

New data from the Millennium Cohort Study: Time Use Diaries and Accelerometry at age 14

MCS webinar
12 June 2018

CENTRE FOR
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STUDIES



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Stephan Tietz
Ipsos MORI
79-81 Borough Road
London
SE1 1FY
Freephone 0808 238 5446 (costs from mobile phones may vary, please check with your provider)
Email: childnc@ipsos.com

...ABOUT CHILD OF THE NEW CENTURY?
For more information about the study you can phone 0800 092 1250, or email childnc@ioe.ac.uk or visit the study website: www.childnc.net.

CHILD OF THE NEW CENTURY  **AGE 14 SURVEY**

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13-025042-02/B08

Agenda

Session	Time	Topics covered	Speaker
1.	2.00 – 2.35pm	Brief introduction, including update on MCS6 data Collection and content of: <ul style="list-style-type: none">- Activity monitors- Time use diaries Q&A	Dr Emily Gilbert Survey Manager
2.	2.35 – 3.00pm	Data structure and handling: <ul style="list-style-type: none">- MCS6 data format and guidance- Activity monitor data and merge- Time use diary data, restructure and merge- Update on MCS data deposits Q&A	Vilma Agalioti-Sgompou Data Manager
3.	3.00 – 3.10pm	A look ahead: <ul style="list-style-type: none">- Update on MCS7, overview, progress and timelines Q&A	Dr Vanessa Moulton Research Associate
4.	3.10-3.30pm	General MCS Q&A	All



Overview of MCS content

		9m	3	5	7	11	14
							
Both resident Parents	Interview and questionnaire self-completion (resident parents)	X	X	X	X	X	X
	Questionnaire self-completion				X	X	X
Cohort member	Physical measurements		X	X	X	X	X
	Cognitive assessments		X	X	X	X	X
	Activity monitor				X		X
	Time use record						X
	Saliva for DNA extraction						X

For more details see: Joshi & Fitzsimons (2016). Study profile: The UK Millennium Cohort Study: the making of a multipurpose resource for social science and policy in the UK. *Longitudinal and Life Course Studies*, 7, 409-430.

Age 14 saliva samples

- Saliva samples were collected from cohort members and resident biological parents for DNA extraction
- **First time** a triad of DNA samples collected from 2 biological parents and child in a large scale study
- Samples collected using Oragene DNA kit
- Number of saliva samples collected:

Cohort member	9360
Main parent	9195
Second parent	4936
TOTAL	23,491



- University of Bristol is collaborating with the MCS team in storing the samples and extracting the DNA
- DNA extractions will be genotyped in order to allow for analysis of different genes and their relationship with areas such as health and wellbeing, growth and behaviour
- Plans for genotyping underway; access in due course will be via a special Access Committee; expected autumn 2018

In the news: MCS6 initial findings

<http://www.cls.ioe.ac.uk/page.aspx?&sitesectionid=2419&sitesectiontitle=MCS+Age+14+initial+findings>

THE TIMES

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Quarter of girls are depressed at 14 in mental health crisis

Chris Smyth, Health Editor

September 20 2017, 12:01am,
The Times



Teenagers are far more likely to experience emotional problems than even ten years ago
GETTY IMAGES

One in four 14-year-old girls is depressed, the largest study of its kind has concluded.

Today's teenagers are far more likely to experience emotional problems than even ten years ago and parents usually have little idea that their child is suffering, researchers found.

Campaigners demanded improvement to NHS services to deal with a "crisis" in teenage mental health, while insisting that society needed to ask uncomfortable questions about why an obsession with body image, academic success and social

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Health

'Stark' increase in overweight youngsters

By Ian Westbrook
Health reporter, BBC News

7 December 2017

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There is a "stark" increase between the ages of seven and 11 in the proportion of children in the UK who are overweight or obese, new data suggests.

The study of nearly 12,000 children found 25% were overweight or obese at age seven, rising to 35% at 11.

Between 11 and 14, there was little change, however, which researchers say may be because children of this age are making more of their own food choices.

Campaigners are calling for more action on weight issues in younger children.

Mothers' education

Researchers from the Centre for Longitudinal Studies (CLS) at the UCL Institute of Education analysed information on nearly 12,000 of the children taking part in the **Millennium Cohort Study**, who were born in 2000 and 2001 and have had their weight and height measured at the ages of three, five, seven, 11 and 14.

Rates of excess weight varied by nation, with nearly 40% of young people in Northern Ireland obese or overweight compared with 38% in Wales and 35% in both Scotland and England.

The levels showed little change up to the age of seven, but then made a big jump in the next four years.

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Nearly half of UK 14-year-olds have tried alcohol, figures show

Findings from on risky behaviours will help to design interventions, say researchers



More than one in 10 14-year-olds admitted to binge drinking on at least one occasion. Photograph: JUPITERIMAGES / Alamy/Alamy

Almost half of children in the UK have tried alcohol by the age of 14, while nearly 20% have had a run-in with the police, new figures have revealed.

The research also found that among 14-year-olds, 17% of boys and 8% of girls had gambled in the previous four weeks, 17% had tried a cigarette at some point, and more than one in 10 admitted to binge drinking on at least one occasion - defined as consuming five or more alcoholic drinks in one sitting.

Experts say the findings will help in the design of interventions to prevent youths adopting risky behaviours, adding that the study highlights the need to tackle the issues of drink, drugs and smoking with primary school children.

"If things become a behavioural pattern and established at [a] young age, it might be difficult to shift later on," said Dr Aase Villadsen, a co-author of the research from University College London.

The results, which have not yet been published in a peer-reviewed journal, come from the **Millennium Cohort Study** - research that has been following about 19,500 people from birth, with interviews and assessments carried out every few years.

The latest findings, from surveys conducted in 2015 and early 2016, focus on various behaviours at age 14, with more than 11,000 teens quizzed.

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Channel 4 reveals shortlisted cities for new national HQ

Access from...UK Data Service

<https://www.ukdataservice.ac.uk>

The screenshot shows the UK Data Service website. At the top, there is a navigation menu with links: "About us", "Get data", "Use data", "Manage data", "Deposit data", and "News and events". Below the menu is a search bar with the text "Search data" and a magnifying glass icon. The main content area features a dark blue banner with the text "Explore the UK's largest collection of social, economic and population data resources." Below this banner, there are two columns of content. The left column is titled "About the UK Data Service" and features a photograph of red double-decker buses in London. The right column is titled "Guides and resources" and lists several categories: "Dataset guides", "Topic guides", "Methods and software guides", and "Guides to exploring online". A "See more" link is provided below these categories. A purple box highlights "Video tutorials" with the text "See our growing range of training videos".

1. Need to create an account
2. State the purpose of the project
3. Find datasets of interest
4. Agree to data security and other policies
5. Download the data and related supporting documents!

(in SPSS or STATA)



Cohort documentation

- Documentation for MCS from UK Data Service
www.ukdataservice.ac.uk
- Documentation available from CLS website
<http://www.cls.ioe.ac.uk/>
 - Questionnaires
 - Technical reports and user guides
 - Guides to initial findings
 - Latest and previously published work and research findings

Time use diaries and accelerometers at age 14

Emily Gilbert

Centre for Longitudinal Studies, University College London

What will be covered

- Design of the time use diaries
- Overview of accelerometers
- How these elements were implemented in-field
- Overview of response rates

Context

- The MCS Age 14 Survey is the first large-scale population study in the world to incorporate objective measurement of physical activity using accelerometers alongside self-reported time use for the same period into a social survey.
- The time use diary and accelerometers were a paired activity, with each type of data enhancing the other.

Time use diaries

Time use diaries – research design

- Pre-coded light diaries: 44 age-specific activity codes
- Main activity, location, who with, enjoyment
- Mixed-mode design: time use app & web-administered diary
- Paper diaries offered only to those with no internet access or those refusing to fill in app/web

Activity codes

The 44 activity codes were grouped into 12 high-level categories

1. Sleep and personal care
2. School, homework and education,
3. Paid or unpaid work
4. Chores, housework and looking after people or animals
5. Eating and drinking
6. Physical exercise and sports
7. Travelling
8. Social time and family time
9. Internet, TV and digital media
10. Volunteering and religious activities
11. Hobbies and other free time activities
12. Any other activity

Time use instruments

	Paper	Web	App
Approach	Time-grid	Time-grid	Question based
Time unit	10 minute slot	10 minute slot	User assigned start & end times
Diary dimensions	Overlap	Overlap	Coterminous
Soft & hard checks	No	Yes	Yes
Aide-memoire	No	Yes	Yes

Web

Activities	Early morning					
	4am	5am	6am	7am	8am	9am
<input type="checkbox"/> What were you doing?	10 20 30 40 50	10 20 30 40 50	10 20 30 40 50	10 20 30 40 50	10 20 30 40 50	10 20 30
<input type="checkbox"/> Sleep and personal care						
Sleeping and resting (including sick in bed)						
Personal care (including taking a shower/bath, grooming, getting dressed etc.)						

