

Additional file 2:
Reliability and hypotheses testing: General linear mixed-effect
model results

Corresponding to the article titled:
Assessing 24-hour movement behaviors in early childhood (0–4 years) -
Reliability and construct validity of the My Little Moves app

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This additional file presents the differences in estimates (i.e., min/day spent in physical activity, sedentary behavior, and sleep, and the compositions) between week and weekend days, and the complete model output of the four general linear mixed-effects models (GLMMs) to test the hypothesized differences in accelerometer-derived acceleration between app-based 24-hour movement behaviors and activity categories.

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1 Week and weekend day differences

For each hourly increment from 12 up to 24 hours, six separate models were fitted to test differences between app-based time-use estimates (i.e., min/day physical activity, sedentary behavior, and sleep) and the first pivot coordinates of the 3-part compositions (i.e., ilr.PA, ilr.SB, and ilr.sleep) for week and weekend days:

1. $PA \sim \text{weekendday} + \text{sex} + \text{age} + (1 \mid \text{participant id})$
2. $SB \sim \text{weekendday} + \text{sex} + \text{age} + (1 \mid \text{participant id})$
3. $\text{sleep} \sim \text{weekendday} + \text{sex} + \text{age} + (1 \mid \text{participant id})$
4. $\text{ilr.PA} \sim \text{weekendday} + \text{sex} + \text{age} + (1 \mid \text{participant id})$
5. $\text{ilr.SB} \sim \text{weekendday} + \text{sex} + \text{age} + (1 \mid \text{participant id})$
6. $\text{ilr.sleep} \sim \text{weekendday} + \text{sex} + \text{age} + (1 \mid \text{participant id})$

Table 1 presents the differences between week days and weekend days for each app-based estimate per hourly increment.

Table 1: Weekday versus weekend day for the My Little Moves app-based estimates

Minimum reporting time (hours/day)	Number of participants ≥ 2 days, incl. ≥ 1 weekend day	PA (min/day)			SB (min/day)			Sleep (min/day)			ilr.PA			ilr.SB			ilr.sleep		
		Week day	Week-end day	p-value	Week day	Week-end day	p-value	Week day	Week-end day	p-value	Week day	Week-end day	p-value	Week day	Week-end day	p-value	Week-day	Week-end day	p-value
≥ 12	310	105.00 [35.00; 210.00]	210.00 [120.00; 295.00]	<.001	280.00 [180.00; 405.00]	380.00 [291.25; 465.00]	<.001	715.00 [660.00; 810.00]	772.05 [690.00; 850.00]	<.001	-1.84 (1.63)	-1.18 (1.09)	<.001	0.01 (0.84)	-0.21 (0.63)	<.001	0.59 (0.74)	0.27 (0.47)	<.001
≥ 13	308	105.00 [35.00; 210.00]	210.00 [120.00; 295.00]	<.001	280.00 [180.00; 410.00]	380.00 [295.00; 465.00]	<.001	720.00 [665.00; 810.00]	775.00 [690.00; 850.00]	<.001	-1.83 (1.62)	-1.18 (1.09)	<.001	0.01 (0.84)	-0.20 (0.62)	<.001	0.58 (0.74)	0.27 (0.47)	<.001
≥ 14	305	110.00 [40.00; 210.00]	210.00 [120.00; 295.00]	<.001	290.00 [190.00; 415.00]	385.00 [300.00; 468.75]	<.001	725.00 [670.00; 820.00]	775.00 [696.25; 850.00]	<.001	-1.78 (1.58)	-1.18 (1.08)	<.001	0.00 (0.82)	-0.20 (0.61)	<.001	0.56 (0.72)	0.27 (0.47)	<.001
≥ 15	303	132.50 [60.00; 230.00]	210.00 [120.00; 295.00]	<.001	325.00 [220.00; 435.00]	385.00 [300.00; 470.00]	<.001	745.00 [685.00; 835.00]	775.00 [700.00; 850.00]	.029	-1.58 (1.41)	-1.17 (1.06)	<.001	-0.07 (0.75)	-0.21 (0.61)	<.001	0.46 (0.64)	0.27 (0.46)	<.001
≥ 16	298	170.00 [90.00; 255.00]	210.00 [120.00; 298.75]	.002	365.00 [280.00; 465.00]	385.00 [300.00; 465.00]	<.001	785.00 [710.00; 855.00]	775.00 [701.25; 850.00]	.517	-1.34 (1.18)	-1.15 (1.02)	<.001	-0.15 (0.66)	-0.21 (0.59)	.024	0.35 (0.52)	0.26 (0.44)	<.001
≥ 17	290	180.00 [105.00; 265.00]	212.50 [120.00; 300.00]	.009	375.00 [300.00; 475.00]	385.00 [300.00; 466.25]	.077	790.00 [715.00; 860.00]	777.50 [710.00; 851.25]	.072	-1.31 (1.16)	-1.14 (0.99)	.003	-0.15 (0.65)	-0.22 (0.58)	.035	0.34 (0.51)	0.26 (0.43)	.002
≥ 18	280	180.00 [110.00; 270.00]	215.00 [130.00; 300.00]	.057	385.00 [303.75; 475.00]	390.00 [300.00; 470.00]	.319	795.00 [720.00; 860.00]	780.00 [715.00; 850.00]	.024	-1.27 (1.11)	-1.14 (1.00)	.023	-0.17 (0.63)	-0.22 (0.58)	.094	0.32 (0.49)	0.26 (0.43)	.018
≥ 19	276	185.00 [117.50; 270.00]	215.00 [130.00; 300.00]	.197	385.00 [310.00; 480.00]	390.00 [305.00; 470.00]	.411	800.00 [725.00; 865.00]	785.00 [715.00; 855.00]	.068	-1.25 (1.08)	-1.14 (1.00)	.108	-0.18 (0.62)	-0.22 (0.58)	.255	0.31 (0.47)	0.26 (0.43)	.088
≥ 20	268	190.00 [120.00; 270.00]	215.00 [135.00; 300.00]	.535	390.00 [315.00; 481.25]	390.00 [305.00; 472.50]	.884	805.00 [730.00; 865.00]	790.00 [715.00; 855.00]	.001	-1.22 (1.03)	-1.14 (1.01)	.240	-0.19 (0.60)	-0.22 (0.59)	.389	0.29 (0.45)	0.26 (0.44)	.223
≥ 21	257	197.50 [120.00; 280.00]	225.00 [135.00; 305.00]	.916	395.00 [315.00; 490.00]	390.00 [305.00; 473.75]	.631	805.00 [730.00; 865.00]	790.00 [730.00; 860.00]	.003	-1.18 (1.00)	-1.13 (1.01)	.550	-0.21 (0.59)	-0.23 (0.59)	.661	0.28 (0.43)	0.26 (0.43)	.604
≥ 22	247	210.00 [120.00; 280.00]	225.00 [137.50; 307.50]	.931	402.50 [316.25; 490.00]	390.00 [307.50; 477.50]	.668	805.00 [740.00; 870.00]	795.00 [730.00; 860.00]	.001	-1.16 (0.95)	-1.11 (0.97)	.541	-0.21 (0.57)	-0.24 (0.58)	.701	0.27 (0.41)	0.25 (0.41)	.594
≥ 23	226	210.00 [125.00; 285.00]	230.00 [142.50; 310.00]	.316	405.00 [320.00; 495.00]	395.00 [312.50; 480.00]	.996	805.00 [730.00; 875.00]	795.00 [730.00; 857.50]	.002	-1.13 (0.86)	-1.12 (1.00)	.767	-0.23 (0.53)	-0.23 (0.59)	.623	0.25 (0.36)	0.25 (0.43)	.712
24	187	210.00 [130.00; 285.00]	225.00 [140.00; 315.00]	.226	405.00 [325.00; 480.00]	400.00 [321.25; 490.00]	.490	815.00 [745.00; 875.00]	795.00 [730.00; 860.00]	<.001	-1.12 (0.89)	-1.14 (1.05)	.509	-0.24 (0.53)	-0.22 (0.61)	.318	0.25 (0.38)	0.26 (0.45)	.592

