

New developments in National physical activity monitoring:

the Health Survey for England

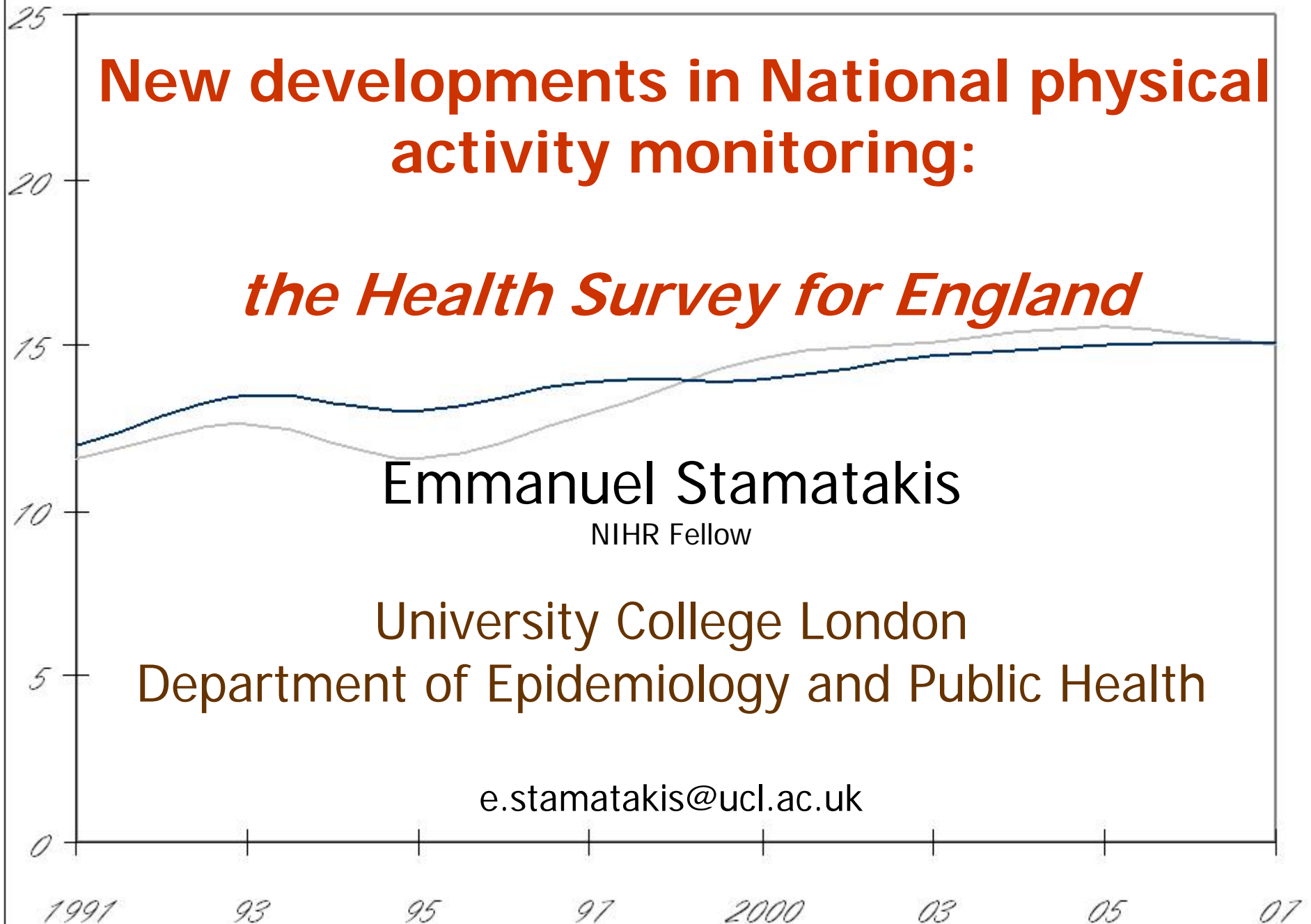
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The Health Survey for England (HSfE)

