Increasing Children's Physical Activity in Estonia

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The deficiency of physical activity among children has become a problem across Europe, including Estonia. One of the driving forces may be that children spend more time using smartphones and tablets instead of playing with friends and doing sports. According to the latest research by Aasvee & Minossenko[1], less than 20 percent of Estonian children move as much as the World Health Organization advises, which is at least one hour a day[2]. A major challenge is to find ways to increase children's physical activity.

During the last few years, there have been several surveys about the physical activity in Estonia. In the Aasvee & Minossenko study, 16.4 percent of Estonians 11 to 15 years old declared that they are engaged in some kind of physical activity at least one hour a day every day. In general, boys were more active than girls. However, when researchers measured the activity level with activity monitors instead of asking students, the results showed that the advised activity level is reached by 13 percent of girls between 2 and 11 years old and 26.8 percent of boys[3]. Additionally, only 18.3 percent of children between 7 and 13 years old move enough every school day[4]. It is therefore evident that most children do not have enough physical activity.

> THE PHYSICAL CAPABILITY DEVELOPED BY PHYSICAL ACTIVITY IS CONNECTED WITH MANY HEALTH BENEFITS FOR SCHOOL-AGED CHILDREN AND YOUTH AND IS ONE OF THE MOST IMPORTANT HEALTH INDICATORS

To address the problem, many countries have developed school-based measures to increase physical activity. The most effective measures have been multi-component school-based interventions[5].

THE IMPORTANCE OF PHYSICAL ACTIVITY IN CHILDHOOD

Research shows that physical activity plays an important role for physical and mental health – it supports and even improves the

[1] Aasvee, K. and Minossenko, A. (2011) *Eesti kooliõpilaste tervisekäitumise uuring 2009/2010 õppeaasta*. Tallinn: Tervise Arengu Instituut.

[2] World Health Organization (2010) *Global recommendations on physical activity for health*. Geneva: World Health Organization.

[3] Konstabel, K., Veidebaum, T., Verbestel, V., Moreno, L. A., Bammann, K., Tornaritis, M. and Pitsiladis, Y. (2014) "Objectively measured physical activity in European children: the IDEFICS study", [in:] *International Journal of Obesity*, 38, pp. 135–143.

[4] Laste liikumisuuring (2015) "Uuringu andmebaas", [in:] T*artu Ülikooli kehakultuuriteaduskond*.

[5] Kriemler, S., Meyer, U., Martin, E., van Sluijs, E.M.F., Andersen, L.B. and Martin, B.W. (2011) "Effect of school-based interventions on physical activity and fitness in children and adolescents: A review of reviews and systematic update", [in:] *British Journal of Sports Medicine, 45*(11), pp. 923–930.

quality of life[6]. The right dose of activity has a considerable influence on diminishing the risk of cardio-vascular diseases, diabetes, hypertension, several forms of cancer, and obesity[7]. It also helps decrease the risk of mental health problems[8]. The physical capability developed by physical activity is connected with many health benefits for school-aged children and youth[9] and is one of the most important health indicators[10]. Regular physical activity keeps the skeleton and muscles fit and healthy, increases muscular power and endurance, and decreases the risk of chronic diseases.

> INTEGRATING SMALL BREAKS FOR PHYSICAL ACTIVITIES DURING THE SCHOOL LESSONS IMPROVED CHILDREN'S PERFORMANCE IN STANDARDIZED ACADEMIC TESTS

More than that, physical activity may increase self-confidence and reduce stress and anxiety levels[11].

Athletics also play a crucial role in physical development and prevention of cardiovascular diseases [12] – for example, according to a 2004 survey examining the descriptive statistics of about 155 children between ages 3 and 7, girls with lower level of physical activity had a higher body-mass index than their more active contemporaries[13].