Note: Values are presented as Median [Inter Quartile Range, 25th; 75th] min/day spent in PA, SB and sleep, and Median (Standard Deviation) ilr.PA, ilr.SB, and ilr.sleep

Abbreviations: *MLM app* My Little Moves app, *PA* physical activity, *SB* sedentary behavior

2 MLM app-based 24-hour movement behaviors

Table 2 presents descriptive data on the duration, frequency, and accelerometer-derived acceleration for all app-based 24-hour movement behaviors.

2.1 Hip placement

Two separate models were fitted to test the hypothesized differences in hip acceleration between app-based 24-hour movement behaviors:

1. $\text{ENMO} \sim \text{24-hour movement behavior} + \text{sex} + \text{age} + (\text{participant id} \mid \text{24-hour movement behavior})$
2. $\text{MAD} \sim \text{24-hour movement behavior} + \text{sex} + \text{age} + (\text{participant id} \mid \text{24-hour movement behavior})$

Model summary Table 3 presents the random effects. By adding participant id over 24-hour movement behavior to the model as nested random effect we assume that observations from the same participant across app-based 24-hour movement behaviors are more similar than observations from other participants. Table 4 presents the fixed effect estimates of the model.

2.2 Wrist placement

Two separate models were fitted to test the hypothesized differences in wrist acceleration between the app-based 24-hour movement behaviors:

1. $\text{ENMO} \sim \text{24-hour movement behavior} + \text{sex} + \text{age} + (\text{participant id} \mid \text{24-hour movement behavior})$
2. $\text{MAD} \sim \text{24-hour movement behavior} + \text{sex} + \text{age} + (\text{participant id} \mid \text{24-hour movement behavior})$

Model summary Table 5 presents the random effects. By adding participant id over 24-hour movement behavior to the model as nested random effect we assume that observations from the same participant across app-based 24-hour movement behaviors are more similar than observations from other participants. Table 6 presents the fixed effect estimates of the model.

Table 2: Duration, frequency and acceleration per movement behavior over all reported activities. Values are presented as Median [Inter Quartile Range, 25th – 75th percentile] if not otherwise specified.

Activity category	Duration (min)	Frequency (%)*	Accelerometer-derived acceleration					
			Hip acceleration			Wrist acceleration		
			ENMO (mg)	MAD (mg)		ENMO (mg)	MAD (mg)	
Sleep	220.00 [95.00 – 360.00]	1522 (16.80)	2.30 [0.70 – 5.30]	3.50 [3.00 – 4.10]		2.80 [1.10 – 5.90]	3.70 [3.30 – 4.20]	
SB	25.00 [15.00 – 30.00]	5710 (62.90)	7.40 [2.60 – 16.40]	9.70 [5.80 – 20.80]		23.50 [11.70 – 39.10]	36.70 [17.40 – 58.90]	
PA	30.00 [20.00 – 60.00]	1532 (16.90)	12.80 [5.60 – 27.50]	20.90 [10.20 – 39.90]		34.70 [19.50 – 51.70]	59.00 [33.98 – 81.48]	
NA	240.00 [60.00 – 525.00]	307 (3.38)	7.15 [3.00 – 12.40]	9.40 [6.10 – 17.05]		21.20 [10.75 – 31.98]	34.00 [18.43 – 51.63]	

Abbreviations: *ENMO* Euclidean norm minus one, *MAD* mean amplitude deviation, *NA* not applicable, *PA* physical activity, *SB* sedentary behavior.

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Table 3: Random effects of the app-based 24-hour movement behaviors for the acceleration during hip placement

Random effects	ENMO					MAD				
	Variance	SD	ICC			Variance	SD	ICC		
Movement behavior:Participant id	$1.26e^{-07}$	0.0004	0.11			$7.88e^{-08}$	0.0003	0.13		
Participant id	$8.57e^{-08}$	0.0003	0.07			$9.12e^{-09}$	0.0001	0.02		
Residual	$9.50e^{-07}$	0.001				$5.17e^{-07}$	0.0007			
	Log likelihood	AIC	BIC	R^2_{total}	R^2_{fixed}	Log likelihood	AIC	BIC	R^2_{total}	R^2_{fixed}
Model fit	44340.19	-88644.37	-88588.39	0.30	0.14	46802.87	-93589.74	-93533.75	0.38	0.28

Note. 8084 observations; 219 Movement behavior:Participant id, 74 Participant id

Table 4: Fixed effects of the app-based 24-hour movement behaviors for the acceleration during hip placement

Fixed effects	ENMO					MAD				
	Estimate	95% CI	t(df)	p	Estimate	95% CI	t(df)	p		
Intercept (reference = sleep)	-0.01	[-0.006; -0.006]	-52.48 (89.27)	<.001***	-0.006	[-0.006; -0.006]	-83.71 (103.07)	<.001***		
Sleep	SB	0.001	[0.0007; 0.0008]	11.39 (124.69)	<.001***	0.001	[0.0009; 0.001]	18.88 (121.31)	<.001***	
	PA	0.001	[0.001; 0.001]	17.23 (155.05)	<.001***	0.001	[0.001; 0.002]	27.05 (147.79)	<.001***	
Intercept (reference = SB)	-0.01	[-0.005; -0.005]	-46.60 (83.86)	<.001***	-0.005	[-0.005; -0.005]	-70.82 (93.65)	<.001***		
SB	PA	0.0005	[0.0004; 0.0005]	6.97 (125.96)	<.001***	0.001	[0.0005; 0.0006]	9.79 (122.52)	<.001***	
Sex (reference = male)	0.0001	[0.00004; 0.0001]	0.50 (69.62)	.616	0.00002	[-0.00002; 0.00007]	0.42 (66.10)	.678		
Age	0.00002	[0.00001; 0.00002]	4.66 (72.38)	<.001***	0.00001	[0.00001; 0.00001]	4.88 (68.99)	<.001***		

Table 5: Random effects of the app-based 24-hour movement behaviors for the acceleration during wrist placement

