
HEALTH PROMOTION IN YOUNG AGES

March 20-21

**Held at Lecture Hall of 2nd Pediatric Department, Med. Fac. Semmelweis Univ.,
Budapest Hungary**

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Registration fee: 70 euro paid on site

Organized by European Chapter of American College of Nutrition, European Association of Paediatric Education, International Group for the Prevention of Atherosclerosis in Childhood and Association of European Research Group of Obesity in Childhood

Locally organized by Pediatric Section of Hungarian Atherosclerosis Society, Foundation for Infants with Cardiac Failure and Convention Budapest Ltd.

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Amalia Gastaldelli (I),

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SCIENTIFIC PROGRAM

FRIDAY MORNING

8, 00- 9,30 REGISTRATION

**8,40-9, 00 OPENING REMARKS (Billeaud C –EAPE, Gastaldelli A-ECACN,
Szamosi T-IGPAC, Widhalm K-AEROC)**

**9,00- 10, 40 EDUCATION ABOUT PEDIATRICS, SCHOOL HEALTH PROGRAMS
Chaired by Billeaud C (F), Martos E (H)**

**Lenoir M (F): The role of health school doctor and the pupils well beeing in
secondary school**

**Martos E, Nagy B, Bakacs M, Sarkadi Nagy E (H): National nutritional
environment survey in schools- a tool for policy making**

**Brines J, Martinez-Costa C, Nunez F (E): Promoting the health of children
and adults by primary school teachers**

**Billeaud C (F), Barak S (Isr): Health school organization and pediatrics for
teachers in Europe**

**Rigourd V, Roux C, Billeaud C(F): A new E learning program about
breastfeeding, CME in pediatrics**

10,40- 11,00 COFFEE BREAK

11,00-12,40 CVD RISK

Chaired by Gastaldelli A (I), Szamosi T (H)

Gastaldelli A (I): Defining cardiometabolic risk and its prevention

Manco M (I): Practical prevention of cardiometabolic abnormalities. From the

lesson of the Origin Study to the MD Pedigree project

Szamosi T (H): Prevention of the early CVD, the role of oxygen stress

**Helk O, Pöppelmayer C, Widhalm K (A): EDDY: a project for the prevention of
Obesity and CVD risk in schoolchildren aged 11-15 years**

**Kiss-Tóth B (H): Dietary and physical activity habits of children
Between 4-10**

12,40- 13, 30: LUNCH

FRIDAY AFTERNOON

**13, 30- 14, 30 Workshop to define curriculum about pediatrics for teachers in
Europe**

Chaired by Brines J (E)

14,30-15, 50 OBESITY

Chaired by Widhalm K(A), Oroszlan Gy(H)

**Widhalm K (A): The morbid obese adolescent: conservative and surgical
treatment**

**Molnar D (H): Metabolic syndrome in young children: definition and results of
the IDEFICS study**

**Banki A (H): The relation of obesity in childhood and the chronic
disease of young adults**

**Oroszlan-Ban M, Harsfa A, Enger-Pozsonyi A, Vigh E, Oroszlan Gy (H) : The
prevalence of overweight and obesity among secondary
school children**

15,50-16,10 COFFEE BREAK

16,10-17, 10 VARIA

Chaired by Manco M (I), Szamosi A(H)

**Szamosi A(H): The role of parents, teachers and medical doctors in the
Prevention of inflammated eye contagiosity**

**Neilhüber GyA, Schuler D, Garami M (H): Results and difficulties in the folate
Prophylaxis of neural tube defects**

**Juhasz E, Felszeghy E, Ungvari T, Mogyorosy G, Illyes I (H): Ambulatory blood
Pressure monitoring in obese children**

SATURDAY MORNING

9,00-10,00 CHRONIC DISEASES

Chaired by Brines J (E), Garami M (H):

Brines J (E), : Decisions of the workshop

**Erdelyi DJ, Kovacs GT (H): Nutrition, lifestyle and the prevention of
malignancies**

**Madarasi A (H): Pediatric implications of the chronic obstructive pulmonary
disease**

10, 00- 10,20 COFFEE BREAK

10, 20- 11,20 FREE PAPERS

Chaired by Helk O (A) (I), Madarasi A (H)

Helk O, Buchinger K, Pöppelmayer C, Widhalm K (A): Measurement of body composition in childhood

Antal E (H): Keeping children well hydrated

Tory V(H): Intrauterine and perinatal determination of later cardiovascular diseases. Can early prevention eliminate increased CV risk?

