



Guidelines for future activities to promote physical activity and healthy nutrition as a healthy lifestyle

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Introduction

According to the World Health Organization (WHO) the number of overweight or obese infants and young children (aged 0 to 5 years) increased from 31 million globally in 1990 to 42 million in 2013. The vast majority of overweight or obese children live in developing countries, where the rate of increase has been more than 30% higher than that of developed countries. Without intervention, obese infants and young children will likely continue to be obese during childhood, adolescence and adulthood and are more likely to develop a variety of health problems. The most effective way to prevent childhood obesity is to raise awareness among families about importance of healthy diet and to engage children at an early age into regular physical activity.

The objective of the On the Move project is to contribute to raising awareness of the need for physical activity as the basis of healthy lifestyle by changing habits of identified target groups (preschool children and their families). The reason of undertaking this project is to tackle the challenges of growing obesity among preschool children in developing countries involved in the project and to raise awareness about importance of active lifestyle and healthy nutrition in all project partner countries (Croatia, Portugal, Malta, Slovakia, United Kingdom and Slovenia). This is in compliance with EU Action Plan on Childhood Obesity 2014-2020 (A healthy lifestyle should be adopted from an early age and should encompass healthy diet and physical activity - indoor and outdoor activities with parents or carers).

The goal is to stimulate children, in the first place those who are obese, overweight and with low physical activity, and their parents to embrace this new kind of lifestyle as a routine, and then transfer the acquired healthy habits in later age. Children that are engaged in sports activities at a very young age are more likely to remain active later in life and are less likely to become obese or suffer from linked chronic diseases.

Comparison of countries involved in this project proposal (data from WHO):

Country	% of estimated overweight population	Activities which are intended to offset the identified challenges in scope of this project – by country.
Croatia	58,8	Sport programme for preschool children, Programme for family activities (14 months)
Slovakia	61	Sport programme for preschool children, Family activities (9 months)
Slovenia	60,6	Sport programme for preschool children (9 months), Family activities
Portugal	55,6	Sport programme for preschool children (9 months), Family activities



United Kingdom	63,4	Sport programme for preschool children, Family activities
Malta	64	Sport programme for preschool children (3 months), Family activities

Following the sports programme delivered in each partner country the project is developing Guidelines for future activities to promote physical activity and healthy nutrition as a healthy lifestyle to sustain the project at policy level. The guidelines presented in this document will be prepared based on results of implemented activities and data collected through the sports programme. The focus will be on measures aimed at reducing the number of obese and overweight pre-school children, increasing the level of physical activity among children and their families as well as changing eating habits of families in Croatia, Slovakia, Slovenia, Portugal, United Kingdom and Malta. This will help decision makers at the national, regional and local level to develop health promotion policies and to initiate related efficient international projects in the future.

The problem

According to WHO childhood obesity is a frequent problem that low and middle-income countries, especially in urban settings are facing and their number is estimated to increase. Obese children are predisposed to remain obese also in the adult life being therefore exposed to other comorbidities and associated diseases. From a statistical point of view, it is estimated that 2.6 million people die each year because of being overweight. (WHO, 2004) On the other hand there is also an economical threat that European Union must pay as 7% of health care cost are due to obesity and physical inactivity. (Commission of the European Communities, 2005) Body mass index BMI (body mass divided by the square of the body height) is a good indicator for obesity diagnosis and prognosis that use a mathematical formula and a findings interpretation table that situates the value in the associated parameters. Fig.1 (WHO, 2004)

Individually speaking, the main causes of this global issue is the discrepancy between the calories consumed and the calories expended. Societally speaking, we face a change in the means of transportation, and increasing urbanization, agriculture, environment, food processing, distribution and marketing, as well as education. (WHO, 2004)

Implications on Health

As a definition, physical activity is the body movement with the help of skeletal muscles. In children aged 0-5 the main source of activity comes from the basic movements as playing, moving to music and other simplified adult activities. After the age of 5 the activities can diverse and parents can



introduce new active sessions for their children, that include different kind of individual and team sports. The reason why children need to do physical activity is that this period is a fundamental development stage in their growth and physical activity was also associated with a good psychological development and help at improving the control upon depression and anxiety. (Dylan P. Cliff , John J. Reilly c, , & Anthony D., 2008)