Random effects	ENMO					MAD				
	Variance	SD	ICC			Variance	SD	ICC		
Movement behavior:Participant id	1.24e-07	0.0004	0.12			7.32e-08	0.0003	0.09		
Participant id	7.58e-08	0.0003	0.08			3.73e-08	0.0002	0.04		
Residual	8.24e-07	0.0009				7.47e-07	0.0009			
	Log likelihood	AIC	BIC	R ² total	R ² fixed	Log likelihood	AIC	BIC	R ² total	R ² fixed
Model fit	36915.48	-73814.96	-73760.54	0.42	0.28	37274.09	-74532.19	-74477.77	0.45	0.37

Note. 6649 observations; 205 24-hour Movement behavior:Participant id, 70 Participant id

Table 6: Fixed effects of the 24-hour movement behaviors for the wrist placement

Fixed effects	ENMO					MAD				
	Estimate	95% CI	t(df)	p	Estimate	95% CI	t(df)	p		
Intercept (reference = sleep)	-0.006	[-0.006; -0.006]	-49.40 (70.66)	<.001***	-0.005	[-0.006; -0.005]	-62.60 (58.09)	<.001***		
Sleep	SB	0.001	[0.001; 0.002]	21.24 (98.60)	<.001***	0.002	[0.002; 0.002]	29.87 (92.14)	<.001***	
	PA	0.002	[0.002; 0.002]	25.39 (120.63)	<.001***	0.002	[0.002; 0.002]	34.77 (119.88)	<.001***	
Intercept (reference = SB)	-0.004	[-0.004; -0.004]	-36.99 (66.18)	<.001***	-0.004	[-0.004; -0.004]	-44.18 (52.65)	<.001***		
SB	PA	0.0004	[0.0004; 0.0005]	5.99 (100.24)	<.001***	0.0005	[0.0004; 0.0005]	8.06 (93.69)	<.001***	
Sex (reference = male)	0.00001	[-0.00007; 0.0001]	0.16 (54.01)	.872	0.00006	[-0.00001; 0.00009]	0.85 (42.19)	.395		
Age	0.000008	[0.000004; 0.00001]	2.02 (54.80)	.044*	0.000006	[-0.000003; 0.00001]	2.05 (43.21)	<.040*		

3 Activity categories

Table 7 presents descriptive data on the duration, frequency, and accelerometer-derived acceleration for all app-based activities and postures.

3.1 Hip placement

Two separate GLMMs were fitted to test the hypothesized differences between activity categories during hip acceleration:

1. $\text{ENMO} \sim \text{activity category} + \text{sex} + \text{age} + (\text{participant id} \mid \text{activity category})$
2. $\text{MAD} \sim \text{activity category} + \text{sex} + \text{age} + (\text{participant id} \mid \text{activity category})$

Model summary Table 8 presents the random effects. By adding participant id over activity category to the model as nested random effect we assume that observations from the same participant across activity categories are more similar than observations from other participants. Table 9 presents the fixed effect estimates of the model.

3.2 Wrist placement

Two separate models were fitted to test the hypothesized differences between the activity categories during wrist acceleration:

1. $\text{ENMO} \sim \text{activity category} + \text{sex} + \text{age} + (\text{participant id} \mid \text{activity category})$
2. $\text{MAD} \sim \text{activity category} + \text{sex} + \text{age} + (\text{participant id} \mid \text{activity category})$

Model summary Table 10 presents the random effects. By adding participant id over activity category to the model as nested random effect we assume that observations from the same participant across activity categories are more similar than observations from other participants. Table 11 presents the fixed effect estimates of the model.

Table 7: Duration, frequency and acceleration per reported activity category over all reported activities. Values are presented as Median [Inter Quartile Range, 25th – 75th percentile] if not otherwise specified.