11,20- 11,40 Closing remarks (Szamosi T) (H)

11,40-12,00 Closing registration

Abstracts

Keeping children well hydrated

ANTAL 1

Emese Antal RD, MSc

Hungarian Dietetic Association / European Hydration Institute

Appropriate hydration of the body is requirement for health. Dehydration can cause serious problems especially in babies, toddlers, infants, children and adolescents. The aim of this article is to show how and why is so important that children are well hydrated and what consequences of their dehydration are.

A child is not simply a small adult. In many aspects their physiology differs from that of an adult and because of this it is not always appropriate to use knowledge gained from research on adults and relate it to children. This applies to aspects of their hydration and water balance in the same way as it does many other aspects of their functioning and nutrition requirements.

The European Food Safety Authority (EFSA) has concluded that adequate intakes of water (from all food and water sources) for children are as follows: 1.3 litres per day for boys and girls 2 to 3 years of age; 1.6 litres per day for boys and girls 4 to 8 years of age; 2.1 litres per day for boys 9 to 13 years of age; 1.9 litres per day for girls 9 to 13 years of age. Adolescents of 14 years and older are considered as adults with respect to adequate water intake and the adult values of 2.0 litres per day for women and 2.5 litres for men thus apply.

Like adults, all young people, need to remain hydrated throughout the day for optimal physical and mental health. Compared to young to middle-aged adults, children are at greater risk of dehydration for physical, physiological, and behavioural reasons.

Many foods have high water content and contribute to total fluid intake. Fruits, vegetables, and some other foods are high in water content. There is some evidence that providing drinks to

children can help them to perform better in standardised tests of concentration, short term memory and other essential elements of the learning process.

Hydration is recognised as an important public health issue but it has not been a priority in many European countries. HCPs and the general public need to be more aware of the importance of water and beverages in maintaining optimal hydration.

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TORY 22

Beküldés dátuma: 2014. 12. 15. 17:44	Jóváhagyva: Még nem volt	Azonosító: 875	Sorszám: 4
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ABSZTRAKT ADATAI

Mód	Oral
Kategóriák	-
Egyéb kategória	
Absztrakt címe	Intrauterine and perinatal determination of later cardiovascular diseases. Can early intervention eliminate increased CV risk?
Abstract text	A great number of evidence indicates that intrauterine malnutrition may negatively influence vascular health in later life. Intrauterine malnutrition includes both overnutrition and undernutrition. Low birth weight, caused by intrauterine growth restriction beside increased rates of CVD results also in increased risk of non-insulin dependent diabetes in adult life. Intrauterine overnutrition is typically linked to excessive maternal nutrient intake. A large number of epidemiological studies proved the association between fetal nutrition, growth and the prevalence of cardiovascular diseases including hypertension, arteriosclerosis and cardiovascular death.

Nutritional and other environmental effects results in long term developmental effects through epigenetic mechanisms: DNA methylation, histone modification, and altered microRNA expression. Most of our knowledge on altered fetal programming originates from animal models, but there is a rapidly growing body of data on human epigenetic changes as well. The genome is highly plastic, sensitive for epigenetic changes during early development therefore the neonatal period provides also the critical time window for therapeutic interventions to break misprogramming.

Human studies revealed that duration of breastfeeding and gender are associated with methylation of the leptin gene in very young children that may influence later risk of obesity. Recent studies revealed that paternal obesity is associated with IGF2 hypomethylation in newborns, providing evidence for transgenerational effects of paternal obesity that may influence the offspring's future health status.

The concept of developmental origins of diseases revealed that the most important time to prevent CV and metabolic diseases is the prenatal and early postnatal period, when the epigenome is still plastic. Research promises that harmful epigenetic changes will be detectable and the correction or compensation of these changes that lead to misprogramming, not optimal development and late diseases will be achievable.

