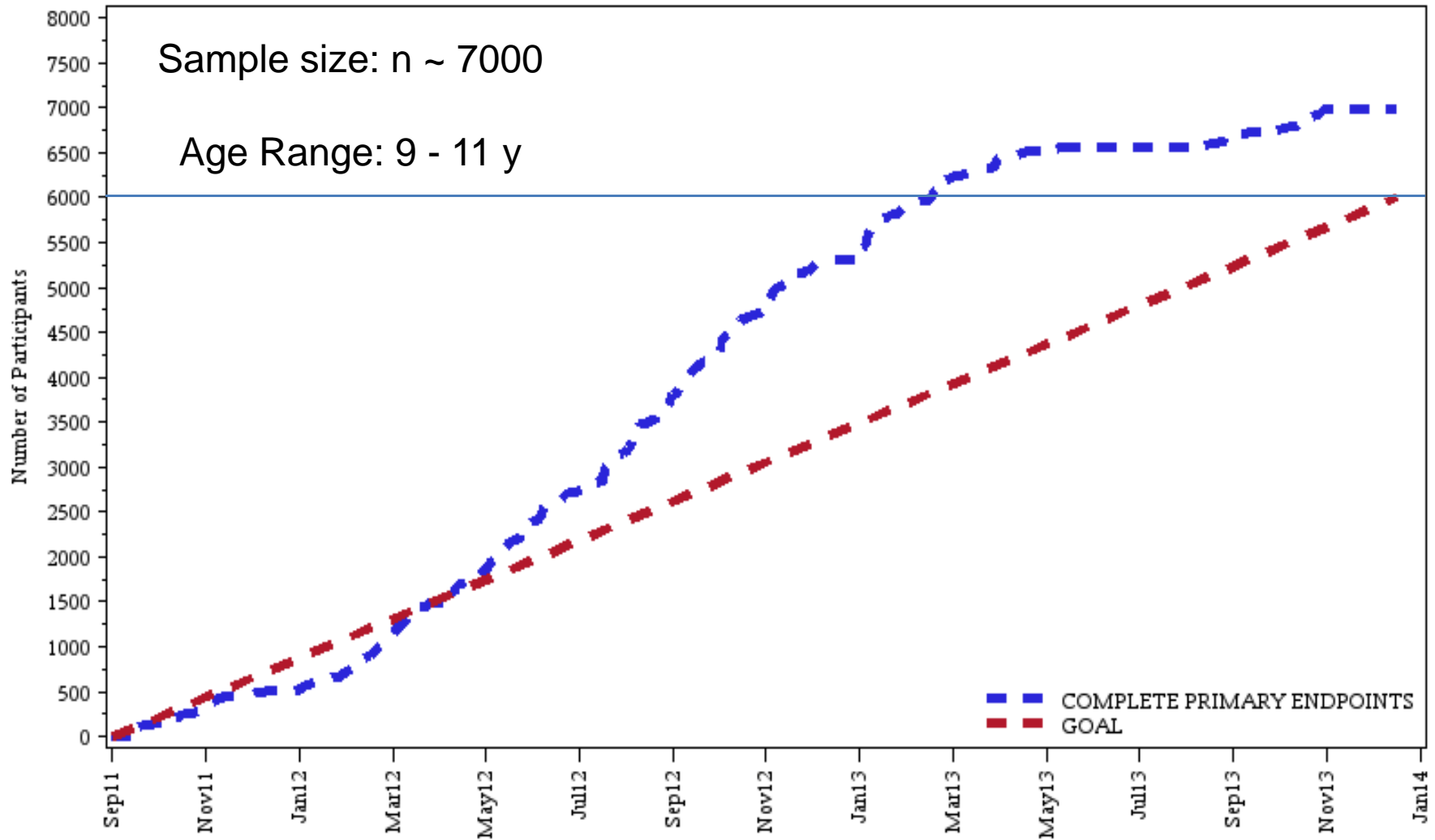
STRUCTURE & GOVERNANCE



METHODS OVERVIEW

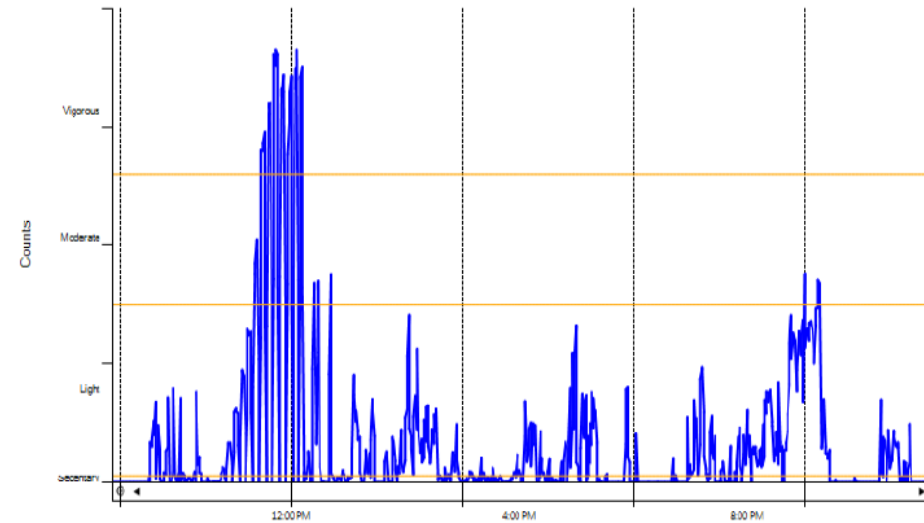


DATA COLLECTION



24-hour Waist-worn Accelerometry for 7 Continuous Days