The most frequent and significant associated illnesses that an obese individual can develop are cardiovascular diseases (as heart disease and stroke); diabetes; musculoskeletal disorders (osteoarthritis) and various types of cancer. Moreover, the burden is amplified by the pre-natal nutrition that continues further with exposure to high-fat foods, micronutrient-poor foods, lack of physical activity as the child grows older. (WHO, 2004)

Obesity also comes along with psychosocial problems, abnormality in the glucose level, an increased CVD risk factors, sleep disorder such as apnoea and also orthopaedic complications. The most important and damaging long term consequence is obesity persistence in the adulthood where it combines with several types of comorbidities which can evolve in a severe type. (WHO, 2000)

For the children who are not able to work, physical activities should be adapted at their needs. Some of the activities that such a toddler can do is spending time playing on the floor, grasping objects, pulling, pushing or playing with other people. There are specialists that recommend also “parent and baby” swim sessions.

For the children that can walk everyday activities should include running, chasing games, riding a bike, walking to a friend’s home or a park. Overall, the benefits of performing such activities improve cardiovascular health, bone health, contributes to healthy weight and support movement co-ordination as well as social and cognitive skills. (Chief Medical Officers, 2011)

The literature evidence shows that nowadays parents prefer to know their children watching television while they keep an eye on them rather than playing outside with other children. In addition, there is a link between children who are driven to school by parents and the unwillingness to participate in the physical education classes associated therefore with increased obesity prevalence. (Mahsid, Noori, & Anwar, 2005)

When talking about the nutrition, a similar situation occurs. Studies shown that higher levels of fruits and vegetables intakes and lower levels of fat intakes is associated with high levels of maternal nutrition knowledge. Since parents of the young children are always the focus of obesity prevention campaigns they are considered to be the most important stakeholder for a good dietary awareness and a basic nutrition knowledge for a normal and healthy growing process of their children. (H.R, E, P, & J, 2007)

Moreover, every action that promotes physical activity needs to be adapted as a child active play opportunity. Therefore, they will use large muscles groups when practicing a large range of movements but they will also explore the space around them and set their own plays areas and have fun and feel good about themselves which is a good indicator for their physical and mental health also. (Chief Medical Officers, 2011)



Obese children's families influence

The family environment is a major contributor to the development of the obesity. Parents eating patterns may influence children food preferences because they usually serve as models for their children also as in terms of food acquisition, eating and even exercise behavior. Researchers findings pose that direct involvement of at least one parent in the weight loss process lead to improvements on short and long term in what concerns weight regulation. (LH, 1996) In most of the studies parents involving as agents in treating childhood obesity was considered to be superior to other approaches. (Golan, 2004) Parents do not usually consult growth charts in order to see if their children is overweight or nor but they do observe if they are inactive or suffer from teasing with other children, although in most of the cases parents consider that obesity is inherited and that will excess with age. The recognition of the illness is a first step in doing a behavioral modification that would include both the nutrition part and the physical activity part. Therefore, an inter-field cooperation is required as health-care professionals along with the families, as well as school and community policies can support and work towards preventing and combating unhealthy childhood lifestyles. Eventually this will lead to a decreasing obesity epidemic among children. (Debra Etelson, Donald A. Brand, Patricia A. Patrick, & Anushree Shirali, 2003)

Many of the recommendations for addressing child and individual obesity and obesity-related factors, such as eating habits and exercise and physical activity patterns, are family-based. Suggestions include creating safe spaces to allow families to exercise or be physically active (J Community Health Nurs. 2005), increasing parental education and awareness (Pediatrics. 2003, Nutrition. 2004), instructing parents to try to change children's eating and physical activity patterns (J Am Diet Assoc. 2004), facilitating supportive family environments (J Am Diet Assoc. 2005), and promoting positive parental support and modeling (Sports Med. 2006).