App

08:39

What were you doing at 4:00am?

Please select one option only

Sleep and personal care

School, homework, and education

Paid or unpaid work

Chores, housework, and looking after people or animals

Eating and drinking ✓

≡ < NEXT >

08:39

What were you doing at 4:00am?

Please select one option only

Sleeping and resting (including sick in bed)

Personal care (including taking a shower/bath, grooming, getting dressed etc.)

≡ < NEXT >

08:39

What time did you finish sleeping and resting?

06 58

07 59

08 00

09 01

10 02

≡ < NEXT >

Paper

What were you doing?		4am					5am			
		10	20	30	40	50	10	20	30	40
Sleep and personal care	Sleeping and resting (including sick in bed)									
	Personal care (including taking a shower/bath, grooming, getting dressed etc.)									
School, homework, and education	Homework									
	In class									
	School breaks									
	School clubs									
	Detention									
Paid or unpaid work	Paid work (including paid babysitting and paid work for the family)									
	Unpaid work for family or other non-household members (e.g. help in family business)									
Chores, housework, and looking after people or	Cooking, cleaning, and shopping for the household									
	Fixing things around the house, fixing bike, gardening									
	Looking after brothers, sisters, other children in the household									



Completion protocol

- Regular completion encouraged (app in real-time, online could be accessed and saved as needed).
- Aide memoire provided for app and online, so CMs could write down what they were doing throughout the day if unable to carry device.
- CMs encouraged not to complete the time use record in classes, but were provided with a letter for their school to explain what they were participating in.

Time use diaries - compliance and return

	%
Agree to complete	89% (of eligible)
Compliance	% of placed records
Day 1	53%
Day 2	45%

Time use diaries – mode choice

	% of placed
Web	29%
App	64%
Paper	7%

Accelerometers

Choosing a device

- A wrist-worn device was preferred from the outset, due to evidence of greater compliance with these types of devices.
- We extensively piloted two different devices – the GENEActiv Original, and the ActiGraph GT3X+.

The device

- GENEActiv Original
- Measures movement on three axes, and provides a measure of time spent in light, moderate and vigorous physical activity.
- Wrist-worn
- Robust and waterproof
- No feedback



Wear protocol

- Can be worn while bathing, showering and swimming.
- Can be worn when doing sports (letters provided for schools and sports clubs explaining it is safe to wear for sports).
- Must be removed to go through airport security.

The data

- The data collected at age 14 complements the accelerometer data collected at age 7.
- At age 7, cohort members wore a waist-worn accelerometer for seven days.
- The data from age 7 are also available in the UKDA.

Accelerometry - compliance and return

	%
Agree to wear	80% (of eligible)
Return rate	72% (of those who agreed)
Compliance	% of returned devices
0 days	16%
1 day	11%
2 days	63%

Implementation in field

In-field administration

- Interviewer-placed during the household visit
- Two randomly selected 24-hour periods (4am-4am) within 10 days of the interviewer visit – one weekday and one day on the weekend.
- Reminders sent by text and email to CMs and parents to put on/take off accelerometers, and complete time use diaries.

Accelerometer management

- Had a stock of 4000 accelerometers, so they had to be re-used in field.
- CMs posted devices back to the office, data were downloaded, then accelerometers reset and posted back out to interviewers.
- Batteries had to be regularly charged to ensure devices functioned correctly in field, involving monitoring in-office and interviewer charging.
- A bespoke device management system was set up to track the status of each individual device.

Subsampling

- As we didn't have enough accelerometers to cover the entire cohort (despite device reuse in-field), a subsample was drawn.
- All cohort members in Wales, Scotland and Northern Ireland were included, and a random sample of 81% in England.
- Cohort members were eligible for both accelerometry and time use, or neither.

Resources

- Blog post on the use of new tech to collect data:
<https://t.co/9NxZqvSM7V>
- Working paper on the development of the time use diary:
<http://www.cls.ioe.ac.uk/shared/get-file.ashx?id=3098&itemtype=document>
- Working paper on the implementation of accelerometers:
<http://www.cls.ioe.ac.uk/shared/get-file.ashx?id=3353&itemtype=document>

Thank you. Any questions?

emily.gilbert@ucl.ac.uk

Back again at 2.35pm

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4.	3.10-3.30pm	General MCS Q&A	All

MCS 6 – Accelerometer and Time Use Diary Data

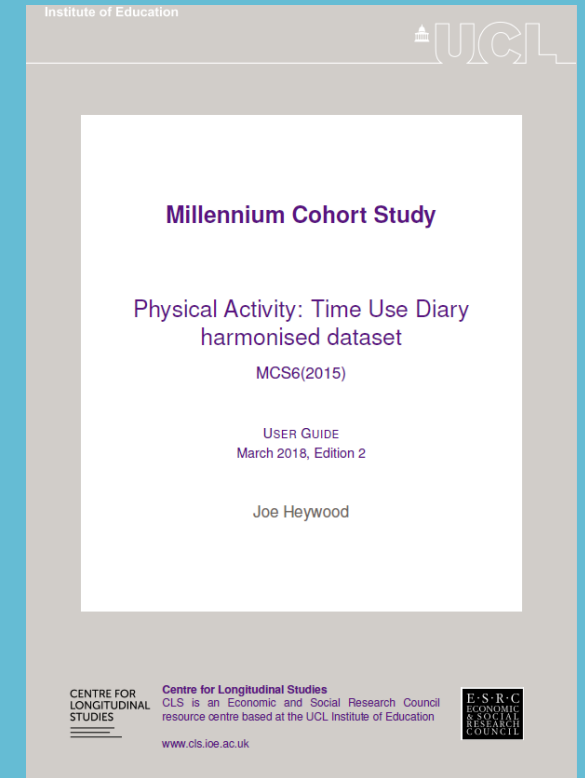
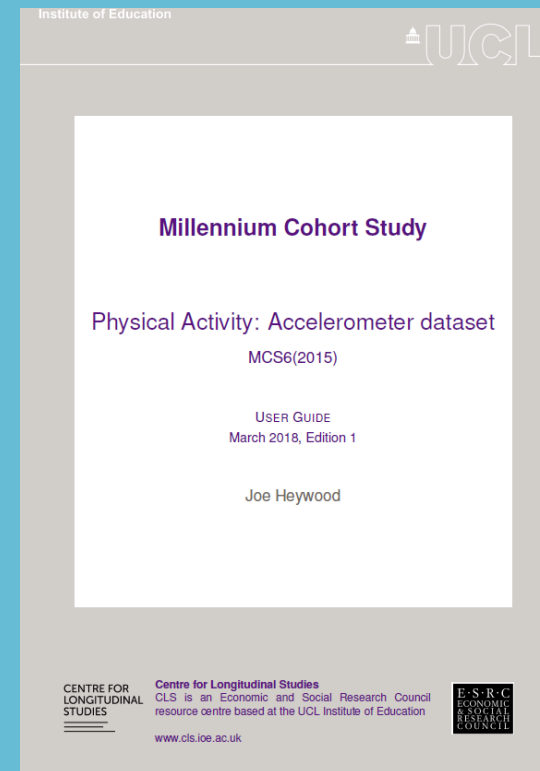
Vilma Agalioti-Sgompou

What will be covered here ?