Activity category	Duration (min)	Frequency (%)*	Accelerometer-derived acceleration							
			Hip acceleration				Wrist acceleration			
			ENMO (mg)		MAD (mg)		ENMO (mg)		MAD (mg)	
Sleeping	220.00 [95.00 – 360.00]	1522 (16.80)	2.30 [0.70 – 5.30]	3.50 [3.00 – 4.10]	2.80 [1.10 – 5.90]	3.70 [3.30 – 4.20]				
Sitting/lying	30.00 [15.00 – 40.00]	648 (7.14)	4.80 [1.80 – 10.50]	8.20 [5.40 – 13.00]	18.80 [9.70 – 31.40]	29.60 [13.30 – 46.00]				
Being carried	20.00 [15.00 – 30.00]	39 (6.02)	1.65 [0.00 -3.38]	8.65 [6.63 – 11.53]	17.10 [9.75 – 39.45]	30.40 [16.50 – 46.40]				
Lying on tummy	30.00 [17.50 – 30.00]	11 (1.70)	7.25 [1.58 – 8.90]	10.60 [6.70 – 13.85]	10.00 [5.83 – 13.60]	17.60 [14.38 – 20.85]				
Lying on back	30.00 [20.00 – 43.75]	66 (10.20)	5.40 [1.40 – 8.65]	8.25 [5.23 – 12.45]	18.80 [11.50 -27.70]	27.50 [14.50 – 39.50]				
Lying on side	60.00 [30.00 – 90.00]	5 (0.77)	5.80 [5.20 – 8.10]	6.30 [5.20 – 7.50]	8.50 [8.40 – 9.40]	13.30 [5.80 – 14.30]				
Sitting without support	20.00 [15.00 – 30.00]	9 (1.39)	5.15 [2.43 – 28.18]	9.45 [5.48 – 17.55]	19.70 [10.35 – 26.50]	39.50 [21.15 – 47.45]				
Sitting with support	30.00 [25.00 – 38.75]	74 (11.40)	3.80 [1.08 – 8.88]	8.20 [5.43 – 12.23]	23.00 [11.30 – 32.50]	35.10 [19.70 – 44.40]				
Lying	25.00 [15.00 – 40.00]	84 (13.00)	4.45 [2.75 – 7.48]	5.15 [4.50 – 7.90]	13.50 [6.65 – 21.73]	12.10 [5.28 – 26.45]				
Sitting	20.00 [11.25 – 30.00]	166 (25.60)	5.45 [1.60 – 13.80]	8.25 [5.90 – 14.03]	20.70 [11.70 – 34.60]	34.70 [15.00 – 53.80]				
Changing posture	30.00 [22.50 – 50.00]	175 (27.00)	5.50 [2.75 – 11.50]	9.30 [5.95 – 14.90]	19.90 [9.55 – 34.80]	32.30 [15.45 – 50.95]				
I don't know	20.00 [15.00 – 30.00]	19 (2.93)	3.80 [2.60 – 12.50]	10.90 [8.50 – 18.30]	13.80 [10.60 – 28.45]	23.90 [9.43 – 46.78]				
Personal care	15.00 [10.00 – 20.00]	1308 (14.40)	7.90 [2.90 – 16.08]	9.40 [5.53 – 18.30]	25.20 [10.20 – 40.15]	38.20 [11.80 – 60.70]				
Eating/drinking	30.00 [15.00 – 30.00]	1795 (19.80)	4.70 [1.40 – 11.50]	7.00 [5.20 – 11.70]	18.60 [10.03 – 30.28]	29.60 [14.53 – 42.23]				
Passive screen use	30.00 [20.00 – 45.00]	177 (1.95)	4.00 [1.50 – 10.40]	5.50 [4.60 – 8.90]	11.00 [4.20 – 25.50]	9.45 [5.10 – 37.78]				
Active screen use	30.00 [25.00 – 47.50]	3 (0.03)	3.10 [3.00 – 6.00]	12.20 [8.35 – 13.55]	13.00 [11.60 – 26.20]	37.10 [21.30 – 50.95]				
Passive transport	30.00 [15.00 – 40.00]	1004 (11.10)	16.50 [8.30 – 30.00]	27.20 [15.70 – 47.35]	32.20 [18.90 – 50.20]	52.10 [33.50 – 76.40]				
Active transport	25.00 [11.25 – 40.00]	186 (2.05)	25.70 [11.73 – 42.08]	41.80 [19.25 – 66.50]	44.00 [28.65 – 64.25]	67.80 [46.30 – 93.30]				
Calm play	30.00 [20.00 – 60.00]	803 (8.85)	9.35 [4.50 – 16.40]	13.80 [7.80 – 23.13]	31.20 [18.68 – 44.45]	51.40 [29.28 – 69.48]				
Being carried	20.00 [13.75 – 30.00]	8 (1.00)	5.80 [3.05 – 9.45]	9.90 [6.85 – 14.20]	33.90 [24.60 – 40.65]	55.30 [34.65 – 67.85]				
Lying on tummy	30.00	1 (0.13)	24.50	22.40	35.10	52.90				
Lying on back	30.00 [30.00 – 37.50]	15 (1.87)	4.80 [1.95 – 8.20]	8.00 [6.80 – 13.20]	20.30 [12.38 – 35.73]	31.30 [19.56 – 44.68]				
Lying on side	30.00 [30.00 – 37.50]	2 (0.25)	19.20 [19.20 – 19.20]	26.90 [26.90 -26.90]	23.30 [21.25 – 23.35]	25.60 [15.37 – 35.73]				
Sitting without support	30.00 [20.00 – 30.00]	17 (2.12)	2.00 [0.10 – 5.10]	7.20 [6.45 – 10.30]	23.40 [10.33 – 28.58]	38.70 [10.45 – 47.38]				
Sitting with support	22.50 [16.25 – 30.00]	18 (2.24)	4.50 [1.65 – 15.05]	9.80 [6.60 – 14.53]	28.40 [14.60 – 42.43]	44.00 [26.18 – 59.35]				
Standing without support	30.00 [28.75 – 41.25]	12 (1.49)	11.20 [9.33 – 13.83]	21.90 [10.15 – 24.78]	36.10 [26.43 – 38.73]	62.70 [44.00 – 66.33]				
Standing with support	25.00 [17.50 -67.50]	7 (0.87)	11.90 [5.00 – 28.55]	8.90 [8.25 – 11.45]	12.30 [5.10 – 19.60]	7.70 [6.05 – 37.45]				
Lying	30.00 [15.00 – 31.25]	12 (1.49)	10.50 [8.90 -13.35]	18.00 [12.30 – 21.70]	39.30 [27.60 – 39.70]	59.60 [56.40 – 64.70]				
Sitting	30.00 [15.00 -45.00]	184 (22.90)	7.40 [3.80 – 12.98]	11.50 [7.08 – 17.33]	29.10 [16.00 – 43.30]	50.00 [26.80 – 63.80]				
Standing	30.00 [20.00 – 60.00]	61 (7.60)	8.10 [3.80 – 16.40]	16.30 [6.50 – 26.90]	33.10 [20.85 – 41.90]	48.40 [16.75 – 62.00]				
Changing posture	40.00 [30.00 – 66.25]	448 (55.80)	11.20 [6.10 – 19.20]	16.20 [9.20 – 26.60]	34.40 [19.70 – 49.68]	56.0 [33.85 – 76.75]				
I don't know	30.00 [30.00 -43.75]	18 (2.24)	6.70 [2.75 – 9.30]	7.70 [5.90 – 8.40]	24.80 [19.70 – 31.28]	43.20 [30.13 – 52.93]				
Active play	35.00 [25.00 – 60.00]	1293 (14.30)	12.2 [5.48 – 25.75]	19.5 [10.10 – 36.83]	34.4 [19.33 – 51.40]	59.0 [33.83 – 81.10]				
Being carried	-	0	-	-	-	-				
Lying on tummy	30.00 [20.00 – 38.75]	58 (4.49)	7.50 [3.80 – 10.50]	11.10 [9.00 – 15.30]	24.10 [14.50 – 32.90]	36.40 [23.50 – 51.20]				
Lying on back	30.00 [20.00 – 50.00]	49 (3.79)	6.70 [4.10 – 8.90]	11.00 [9.30 – 13.70]	26.60 [11.20 – 36.98]	32.90 [20.85 – 48.80]				
Lying on side	-	0	-	-	-	-				
Sitting without support	30.00 [23.75 – 35.00]	28 (1.55)	3.05 [1.38 – 4.68]	8.80 [6.95 – 9.90]	21.20 [14.70 – 24.80]	36.90 [28.70 – 41.33]				
Sitting with support	30.00 [23.75 – 35.00]	20 (1.55)	4.70 [1.98 – 9.63]	12.10 [8.43 – 15.83]	46.00 [26.05 – 54.60]	55.60 [45.05 – 68.15]				
Standing without support	30.00 [23.75 – 56.25]	104 (8.04)	17.80 [10.85 – 27.53]	32.40 [23.08 – 52.00]	40.20 [2.80 – 54.95]	69.60 [44.30 – 90.90]				
Standing with support	27.50 [15.00 – 35.00]	22 (1.70)	18.80 [10.20 – 52.53]	23.40 [11.15 – 37.20]	36.30 [17.30 – 43.80]	63.80 [31.80 – 74.60]				
Lying	15.00 [10.00 -30.00]	15 (1.16)	16.00 [10.15 – 27.30]	30.40 [18.30 – 36.10]	44.90 [35.25 – 58.13]	78.40 [64.30 – 97.30]				
Sitting	25.00 [13.75 – 30.00]	12 (0.93)	11.70 [5.10 – 18.85]	17.50 [11.90 – 23.10]	41.10 [25.10 – 54.63]	62.00 [50.65 – 85.48]				
Standing	35.00 [20.00 – 60.00]	134 (10.40)	26.00 [12.25 – 40.45]	42.90 [21.45 – 65.95]	62.20 [43.35 – 83.25]	83.20 [65.40 – 121.55]				
Changing posture	40.00 [30.00 – 65.00]	846 (65.40)	12.30 [5.23 – 25.60]	19.60 [9.63 – 35.50]	34.70 [18.90 – 50.70]	60.00 [33.90 – 81.40]				
I don't know	45.00 [35.00 – 55.00]	5 (0.39)	4.20 [3.60 – 14.70]	21.60 [10.10 – 26.40]	29.00 [23.30 – 48.60]	52.90 [44.20 – 78.30]				
Play of unknown intensity	60.00 [30.00 – 75.00]	25 (0.28)	7.50 [3.50 – 16.40]	8.70 [5.90 – 17.20]	21.40 [12.23 – 33.85]	39.80 [24.05 – 57.00]				
Being carried	-	0	-	-	-	-				
Lying on tummy	-	0	-	-	-	-				
Lying on back	-	0	-	-	-	-				
Lying on side	-	0	-	-	-	-				
Sitting without support	-	0	-	-	-	-				
Sitting with support	-	0	-	-	-	-				
Standing without support	-	0	-	-	-	-				
Standing with support	-	0	-	-	-	-				
Lying	20.00 [15.00 – 25.00]	2 (8.00)	3.00 [2.70 – 3.30]	6.65 [6.38 – 6.93]	6.40 [5.95 – 6.85]	12.40 [11.80 – 13.00]				
Sitting	50.00 [40.00 – 60.00]	2 (8.00)	3.65 [2.23 – 5.08]	6.40 [5.65 – 7.15]	10.50 [10.50 – 10.50]	24.90 [24.90 – 24.90]				
Standing	-	0	-	-	-	-				
Changing posture	60.00 [30.00 – 85.00]	11 (44.00)	14.50 [6.20 – 27.15]	10.50 [5.05 – 16.50]	41.80 [31.15 – 49.35]	69.00 [48.60 – 71.20]				
I don't know	67.50 [26.25 – 86.25]	10 (40.00)	7.15 [3.33 – 9.50]	10.20 [8.43 – 17.73]	19.70 [13.40 – 26.15]	33.90 [23.13 – 48.33]				
Other activity	25.00 [20.00 – 75.00]	83 (0.92)	7.70 [2.73 – 16.13]	11.00 [5.43 – 24.03]	24.20 [10.50 – 38.20]	37.60 [17.70 – 55.90]				
My child was with someone else	510.00 [255.00 – 550.00]	197 (2.17)	6.65 [3.30 – 11.75]	8.55 [6.20 – 14.63]	20.00 [11.15 – 29.95]	32.20 [18.90 – 50.00]				
I don't know	40.00 [30.00 – 82.50]	27 (0.30)	7.05 [1.40 – 18.08]	12.40 [6.45 – 19.55]	23.00 [10.20 – 32.30]	35.50 [19.20 – 47.00]				