Most nonclinical interventions involving child and adolescent eating and physical activity patterns are school-based, rather than parent-based or family-based (Am J Prev Med. 2002). Many school-based interventions, however, include a family or parent component.

Because obesity tends to run in families, effective interventions should involve parents and other family members. However, this raises the question of how to best intervene with families. Effective interventions for childhood obesity involve active participation by 1 or more parents. Parents need to learn how to talk with their children about exercising and eating well and how to encourage them to be more active. In some cases it is not the intention of the family not to adopt or maintain healthy behaviors; other factors may prevent them from doing so, for example, perceptions of environmental factors such as neighborhood safety also have been noted as barriers to physical activity. Nevertheless, achievable diet and physical activity goals are likely better enacted if determined by using the strengths and abilities of the family to develop and institute a plan agreed on by all family members. (Gruber KJ, Haldeman LA. 2009).



Measures to promote physical activities involving parents

As an important agent in combating the issue discussed, the parent or the care giver can promote appropriate activity for his child by following different pathways. The first activity found in the literature is playing, this activity can take place in the education classes breaks or in after-school programs. The next step is to provide proper models to follow and positive feedback such as praise, rewards and encouragement that support an active lifestyle. The efficiency stands in making these activities also safe and graduated over time using appropriate rules and equipment. The last barrier to cross is setting a basis for the child lifetime such as including him in team or individual sports that appeals him and that he will keep it on a long term. (Leavitt, 2008)

Promotion of physical activities actions:

- Make exercise a family habit (variety of exercises is important)
- Play together
- Set family fitness goals
- Exchange "screen time" for active time
- Have family walks/brisk walks

Changing habits

Poor eating habits include unbalanced daily food intakes such as lack of vegetables, fruits or milk products, also eating high-calories snacks can lead to childhood obesity. It is studied that they have the highest percentage from the daily calories intakes when the breakfast should have the biggest share of calories. Therefore, a setting for changing eating habits in childhood needs to be done further. It should contain more vegetables and fruits, eating the meals with the family and finally being physically active. As children's eating patterns are influenced by the people they spend the most time, care givers, parents, friends, they should adopt the same strategy. The most effective one would be an interdisciplinary management of school based programs, home dietary change though family participation, physical activity and counseling. (Roblin, 2007) Some practical examples of changing the habits can constitute encouragement of healthy eating habits like provide food diversity, measure the portions, limit the sugar beverages and fat. Also, looking at ways to make favorites dishes healthier though interesting recipes can remove calorie-rich temptations or replace them as replacing a bar of chocolate with a medium sized apple. These measures should be combined with moderate physical activity in the most days of the weeks and create a routine from brisk walking, jumping rope, playing soccer, swimming or dancing. Going further to reach our aim we must reduce the sedentary life that is represented by watching TV, playing video games or surf to web more than 2 hours, daily. (Center for Disease Control and Prevention, 2017)

Changing habits key actions:

- Encourage healthy eating habits



- Look for ways to make favorite dishes healthier
- Remove calorie-rich temptations
- Help kids stay active
- Reduce sedentary time

Sustainability in the community

Communities can play a crucial role in the physical activity settings because they can influence whether physical activity would or would not be an easy choice. From the benefits that a community could offer you can find walking trails, bike lines, sports fields and sidewalks, because if there are places for parents or care givers to do physical activity they will encourage and bring their children with them, also. Therefore, community-wide campaigns are a first step to distribute healthy content messages through television, newspapers, radio or media. Another issue to take into consideration is that of including more physical education classes delivered in group settings in the school's curriculum. Least but not the last encouraging physical activity through infrastructure is a way of getting further with the project. When talking about infrastructure we refer to fitness rooms, walking breaks, playgrounds and other sport places. Overall, we can talk about a intersectoral chain that should work closely together in order to reach the aim. We start with the law enforcement and urban planning and then we continue with transportation, education and architecture in order to be able to encourage the citizens to increase their physical activity daily amount and improve their health care status through public health approaches. (Leavitt, 2008)