- Funded by Department of Health / Health and Social Care Information Centre
- 1994 on: **Joint Health Surveys Unit** (Department of Epidemiology & Public Health at UCL & National Centre for Social Research)
- Continuous (in annual cycles) since 1991
- Household visit-based
- Nationally representative (adults: 16K/yr, children: 4K/yr)
- Multi-stage stratified sampling
- Wide thematic coverage:
 - Health status (e.g. diagnosed disease, long-standing illness)
 - Anthropometry (e.g. infant length, BMI, waist, hip)
 - Blood samples (e.g. cholesterol, glucose, ferritin)
 - Health behaviours (e.g. smoking, **physical activity**)

Physical activity in HSfE to date...

HSfE Year	'91-94	'97	'98	'99	'01	'02	'03	'04	'05	'06	'07	2008
Adults: <ul style="list-style-type: none"> •Work •Housework •DIY/gardening •Walking •Sports/exercises 	X	X	X	X			X	X		X		X
Children: <ul style="list-style-type: none"> •Walking •Active Play •Sports •Housework 		X	X	X		X		X	X			X

Table 1: Outline of the three versions of the Health Survey for England physical activity questionnaire (adults)

Physical activity Domain	1991- '94	1997- '98	1999- '04
Heavy Domestic (Heavy Housework and Heavy Gardening/manual/building/DIY)			
<i>Frequency*</i>	√	√	√
<i>Duration</i>		√	
<i>Intensity</i>			
<i>Lower limit for duration (minutes)</i>	None	15	30
<i>Perceived level</i>			
Walking			
<i>Frequency*</i>	√	√ [†]	√
<i>Duration</i>		√	
<i>Intensity</i>	√	√	√
<i>Lower limit for duration (minutes)</i>	20	15	30
<i>Perceived level</i>			
Sports and exercise			
<i>Frequency*</i>	√	√	√
<i>Duration</i>	√	√	√
<i>Intensity</i>	√	√	√
<i>Lower limit for duration (minutes)</i>	None	15	15
<i>Perceived level</i>			
Occupational activity[‡]			
<i>Frequency*</i>			
<i>Duration</i>			
<i>Intensity</i>			
<i>Lower limit for duration (minutes)</i>			
<i>Perceived level</i>	√	√	√