* For postures this is presented as % within the app category.
Abbreviations: ENMO Euclidean norm minus one, MAD mean amplitude deviation.

Table 8: Random effects of the activity categories for the acceleration during hip placement

	ENMO					MAD				
Random effects	Variance	SD	ICC			Variance	SD	ICC		
Activity category:Participant id	0.10	0.31	.09			0.07	0.27	.15		
Participant id	0.11	0.34	.11			0.02	0.16	.05		
Residual	0.84	0.91	-			0.39	0.63	-		
Model fit	Log likelihood	AIC	BIC	R^2_{total}	R^2_{fixed}	Log likelihood	AIC	BIC	R^2_{total}	R^2_{fixed}
	-11458.19	22954.38	23087.99	0.36	0.20	-8377.57	16793.51	16926.76	0.51	0.39

Note. 8370 observations; 700 Activity category:Participant id, 74 Participant id

Table 9: Fixed effects of the app categories for the hip placement

Fixed effects		ENMO				MAD			
		Estimate	95% CI	t(df)	p	Estimate	95% CI	t(df)	p
Sleeping	Intercept (reference = sleeping)	-5.99	[-6.21; -5.77]	-53.35 (96.06)	<.001***	-5.56	[-5.69; -5.43]	-85.46 (123.94)	<.001***
	Sitting/lying	0.56	[0.42; 0.71]	7.62 (524.71)	<.001***	0.77	[0.65; 0.88]	13.14 (502.96)	<.001***
	Personal care	0.79	[0.66; 0.92]	12.04 (407.01)	<.001***	0.88	[0.77; 0.98]	16.66 (404.41)	<.001***
	Eating/drinking	0.48	[0.35; 0.60]	7.57 (362.76)	<.001***	0.74	[0.64; 0.84]	14.55 (368.49)	<.001***
	Passive screen use	0.23	[0.02; 0.44]	2.15 (909.68)	.032*	0.46	[0.30; 0.62]	5.59 (791.42)	<.001***
	Active screen use	0.16	[-0.95; 1.26]	0.28 (6362.14)	.782	0.66	[-0.12; 1.44]	1.65 (5278.48)	.099
	Passive transport	1.39	[1.26; 1.52]	20.84 (439.94)	<.001***	1.71	[1.60; 1.81]	31.99 (426.88)	<.001***
	Active transport	1.56	[1.36; 1.76]	15.01 (932.40)	<.001***	1.89	[1.74; 2.05]	23.81 (799.77)	<.001***
	Calm play	0.85	[0.72; 0.99]	11.89 (508.89)	<.001***	1.09	[0.98; 1.20]	19.15 (487.05)	<.001***
	Active play	1.21	[1.08; 1.33]	18.41 (399.44)	<.001***	1.47	[1.37; 1.57]	27.85 (399.16)	<.001***
Sitting/lying	Play of unknown intensity	0.80	[0.33; 1.23]	3.69 (2566.47)	<.001***	0.80	[0.49; 1.11]	5.01 (2070.88)	<.001***
	Intercept (reference = sitting/lying)	-5.43	[-5.66; -5.19]	-46.00 (116.61)	<.001***	-4.79	[-4.93; -4.65]	-68.19 (165.77)	<.001***
	Personal care	0.22	[0.08; 0.37]	2.97 (549.96)	.003**	0.11	[-0.01; 0.22]	1.82 (526.09)	.068
	Eating/drinking	-0.09	[-0.23; 0.06]	-1.19 (509.38)	.235	-0.02	[-0.14; 0.09]	-0.42 (492.11)	.671
	Passive screen use	-0.33	[-0.56; -0.11]	-2.90 (985.50)	.004**	-0.31	[-0.48; -0.31]	-3.51 (861.53)	.001**
	Active screen use	-0.41	[-1.52; 0.70]	-0.72 (6337.46)	.472	-0.11	[-0.89; 0.68]	-0.27 (5257.99)	.788
	Passive transport	0.83	[0.68; 0.98]	10.80 (586.32)	<.001***	0.94	[0.82; 1.06]	15.67 (550.58)	<.001***
	Active transport	1.00	[0.78; 1.21]	8.99 (1004.33)	<.001***	1.13	[0.96; 1.29]	13.33 (872.16)	<.001***
	Calm play	0.29	[0.13; 0.45]	3.58 (647.09)	<.001***	0.32	[0.20; 0.44]	5.08 (605.32)	<.001***
	Active play	0.64	[0.49; 0.79]	8.51 (542.93)	<.001***	0.70	[0.59; 0.82]	11.80 (520.88)	<.001***
Personal care	Play of unknown intensity	0.24	[-0.19; 0.67]	1.09 (2557.07)	.275	0.03	[-0.29; 0.35]	0.19 (2072.38)	.853
	Intercept (reference = personal care)	-5.20	[-5.42; -4.98]	-45.90 (99.76)	<.001***	-4.68	[-4.81; -4.55]	-71.00 (131.17)	<.001***
	Eating/drinking	-0.31	[-0.44; -0.18]	-4.82 (390.50)	<.001***	-0.13	[-0.23; -0.03]	-2.55 (392.74)	.011*
	Passive screen use	-0.56	[-0.77; -0.34]	-5.11 (921.07)	<.001***	-0.41	[-0.58; -0.25]	-4.98 (803.58)	<.001***
	Active screen use	-0.63	[-1.74; 0.48]	-1.12 (6362.53)	.264	-0.22	[-1.00; 0.57]	-0.54 (5281.13)	.589
	Passive transport	0.60	[0.47; 0.74]	8.85 (466.58)	<.001***	0.83	[0.73; 0.94]	15.33 (450.76)	<.001***
	Active transport	0.77	[0.57; 0.98]	7.38 (945.79)	<.001***	1.02	[0.86; 1.17]	12.70 (814.14)	<.001***
	Calm play	0.07	[-0.08; 0.21]	0.90 (530.41)	.366	0.21	[0.10; 0.33]	3.69 (508.07)	<.001***
	Active play	0.42	[0.29; 0.55]	6.25 (427.02)	<.001***	0.59	[0.49; 0.70]	11.05 (423.49)	<.001***
	Play of unknown intensity	0.02	[-0.41; 0.45]	0.08 (2573.61)	.937	-0.08	[-0.39; 0.23]	-0.49 (2085.29)	.624