Data collected at 80 Hz continuously for 7 days, analyzed in 15-s epochs.

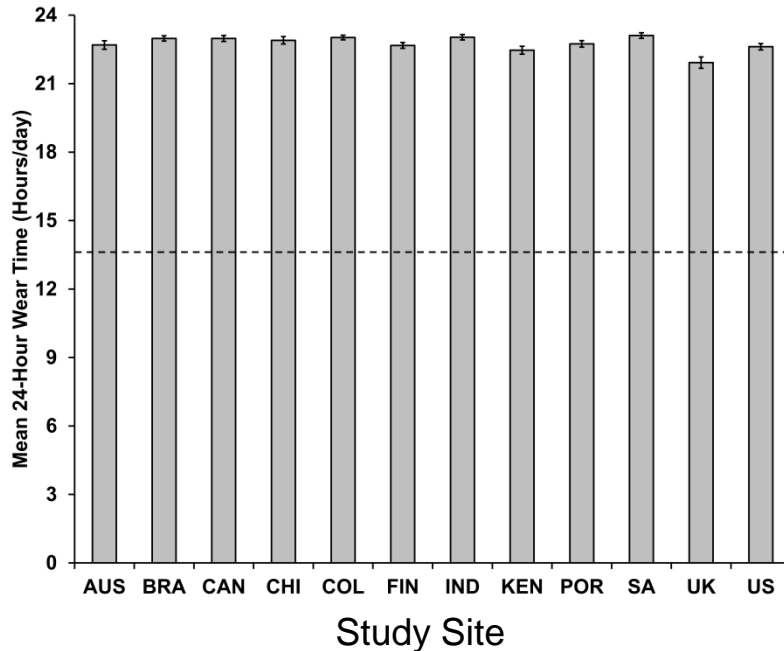


Metrics

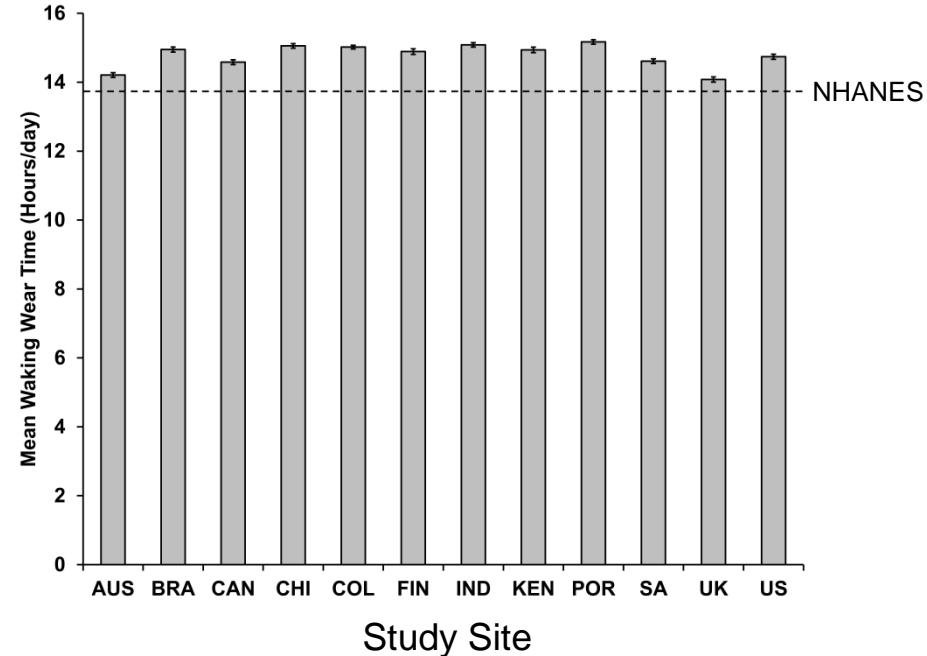
- Sleep duration and efficiency
- Sedentary time and physical activity
 - Steps/day
 - Peak cadence