[‡] A single question on overall activity levels at work

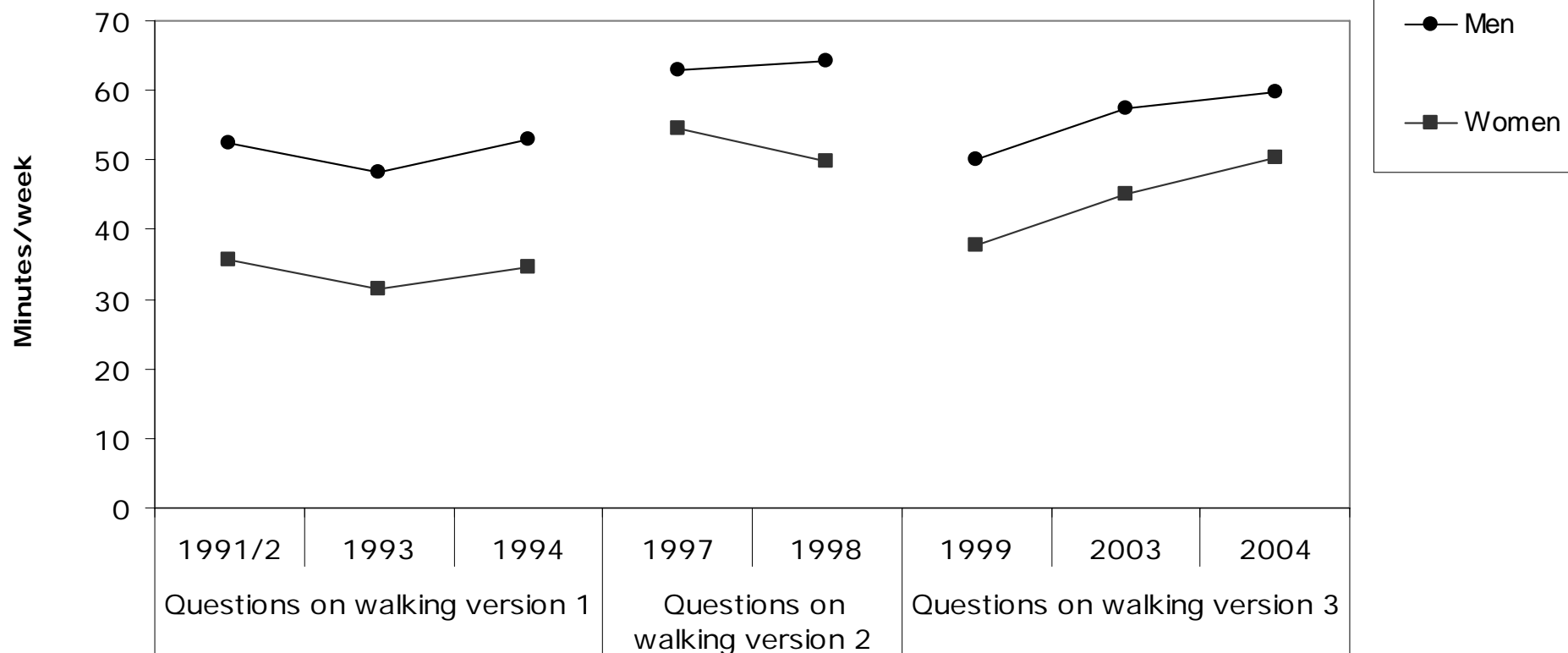
*1991-94: occasions of participation; 1997-04: days of participation