[6] Brown, H. E., Pearson, N., Braithwaite, R. E., Brown, W. J. and Biddle, S. J. (2013) "Physical activity interventions and depression in children and adolescents", [in:] *Sports medicine, 43*(3), pp. 195–206;
Dishman, R. K., Hales, D. P., Pfeiffer, K. A., Felton, G. A., Saunders, R., Ward, D. S. and Pate, R. R. (2006) "Physical self-concept and self-esteem mediate cross-sectional relations of physical activity and sport participation with depression symptoms among adolescent girls", [in:] *Health Psychology, 25*(3), pp. 396–407.
Janssen, I. and Leblanc, A. G. (2010) "Systematic review of the health benefits of physical activity and fitness in school-aged children and youth", [in:] I*nternational Journal of Behavioral Nutrition and Physical Activity, 7*(40), pp. 1–16.

[7] Buffart, L. M., Singh, A. S., van Loon, E. C., Vermeulen, H. I., Brug, J. and Chinapaw, M. J. (2014) "Physical activity and the risk of developing lung cancer among smokers: A meta-analysis", [in:] *Journal of Science and Medicine in Sport, 17*(1), pp. 67–71; Schranz, N., Tomkinson, G., Parletta, N., Petkov, J. and Olds, T. (2014) "Can resistance training change the strength, body composition and self-concept of overweight and obese adolescent males? A randomized controlled trial", [in:] *British journal of sports medicine, 48*(20), pp. 1482–1488.

[8] Hassmen, P., Koivula, N. and Uutela, A. (2000) "Physical exercise and psychological well-being: a population study in Finland", [in:] *Preventive medicine, 30*(1), pp. 17–25; Penedo, F. J. and Dahn, J. R. (2005) "Exercise and well-being: a review of mental and physical health benefits associated with physical activity", [in:] *Current opinion in psychiatry, 18*(2), pp. 189–193.

[9] Janssen, I., and Leblanc, A. G. (2010) "Systematic review of the health benefits of physical activity and fitness in school-aged children and youth", [in:] *International Journal of Behavioral Nutrition and Physical Activity, 7*(40), pp. 1–16.

[10] Ortega, F. B., Ruiz, J. R., Castillo, M. J., and Sjostrom, M. (2008) "Physical fitness in childhood and adolescence: a powerful marker of health", [in:] *International Journal of Obesity (London), 32*(1), pp. 1–11.

[11] Physical Activity Guidelines Advisory Committee (2008) "Physical activity guidelines advisory committee report, 2008". *Washington, DC: US Department of Health and Human Services*, pp. A1–H14.

[12] Jiménez-Pavón, D., Kelly, J. and Reilly, J. J. (2010) "Associations between objectively measured habitual physical activity and adiposity in children and adolescents: Systematic review", [in:] *International Journal of Pediatric Obesity, 5*(1), pp. 3–18; Timmons, B.W., Naylor, P.J. and Pfeiffer, K.A. (2007) "Physical activity for preschool children: How much and how?", [in:] *Can. J. Public Health, 98*(2), pp. 122–134.

[13] Sääkslahti, A., Numminen, P., Varstala, V., Helenius, H., Tammi, A., Viikari, J. and Välimäki, I. (2004) "Physical ac-

More active children also had lower levels of bad cholesterol. The data was gathered by the annual doctor visit summaries and physical activity diaries that children kept.

Moreover, physical activity has a strong connection with the functioning of the central nervous system – cognitive and motor abilities develop in accordance[14]. It helps, for instance, to supply the brain with oxygen and nutrition, increases the growth of nerve cells in the hippocampus (the center of learning and memory), and contributes to the development of nerve connection. These physical processes have a positive effect on increasing the ability of attention and the capacity of processing information and memory[15].