- **Structures of datasets in MCS**
- **mcs6_cm_accelerometer_derived**
 - Dataset structure
 - Contents of the dataset
- **mcs6_cm_tud_harmonised**
 - Dataset structure
 - Contents of the dataset
 - How to derive variables from the Time Use Diary data
- **How to merge the two datasets**
 - Overview of data merge between Time Use Diary and the Accelerometer data

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 - Contents of the dataset
 - How to derive variables from the Time Use Diary data
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 - Overview of data merge between Time Use Diary and the Accelerometer data



➡ User guides of the Time User Diary and the Accelerometer

Data Structures of MCS

MCSID is a family/household identifier

CNUM is the number of the Cohort Member within a family

Time Use Diary and **Accelerometer** data are structured on `_cm_` level

MCSID	CNUM	
Family identifier	Cohort Member Number	
Family 1	Be aware of more than one Cohort Member per family (i.e. twins & triplets) like Family 1	1
Family 1		2
Family 2	1	
Family 3	1	

Naming conventions

Sweep — X X X X X X X X — For variables from Multi-Coded questions or loops

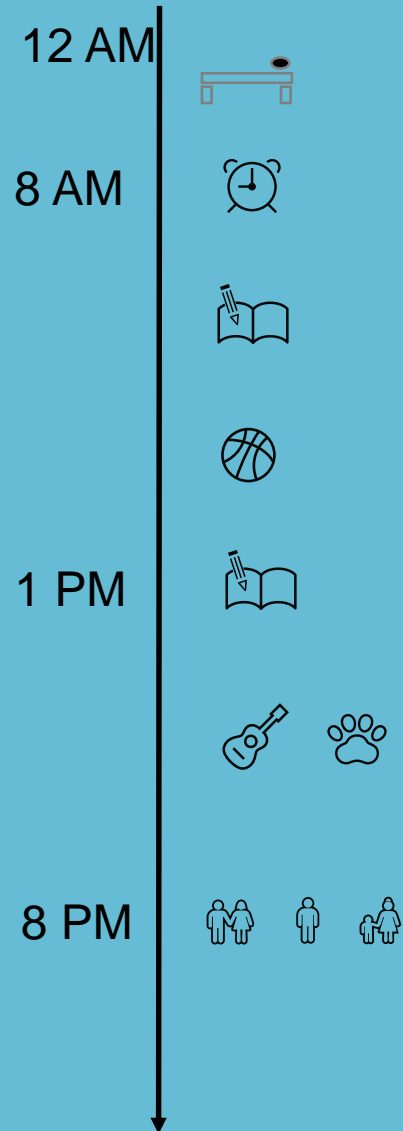
Section of the questionnaire or respondent of that section

- H** for Household module
- P** for Parent interview/Parent respondent
- X** for Proxy partner module (the Main respondent about partner)
- C** for Cohort Member responds/ Child provides information about him/herself
- D** for Derived variables

CAPI code of the question in the questionnaire

Questionnaire section	CAPI	Variable name	Dataset
Household grid	BWHP	F H B W H P 00	mcs6_hhgrid
Household module	ADSA	F H A D S A 00	mcs6_parent_interview
Parent interview	PASD	F P P A S D 00	mcs6_parent_interview
Proxy Parent interview	PXGE	F X P X G E 00	mcs6_proxy_partner_interview
Parent interview (CM loop)	WPRV	F P W P R V 0A	mcs6_parent_cm_interview
Young Person interview	FGHT	F C F G H T 00	mcs6_cm_interview
Physical measurements	WTRL	F C W T R L 0A	mcs6_cm_measurement
Derived variables	RSPO	F D R S P O 00	mcs6_family_derived

mcs6_cm_accelerometer_derived



Acceleration (ENMO = Euclidean Norm Minus One)

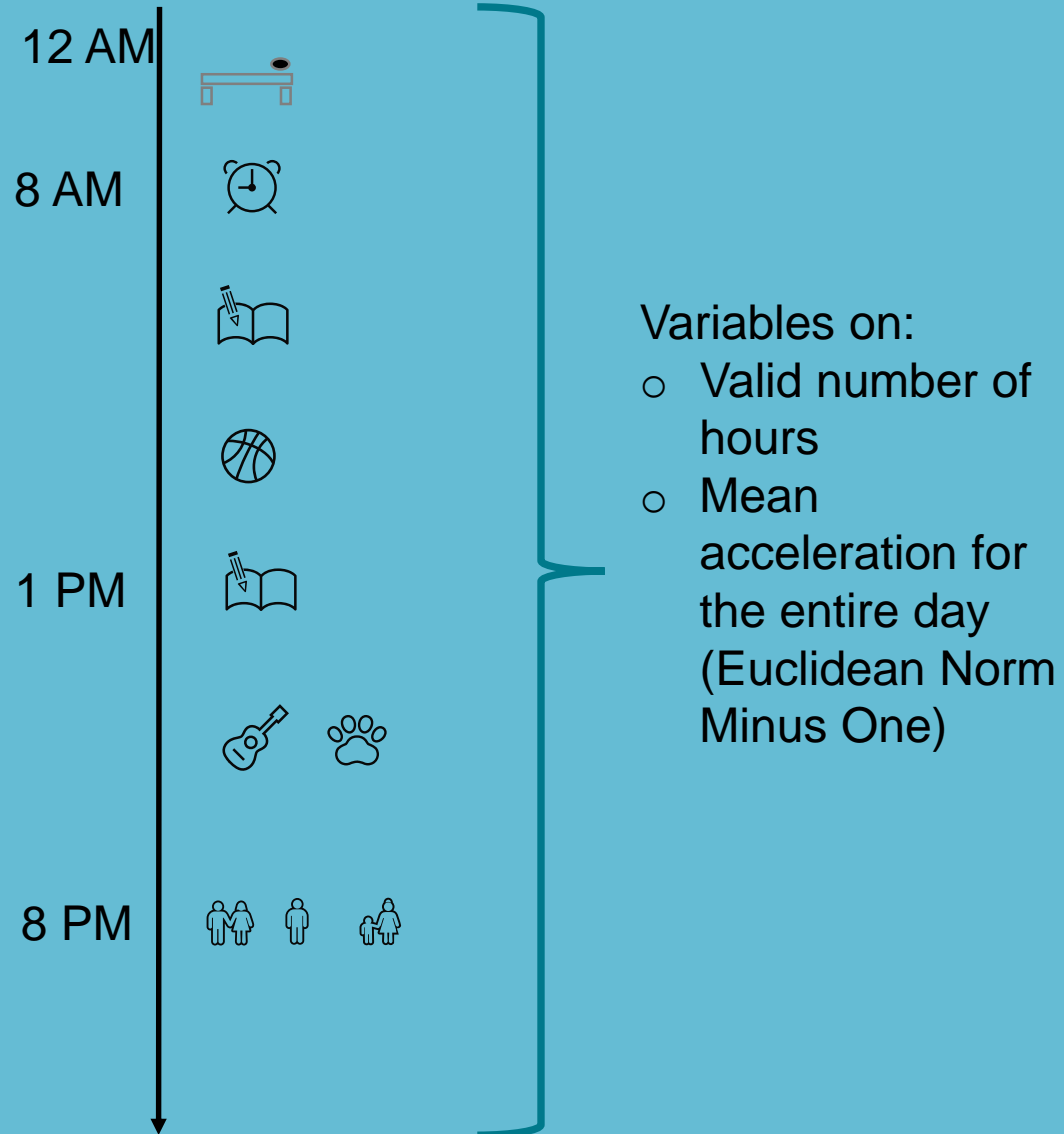
Acceleration is the mean movement within a certain time period (epoch)

Example

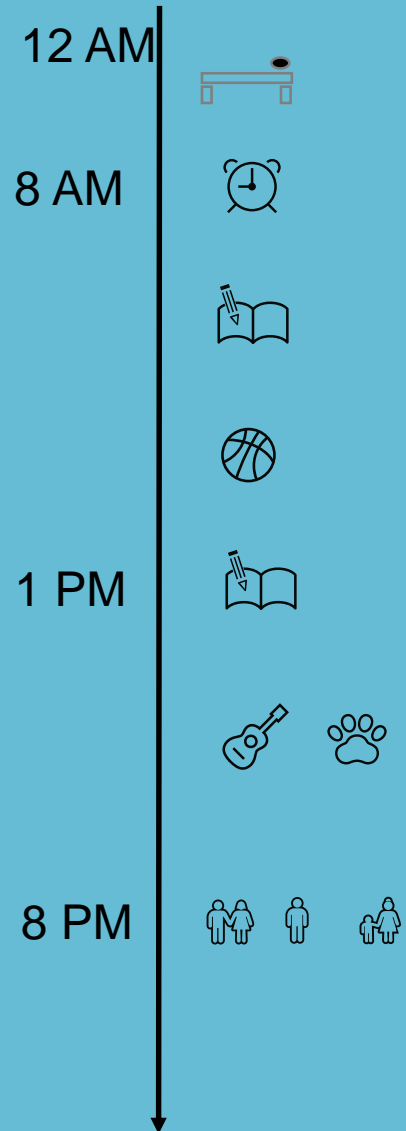
- A child playing basketball
- A child watching TV