[†] A question probing on second walking session on the same day was included

***Stamatakis E., Ekelund U., Wareham N. Preventive Medicine, In Press (2008)**

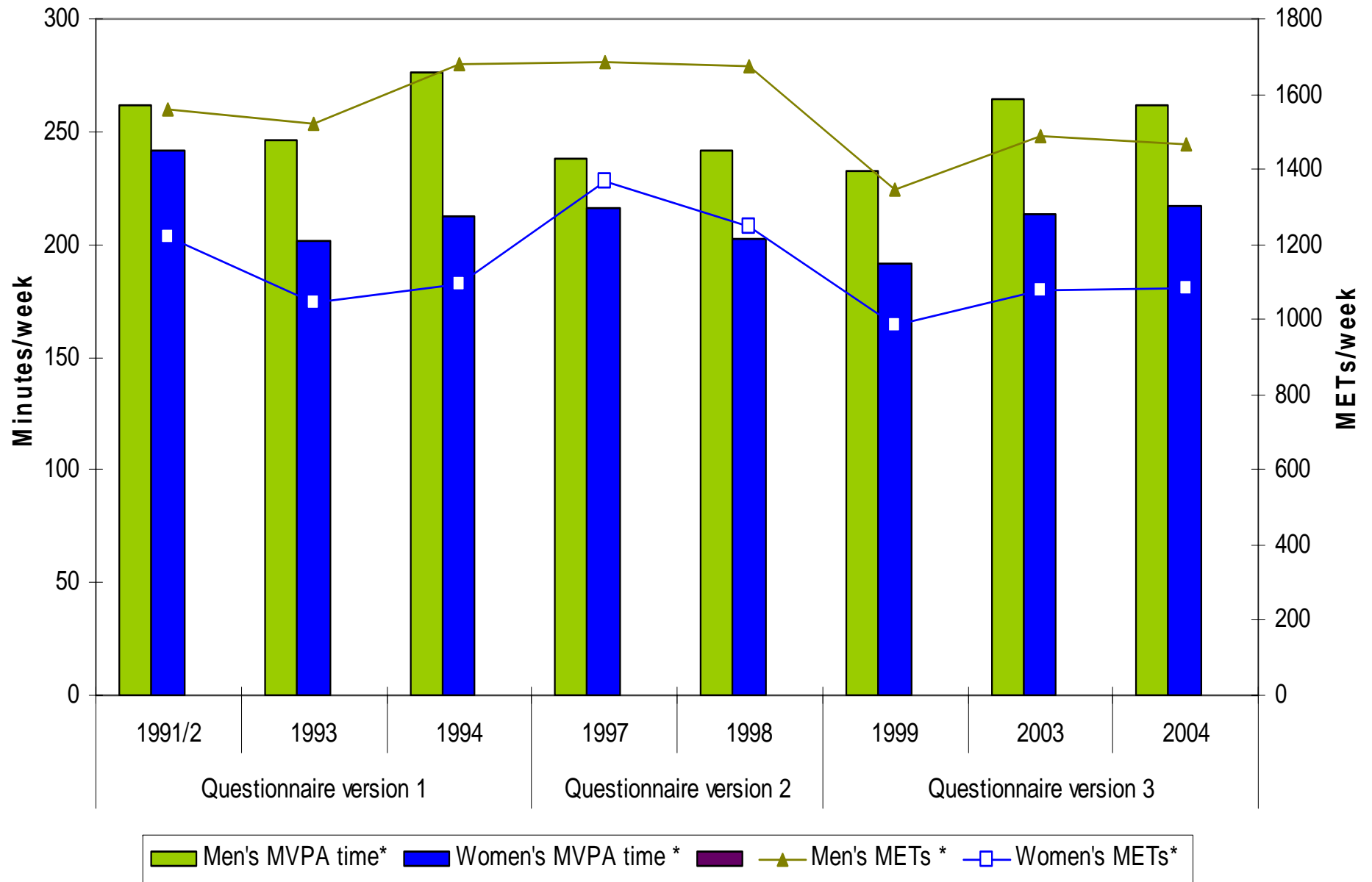
Adults aged 16 yrs +

Mean weekly time spent in brisk to fast walking, by survey year. The Health Survey for England*

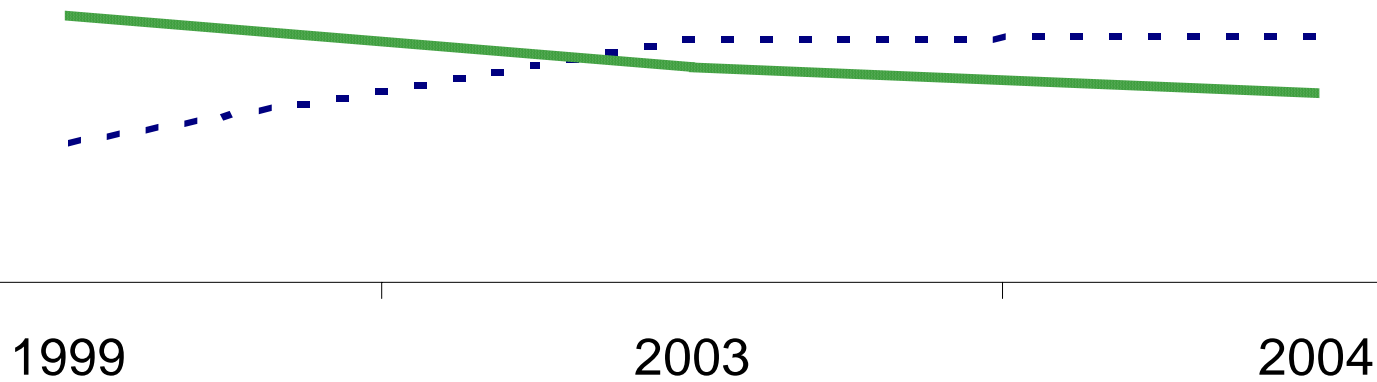


*Stamatakis E., Ekelund U., Wareham N. Preventive Medicine, In Press (2008)

Total weekly time spent in moderate to vigorous physical activity and total energy expenditure (METs), by year. Health Survey for England 1991/2 to 2004