In 2011, Donnelly and Lambourne wrote an article in which they brought out the connections among physical activity during the school day, their body-mass index, and academic achievement[16]. They found that integrating small breaks for physical activities during the school lessons improved children's performance in standardized academic tests. The same discovery was made in a 2007 Illinois survey based on the data of 259 pupils from grades 3 and 5[17]: the pupils' aerobic capability proved to be in accordance with their mathematical and linguistic capabilities. In conclusion, the role of physical activity to the cognitive functions and ability to learn should not be underestimated.

> SEVERAL OTHER COUNTRIES IN EUROPE AND ELSEWHERE (E.G., CANADA, FINLAND, ESTONIA) HAVE ALREADY STARTED TO DEVELOP DIFFERENT SCHOOL-BASED MEASURES TO INCREASE PHYSICAL ACTIVITY

INCREASING PHYSICAL ACTIVITY DURING SCHOOL-DAY

Taking into account the low physical activity level among Estonian pupils and the results of the previously mentioned surveys, we may say that increasing activity is an important challenge for the nation. The key role in this battle is given to the activi-

tivity as a preventive measure for coronary heart disease risk factors in early childhood", [in:] *Scandinavian journal of medicine & science in sports, 14*(3), pp. 143–149.

[14] Diamond, A. (2000) "Close interrelation of motor development and cognitive development and of the cerebellum and prefrontal cortex", [in:] *Child development 71*(1), pp. 44–56.

[15] Rosenbaum, D. A., Carlson, R. A. and Gilmore, R. O. (2001) "Acquisition of intellectual and perceptual-motor skills", [in:] *Annual review of psychology, 52*(1), pp. 453–470. Trudeau, F. and Shephard, R. J. (2008) "Physical education, school physical activity, school sports and academic performance", [in:] *International Journal of Behavioral Nutrition and Physical Activity, 5*(1), p. 10.

[16] Donnelly, J. E. and Lambourne, K. (2011) "Classroom-based physical activity, cognition, and academic achievement", [in:] *Preventive medicine, 52*, pp. 36-42.

[17] Castelli, D. M., Hillman, C. H., Buck, S. M. and Erwin, H. E. (2007) "Physical fitness and academic achievement in third-and fifth-grade students", [in:] *Journal of Sport and Exercise Psychology, 29*(2), p. 239.

ties that are conducted during the school day[18]. That is also the reason why several other countries in Europe and elsewhere (e.g., Canada, Finland, Estonia) have already started to develop different school-based measures to increase physical activity. Next to home, school is considered to be the best place to alter habits[19] because all children go to school and spend a considerably large amount of their day there. The changes that are made in the school environment are accessible to all children irrespective of their socio-economic background.

As mentioned before, the most effective way to influence children's physical activity is to use multi-component school-based measures[20] that have an impact on different socio-ecological levels at the same time. The results and analyses of intervention programs with the goal of increasing children's physical activity have shown that the most important elements to change behavior are:

- changing the school physical environment, both in- and outdoors, so that it would contribute to the goal;
- integrating physical movement and activities into different classes;
- introducing (student- or teacher-) guided physical activity breaks;
- changing the curriculum and the structure of the day so that longer activity breaks may be included;
- diversifying the physical education class;
- promoting active school transportation and increasing parents and teachers' knowledge about the effect of physical activity[21].

The Finnish program "Liikkuva Koulu" (*Finnish Schools on the Move*) was created to increase physical activity. It includes all the abovementioned elements[22]. One important characteristic of the Finnish way is that all the schools that have joined the program decide for themselves which elements they use and which they omit. That flexibility is important in making the program popular and effective. Some Finnish schools focus on children's gender differences while providing various physical activities. Other schools start the school day with a set of alternative physical activities or pay attention to longer activity breaks, during which children are offered to take part in different organized games and activities (so-called "active break"). Many schools consider it important to provide

[18] Story, M., Nanney, M. S. and Schwartz, M. B. (2009) "Schools and Obesity Prevention: Creating School Environments and Policies to Promote Healthy Eating and Physical Activity", [in:] *Milbank Quarterly, 87*(1), pp. 71–100.