Eating/drinking	Intercept (reference = eating/drinking)	-5.51	[-5.73; -5.29]	-49.29 (94.72)	<.001***	-4.82	[-4.94; -4.69]	-74.46 (121.43)	<.001***
	Passive screen use	-0.24	[-0.45; -0.03]	-2.28 (898.33)	.023*	-0.28	[-0.44; -0.12]	-3.42 (783.51)	<.001***
	Active screen use	-0.32	[-1.43; 0.79]	-0.57 (6364.23)	.571	-0.08	[-0.87; 0.70]	-0.21 (5281.06)	.835
	Passive transport	0.91	[0.79; 1.04]	13.87 (423.57)	<.001***	0.97	[0.86; 1.07]	18.26 (415.34)	<.001***
	Active transport	1.08	[0.88; 1.29]	10.48 (917.47)	<.001***	1.15	[0.99; 1.30]	14.53 (789.69)	<.001***
	Calm play	0.38	[0.24; 0.52]	5.31 (490.35)	<.001***	0.35	[0.24; 0.46]	6.13 (474.26)	<.001***
	Active play	0.73	[0.60; 0.86]	11.28 (384.00)	<.001***	0.73	[0.62; 0.83]	13.91 (388.03)	<.001***
	Play of unknown intensity	0.33	[-0.10; 0.75]	1.51 (2561.19)	.132	0.05	[-0.26; 0.37]	0.34 (2068.05)	.732
Passive screen use	Intercept (reference = passive screen use)	-5.76	[-6.04; -5.47]	-39.66 (253.90)	<.001***	-5.10	[-5.28; -4.91]	-53.91 (440.23)	<.001***
	Active screen use	-0.08	[-1.19; 1.04]	-0.13 (6219.36)	.895	0.20	[-0.60; 0.99]	0.49 (5125.40)	.625
	Passive transport	1.16	[0.94; 1.37]	10.58 (945.23)	<.001***	1.25	[1.08; 1.41]	14.90 (819.40)	<.001***
	Active transport	1.33	[1.07; 1.59]	9.92 (1184.54)	<.001***	1.43	[1.23; 1.63]	14.14 (999.75)	<.001***
	Calm play	0.62	[0.40; 0.84]	5.54 (962.87)	<.001***	0.63	[0.46; 0.79]	7.33 (840.22)	<.001***
	Active play	0.97	[0.76; 1.19]	8.94 (916.62)	<.001***	1.01	[0.84; 1.17]	12.09 (800.15)	<.001***
	Play of unknown intensity	0.57	[0.11; 1.03]	2.43 (2417.53)	.015*	0.34	[0.00; 0.67]	1.95 (1966.53)	.051
Active screen use	Intercept (reference = active screen use)	-5.83	[-6.95; -4.71]	-10.18 (6144.61)	<.001***	-4.90	[-5.69; -4.11]	-12.17 (5318.93)	<.001***
	Passive transport	1.23	[0.13; 2.34]	2.18 (6362.20)	.029*	1.05	[0.26; 1.83]	2.62 (5279.75)	.009**
	Active transport	1.40	[0.29; 2.52]	2.46 (6239.36)	.014*	1.23	[0.44; 2.03]	3.05 (5152.47)	.002**
	Calm play	0.70	[-0.41; 1.81]	1.23 (6345.46)	.218	0.43	[-0.36; 1.21]	1.07 (5268.77)	.285
	Active play	1.05	[-0.06; 2.16]	1.86 (6355.20)	.063	0.81	[0.03; 1.59]	2.03 (5272.74)	.043*
	Play of unknown intensity	0.65	[-0.53; 1.83]	1.08 (5945.48)	.282	0.14	[-0.70; 0.98]	0.32 (4883.52)	.747
Passive transport	Intercept (reference = passive transport)	-4.60	[-4.82; -4.37]	-40.29 (102.75)	<.001***	-3.85	[-3.98; -3.72]	-57.77 (136.57)	<.001***
	Active transport	0.17	[-0.04; 0.38]	1.60 (970.42)	.109	0.18	[0.03; 0.34]	2.28 (830.67)	.023*
	Calm play	-0.54	[-0.68; -0.39]	-7.24 (563.38)	<.001***	-0.62	[-0.74; -0.51]	-10.61 (530.63)	<.001***
	Active play	-0.18	[-0.32; -0.05]	-2.69 (458.79)	.007**	-0.24	[-0.35; -0.13]	-4.38 (444.73)	<.001***
Active transport	Play of unknown intensity	-0.59	[-1.02; -0.16]	-2.68 (2582.95)	.007**	-0.91	[-1.22; -0.60]	-5.70 (2088.28)	<.001***
	Intercept (reference = active transport)	-4.43	[-4.71; -4.15]	-31.33 (232.25)	<.001***	-3.67	[-3.84; -3.49]	-40.26 (402.93)	<.001***
	Calm play	-0.71	[-0.92; -0.49]	-6.54 (983.89)	<.001***	-0.80	[-0.97; -0.64]	-9.75 (849.19)	<.001***
Calm play	Active play	-0.35	[-0.56; -0.15]	-3.36 (939.92)	<.001***	-0.42	[-0.58; -0.27]	-5.26 (810.50)	<.001***
	Play of unknown intensity	-0.76	[-1.21; -0.30]	-3.24 (2469.81)	.001**	-1.10	[-1.43; -0.76]	-6.41 (2007.63)	<.001***
	Intercept (reference = calm play)	-5.14	[-5.37; -4.90]	-43.44 (117.91)	<.001***	-4.47	[-4.61; -4.33]	-63.53 (167.56)	<.001***
Active play	Active play	0.35	[0.21; 0.50]	4.81 (529.04)	<.001***	0.38	[0.27; 0.50]	6.58 (506.31)	<.001***
	Play of unknown intensity	-0.05	[-0.48; 0.38]	-0.22 (2576.57)	.824	-0.29	[-0.61; -0.02]	-1.81 (2087.83)	.071
Sex (reference = male)	Intercept (reference = active play)	-4.78	[-5.00; -4.56]	-42.21 (99.62)	<.001***	-4.09	[-4.22; -3.96]	-61.94 (130.95)	<.001***
	Active play	-0.40	[-0.83; 0.03]	-1.84 (2553.86)	.065	-0.67	[-0.99; -0.36]	-4.21 (2066.36)	<.001***
	Age	0.02	[-0.15; 0.19]	0.25 (72.65)	<.800	0.02	[-0.07; 0.11]	0.45 (69.22)	<.653
		0.02	[0.01; 0.03]	4.74 (75.19)	<.001***	0.009	[0.00; .01]	4.37 (71.88)	<.001***

