



# Movement Behaviour Questionnaire

## Child Open Version

### (MBQ-C)

#### OVERVIEW

- The MBQ is a validated rapid assessment tool for measuring movement behaviours in children aged 0 – 5 years.
- The MBQ-C measures active play, screen time and sleep.

#### TARGET POPULATION

- For children aged up to 5 years *who can walk*.

#### HOW IT IS MEASURED

- 9 items
- Open-ended questions
- Self-report
- Hard-copy or electronic completion (REDCap data dictionary available upon request)
- Supplemented by the User guide for administration and scoring (hard copy or REDCap versions available)

Stewart. G. Trost

Contact for information: [s.trost@uq.edu.au](mailto:s.trost@uq.edu.au)

Date: \_\_\_\_ / \_\_\_\_ / \_\_\_\_

## Movement Behaviour Questionnaire (MBQ-C)

### DIRECTIONS

This survey will ask you questions about your child's movement behaviours (activity, screen time, and sleep) on a typical day.

A typical day is a day when your child does things they normally do.

For questions about how much time your child spends in these behaviours, please provide an answer to both hours and minutes, e.g., 2 hours 0 minutes, 0 hours 30 minutes.

Please respond to all the questions as best as you can.

How old is your child?

- 1 year old [1]
- 2 years old [2]
- 3 years old [3]
- 4 years old [4]
- 5 years old [5]

This section is about your child's physical activity

**Q1A.** Thinking about the past week, on a TYPICAL **WEEKDAY**, how much time did your child spend in active play? *Active play includes activities such as walking, running, dancing, climbing, playing with balls, riding bikes or scooters, or swimming.*

hours  minutes **If you answered 0 hours/min → Skip to question 2A**

**Q1B.** Of this time, how much was spent doing vigorous activities such as running, jumping, dancing, riding bikes or scooters? Please note, the time provided must be less than your previous answer.

hours  minutes

**Q2A.** Thinking about the past week, on a TYPICAL **WEEKEND DAY**, how much time did your child spend in active play? *Active play includes activities such as walking, running, dancing, climbing, playing with balls, riding bikes or scooters, or swimming.*

hours  minutes **If you answered 0 hours/min → Skip to question 3A**

**Q2B.** Of this time, how much was spent doing vigorous activities such as running, jumping, dancing, riding bikes or scooters? Please note, the time provided must be less than your previous answer.

hours  minutes

This section is about your child's screen time

**Q3A.** Thinking about the past week, on a TYPICAL **WEEKDAY**, how much time did your child spend watching television programs, videos/internet clips or movies on a television, computer, or portable/mobile device such as iPad, tablet or smartphone?

hours  minutes **If you answered 0 hours/min → Skip to question 4A**

**Q3B.** Of this time, how much time did they spend watching television programs, videos/internet clips, or movies while standing? Please note, the time provided must be less than your previous answer.

hours  minutes

**Q4A.** Thinking about the past week, on a TYPICAL **WEEKEND DAY**, how much time did your child spend watching television programs, videos/internet clips or movies on a television, computer, or portable/mobile device such as iPad, tablet or smartphone?

hours  minutes **If you answered 0 hours/min → Skip to question 5A**

**Q4B.** Of this time, how much time did they spend watching television programs, videos/internet clips, or movies while standing? Please note, the time provided must be less than your previous answer.

hours  minutes

**Q5A.** Thinking about the past week, on a TYPICAL **WEEKDAY**, how much time did your child spend playing games, looking at photos, or video chatting (e.g. FaceTime, Zoom, Skype) on a screen-based device such as a computer or laptop, video game console, iPad, tablet, or smartphone?

hours  minutes **If you answered 0 hours/min → Skip to question 6A**

**Q5B.** Of this time, how much time did they spend playing games, looking at photos, or video chatting (e.g. FaceTime, Zoom, Skype) while standing? Please note, the time provided must be less than your previous answer.

hours  minutes

**Q6A.** Thinking about the past week, on a TYPICAL WEEKEND DAY, how much time did your child spend playing games, looking at photos, or video chatting (e.g. FaceTime, Zoom, Skype) on a screen-based device such as a computer or laptop, video game console, iPad, tablet, or smartphone?

hours  minutes **If you answered 0 hours/min → Skip to question 7**

**Q6B.** Of this time, how much time did they spend playing games, looking at photos, or video chatting (e.g. FaceTime, Zoom, Skype) while standing? Please note, the time provided must be less than your previous answer.

