

**Associations of sedentary time accumulation with weight status in children**

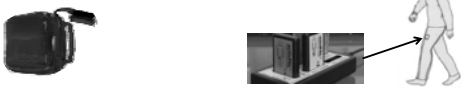
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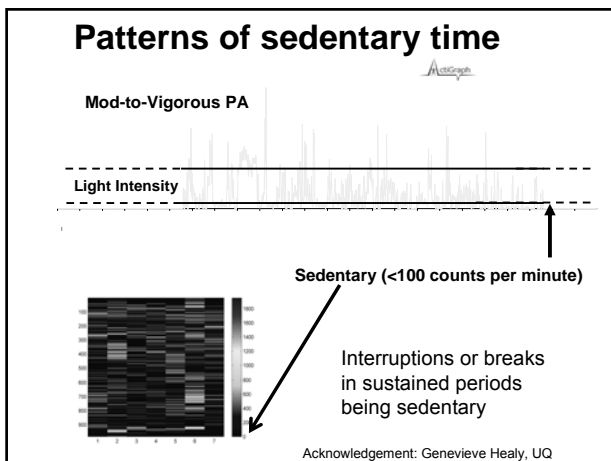
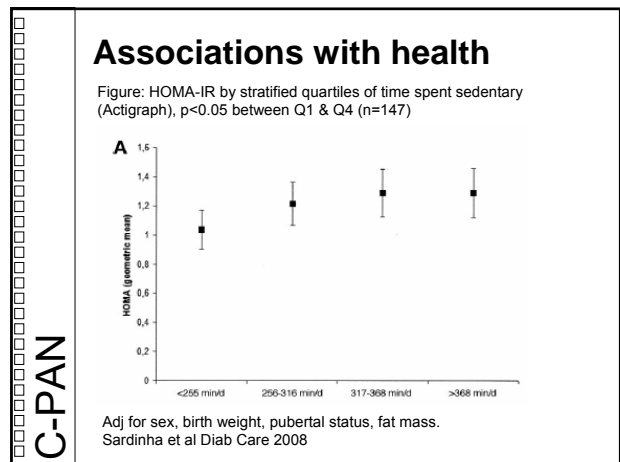
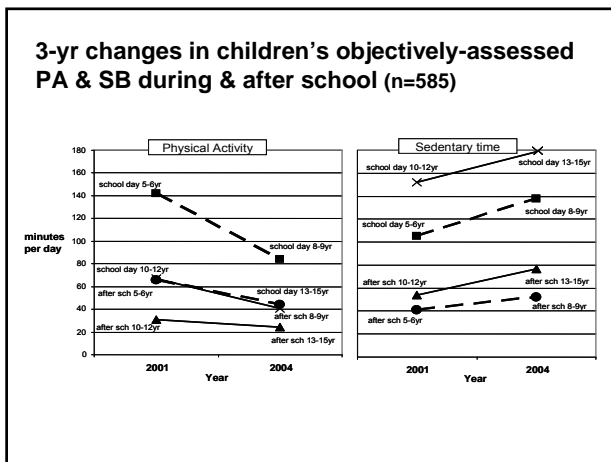
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**Defining & assessing children's sedentary time**

- distinct class of sitting behaviors that involve low energy expenditure to perform
  - ◆ EG: schoolwork, reading, watching TV, & using the computer
- Assessment: self-report, parental proxy-report, objective measures (eg, accelerometry (<100 cpm), activPALs)



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**Aims**

- To examine associations between accumulation and patterns of sedentary time during the school day with children's weight status & body mass index

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### Methods

- Data pooled from 2 cross-sectional studies conducted in Melbourne 2001-2003
- Children wore Actigraph accelerometer for 6 school days (school day: 9am-3pm)
- sedentary time defined as 0-100 counts per minute (cpm)
- interruptions to sedentary time (sedentary breaks) defined as frequency of occasions  $\geq 100$  cpm
- Height & weight were measured (IOTF definitions of weight status applied)

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### Results

- N=2,452 participants
  - ◆ 48% boys
  - ◆ 31% 5-6 yr olds
  - ◆ 69% 10-12 yr olds
- ◆ 22% 5-6 yo overweight/obese
- ◆ 30% 10-12 yo overweight/obese

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### Mean accumulated time spent sedentary across school day

- 174±46 mins/day (48% of time)

SB & light PA :  $r = -0.78$   
SB & MVPA :  $r = -0.55$

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### Mean number sedentary breaks in school day

- 33±6 breaks/day
  - ◆ 10-12 yo = 34 breaks/day
  - ◆ 5-6 yo = 31 breaks/day ( $p < 0.001$ )

Breaks & light PA :  $r = 0.37$   
Breaks & MVPA :  $r = -0.06$

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### Associations with BMI z-score

- Total sedentary time\*
  - ◆ 5-6 yo:  $r = -0.04$  (ns)
  - ◆ 10-12 yo:  $r = 0.01$  (ns)
- Sedentary breaks\*
  - ◆ 5-6 yo:  $r = -0.12$  ( $p = 0.001$ )
  - ◆ 10-12 yo:  $r = -0.11$  ( $p < 0.001$ )

\*partial correlations adj for light & MVPA

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### Sedentary breaks/day & weight status

AOR (light, mvpa) for each additional break 5% less likely ov/ob

## Conclusions

- No assoc between total sed time & BMI z-scores when adj for light & MVPA
- Inverse assoc between frequency interruptions to sedentary time during the school day & children's weight status
- overweight or obese children may be less likely to interrupt time spent sedentary with more intense activity
  - ◆ Healthy weight children spent signif higher % of school day in MVPA

## Future directions

- What are the associations between sedentary time & children's health?
- What is more important, the total accumulated amount or *how* it is accumulated? (ie, sustained vs interrupted)
- Present study limited by cross-sectional nature of data, longitudinal research to provide further clarity on associations between children's patterns of sedentary time with changes in weight status

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## Thank you!



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