At a European level, there are already community structures that promote actions on Diet, Physical Activity and Health under the form of a platform that stimulates the civil society to catalyze voluntary actions across EU. The members of the online platform included representatives of the food chains, catering, consumer organizations, advertising industries and health NGO's in order to provide an example of coordination but still autonomous action from different parts of the society integrating the responses to the obesity challenge into a large range of policies and measures. (Commission of the European Communities, 2005)

Areas for action

Promote healthy living also in schools *Healthy Eating Lifestyle Plan (HELP)* and put more emphasize on the food chain and Physical Education classes curriculum. Those should include at least 30 minutes of daily Physical activity during official school hours. Therefore, they want to promote healthy snacks during breaks and doing extra-curricular activities such as schools bazars and encourage media to promote appropriate audiovisual communications on food and healthy living. By facilitating the school yards with infrastructure, we can uptake the amount of physical activity. (Superintendence of Public Health, Ministry for Health, the Elderly and Community Centre, 2012)



Increase knowledge of the parents regarding physical activity and the benefit of it and therefore encourage children and parents to reduce the number of hours watching TV or using the computer in the favor of sitting down for meals as a family. (Superintendence of Public Health, Ministry for Health, the Elderly and Community Centre, 2012)

Promoting breakfast at early ages involving parents and children breakfast clubs. (Dr Charmaine & Miss Gilson, 2015)

Develop a specific public website containing information about nutrition, physical activity and diet and ensure a platform to promote healthy eating in the Mediterranean area regarding also the portion sizes information. (Health Promotion and Disease Prevention Directorate Parliamentary Secretariat for Health, 2014)

Making PE mandatory and accessible for all children attending schools or kindergarten programs.

Introducing sports club during breaks such as games. Setting up a school coordinator Unit in charge with this issue that will facilitate the interactions between institutions and interconnected stakeholders is an accessible way to improve the system and reach the aim.

Introducing afterschool programs and community links between parents that can include competitive sports teams, leisure sport clubs, classes or training, recreational or non-athletic activities that involve physical activities is the best way to guarantee continuity of the program and expand the opportunities to improve the lives of both children and their families. (The Parliamentary Secretariat for Research, Innovation, Youth and Sport, 2016)

Figure 4: A Portfolio of Choices for Obesity Prevention

Economic Regulations	Environmental Urban planning intervention	Social Community empowerment	Individual Education
Nutritional labelling, food advertising, food, environment and land use	Promote non motorised form of transport	Reduce poverty/ inequality/ social segregation	Compulsory physical activity education
Economic Instruments: Fat taxes and thin subsidies	Side walks and cycle paths	Community awareness through social clubs	Rewards for school children for healthy lifestyles
Subsidies for exercise equipments	Easy access to parks, destination	Exercise classes and training for parents, teachers	Individual tax credits for healthy weight
Tax credit for weight management/real estate developers/ primaryproducers for organic food production	Mixed land use-optimum combination of retail and service establishments and physical activity facilities	Media campaigns News papers/TV/ Radio/news letters	Subsidies for GP/doctor advice/healthy foods
		Work place programmes	Tax Incentives for exercise equipment
		School based healthy lunch programmes	

Source: Obesity Prevention: A review of the interactions and interventions, and some policy implications - Anura Amarasinghe and Gerard D'Souza



Programs adopted on a EU level

EU Action Plan on Childhood Obesity 2014-2020

The program aims to support a healthy start in life; promote healthier environments, especially in schools and pre-schools; make the healthy option the easier option; restrict marketing and advertising to children; Inform and empower families; encourage physical activity; monitor and evaluate and increase research. Main stakeholders of this projects will be European Commission, civil society stakeholders, health, education, family, consumer and sport NGO's, industry, including retail, catering and agricultural sectors and also, universities and research institutes. (EU, 2014)

European Food and Nutrition Action Plan 2015-2020, the Physical Activity Strategy for the WHO European Region 2016-2025