For an epoch of 5 seconds, the mean acceleration of the child playing basketball is likely to be larger than the one of the child watching TV

mcs6_cm_accelerometer_derived

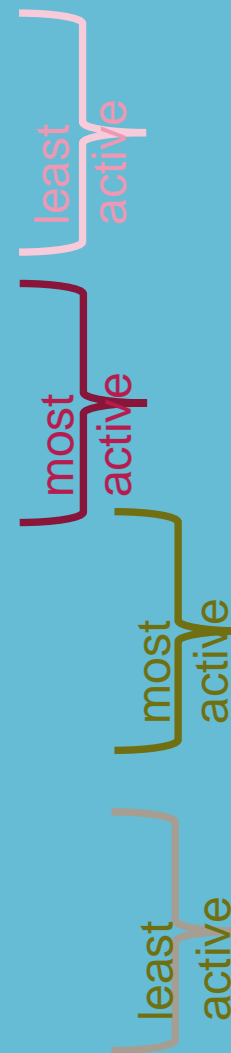


mcs6_cm_accelerometer_derived



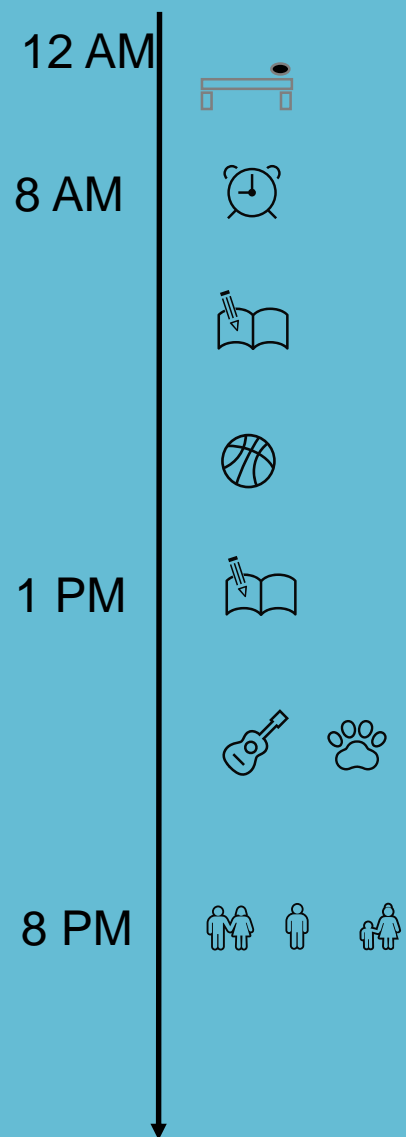
Variables on:

- Valid number of hours
- Mean acceleration for the entire day (Euclidean Norm Minus One)



- Variables on the most and least active 5 hour block of the day.
- Mean acceleration for the 5-hour block
 - Start time of the 5-hour block

mcs6_cm_accelerometer_derived



Variables on:

- Valid number of hours
- Mean acceleration for the entire day (Euclidean Norm Minus One)

least active

most active

most active

least active

Variables on the most and least active 5 hour block of the day.

- Mean acceleration for the 5-hour block
- Start time of the 5-hour block

What 'epochs' are?



Moderate-to-vigorous physical activity. Total time spend in at least 80% vigorous activity for 1min, 5min, 10min.

mcs6_cm_accelerometer_derived



Variables on:

- Valid number of hours
- Mean acceleration for the entire day (Euclidean Norm Minus One)

least active

most active

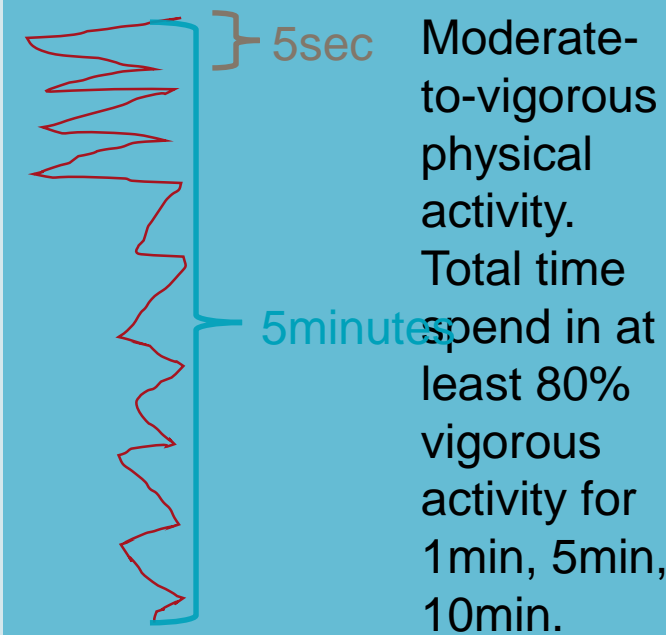
most active

least active

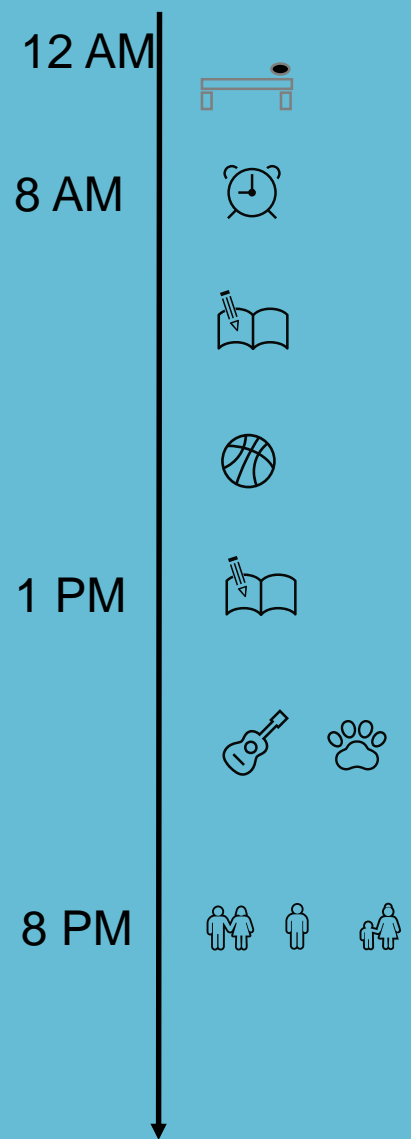
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- Start time of the 5-hour block

What 'epochs' are?



mcs6_cm_accelerometer_derived



Variables on:

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least active

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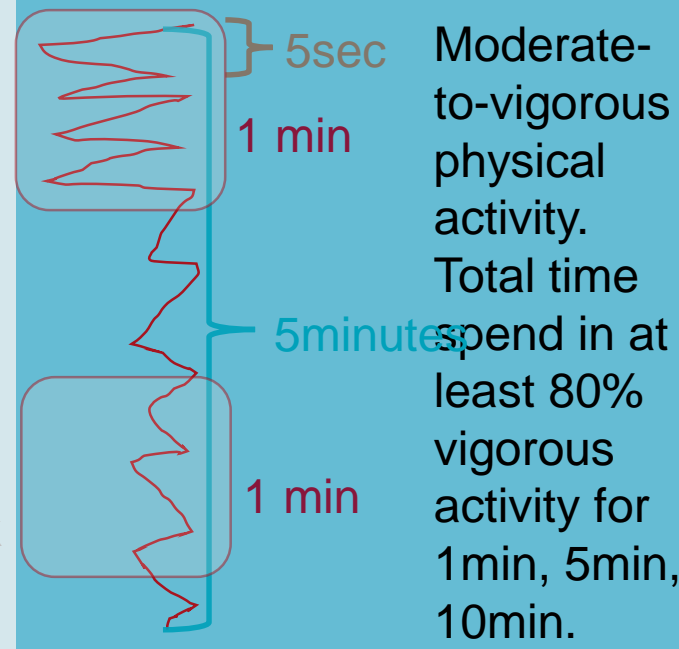
most active

least active

Variables on the most and least active 5 hour block of the day.

- Mean acceleration for the 5-hour block
- Start time of the 5-hour block

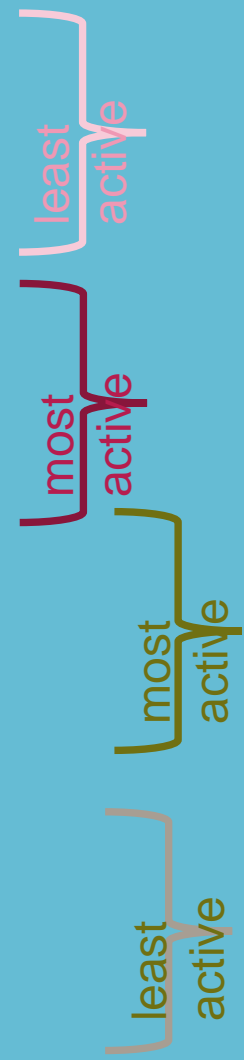
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mcs6_cm_accelerometer_derived