hours  minutes

This section is about your child's sleep

**Q7.** Thinking about the past week, on a TYPICAL NIGHT, how much time did your child sleep in total during the night?

hours  minutes

**Q8.** Thinking about the past week, on a TYPICAL DAY, how much time did your child sleep in total during the day?

hours  minutes

**Q9.** In a TYPICAL WEEK, how often does your child have a regular bedtime routine (e.g., bath, story)?

times

--- Thank you for completing the MBQ ---

## Calculation of outcome variables

Outcome variable	Calculation
<b>PHYSICAL ACTIVITY</b>	
Weekday total active play (minutes/day)	Q1A ( _____ hours x 60) + _____ minutes
Weekday energetic play (minutes/day)	Q1B ( _____ hours x 60) + _____ minutes
Weekend day total active play (minutes/day)	Q2A ( _____ hours x 60) + _____ minutes
Weekend day energetic play (minutes/day)	Q2B ( _____ hours x 60) + _____ minutes
Weighted average of total active play (minutes/day)	$((\text{Weekday total active play} \times 5) + (\text{Weekend day total active play} \times 2)) / 7$
Weighted average of energetic play (minutes/day)	$((\text{Weekday energetic play} \times 5) + (\text{Weekend day energetic play} \times 2)) / 7$
<b>SCREEN TIME</b>	
Weekday passive screen time (minutes/day)	Q3A ( _____ hours x 60) + _____ minutes
Weekday passive screen time <u>while standing</u> (minutes/day)	Q3B ( _____ hours x 60) + _____ minutes
Weekend day passive screen time (minutes/day)	Q4A ( _____ hours x 60) + _____ minutes
Weekend day passive screen time <u>while standing</u> (minutes/day)	Q4B ( _____ hours x 60) + _____ minutes
Weekday SEDENTARY passive screen time (minutes/day)	Weekday passive screen time - Weekday passive screen time <u>while standing</u> <b>NOTE.</b> If weekday passive screen time <u>while standing</u> exceeds total passive screen time, 'Weekday passive screen time' should be used to calculate the weighted average for Weekday SEDENTARY passive screen time.
Weekend day SEDENTARY passive screen time (minutes/day)	Weekend day passive screen time - Weekend day passive screen time <u>while standing</u> <b>NOTE.</b> If weekend day passive screen time <u>while standing</u> exceeds total passive screen time, 'Weekend day passive screen time' should be used to calculate the weighted average for Weekend day SEDENTARY passive screen time.
Weighted average of passive screen time	$((\text{Weekday passive screen time} \times 5) + (\text{Weekend$

(minutes/day)	day passive screen time x 2)) / 7
Weighted average of SEDENTARY passive screen time (minutes/day)	((Weekday sedentary passive screen time x 5) + (Weekend day sedentary passive screen time x 2)) / 7
Weekday interactive screen time (minutes/day)	Q5A ( _____ hours x 60) + _____ minutes
Weekday interactive screen time <u>while standing</u> (minutes/day)	Q5B ( _____ hours x 60) + _____ minutes
Weekend day interactive screen time (minutes/day)	Q6A ( _____ hours x 60) + _____ minutes
Weekend day interactive screen time <u>while standing</u> (minutes/day)	Q6B ( _____ hours x 60) + _____ minutes
Weekday SEDENTARY interactive screen time (minutes/day)	Weekday interactive screen time - Weekday interactive screen time <u>while standing</u> <b>NOTE.</b> If weekday interactive screen time <u>while standing</u> exceeds total interactive screen time, 'Weekday interactive screen time' should be used to calculate the weighted average for Weekday SEDENTARY interactive screen time.
Weekend day SEDENTARY interactive screen time (minutes/day)	Weekend day interactive screen time - Weekend day interactive screen time <u>while standing</u> <b>NOTE.</b> If weekend day interactive screen time <u>while standing</u> exceeds total interactive screen time, 'Weekend day interactive screen time' should be used to calculate the weighted average for Weekend day SEDENTARY interactive screen time.
Weighted average of interactive screen time	((Weekday interactive screen time x 5) + (Weekend day interactive screen time x 2)) / 7
Weighted average of SEDENTARY interactive screen time	((Weekday SEDENTARY interactive screen time x 5) + (Weekend day SEDENTARY interactive screen time x 2)) / 7
Weighted average of total screen time	Weighted average of passive screen time + Weighted average of interactive screen time
Weighted average of total SEDENTARY screen time	Weighted average of SEDENTARY passive screen time + Weighted average of SEDENTARY interactive screen time
<b>SLEEP</b>	
Night sleep (minutes)	Q7 ( _____ hours x 60) + _____ minutes
Day sleep (minutes)	Q8 ( _____ hours x 60) + _____ minutes

Total sleep (minutes per 24 hours)	Night Sleep + Day Sleep
------------------------------------	-------------------------

## Truncation of extreme values

Implausible or extreme values for the following outcome variables are truncated (that is recoded) to the value equivalent of the 95th percentile from the validation study dataset.

Outcome variable	Truncated value
Weekday total active play	480 minutes per day
Weekend day total active play	480 minutes per day
Weekday energetic play	360 minutes per day
Weekend day energetic play	360 minutes per day

# **Adherence to Guidelines**

## **Physical Activity**

At least 3 hours of total physical activity per day, including 1 hour of energetic play.

## **Screen time**

Age = under 2 years: No screen time for babies/children.

Age = 2 – 5 years: No more than 1 hour per day of sedentary screen time.

## **Sleep**

Age = under 3 years: At least 660 minutes (11 hours) per day.

Age = 3 years or older: At least 600 minutes (10 hours) per day.

## **24-hour movement guidelines**

Meets all 3 guidelines for physical activity, screen time and sleep.