[19] Dobbins, M., Husson, H., DeCorby, K. and LaRocca, R. L. (2013) "School-based physical activity programs for promoting physical activity and fitness in children and adolescents aged 6 to 18", [in:] *Cochrane Database of Systematic Reviews*, p. 2; Hyndman, B., Telford, A., Finch, C. F. and Benson, A. C. (2012) "Moving Physical Activity Beyond the School Classroom: A Social-ecological Insight for Teachers of the facilitators and barriers to students' non-curricular physical activity", [in:] *Australian Journal of Teacher Education, 37*(2), p. 1.

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[21] Haapala, H. L., Hirvensalo, M. H., Laine, K., Laakso, L., Hakonen, H., Lintunen, T. and Tammelin, T. H. (2014) "Adolescents' physical activity at recess and actions to promote a physically active school day in four Finnish schools", [in:] *Health education research*; Kämppi, K., Asanti, R., Hirvensalo, M., Laine, K., Pönkkö, A., Romar, J. E. and Tammelin, T. (2013) "Viihtyvyyttä ja työrauhaa. Koulun henkilökunnan kokemukset ja näkemykset liikunnallisen toimintakulttuurin edistämisesta koulussa, [in:] *Liikunnan ja kansanterveyden julkaisuja*, p. 269.

[22] Tammelin, T., Laine, K. and Turpeinen, S. (2013) *Oppilaiden fyysinen aktiivisuus. Liikunnan ja kansanterveyden julkaisuja*, p. 272.

the pupils with the opportunity to spend the breaks outside in fresh air. In addition, the schools enable children to move during classes. "Finnish Schools on the Move" is one of the key projects in the field of knowledge and education in the government program of Finland. The goal of the government is to expand the program across the country to ensure one hour of physical activity each day. It is funded by the Ministry of Education and Culture and is organized by the Board of Education, regional state administrative agencies, and other organizations. It started with a pilot phase in 2010-2012. On November 2016, more than 80 percent of municipalities and 70 percent of comprehensive schools (1,700 schools) were involved in the program[23].

In many developed countries schools may take part in similar programs – for example, "Playground Activity Leaders in Schools"[24] in Canada or "Take 10" in the United States[25]. The latter is a classroom-based physical activity supporting measure, where teachers can join physical activity and movement with academic education. The program also focuses on healthy eating habits. According to a survey[26] conducted in 2009 in the United States, pupils from schools that participated in "Take 10" received better results in mathematics, reading, and writing tests. Moreover, students in the program were 12 percent physically more active than children who did not partake.

WHY AREN'T ESTONIAN CHILDREN ACTIVE DURING BREAKS?

In a 2016 survey[27] conducted by the author of this article, we found that lower physical activity level is not necessarily the result of children's own choice. It was discovered that the physical environment of the school and the school rules may stop children from moving. For example, in several schools children are forbidden to run during the break. Curiously enough, the main obstacle is not the lack of space but rather the rules that keep children away from physical activities – mostly to enforce safety rather than allowing creativity and risk.

Most of the students questioned in the survey claimed that they would move around much more during the time in school, if only they were allowed to. The children from grades 1 to 3 and 4 to 6 said that they would like to play more games, chase each other, play hide and seek, run in school hallways, or in the schoolyard. Students agreed that they would be glad to shoot a bow or throw some arrows, hold pillow fights, water gun fights, play with a Frisbee, or dance.

Although students from grades 7 to 9 did not mention such activities as the younger students, they agreed that they would move more, should it be permitted.

[23] Finnish Schools on the Move. (n.d.). Available [online]: http://www.liikkuvakoulu.fi.

[24] Playground Activity Leaders in Schools (P.A.L.S.). (n.d.). Available [online]: http://www.halton.ca/working_in_halton/supports_for_professional_groups/school_health_information_for_professionals/playground_activity_leaders_in_schools___p__a__l__/.