The objective of this campaign is to increase the amount of physical activity among citizens of the European Region. Therefore, the mission is to promote physical activity and reduce sedentary behaviors through a life-course approach. They want to enable an environment that supports the objective through accessible public spaces and infrastructure and provide equal opportunities for everyone upon a multi and partnerships approaches. Removing barriers would be the last objective of this project in order to better monitor the ongoing implementation and impact of it using surveillance, enabling platforms and research activities. (WHO, 2015)

European Food and Nutrition Action Plan 2015–2020

This project has a bigger focus on achieving access to affordable healthy food in the EU region. As guidelines, they want to reduce inequalities in access to healthy food creating healthy food and drink environments. They want to ensure human rights and empower people to gain a healthy diet especially targeting vulnerable groups. Moreover, they will promote a life-course approach with evidence based strategies using monitoring, evaluation and research in order to strengthen the networks of health-in-all-policies approach. (WHO, 2014)

Action plan for the prevention and control of noncommunicable diseases in the WHO European Region

The goal of this action plan is to reduce the disease burden from NCD as well as obesity and improve people health and tackle also with a longer life expectancy among Member States. This is going to be done focusing on supporting areas such as governance, prevention and health promotion and health systems. At a population level, they aim to promote marketing policies regarding tobacco, alcohol and food, reduce fats, salt and sugar from daily consumption and promote active living and clean air. At an individual level, they target to increase the risk assessment and management, improve the early detection of major NCD and promote vaccination. (WHO, 2016)

High Level Group on Nutrition and Physical activity

This body is a group formed by European Government representatives that offer an overview of all government policies on nutrition and physical activity. It helps Governments to reshape policies regarding physical activity that encourage cycling, walking and other forms of daily activity, or



reformulates food products labels and frameworks to contain less salt, fats or sugars. This program also improves partnerships between stakeholders so that they can agreed on making new strategies and activities quickly. (European Commission , 2015)

EU platform for action on diet, physical activity and health

The EU platform protect the citizen from misleading health information regarding food legislation, food quality, risk communication and physical activity. All the evidence is supported by the scientifically and professional community and offers to the viewers accessible information about food and health counseling people to choose healthy alternatives for them and for their children, those therefore have a platform especially created for them regarding nutrition and healthy living: www.coolfoodplanet.org (EUFIC, 2005)

EU School Fruit Scheme

The campaign contributed to distribute fruits and vegetables to over 9 million school children improving the amount of fresh food consumed on a short term and accompanied educational measures and food cultures systems together. Although it was too early to measure the long term impacts, the program is thought to be a success from a scientifically point of view in terms of healthier eating habits. (PHEIAC, 2013)

Childhood Obesity: Halting the Rise

This program is composed from a series of strategies that incorporates strategies to address childhood obesity. It addresses a healthy life start regarding counseling on diet and physical activity during and after pregnancy for the child and mother, also, it supports breastfeeding. Moreover, it targets the access limitation to supplementary less healthy food in schools and promote active breaks. Therefore, help consumers to identify affordable, convenient food options that are also nutritive. Regarding children, there should be a market restriction that includes media activities such as television and a promotion of encouraging family based programs that involves physical activity. (European Commission , 2017)

Conclusion

In conclusion, activities for youth should be developmentally appropriate, offer variety, and be enjoyable. Examples of activities that may be classified as aerobic include bicycle riding, walking, running, games, dancing, soccer, and swimming. Note that there might be a little need for healthy children and adolescents to monitor their heart rate during the activity period.

Children and adolescents should also participate in activities that promote muscle strength on two or three days per week. Examples of activities for young children include climbing, jumping, tumbling and gymnastics, and a variety of games. Older children and adolescents can participate in supervised strength training programs provided the focus is on developing proper exercise technique. Good form and mechanics should be stressed. Examples of appropriate activities include body weight calisthenics (i.e. push-ups, pull-ups) and strength exercises with dumbbells, medicine balls and



elastic bands. Traditional games and fitness activities that require participants to run fast, jump high, change direction or maintain balance can develop and reinforce needed movement skills. Jumping rope, animal races, obstacle courses, scavenger hunts and hopscotch can get youth moving in fun activities. Sedentary inactivity is a strong contributor to overweight and lack of physical fitness.