Table 10: Random effects of the activity categories for acceleration during wrist placement

Random effects	ENMO					MAD				
	Variance	SD	ICC			Variance	SD	ICC		
Activity category : Participant id	0.10	0.31	0.10			0.09	0.29	0.11		
Participant id	0.12	0.34	0.12			0.06	0.24	0.07		
Residual	0.76	0.87	-			0.66	0.81	-		
Model fit	<i>Log likelihood</i>	<i>AIC</i>	<i>BIC</i>	<i>R²total</i>	<i>R²fixed</i>	<i>Log likelihood</i>	<i>AIC</i>	<i>BIC</i>	<i>R²total</i>	<i>R²fixed</i>
	-9102.89	18243.77	18373.67	0.46	0.31	-8621.85	17281.70	17411.60	0.51	0.41

Note. 6883 observations; 626 Activity category:Participant id, 70 Participant id

Table 11: Fixed effects of the activity categories for acceleration during wrist placement

Fixed effects	ENMO					MAD				
	Estimate	95% CI	t(df)	p		Estimate	95% CI	t(df)	p	
Intercept (reference = sleeping)	-5.68	[-5.91; -5.45]	-48.27 (75.47)	<.001***		-5.48	[-5.66; -5.30]	-60.12 (66.51)	<.001***	
Sleeping	Sitting/lying	1.33	[1.17; 1.48]	17.11 (397.53)	<.001***	1.51	[1.37; 1.65]	20.77 (370.39)	<.001***	
	Personal care	1.43	[1.29; 1.56]	20.57 (318.03)	<.001***	1.59	[1.46; 1.72]	24.36 (296.04)	<.001***	
	Eating/drinking	1.41	[1.28; 1.54]	21.09 (285.36)	<.001***	1.62	[1.50; 1.74]	25.78 (265.83)	<.001***	
	Passive screen use	0.93	[0.70; 1.15]	8.01 (726.58)	<.001***	0.93	[0.72; 1.14]	8.57 (678.26)	<.001***	
	Active screen use	1.57	[0.51; 2.63]	2.90 (4916.04)	.004**	1.67	[0.68; 2.66]	3.31 (4829.58)	<.001***	
	Passive transport	1.87	[1.73; 2.01]	26.43 (345.99)	<.001***	2.15	[2.02; 2.28]	32.34 (321.79)	<.001***	
	Active transport	2.07	[1.84; 2.30]	17.90 (704.28)	<.001***	2.33	[2.11; 2.54]	21.45 (657.57)	<.001***	
	Calm play	1.73	[1.58; 1.88]	22.87 (391.43)	<.001***	1.96	[1.82; 2.10]	27.57 (364.37)	<.001***	
	Active play	1.94	[1.80; 2.08]	27.80 (316.44)	<.001***	2.18	[2.05; 2.31]	33.22 (294.70)	<.001***	
	Play of unknown intensity	1.80	[1.34; 2.26]	7.60 (1742.56)	<.001***	2.06	[1.63; 2.50]	9.31 (1662.36)	<.001***	
Intercept (reference = sitting/lying)	-4.36	[-4.60; -4.12]	-35.28 (90.55)	<.001***		-3.97	[-4.16; -3.78]	-40.68 (85.88)	<.001***	
Sitting/lying	Personal care	0.10	[-0.05; 0.26]	1.28 (414.40)	.199	0.08	[-0.07; 0.22]	1.04 (385.98)	.297	
	Eating/drinking	0.08	[-0.07; 0.23]	1.09 (384.71)	.277	0.11	[-0.03; 0.25]	1.51 (358.53)	.130	
	Passive screen use	-0.40	[-0.64; -0.16]	-3.29 (776.49)	<.001***	-0.58	[-0.81; -0.36]	-5.13 (725.19)	<.001***	
	Active screen use	0.24	[-0.82; 1.30]	0.45 (4892.52)	.654	0.16	[-0.83; 1.15]	0.32 (4804.88)	.750	
	Passive transport	0.55	[0.39; 0.70]	6.80 (444.68)	<.001***	0.64	[0.49; 0.79]	8.50 (413.91)	<.001***	
	Active transport	0.75	[0.51; 0.98]	6.12 (747.23)	<.001***	0.81	[0.59; 1.04]	7.13 (698.69)	<.001***	
	Calm play	0.41	[0.24; 0.57]	4.79 (484.30)	<.001***	0.45	[0.29; 0.60]	5.64 (451.41)	<.001***	
	Active play	0.62	[0.46; 0.77]	7.75 (413.41)	<.001***	0.67	[0.52; 0.82]	8.98 (385.31)	<.001***	
	Play of unknown intensity	0.47	[0.00; 0.94]	1.98 (1736.60)	.048*	0.55	[0.11; 0.99]	2.45 (1655.34)	.014*	
Intercept (reference = personal care)	-4.26	[-4.49; -4.02]	-35.77 (78.44)	<.001***		-3.89	[-4.07; -3.71]	-42.05 (70.35)	<.001***	
Personal care	Eating/drinking	-0.02	[-0.15; 0.12]	-0.26 (304.94)	.794	0.03	[-0.09; 0.16]	0.50 (283.94)	.620	
	Passive screen use	-0.50	[-0.73; -0.27]	-4.31 (732.66)	<.001***	-0.66	[-0.88; -0.45]	-6.06 (683.66)	<.001***	
	Active screen use	0.14	[-0.92; 1.20]	0.26 (4914.78)	.794	0.08	[-0.91; 1.07]	0.17 (4828.52)	.868	
	Passive transport	0.44	[0.30; 0.59]	6.13 (364.31)	<.001***	0.56	[0.43; 0.70]	8.27 (338.73)	<.001***	
	Active transport	0.64	[0.42; 0.87]	5.52 (710.99)	<.001***	0.74	[0.52; 0.96]	6.74 (663.50)	<.001***	
	Calm play	0.30	[0.15; 0.46]	3.94 (404.76)	<.001***	0.37	[0.23; 0.51]	5.12 (376.91)	<.001***	
	Active play	0.51	[0.37; 0.65]	7.19 (335.63)	<.001***	0.59	[0.46; 0.72]	8.81 (312.48)	<.001***	
	Play of unknown intensity	0.37	[-0.09; 0.84]	1.57 (1745.66)	.117	0.47	[0.04; 0.91]	2.13 (1666.63)	.033*	
Intercept (reference = eating/drinking)	-4.27	[-4.51; -4.04]	-36.41 (74.54)	<.001***		-3.86	[-4.04; -3.68]	-42.53 (65.37)	<.001***	
Eating/drinking	Passive screen use	-0.48	[-0.71; -0.26]	-4.21 (716.63)	<.001***	-0.69	[-0.90; -0.48]	-6.43 (668.48)	<.001***	
	Active screen use	0.16	[-0.90; 1.22]	0.29 (4917.00)	.769	0.05	[-0.94; 1.04]	0.10 (4830.95)	.918	
	Passive transport	0.46	[0.32; 0.60]	6.60 (332.68)	<.001***	0.53	[0.40; 0.66]	8.07 (309.41)	<.001***	
	Active transport	0.66	[0.44; 0.89]	5.74 (692.46)	<.001***	0.70	[0.49; 0.92]	6.53 (646.38)	<.001***	
	Calm play	0.32	[0.17; 0.47]	4.30 (376.07)	<.001***	0.34	[0.20; 0.48]	4.81 (350.24)	<.001***	
	Active play	0.53	[0.40; 0.67]	7.71 (304.09)	<.001***	0.56	[0.43; 0.69]	8.63 (283.22)	<.001***	
	Play of unknown intensity	0.39	[-0.087; 0.85]	1.65 (1737.62)	.099	0.44	[0.01; 0.87]	1.99 (1657.62)	.046*	
Intercept (reference = passive screen use)	-4.76	[-5.06; -4.46]	-30.90 (208.39)	<.001***		-4.55	[-4.81; -4.30]	-34.79 (247.08)	<.001***	
Passive screen use	Active screen use	0.64	[-0.43; 1.72]	1.17 (4776.42)	.241	0.75	[-0.26; 1.75]	1.46 (4679.77)	.146	
	Passive transport	0.95	[0.72; 1.18]	8.08 (752.58)	<.001***	1.22	[1.01; 1.44]	11.15 (701.88)	<.001***	
	Active transport	1.15	[0.86; 1.43]	7.79 (905.23)	<.001***	1.40	[1.13; 1.67]	10.15 (847.59)	<.001***	
	Calm play	0.81	[0.57; 1.04]	6.75 (757.95)	<.001***	1.03	[0.81; 1.25]	9.22 (707.87)	<.001***	
	Active play	1.02	[0.79; 1.25]	8.71 (732.37)	<.001***	1.25	[1.04; 1.47]	11.46 (683.20)	<.001***	
	Play of unknown intensity	0.87	[0.37; 1.38]	3.42 (1677.13)	<.001***	1.13	[0.67; 1.60]	4.75 (1599.22)	<.001***	