[25] Donnelly, J. E., Greene, J. L., Gibson, C. A., Sullivan, D. K., Hansen, D. M., Hillman, C. H. and Washburn, R. A. (2013) "Physical activity and academic achievement across the curriculum (A+ PAAC): rationale and design of a 3-year, cluster-randomized trial", [in:] *BMC public health, 13*(1), p. 307.

[26] Donnelly, J. E., Greene, J. L., Gibson, C. A., Smith, B. K., Washburn, R. A., Sullivan, D. K. and Jacobsen, D. J. (2009) "Physical Activity Across the Curriculum (PAAC): a randomized controlled trial to promote physical activity and diminish overweight and obesity in elementary school children", [in:] *Preventive medicine, 49*(4), pp. 336-341.

[27] Lees, M. (2016) *Kehalist aktiivsust toetavad ja takistavad tegurid vahetundides erinevate kooliastmete õpilaste arvamusele tuginedes*, Master's thesis, Tartu: Tartu Ülikool.

> THE STUDENTS AGREED THAT THE BIGGEST OBSTACLE WAS SCHOOL RULES THAT DO NOT PERMIT THE PUPILS TO RUN OR PLAY CHASE IN THE HALLWAYS

One important aspect is that children prefer to practice activities together. This may be also the reason why many schools have forbidden running outside of physical education classes since it might become dangerous and noisy. The biggest physical activity supporting aspect is when children are offered to take part in some organized games or activities. In interviews, children from grades 7 to 9 claimed that so-called "active breaks" could be organized more often. Unfortunately, children and teachers are lacking the time to organize such breaks, and the breaks are often rather short (10 minutes).

The students agreed that the biggest obstacle was school rules that do not permit the pupils to run or play chase in the hallways. It also became evident that there are some schools where the students are not even allowed to visit the gym during the break – the door remains locked. Moreover, some children stated that they do not have permission to go outside during the break. The ones who have violated the ban have been punished. The teachers are standing in the hallways and making sure that the rules are obeyed. When the students are not allowed to move, they use smartphones and spend the break in social networks instead. One pupil admitted: "We are more interested in Facebook than playing chase". Another added: "If you write with someone via Facebook, then you forget yourself and also forget to go and play something with the others".

The second obstacle is the lack of time – the breaks are just too short for physical activities. And that is a problem, since physical activity helps mental health and improves information processing ability and memory. From the educational point of view, physical activity is very important and education policy should ensure that children have sufficient access to it in schools. And not only during PE classes.

ESTONIAN PRACTICE

Less than 20 percent of Estonian children move as much as the WHO advises – at least one hour a day. Sitting has become one of the inheritable diseases in the modern "sitting-behind-a-screen-society". This disease should be therefore cured by active intervention, development of skills, changing the environment, and alteration of the norms.

Too much sitting has become problematic in most welfare countries. Instead of rushing to adopt already established solutions, Estonia decided to test the available solutions to find the suitable ones for our situation so that physical activity may be a natural part of the school day. Of course, positive and negative experiences from other countries were analyzed before starting. In 2016, the Research Group of Physical Activity for Health of the University of Tartu in cooperation with the Estonian

Ministry of Research and Education and the Ministry of Social Affairs started the program "Liikuma kutsuvad koolid" (*Schools for movement!*). The researchers, in cooperation with Estonian schools, try to find solutions that would best suit the needs and opportunities of Estonian schools.

The program is currently testing different solutions and collecting feedback. Ten test-schools (located in various regions – from the capital of Estonia, Tallinn, to the small Rõuge parish) have been chosen. The focus is on solutions that the schools have already developed themselves and that are sustainable. The researchers assist the schools with their know-how, but cannot dictate the solutions. The suitable models are found in cooperation. All the test schools are ready to adapt new methods to increase children's physical activity as well as to share their experiences with other institutions.