Response rates and physical activity trends. HSE adults 16yrs+ (Scaled data patterns)



- - - .MVPA Mins/Day — % Response

Children aged 2-15

- Old (1997-2005) questionnaire coverage:
 - Walking
 - Active Play
 - Organised Sports
 - Housework (8-15 yrs only)
- *Proxy parental interviews for 2-12 yrs, self-reports for 13-15
- *Activity outside school hours
- *Like in adults, questions changed between 97 and 2002

Accessing the HSfE data

1991-2006 datasets archived and freely available:

– <http://www.data-archive.ac.uk/>

Moving on: the HSfE 2008

- Special focus on physical activity, inactivity and fitness
- Enhanced (adults) and new (children) physical questionnaires
- Cognitive and reliability and validity testing of PA questions
- Objective activity measures
- Fitness testing: step test

Enhanced adults' questionnaire

- Domains:
 - Occupational/Walking/Housework/Manual & DIY/ Recreational Sports & Exercises/TV watching/Other sedentary
- Dimensions:
 - Frequency/Duration/Intensity/Mode
- Time Frame: Last 4 weeks
- What's new:
 - Sedentary time questions (weekend/weekday)
 - Detailed occupational section
 - More details on recreational exercise/sports
 - Lower limit for walking reduced from 30 (v.3) or 15 (v.2) to 10 minutes
- **!Care to preserve time trends!**

The new children's questionnaire

- Bears no similarity with previous HSfE versions
- Domains: transportation to school/ school breaks/active playing/sports/TV watching/other sedentary
- Dimensions Frequency/Duration/Intensity/Mode
- Time frame: Last 7 days
- Day-specific (Mon, Tue, Wed, etc)

Development work for HSfE 2008

- Adults Questionnaire **validity** (Vs 2 weeks of accelerometry) ($n=100$) ✓
- Children's Questionnaire **validity** (Vs one week of accelerometry) ($n=120$) ✓
- Adults Questionnaire **reliability** (test-retest) ($n=100$) ✓
- Children's Questionnaire **reliability** (test-retest) ($n=120$) ✓
- Adults' **feasibility** of the step test ($n=30$) ✓
- Main stage HSfE'08 will be a large-scale validation study

Results not available yet!



HSE08: Adults' protocols

(starting January 2008)

- Questionnaire: N=**14,000**
- Accelerometers(7days): N=**3,400**
- CR Fitness testing (sub-max graded step-test): N=**3,000** adults (aged 16-74, sub-sample of the above 3.4K)
- Also:
 - height, weight, waist circumference
 - saliva samples for cotinine
 - eating habits, fruit and vegetable
 - health status
 - blood samples for: HbA1c, total cholesterol /HDL cholesterol*
 - prescribed medication
 - Socioeconomic, demographic etc

HSE08: Children' protocols

(starting January 2008)

- Questionnaire: n=**8,000***
- Accelerometers(7days): n=**1,400** children
- Also:
 - height, weight, waist circumference (11-15yrs)
 - saliva samples for cotinine (smoking)
 - eating habits & fruit and vegetable
 - Socioeconomic, demographic, etc

**Children's boost*

Thinking past 2008...

- HSfE: sustainable surveillance vehicle for physical activity?
 - Many competing themes
 - Fitness/accelerometers add to participants' burden → Declining response rates already → result in even lower response rates?
- ...a **periodic** focus on physical activity, inactivity and fitness for HSfE (every 3-4 years?)?

OR

- some other **dedicated** physical activity, inactivity (and fitness?) surveillance system (like BRFSS in the USA...)?
- Emerging themes that need to be covered
 - PA & Environment
 - PA & Psychosocial factors
 - Cost of being active

Conclusions

- HSE '08 a major step ahead for National physical activity/inactivity surveillance

...but...

- We need a **sustainable**, long-term physical activity/inactivity surveillance system
- **Standardised measures** (i.e. let's stop fiddling with those questions!)
- Care to preserve **response rates** at current levels