COMPLIANCE

24-Hour



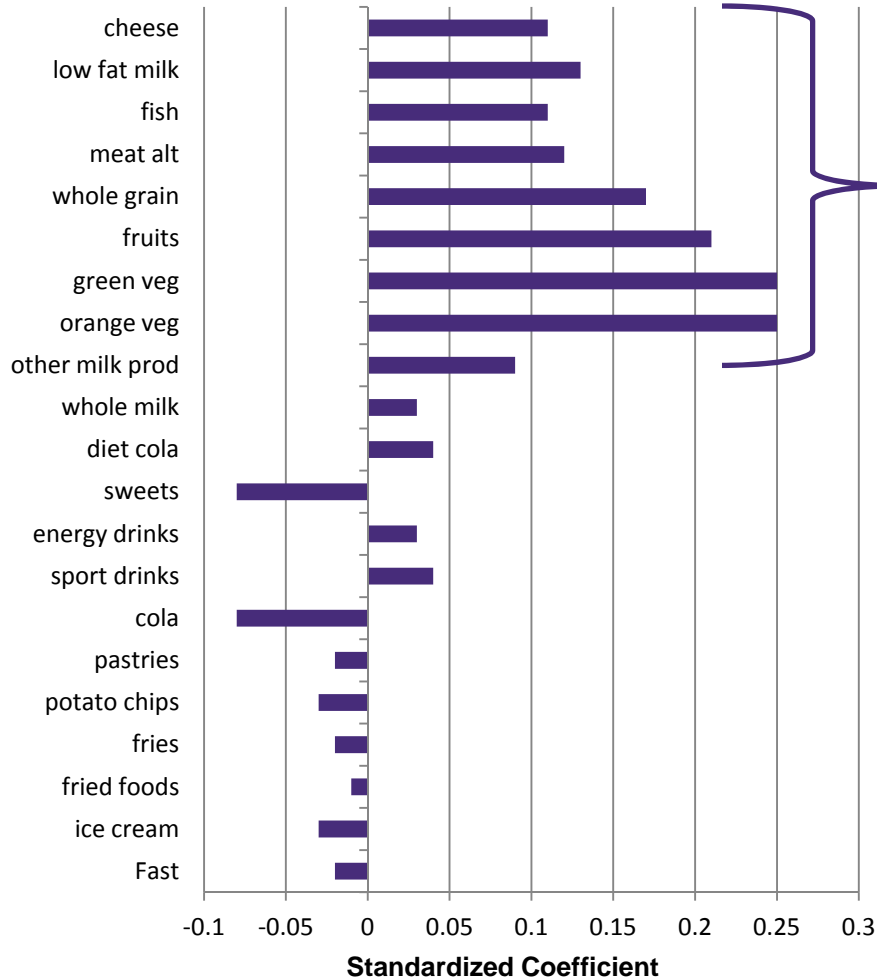
Waking Hours



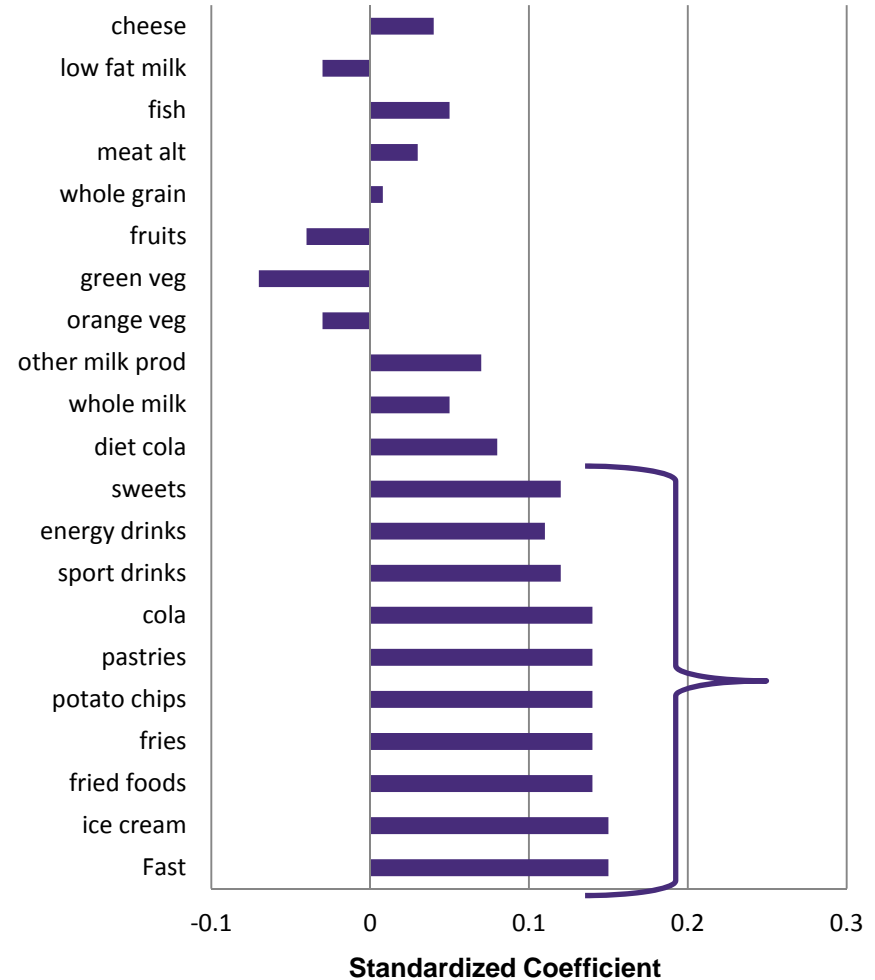
U.S. Site: Total wear time: 22.6 h
Waking wear time: 14.7 h/day (NHANES = 13.7 h/day)
Valid days: 6.4 days (NHANES = 6.0 days)