In 2016, the focus was mostly on the changes that can be adopted during lessons. In 2017, the idea is to train student leaders who would be able to conduct active breaks and school staff to supervise the program in schools. It is also necessary to create a webpage where other Estonian schools could get ideas on how to increase children´s physical activity during school.

WHY ARE CHILDREN LACKING PHYSICAL ACTIVITY?

In creating the activity habits of children and youth, there are several elements that play an important role: home, school, social beliefs, and values are among them. For example, more than 50 percent of children from grade 6 claimed that they do not have an opportunity to practice physical activity during the breaks between lessons.

The physical activity level in schools is low because of several reasons. First, the length of the school days and the size of academic work do not contribute to a higher level of physical activity. The curriculum and the structure of the day do not enable much moving around – 45-minute school lessons have only 10-minute breaks between them. There are a few longer breaks for lunch. This kind of system does not promote being physically active.

Some schools have a lot of space and pupils can use several entrances to go outside and play in the schoolyard. At the same time, there are also schools with narrow hallways or schools which are surrounded by motorways. Although the differences are quite big, we may say that all Estonian schools have some kind of possibilities to enable children to practice physical activities.

The way to school also plays an important role. The goal is that all pupils use active transportation measures (walking, cycling, etc.) for at least some part of their way to school. Unfortunately, children are often brought to school by car and their parents pick them up and drive them home. So the children do not use active transportation – that means, they do not ride a bike or walk on their own. This is also a challenge for local municipalities – school roads for children should be designed in such a way that would ensure safety of active transportation measures.

Attitudes of some people can also pose a problem. For instance, there are people who believe that physical activity of children may be dangerous (the risk of falling on the stairs, bumping one's head against a wall, etc.), that it simply generates noise, or that running may be unsuitable for an academic environment. Thus, the reason for low physical activity may not actually be in small rooms or the lack of time. The so-called "academic atmosphere" is of-

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ten thought not to be suitable for running around and shouting with joy – the natural side effect of children playing.

Furthermore, "non-active time" has also become one focus in the physical activity discussion. It often coincides with "screen time". Children spend more and more time with their phones, computers, or TV screens. In the context of school days, the usage of smart phones is most inevitable. Spending the break leaning against the wall and watching the phone screen influences physical activity and also communication skills. It results in low physical activity and a need for a solution.

So far, physical activity during the school day has been too sport-centered and it is considered to be only a matter of concern for physical education teachers. The parents may think that children do not have to move during the breaks since some of them have additional trainings after school. Unfortunately, those cannot make up for the detrimental effects of a day spent sitting behind desks (with some PE classes intervals a few days a week) has on their health.

Children sit during all the classes and most of the break – which, depending of the grade, may amount to up to seven hours of sitting in a day. A survey conducted by the Research Group of Physical Activity for Health shows that children who are sitting during the break are more tired by the end of the school day[28]. It is therefore a vicious circle: pupils feel tired and do not want to move around, which makes them even more tired. Two or three training lessons per week do not give children the necessary amount of physical activity. Fortunately, it seems that, in Estonia, all-day sitting has started to be commonly acknowledged as a health threat by scientists, parents, and journalists.

[28] Research Group of Physical Activity for Health, University of Tartu, 2016.

> PHYSICAL LITERACY – THE PHYSICAL SKILLS, SELF-CONFIDENCE, AND JOY THAT PHYSICAL ACTIVITIES BRING – IS AS IMPORTANT AS READING AND WRITING SKILLS

More and more research proves that the ability to learn and physical activity have a positive connection. Games and activities that are practiced with others also improve communication skills and provide rest form the academic work. So physical literacy – the physical skills, self-confidence, and joy that physical activities bring – is as important as reading and writing skills. It should also be a natural part of the school day.

Some opportunities to be more active are related to changing everyday habits and thus need conscious practicing and adaption of new ways of thinking and behaving. Estonia's cold climate also makes outdoor activities challenging to organize, but it is an effective way of relieving stress and improving relationships.