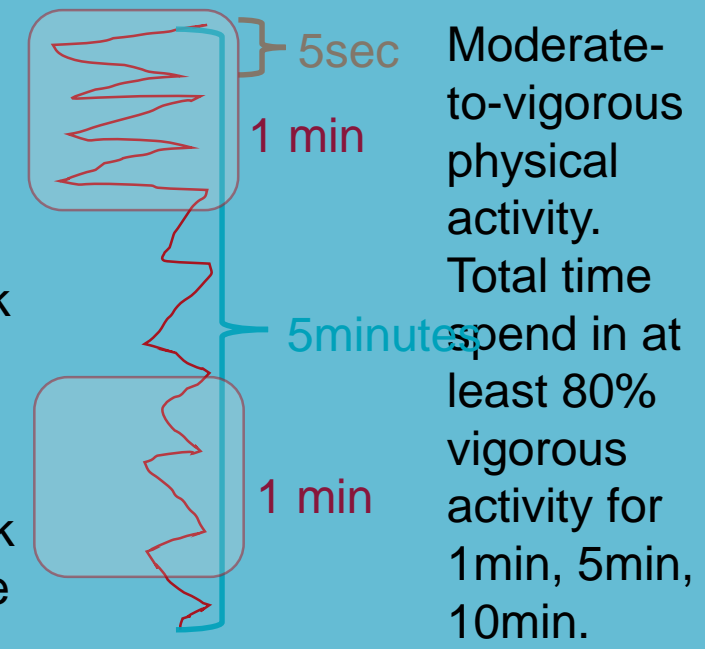


Variables on:
○ Valid number of hours
○ Mean acceleration for the entire day (Euclidean Norm Minus One)



Variables on the most and least active 5 hour block of the day.
○ Mean acceleration for the 5-hour block
○ Start time of the 5-hour block

What 'epochs' are?

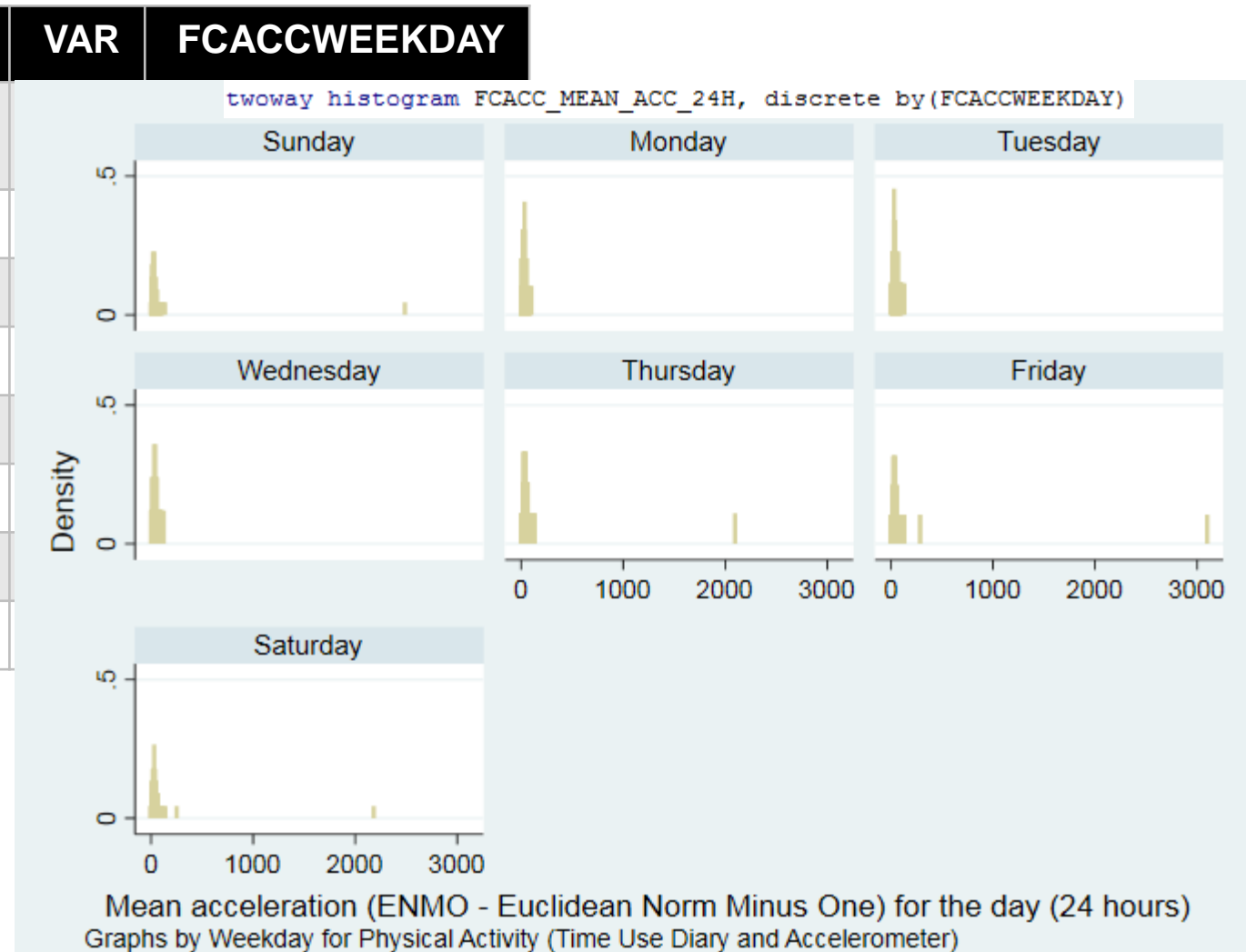


mcs6_cm_accelerometer_derived

MCSID	Cohort Member	FCACCAD	VAR	FCACCWEEKDAY
Household/ Family ID	Cohort Member number within an MCS family (CNUM)	Accelerometer assigned day		Weekday vs Weekend
Family 1	1	1	A	Weekday
Family 1	1	2	B	Weekend
Family 2	1	1	C	Weekend
Family 2	1	2	D	Weekday
Family 2	2	1	E	Weekend
Family 2	2	2	F	Weekday
Family 3	1	1	G	Weekday

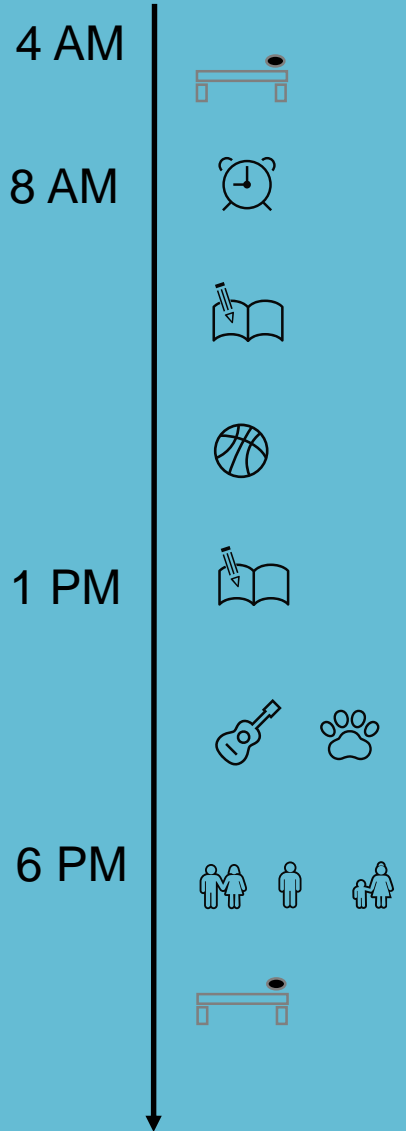
mcs6_cm_accelerometer_derived

MCSID	Cohort Member	FCACCAD	VAR	FCACCWEEKDAY
Household/ Family ID	Cohort Member number within an MCS family (CNUM)	Accelerometer assigned day		
Family 1	1	1		
Family 1	1	2		
Family 2	1	1		
Family 2	1	2		
Family 2	2	1		
Family 2	2	2		
Family 3	1	1		



mcs6_cm_tud_harmonised

Assigned day can be used to connect to the Accelerometer



MCSID	FCNUM00	FCTUDAD	FCTUDSLOT	FCTUDACT	FCTUDWEEKDAY
Household / Family identifier	Cohort Member number within a family	Assigned Day	10-minute slot (144 in 24 hours)	Activity	Whether the assigned day is weekday or weekend (Month and Year are also provided)
Family 1	1 st CM of the family	First assigned day	10-minute slot 1 (at 4am)	House	Weekend (Saturday, Sunday)
Family 1	1 st CM of the family	First assigned day	10-minute slot 2	Basketball	Weekend (Saturday, Sunday)
Family 1	1 st CM of the family	First assigned day	10-minute slot 50	Flip-flops	Weekend (Saturday, Sunday)
...
Family 1	1 st CM of the family	First assigned day	10-minute slot 144	House	Weekend (Saturday, Sunday)
Family 1	1 st CM of the family	Second assigned day	10-minute slot 1 (at 4am)	Alarm clock	Weekday (Monday – Friday)
Family 1	1 st CM of the family	Second assigned day	10-minute slot 30	Book	Weekday (Monday – Friday)
...
Family 1	1 st CM of the family	Second assigned day	10-minute slot 144	House	Weekday (Monday – Friday)
Family 1	2 nd CM of the family	First assigned day	10-minute slot 40	Fork and plate	Weekday (Monday – Friday)
...
Family 2	1 st CM of the family	Second assigned day	10-minute slot 110	Thumbs up	Weekday (Monday – Friday)

