S5 Table. Dataset legend and explanation

Parameter	Legend	Additional information
SubjectNr	Subject number, unique for each participant	Anonymized.
DayNo	Study day number,	Day 0 (screening day, incomplete data expected) Day 1-21 (study days)
weekday	Day of the week	
dayType	Type of day (school, weekend, holiday)	
Age	Age of participant	
sex	Sex of participant	
weight	Weight of participant	NA: data not provided by participant.
height	Height of participant	NA: data not provided by participant.
BMI_SDS	Standard deviation score of participant's BMI (based on Dutch reference values)	NA: BMI unknown
ethnicity	Ethnicity of participant	
school_year_final	School type of participant	
sportsyesno	Whether subject regularly plays sports or not.	
urbanisation	Urbanization grade of city of residence of subject: - Extremely urbanized: > 2500 households / km^2 - Very urbanized: 1500-2500 households / km^2 - Moderately urbanized: 1000-1500 households / km^2 - Little urbanized: 500-1000 households / km^2	
PedsQL_score_baseline	PedsQL 4.0 score	Completed at day 0 (screening day). NA: subject did not complete questionnaire.
stepsTotalDaily	Total step count taken during that day	NA or 0: No data available. Missing data either due to noncompliance or data-connectivity issue.

steps_hour_max	Steps taken during the most active hour of each day.	
steps00	Step count between 00:00AM and 01:00AM	NA or 0: No data available. Missing data either due to noncompliance, sleep/non-movement, or data-connectivity issue.
steps01	Step count between 01:00AM and 02:00AM	"
steps02	Step count between 02:00AM and 03:00AM	"
steps03	Step count between 03:00AM and 04:00AM	"
steps04	Step count between 04:00AM and 05:00AM	"
steps05	Step count between 05:00AM and 06:00AM	"
steps06	Step count between 06:00AM and 07:00AM	"
steps07	Step count between 07:00AM and 08:00AM	"
steps08	Step count between 08:00AM and 09:00AM	"
steps09	Step count between 09:00AM and 10:00AM	"
steps10	Step count between 10:00AM and 11:00AM	"
steps11	Step count between 11:00PM and 12:00PM	"
steps12	Step count between 12:00PM and 01:00PM	"
steps13	Step count between 01:00PM and 02:00PM	"
steps14	Step count between 02:00PM and 03:00PM	"
steps15	Step count between 03:00PM and 04:00PM	"
steps16	Step count between 04:00PM and 05:00PM	"
steps17	Step count between 05:00PM and 06:00PM	"
steps18	Step count between 06:00PM and 07:00PM	"
steps19	Step count between 07:00PM and 08:00PM	"
steps20	Step count between 08:00PM and 09:00PM	"

steps21	Step count between 09:00PM and 10:00PM	"
steps22	Step count between 10:00PM and 11:00PM	"
steps23	Step count between 11:00PM and 12:00AM	"
HR05Perc	5^{th} percentile of all heart rates measured during a day.	NA: not enough heart rate data available during this day to calculate 5^{th} percentile.
HR95Perc	95^{th} percentile of all heart rates measured during a day.	NA: not enough heart rate data available during this day to calculate 95^{th} percentile.
HRMinSleep	Minimum heart rate measured during sleep	NA: no heart rate registered during sleep.
HRMaxSleep	Maximum heart rate measured during sleep	NA: no heart rate registered during sleep.
AVGHR_daily	Average heart rate during a day	NA: not enough hourly heart rate data available during this day to calculate average
AVGHR_sleep	Average heart rate during 12:00AM and 05:00AM	NA: not enough hourly heart rate data available during this period to calculate average
AVGHR_wake	Average heart rate during 6:00AM and 22:00PM	NA: not enough hourly heart rate data available during this period to calculate average
HR00	Heart rate between 00:00AM and 01:00AM	NA: no heart rate reglistered during this hour. Either due to noncompliance, inadequate device handling or data connectivity-issue.
HR01	Heart rate between 01:00AM and 02:00AM	"
HR02	Heart rate between 02:00AM and 03:00AM	"
HR03	Heart rate between 03:00AM and 04:00AM	"
HR04	Heart rate between 04:00AM and 05:00AM	"
HR05	Heart rate between 05:00AM and 06:00AM	"
HR06	Heart rate between 06:00AM and 07:00AM	"