The older students also enjoy games. The opportunity to play and run in the middle of the school day helps to manage the

tiredness during the last lessons and make friends with kids from other groups. Even when older students do not want to play, they can walk around or at least stand, which is always better than sitting. Spending the break outdoors is quite common in Nordic countries.

Estonian students also long for an outdoor break. It is, however, crucial to provide organized activities during such outings – for example, by introducing animated active games. There are already some progressive schools in the country where an outdoor break is a norm and children and teachers do not imagine school without it. For example, in Väänа-Jõesuu school, the outdoor break lasts 40 minutes and children can go outside during all seasons. It is not a common practice because most of the breaks in Estonian schools last between 10 and 15 minutes. The parents know and support the decision of school authorities and make sure that children are dressed according to the weather.

Nevertheless, when talking about supporting the children's physical activity, a certain question rises – should it be a school's responsibility? Or is it the parents' problem? It certainly is the latter, but let us not forget that some children do not have strong parental support.

HOW TO MAKE SCHOOLDAYS MORE ACTIVE?

Members of Research Group of Physical Activity for Health have noticed that teachers do not hold the attention of pupils who can only focus when they are sitting still. They rather say that they themselves lack skills and knowledge of how to make the lessons more active – in other words, how to combine teaching and moving. The start may be very small, for example:

- Giving the pupils opportunity to stand up during the lesson or to organize the work elsewhere and not behind the desk;

- Integrating the subject with moving, organizing active breaks for younger children, during which they could dance around or do other fun activities, for instance, accompanied by a video;

- Placing the worksheets around the classroom so that pupils have to get up to get the sheets;

- Using standing up or sitting down (or doing some other exercises) while answering questions instead of raising a hand.

The methods Estonian schools have tested have shown that teachers have more fun working with children when they can move around during a lesson.

Most of the obstacles related to the school's physical environment and house rules are difficult or expensive to change. But not all of them. The rooms can be turned into moving-friendly spaces by using several simple methods:

- During breaks, children are allowed in the gymnasium;

- In the gymnasium, the children may play different games. Some children may organize the games. There can be different theme days, etc.;

- Children are engaged in making school furniture (e.g., ping-pong tables, obstacle tracks). These kind of furniture pieces carry the message that moving and physical activities are allowed in the school;

- Find smart and innovative places where children can keep their bikes and skateboards, especially in small schools where space is limited;

• The parents could help by not bringing children to school by car. In many cases, children could easily walk. Many schools have car-free secure area so that children can walk to school for at least part of the distance;

• Longer breaks held outdoors enable younger children to run and play outside. The older students may also enjoy spending the time outside with some fresh air.

It seems that it is not very difficult to implement the changes mentioned above. However, this requires a greater awareness of the need for physical activity and cooperation among school boards, teachers, and students who are willing to experiment and employ a more "outside-the-box" thinking.

CONCLUSIONS

Children's lack of physical activity is a serious problem in Estonia and other European countries. One of the possible solutions lies in school-based measures. Even small changes related to school rules, parental attitudes, school staff, and physical environments (as well as children themselves) might bring much desired results. It is essential that, in addition to dealing with children's education and mental development, schools devote some thought to children's physical development. It is only by finding the balance between these two aspects that young people may develop to the best of their potential.

Without a doubt, no changes are possible without the support of local and central authorities in charge of the creation of necessary regulations and legislation as well as funding related to redesigning the physical environment of the schools and purchasing new learning tools. Nevertheless, schools need to maintain enough autonomy to choose the right measures that would work for them – needless to say, the same model will not work for all schools. Therefore, decision-makers in local municipalities and ministries cannot presume that one can simply develop a manual or a directive that would meet the needs and requirements of all schools regardless of their size, location, or organizational culture. Let us hope that this will be borne in mind. ●

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