The 44 activities can get clustered into 12 general activities using syntax provided

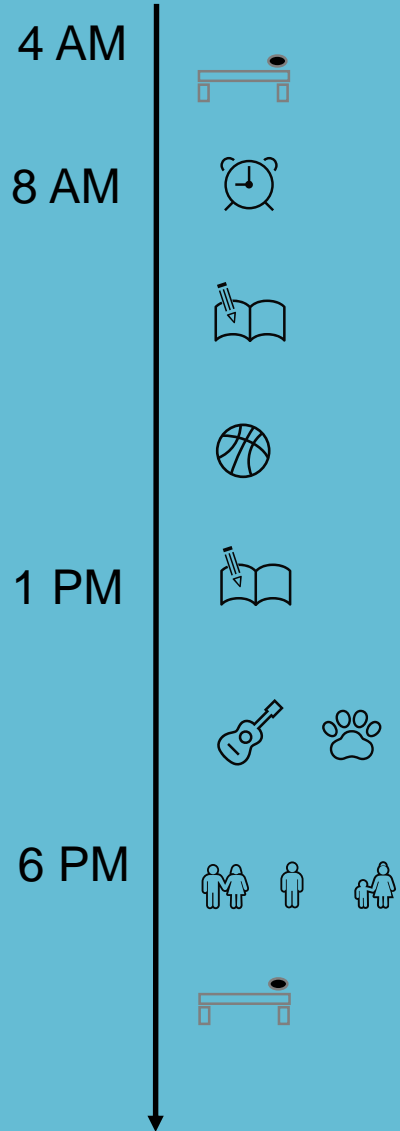
One slot / one row is 10 minutes

The assigned days are two per child: one is a weekday and one is in the weekend. **The order of the assigned day does not correspond to the weekday.**

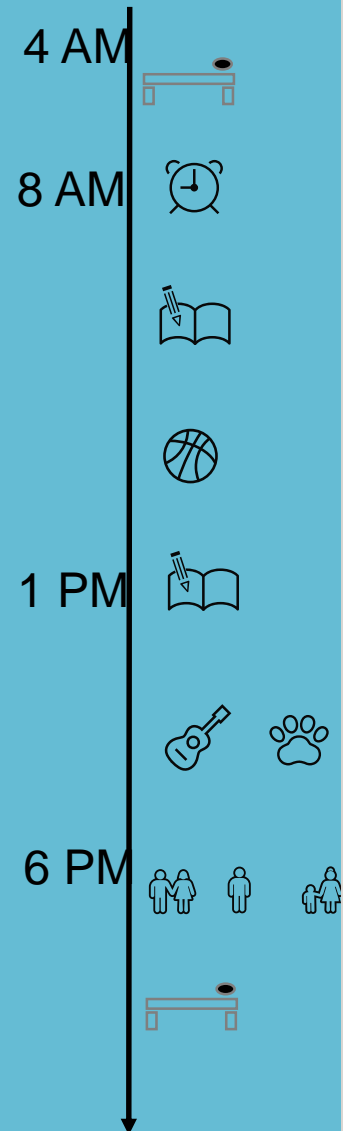
_cm_level multiple CMs per family

Only one day may have been collected for a CM (144 rows)

mcs6_cm_tud_harmonised

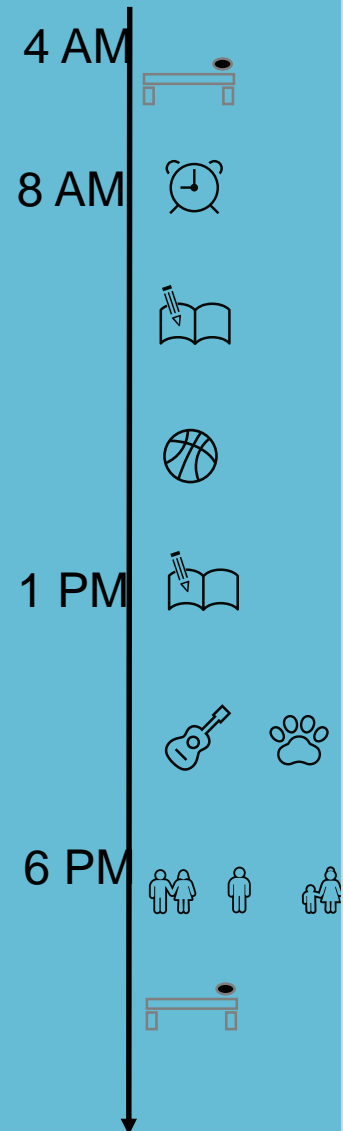


Deriving variables from the Time Use Diary



MCSID	FCNUM00	FCTUDAD	FCTUDSLOT	FCTUDACT
Household / Family identifier	Cohort Member number within a family	Assigned Day	10-minute slot (144 in 24 hours)	Activity
Family 1	1 st CM of the family	First assigned day	10-minute slot 1 (at 4am)	
Family 1	1 st CM of the family	First assigned day	10-minute slot 2	
Family 1	1 st CM of the family	First assigned day	10-minute slot 50	
Family 1	1 st CM of the family	First assigned day	10-minute slot 70	
Family 1	1 st CM of the family	First assigned day	10-minute slot 100	
...	
Family 1	1 st CM of the family	First assigned day	10-minute slot 144	
Family 1	1 st CM of the family	Second assigned day	10-minute slot 1 (at 4am)	
Family 1	1 st CM of the family	Second assigned day	10-minute slot 30	
Family 1	1 st CM of the family	Second assigned day	10-minute slot 40	
Family 1	1 st CM of the family	Second assigned day	10-minute slot 50	
...	
Family 1	1 st CM of the family	Second assigned day	10-minute slot 144	
Family 1	2 nd CM of the family	First assigned day	10-minute slot 40	
...	
Family 2	1 st CM of the family	Second assigned day	10-minute slot 110	

Deriving variables from the Time Use Diary

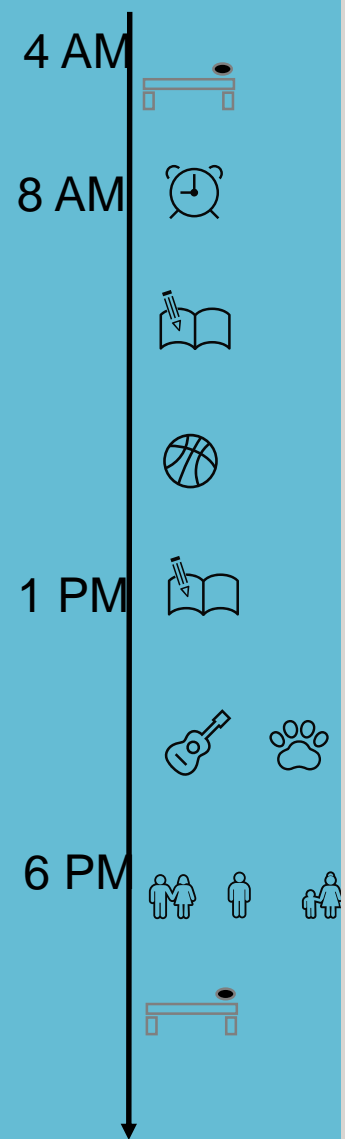


MCSID	FCNUM00	FCTUDAD	FCTUDSLOT	FCTUDACT
Household / Family identifier	Cohort Member number within a family	Assigned Day	10-minute slot (144 in 24 hours)	Activity
Family 1	1 st CM of the family	First assigned day	10-minute slot 1 (at 4am)	
Family 1	1 st CM of the family	First assigned day	10-minute slot 2	
Family 1	1 st CM of the family	First assigned day	10-minute slot 50	
Family 1	1 st CM of the family	First assigned day	10-minute slot 70	
Family 1	1 st CM of the family	First assigned day	10-minute slot 100	
...	
Family 1	1 st CM of the family	First assigned day	10-minute slot 144	
Family 1	1 st CM of the family	Second assigned day	10-minute slot 1 (at 4am)	
Family 1	1 st CM of the family	Second assigned day	10-minute slot 30	
Family 1	1 st CM of the family	Second assigned day	10-minute slot 40	
Family 1	1 st CM of the family	Second assigned day	10-minute slot 50	
...	
Family 1	1 st CM of the family	Second assigned day	10-minute slot 144	
Family 1	2 nd CM of the family	First assigned day	10-minute slot 40	
...	
Family 2	1 st CM of the family	Second assigned day	10-minute slot 110	

Example:

How to calculate total number of 10-minute slots for a certain activity (i.e. physical activity) per day for each child?