Table 11 continued from previous page

Fixed effects	ENMO				MAD				
	Estimate	95% CI	t(df)	p	Estimate	95% CI	t(df)	p	
Intercept (reference = active screen use)	-4.12	[-5.19; -3.04]	-7.49 (4790.25)	<.001***	-3.81	[-4.81; -2.81]	-7.47 (5007.97)	<.001***	
Active screen use	Passive transport	0.30	[-0.76; 1.36]	0.56 (4915.68)	.575	0.48	[-0.51; 1.47]	0.95 (4828.91)	.343
	Active transport	0.50	[-0.57; 1.58]	0.92 (4748.62)	.359	0.65	[-0.35; 1.66]	1.27 (4654.65)	.202
	Calm play	0.16	[-0.90; 1.22]	0.30 (4899.58)	.764	0.29	[-0.70; 1.28]	0.57 (4813.81)	.571
	Active play	0.37	[-0.69; 1.43]	0.69 (4907.04)	.490	0.51	[-0.48; 1.50]	1.01 (4819.85)	.314
	Play of unknown intensity	0.23	[-0.92; 1.38]	0.40 (4392.64)	.693	0.39	[-0.68; 1.46]	0.71 (4294.94)	.478
Intercept (reference = passive transport)	-3.81	[-4.05; -3.58]	-31.81 (80.81)	<.001***	-3.33	[-3.51; -3.15]	-35.59 (73.42)	<.001***	
Passive transport	Active transport	0.20	[-0.03; 0.43]	1.70 (732.12)	.089	0.17	[-0.04; 0.39]	1.58 (683.21)	.114
	Calm play	-0.14	[-0.29; 0.01]	-1.79 (432.66)	.074	-0.19	[-0.34; -0.05]	-2.61 (402.65)	.009**
	Active play	0.07	[-0.07; 0.21]	0.97 (363.10)	.333	0.03	[-0.10; 0.16]	0.43 (337.65)	.665
	Play of unknown intensity	-0.07	[-0.54; 0.40]	-0.30 (1752.52)	.765	-0.09	[-0.53; 0.35]	-0.40 (1672.61)	.686
Intercept (reference = active transport)	-3.61	[-3.91; -3.31]	-23.64 (202.34)	<.001***	-3.15	[-3.41; -2.90]	-24.46 (238.72)	<.001***	
Active transport	Calm play	-0.34	[-0.57; -0.11]	-2.84 (732.50)	.005**	-0.37	[-0.59; -0.15]	-3.27 (684.21)	<.001***
	Active play	-0.13	[-0.36; 0.10]	-1.10 (711.17)	.270	-0.14	[-0.36; 0.07]	-1.31 (663.91)	.189
	Play of unknown intensity	-0.27	[-0.77; 0.23]	-1.06 (1658.08)	.289	-0.26	[-0.73; 0.20]	-1.10 (1581.54)	.269
Intercept (reference = calm play)	-3.95	[-4.20; -3.71]	-31.85 (92.56)	<.001***	-3.52	[-3.71; -3.33]	-35.84 (88.64)	<.001***	
Calm play	Active play	0.21	[0.06; 0.36]	2.71 (408.50)	.007**	0.22	[0.08; 0.36]	3.04 (380.27)	.002**
	Play of unknown intensity	0.07	[-0.40; 0.54]	0.29 (1749.37)	.774	0.10	[-0.34; 0.54]	0.46 (1667.97)	.648
Intercept (reference = active play)	-3.74	[-3.98; -3.51]	-31.41 (78.79)	<.001***	-3.30	[-3.48; -3.12]	-35.58 (70.62)	<.001***	
Active play	Play of unknown intensity	-0.14	[-0.61; 0.32]	-0.60 (1732.80)	.551	-0.12	[-0.56; 0.32]	-0.54 (1653.67)	.590
Sex (reference = male)		-0.02	[-0.20; 0.17]	0.19 (57.41)	<.850	0.04	[-0.09; 0.18]	0.60 (43.65)	.549
Age		0.01	[0.00; 0.01]	2.37 (57.68)	<.018*	0.01	[0.00; 0.01]	2.39 (44.10)	.017**