DIETARY PATTERNS

Healthy Diet Pattern Score



Unhealthy Diet Pattern Score

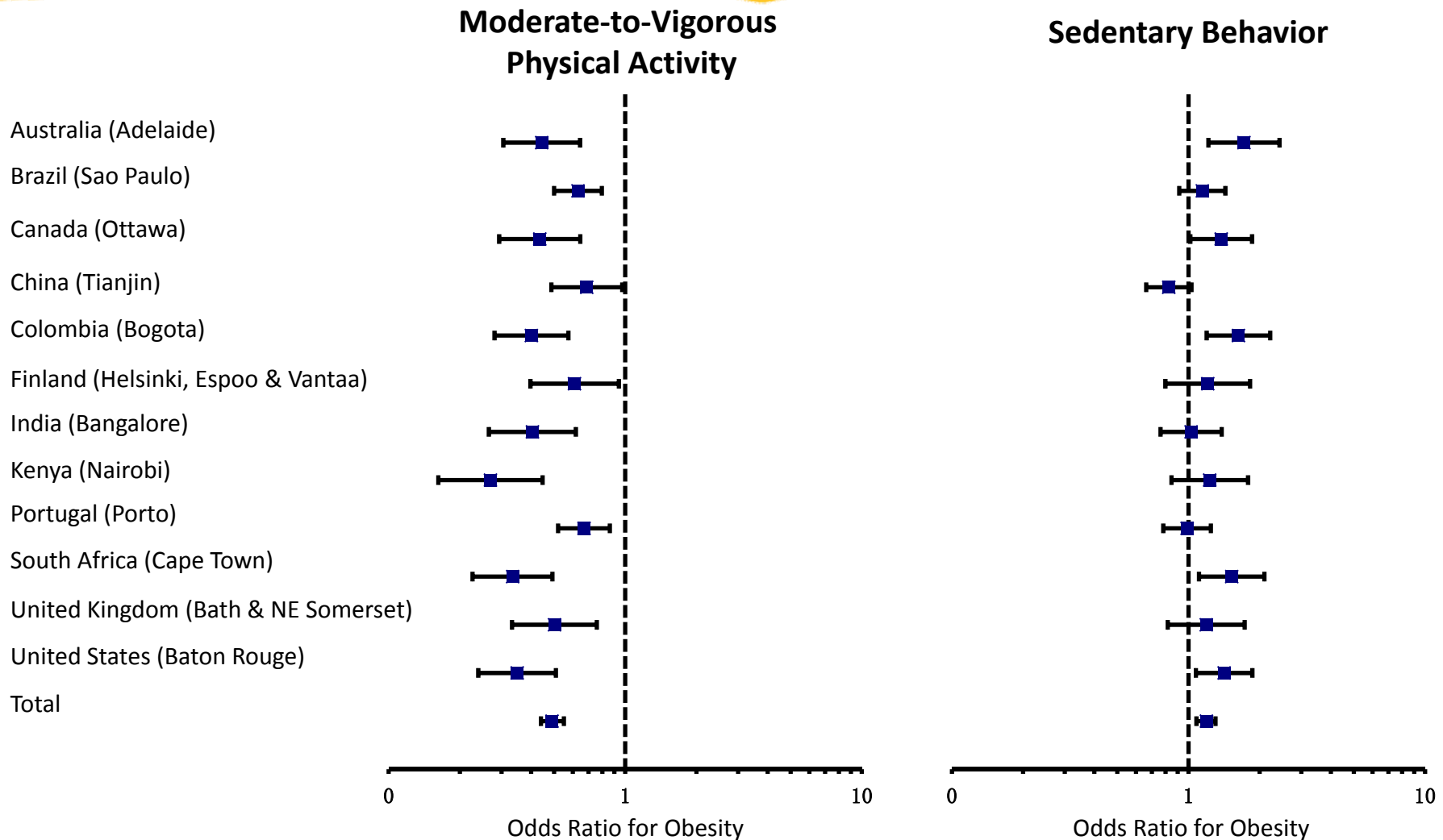


CORRELATES OF OBESITY

	OR	95% CI
Boys		
MVPA	0.48	0.41, 0.56
TV TIME	1.15	1.05, 1.27
Healthy Diet Score	1.11	0.98, 1.24
Unhealthy Diet Score	0.97	0.86, 1.10
Girls		
MVPA	0.40	0.32, 0.50
TV TIME	1.07	0.96, 1.19
Healthy Diet Score	1.10	0.97, 1.26
Unhealthy Diet Score	0.97	0.83, 1.13

- All models were adjusted for age, socio-economic status, site*socio-economic status and all variables in the table.
- The combined analyses of boys and girls were also adjusted for sex.
- Odds ratios (OR) are expressed per approximate SD: MVPA = 25 min; healthy diet score = 1; unhealthy diet score = 1.

MVPA, SEDENTARY TIME & OBESITY



Results of Receiver Operating Characteristic (ROC) Curve Analyses for the Associations Among Moderate-to-Vigorous Physical Activity and Obesity in 6,548 9-11 Year Old Children

	AUC (95% C.I.)	Youden Index	Threshold, min/day (95% CI)	Sensitivity (%)	Specificity (%)
Boys (n = 2,992)	0.68 (0.66 - 0.70)	0.266	65 (55 - 74)	69	57
Girls (n = 3,556)	0.66 (0.64 - 0.67)	0.238	49 (41 - 58)	69	55
Total (n = 6,548)	0.64 (0.62 - 0.65)	0.205	55 (46 - 60)	65	55

AUC, area under the curve; CI, confidence interval.

CAPACITY DEVELOPMENT

ISCOLE represents a multi-national collaboration among all world regions, and represents a global effort to increase research understanding, capacity and infrastructure in childhood physical activity and obesity.

240 people have worked on ISCOLE to date, including junior and senior scientists, post-doctoral fellows, students and staff.

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