Deriving variables from the Time Use Diary



MCSID	FCNUM00	FCTUDAD	FCTUDSLOT	FCTUDACT
Household / Family identifier	Cohort Member number within a family	Assigned Day	10-minute slot (144 in 24 hours)	Activity
Family 1	1 st CM of the family	First assigned day	10-minute slot 1 (at 4am)	
Family 1	1 st CM of the family	First assigned day	10-minute slot 2	
Family 1	1 st CM of the family	First assigned day	10-minute slot 50	
Family 1	1 st CM of the family	First assigned day	10-minute slot 70	
Family 1	1 st CM of the family	First assigned day	10-minute slot 100	
...	
Family 1	1 st CM of the family	First assigned day	10-minute slot 144	
Family 1	1 st CM of the family	Second assigned day	10-minute slot 1 (at 4am)	
Family 1	1 st CM of the family	Second assigned day	10-minute slot 30	
Family 1	1 st CM of the family	Second assigned day	10-minute slot 40	
Family 1	1 st CM of the family	Second assigned day	10-minute slot 50	
...	
Family 1	1 st CM of the family	Second assigned day	10-minute slot 144	
Family 1	2 nd CM of the family	First assigned day	10-minute slot 40	
...	
Family 2	1 st CM of the family	Second assigned day	10-minute slot 110	

Example:

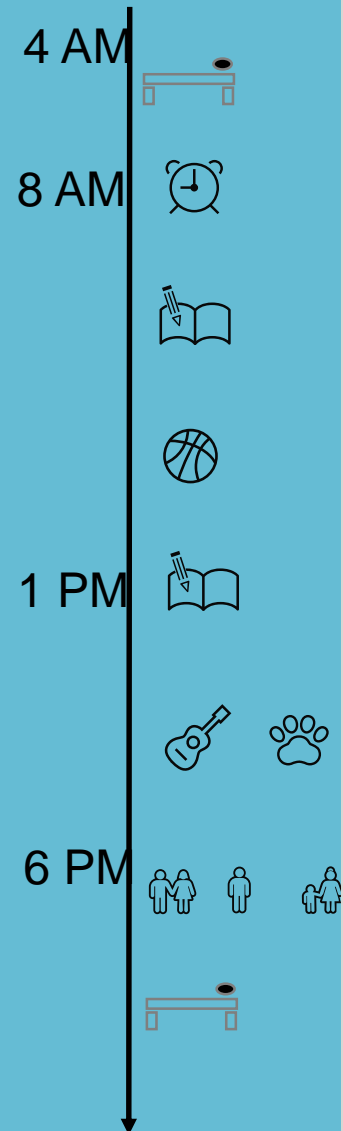
How to calculate total number of 10-minute slots for a certain activity (i.e. physical activity) per day for each child?

Per family – MCSID

Per CM – CNUM

Per day – FCTUDAD

Deriving variables from the Time Use Diary



MCSID	FCNUM00	FCTUDAD	FCTUDSLOT	FCTUDACT
Household / Family identifier	Cohort Member number within a family	Assigned Day	10-minute slot (144 in 24 hours)	Activity
Family 1	1 st CM of the family	First assigned day	10-minute slot 1 (at 4am)	
Family 1	1 st CM of the family	First assigned day	10-minute slot 2	
Family 1	1 st CM of the family	First assigned day	10-minute slot 50	
Family 1	1 st CM of the family	First assigned day	10-minute slot 51	
Family 1	1 st CM of the family	First assigned day	10-minute slot 52	
...
Family 1	1 st CM of the family	First assigned day	10-minute slot 53	
Family 1	1 st CM of the family	Second assigned day	10-minute slot 1	
Family 1	1 st CM of the family	Second assigned day	10-minute slot 2	
Family 1	1 st CM of the family	Second assigned day	10-minute slot 3	
Family 1	1 st CM of the family	Second assigned day	10-minute slot 4	
Family 1	1 st CM of the family	Second assigned day	10-minute slot 5	
...
Family 1	1 st CM of the family	Second assigned day	10-minute slot 56	
Family 1	2 nd CM of the family	First assigned day	10-minute slot 1	
...
Family 2	1 st CM of the family	Second assigned day	10-minute slot 1	

Example:

How to calculate total number of 10-minute slots for a certain activity (i.e. physical activity) per day for each child?

Per family – MCSID

Per CM – CNUM

Per day – FCTUDAD

```

* generate a physical activity variable .
gen PHYSICAL_ACTIVITY = 0
* Physical exercise and sports > Cycling .
replace PHYSICAL_ACTIVITY = 1 if (FCTUDACT == 18)
* Physical exercise and sports > Individual ball games and training .
replace PHYSICAL_ACTIVITY = 1 if (FCTUDACT == 19)
* Physical exercise and sports > Jogging, running, walking, hiking .
replace PHYSICAL_ACTIVITY = 1 if (FCTUDACT == 20)
* Physical exercise and sports > Team ball games and training .
replace PHYSICAL_ACTIVITY = 1 if (FCTUDACT == 21)
* Physical exercise and sports > Swimming and other water sports .
replace PHYSICAL_ACTIVITY = 1 if (FCTUDACT == 22)
* Physical exercise and sports > Other exercise and sports, dancing, etc .
replace PHYSICAL_ACTIVITY = 1 if (FCTUDACT == 23)
* Non-physical activity
tab PHYSICAL_ACTIVITY

* total physical activity per assigned day per Cohort Member per family .
egen total_physical_activity_per_day = sum(PHYSICAL_ACTIVITY), ///
by (MCSID FCNUM00 FCTUDAD)
tab total_physical_activity_per_day

* keep one row per assigned day
keep if FCTUDSLOT == 1
    
```

Deriving variables from the Time Use Diary



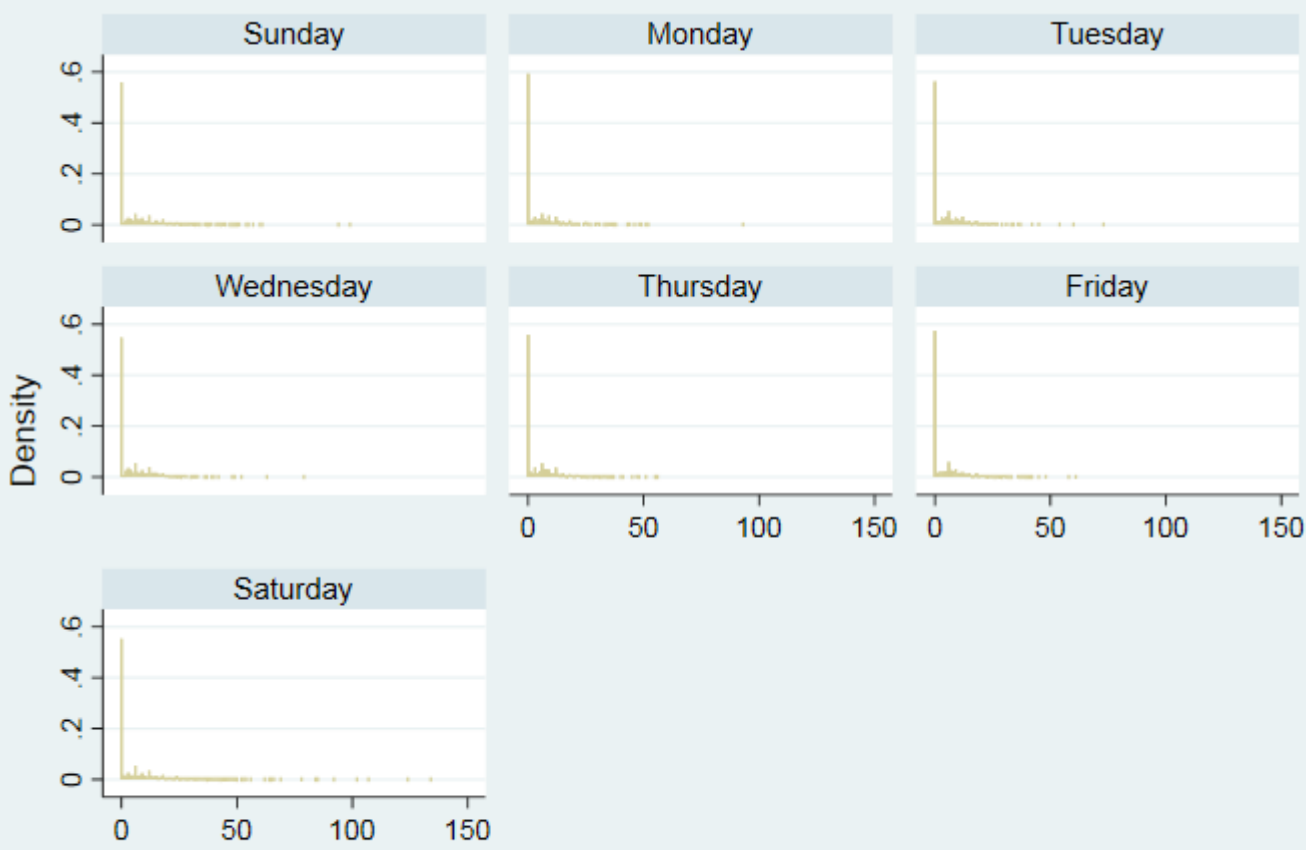
Example:

How to calculate total number of 10-minute slots for a certain activity (i.e. physical activity) per day for each child?