Sedentary activities such as television viewing, computer and telephone use, and inactive video games should be discouraged and limited to < 2 hours per day. (ACSM, 2015)

In fighting obesity and unhealthy life style among preschool children, the most important element is targeting their families. Children must be surrounded by healthy environment (healthy nutrition, outdoor recreation...) not only when they are participating in sport activities but also at home with their parents who are their role models, especially at this age. Healthy choice should be available at all time. This project developed the best possible model for the physical and cognitive development of children through physical activity and proper nutrition.

The On the Move project was implemented in 6 different EU countries and ensured wide reach and impact on the broader region by including the right target group from each country/region. The Guidelines for future activities to promote physical activity and healthy nutrition as a healthy lifestyle is the result of exchange of experience, good practices and innovative solutions developed during the sports programmes among the partner countries and gives to the project greater relevance by addressing this to regional and national policy makers.

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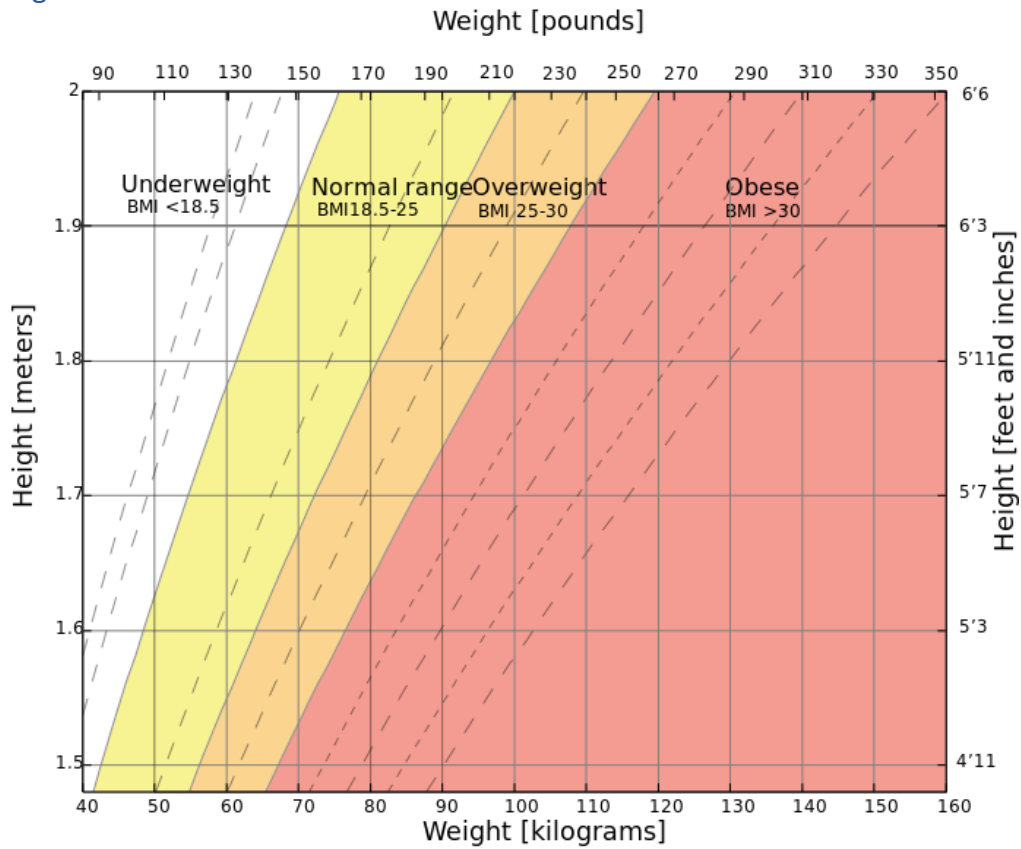


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Annexes

Fig.1



Wikipedia/Body mass index