

Physical activity and spatial use during school break times in children aged four



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Purpose. Analyze quantity of physical activity and use of space during school break times according to gender, in four-year-old pupils.

Methods. 119 pupils participated in the study, with a mean age of 4 years (65 boys aged 3.9±0.81 years and 54 girls aged 4.05±0.75 years). To assess physical activity during school break time, Yamax Digiwalker SW-200 (YDSW200) pedometers were used and the behavioural mapping was performed using a direct observation form

Zone 1	Zone 2	Zone 3	Most used zones
359 Instances 179,5 min.	383 Instances 131,5 min.	463 Instances 231,5 min.	
Zone 4: 232 Instances 116 min.	Zone 5: 356 Instances 178 min.	Zone 6: 369 Instances 184,5 min.	
Zone 7: 124 Instances 62 min.	Zone 8: 846 Instances 423 min.	Zone 9: 594 Instances 297 min.	Underutilise zones

Figure. Frequency and duration in each zone of the school playground

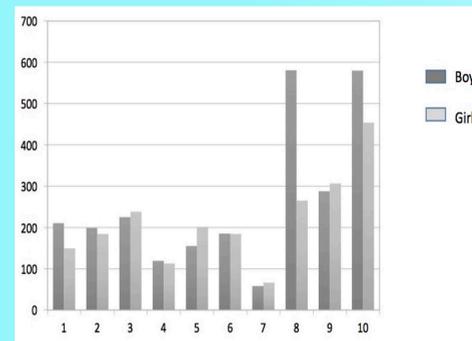


Figure. Selection frequencies of each zone according to gender

Results. Most of the time, the pupils tended to move in an undefined manner through zone 10 (multizone), recording a total frequency of 1,034 entries and 517 minutes in this category. After this, the zones with the greatest frequency and usage by our infants are zone 8 (846 instances and 423 minutes) and 9 (594 instances and 297 minutes). This tendency towards continuous movement and multizone use, as well as the use of zone 8 and 9 can also be observed in the rate; rate being understood as the average number of occurrences of each category per unit of time

Table. Descriptions of the behaviour category

Behaviour category	Dc: Minutes duration	uc: Rate	pi: Relative Frequency
DA	1285,5	0,0180345118	0,5410353535
SA	656,5	0,0092101571	0,2763047138
C	232	0,0032547699	0,0976430976
P	202	0,0028338945	0,085016835

DA: Dynamic activity, SA: Static activity, C: Communication, P: Passivity

In the case of the four behavioural categories assembled, the category with the highest frequency is DA (2,571 instances and 1285.5 minutes' duration), followed by SA (1,313 instances and 656.5 minutes). The DA category's rate is 0.018, while the SA category has a rate of 0.009.

Conclusions. In our results, there are no significant differences between gender and behavioural category DA, or the number of steps completed during break time (65.69±24.98 steps per minute in boys and 62.1±30.23 steps per minute in girls).

The dominant behavioural category is Dynamic Activity (DA), which equates to 54% of school break time. This means that for slightly more than half the time, pupils are engaging in activities that involve physical stimuli, with the remaining time distributed between the other categories, which are less interesting from the point of view of health habits and physical activity. We believe it would be interesting to increase this physical practice time during breaks, as a way of combating sedentary lifestyles in childhood, and high levels of overweightness.