- Per family – MCSID
- Per CM – CNUM
- Per day – FCTUDAD

MCSID	FCNUM00	FCTUDAD	FCTUDSLOT	FCTUDACT
Household / Family	Cohort Member number within a	Assigned Day	10-minute slot (144 in 24 hours)	Activity

* look at the total physical activity slots per weekday
`twoway histogram total_physical_activity_per_day, discrete by(FCTUDWEEKDAY)`



total_physical_activity_per_day
 Graphs by Weekday for Physical Activity (Time Use Diary and Accelerometer)

lam)	🏠
lot 2	🚲
it 50	🏀
it 70	👣
100	📈
...	🍔
144	🏠
lam)	🏠
it 30	🕒
it 40	📖
it 50	🍴
...	👍
144	🏠
it 40	🚗
...	
110	✍️

4 AM



Merging Time Use Diary to Accelerometer

MCSID	CNUM	FCTUD AD	...
Family 1	1	1	
Family 1	1	2	
Family 2	1	1	
Family 2	1	2	
Family 2	2	1	
Family 2	2	2	
Family 3	1	1	
Family 3	1	2	
Family 4	1	1	
Family 4	1	2	

MCSID	CNUM	FCACC AD	...
Family 1	1	1	
Family 1	1	2	
Family 2	1	1	
Family 2	1	2	
Family 2	2	1	
Family 2	2	2	
Family 3	1	1	
Family 3	1	2	
Family 4	1	1	
Family 4	1	2	

Merging Time Use Diary to Accelerometer

MCSID	CNUM	FCTUD AD	...	MCSID	CNUM	FCACC AD	...
Family 1	1	1		Family 1	1	1	
Family 1	1	2		Family 1	1	2	
Family 2	1	1		Family 2	1	1	
Family 2	1	2		Family 2	1	2	
Family 2	2	1		Family 2	2	1	
Family 2	2	2		Family 2	2	2	
Family 3	1	1		Family 3	1	1	
Family 3	1	2		Family 3	1	2	
Family 4	1	1		Family 4	1	1	
Family 4	1	2		Family 4	1	2	

Future MCS data releases

Sweep	MCS 1	MCS 2	MCS 3	MCS 4	MCS 5	MCS 6	MCS 7
Year of data collection	2001/2	2004/5	2006	2008	2012	2015/6	2018
CM 's age	9 months	3	5	7	11	14	17
Education			Year 1	Year 3	Year 6	Year 9	Year 12
			Key stage 1	Key stage 2	Key stage 3	Key stage 4	Key stage 5
Format of datasets until Autumn 2018	Wide format (one row per family)				Long format (person level - one row per respondent)		
Format of datasets Autumn 2018 onwards	Long format (person level - one row per respondent)						



Future MCS data releases

MCS 1-4 datasets **old** dataset format: one row per family (wide / unstacked)

MCSID	*MVAR	*PVAR	*CVARa	*CVARb	*CVARc	*MVARa	*MVARb	*MVARc	*PVARa	*PVARb	*PVARc
Family ID	Main on Parent interview	Partner on Parent interview	Child 1	Child 2	Child 3	Main respondent for CM1	Main respondent for CM2	Main respondent for CM3	Partner for CM1	Partner for CM2	Partner for CM3
Family 1	A	D	A	-	-	1	-	-	1	-	-
Family 2	B	E	A	A	A	1	1	-	1	1	-
Family 3	C	-	A	-	-	1	-	-	-	-	-

parent
cm
_parent_cm_

MCS 1-4 datasets **new** dataset format: person level (long / stacked / narrow)

<u>_family_</u>		<u>_parent_level dataset</u>			<u>_parent_cm_level dataset</u>				<u>_cm_level dataset</u>		
MCSID	VAR	MCSID	Main/Partner	VAR	MCSID	Main/Partner	Cohort M	VAR	MCSID	Cohort M	VAR
Family 1	A	Family ID	PNUM, ELIG, RESP		Family ID	PNUM, ELIG, RESP	CNUM		Family ID	CNUM	
Family 2	B	Family 1	Main Interview	A	Family 1	Main Interview	1	A	Family 1	1	A
Family 3	C	Family 1	Partner Interview	B	Family 1	Partner Interview	1	B	Family 2	1	B
		Family 2	Main Interview	C	Family 2	Main Interview	1	C	Family 2	2	C
		Family 2	Partner Interview	D	Family 2	Partner Interview	1	D	Family 3	1	D
		Family 3	Main Interview	E	Family 2	Main Interview	2	E			
					Family 2	Partner Interview	2	F			
					Family 3	Main Interview	1	G			

Future MCS data releases

- Possible to find a variable from the previous **old** format into the **new** one. List with **correspondence** between previous format and old format
- Data handling guide on how to merge the different files
- Webinar on data handling of MCS in the long format
- Release time estimated Autumn 2018

MCS 1-4 datasets **old** dataset format: one row per family (wide / unstacked)

MCSID	*MVAR	*PVAR	*CVARa	*CVARb	*CVARc	*MVARa	*MVARb	*MVARc	*PVARa	*PVARb	*PVARc
Family ID	Main on Parent interview	Partner on Parent interview	Child 1	Child 2	Child 3	Main respondent for CM1	Main respondent for CM2	Main respondent for CM3	Partner for CM1	Partner for CM2	Partner for CM3
Family 1	A	D	A	-	-	1	-	-	1	-	-
Family 2	B	E	A	A	A	1	1	-	1	1	-
Family 3	C	-	A	-	-	1	-	-	-	-	-

parent
cm
_parent_cm_

MCS 1-4 datasets **new** dataset format: person level (long / stacked / narrow)

<u>_family_</u>		<u>_parent_level dataset</u>			<u>_parent_cm_level dataset</u>				<u>_cm_level dataset</u>		
MCSID	VAR	MCSID	Main/Partner	VAR	MCSID	Main/Partner	Cohort M	VAR	MCSID	Cohort M	VAR
Family 1	A	Family ID	PNUM, ELIG, RESP		Family ID	PNUM, ELIG, RESP	CNUM		Family ID	CNUM	
Family 2	B	Family 1	Main Interview	A	Family 1	Main Interview	1	A	Family 1	1	A
Family 3	C	Family 1	Partner Interview	B	Family 1	Partner Interview	1	B	Family 2	1	B
		Family 2	Main Interview	C	Family 2	Main Interview	1	C	Family 2	2	C
		Family 2	Partner Interview	D	Family 2	Partner Interview	1	D	Family 3	1	D
		Family 3	Main Interview	E	Family 2	Main Interview	2	E			
					Family 2	Partner Interview	2	F			
					Family 3	Main Interview	1	G			

Thank you!

Looking ahead - MCS7, Age 17 survey

Dr Vanessa Moulton

Timeline MCS7

- In the field: January 2018 - March 2019
- Data deposit at UKDS ~ end 2019

Data linkage consents at age 17

Domain
Education (NPD, ILR, HESA)
Education (UCAS)
Education (SLC)
Health (NHS)
Economic (DWP)
Economic (HMRC)
Crime (MOJ)

Content

Cohort member:

- Interview, self-completion and online questionnaire
- Physical measurements (height, weight, body fat)
- Numeracy assessment

Parents:

- Online questionnaire

Overview of content MCS7

Parent	Cohort member
<p>Family context</p> <p>Parental education, schooling and parenting</p> <p>Parents health</p> <p>Employment, income and housing</p> <p>Cohort members SDQ</p>	<p>Family and home life</p> <p>Education and schooling</p> <p>Income and employment</p> <p>Health and physical activity</p> <p>Strengths and Difficulties Questionnaire</p> <p>Family and friends</p> <p>Personality and attitudes</p> <p>Life and well being</p> <p>Relationships, sex and pregnancy</p> <p>Risky behaviours</p> <p>Diet and body image</p> <p>Sexual identity</p>