HR07	Heart rate between 07:00AM and 08:00AM	“
HR08	Heart rate between 08:00AM and 09:00AM	“
HR09	Heart rate between 09:00AM and 10:00AM	“
HR10	Heart rate between 10:00AM and 11:00AM	“
HR11	Heart rate between 11:00PM and 12:00PM	“
HR12	Heart rate between 12:00PM and 01:00PM	“
HR13	Heart rate between 01:00PM and 02:00PM	“
HR14	Heart rate between 02:00PM and 03:00PM	“
HR15	Heart rate between 03:00PM and 04:00PM	“
HR16	Heart rate between 04:00PM and 05:00PM	“
HR17	Heart rate between 05:00PM and 06:00PM	“
HR18	Heart rate between 06:00PM and 07:00PM	“
HR19	Heart rate between 07:00PM and 08:00PM	“
HR20	Heart rate between 08:00PM and 09:00PM	“
HR21	Heart rate between 09:00PM and 10:00PM	“
HR22	Heart rate between 10:00PM and 11:00PM	“
HR23	Heart rate between 11:00PM and 12:00AM	“
Wear05H	Wear time (percentage) of the smartwatch between 00AM and 05:00 AM	Wear time was calculated by appraising both HR and step count data during each hour. If either was present, the hour was classified as ‘worn’
wear16H	Wear time (percentage) of the smartwatch between 6:00AM and 10:00PM	Wear time was calculated by appraising both HR and step count data during each hour. If either was present, the hour was classified as ‘worn’

wear24H	Wear time (percentage) of the smartwatch during a day	Wear time was calculated by appraising both HR and step count data during each hour. If either was present, the hour was classified as 'worn'
BODY_TEMPERATURE_DEG_C	Body temperature (degrees Celsius)	NA: measurement was not performed on this day.
DIASTOLIC_BLOOD_PRESSURE_MMHG	Diastolic blood pressure (mmHg)	NA: measurement was not performed on this day.
HEART_PULSE_BPM	Heart rate (bpm) measured by blood pressure monitor	NA: measurement was not performed on this day.
SYSTOLIC_BLOOD_PRESSURE_MMHG	Systolic blood pressure (mmHg)	NA: measurement was not performed on this day.
WEIGHT_KG	Weight measured by scales (kg)	NA: measurement was not performed on this day.
awakeDuration	Time in seconds the subject was awake	NA: no sleep data was registered. Most likely due to not wearing the watch. Other causes: non-detection of sleep by the algorithm, data-connectivity issue.
lightSleepDuration	Time in seconds the subject slept with light depth	NA: no sleep data was registered. Most likely due to not wearing the watch. Other causes: non-detection of sleep by the algorithm, data-connectivity issue.
deepSleepDuration	Time in seconds the subject slept with deep depth	NA: no sleep data was registered. Most likely due to not wearing the watch. Other causes: non-detection of sleep by the algorithm, data-connectivity issue.
wakeUpCount	Number of times the subject woke up	NA: no sleep data was registered. Most likely due to not wearing the watch. Other causes: non-detection of sleep by the algorithm, data-connectivity issue.
sleeptime	Clock time the subject started sleeping	NA: no sleep data was registered. Most likely due to not wearing the watch. Other causes: non-detection of sleep by the algorithm, data-connectivity issue.

waketime	Clock time the subject woke up	NA: no sleep data was registered. Most likely due to not wearing the watch. Other causes: non-detection of sleep by the algorithm, data-connectivity issue.
fvc_best	Forced vital capacity (liters)	NA: measurement was not performed on this day.
fev1_best	Forced expiratory volume (liters)	NA: measurement was not performed on this day.
pef_best	Peak flow (liters per second)	NA: measurement was not performed on this day.
grade_fev1	Spirometry maneuver quality graded by physician for FEV1	Grading according to ATS criteria. NA: measurement was not performed on this day.
grade_fvc	Spirometry maneuver quality graded by physician for FVC	Grading according to ATS criteria. NA: measurement was not performed on this day.
predicted_fvc_best	Predicted FVC for this subject	NA: measurement was not performed on this day.
predicted_fev1_best	Predicted FEV1 for this subject	NA: measurement was not performed on this day.
predicted_fev1_ratio_best	Predicted FEV1/FVC ratio for this subject	NA: measurement was not performed on this day.
fev1_ratio_best	FEV1/FVC ratio	NA: measurement was not performed on this day.
fev1_percentage	Percentage of predicted FEV1	NA: measurement was not performed on this day.
fvc1_percentage	Percentage of predicted FVC	NA: measurement was not performed on this day.
fev1_ratio_percentage	Percentage of predicted FEV1/FVC ratio	NA: measurement was not performed on this day.
school_yes_no	Questionnaire data regarding whether subject went to school, daycare or neither.	NA: questionnaire was not completed on this day.
screentime	Questionnaire data regarding the duration of screentime (phone, computer, tablet, tv) during the day.	NA: questionnaire was not completed on this day.
FG	Mean wind speed (m/s)	
FHX	Highest hourly mean wind speed (m/s)	

FHN	Lowest hourly mean wind speed (m/s)	
TG	Mean temperature (degrees Celsius)	
TN	Minimum temperature (degrees Celsius)	
TX	Maximum temperature (degrees Celsius)	
SQ	Sunshine duration (hours)	
SP	Sunshine duration (percentage of maximum possible duration)	
DR	Rain duration (hours)	
RH	Rainfall (0.1 mm)	
RHX	Highest hourly rainfall (0.1 mm)	