TOVÁBBI SZERZŐK

Vera Tory, Md (PRESENTER, FIRST AUTHOR) ¹

¹ Szt. János Hospital Children Department, Budapest, Hungary

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Beküldés dátuma: 2014. 11. 30. 19:46	Jóváhagyva: Még nem volt	Azonosító: 874	Sorszám: 3
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ABSZTRAKT ADATAI

Mód	Oral
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Kategóriák	-
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Egyéb kategória	
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Absztrakt címe	Paediatric Implications of the Chronic Obstructive Pulmonary Disease
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Abstract text	<p>The number of patients with Chronic Obstructive Pulmonary Disease (COPD) is steeply increasing worldwide and according to predictions of the World Health Organisation, COPD will be the third most common cause of death by 2020. COPD is characterised by a progressive and hardly reversible respiratory constriction. The disease is often accompanied by respiratory inflammation, triggering rapid deterioration of the patient's overall condition, and causing irreversible damage to the lungs, further decreasing their respiratory surface. Genetic and environmental factors play an important role in the aetiology of COPD, together with irregularities in the childhood development of the lungs. The severity of symptoms in COPD is largely affected by impaired respiratory functions during childhood. The role of paediatricians in the prevention of COPD lies in ensuring optimal development of the lungs, including (i) identifying children that have potentially higher risk to develop the illness (e.g. positive family history, preterm birth, severe asthma bronchiale, severe air pollution in neighbourhood); (ii) following up on their condition; (iii) preventing - as much as possible - their exposure to respiratory infections; (iv) adequately treating children with asthma, and (v) delivering effective health education, especially regarding the detrimental effects of childhood smoking and of environmental stressors. In my talk I will elaborate on these thoughts in an attempt to draw attention to the problem, and to conclude that the prevention of respiratory diseases need to be considered on part with that of heart, circulatory, metabolic diseases and cancers.</p>
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TOVÁBBI SZERZŐK

Madarasi Anna (PRESENTER, FIRST AUTHOR) ¹

¹ St. John's Hospital, Budapest, Hungary

AAAAAAAAAAAAAAAAaa ERDELYI 6

Nutrition, lifestyle and the prevention of malignancies

Erdélyi DJ, Kovács GT

In adults, extensive data support the linkage of numerous dietary and lifestyle elements to predisposition or prophylaxis of various cancer types. In paediatric malignancies, these factors are thought to play less pronounced role. According to indirect evidence and also many explored cases and specific conditions, spontaneous mutagenesis and genetic predisposition are the main contributors. However, growing evidence support that fruit and vegetable consumption, folate and vitamin-D levels, physical exercise, obesity and, in certain situations, exposure to various carcinogens and xenobiotics are associated with the incidence of malignancies in childhood and adolescence. Basic science providing explored pathomechanisms, animal models and human epidemiological data provide foundation for these principles. Intriguing interactions of genetic predisposition and environmental factors have also been explored. Another interesting related field is the early origins of adult cancers. Intrauterine, perinatal factors plus diet, lifestyle and environmental exposures during childhood seem to contribute. Such factors have been explored for breast cancer and melanoma at greater extent.

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NEILHUBEL 16

Results and difficulties in the folate prophylaxis of neural tube defects

Györgyi A. Nelhübel¹, Dezső Schuler¹, Miklós Garami¹

¹ Semmelweis University, Faculty of Medicine,
2nd Department of Pediatrics, 1094 Budapest, Tűzoltó Str. 7-9. Hungary

Abstract

The NTD-s may have several etiologies: genetic determinants, chemicals, malnutrition, drugs (e.g. valproic acid) diabetes, etc. However, the genetic factor can be influenced, if it is caused by mutation in folate-responsive or folate dependent enzyme pathways.

The prophylactic administration of FA to decrease the incidence of neural tube defect was suggested already in 1976, and its effectivity was proved by the Vitamin Study Research Group of the Medical Research Council described already in 1991. The perinatal folic acid (FA) supplementation can prevent the majority of neural tube defect (NTD) cases. Czeizel et al. compared the risk of NTD occurrence among women, who received 0,8 mg FA containing vitamin supplement or trace-element supplement daily for at least one month before pregnancy until the second missed menstrual period or later in a randomized controlled trial.

Congenital malformations were significantly higher in the group receiving trace-element supplement than the vitamin supplement group. (22.9 cases of 1000 birth vs. 13.1 cases of 1000 birth). Intervention trials in Germany, Ireland and China have shown similar results.

It is very difficult to obtain 400µg FA from natural folate containing foods. There are three potential strategies to increase the daily intake on the recommended level: increase the awareness of the targeted population to the importance of taking FA containing supplements, or fortification staple foods with it.

Folic acid and cancer risk

Folate is a substantial nutrient as it is an important cofactor in one-carbon metabolism. The products of this pathway are used for DNA synthesis, DNA repair, and in methylation of DNA, lipids and proteins. The relation between folate and carcinogenesis has been best investigated for colorectal cancers in preclinical, clinical and epidemiologic studies. An Epidemiologic study in Canada showed a 60% reduction in the incidence of neuroblastoma after folic acid fortification.

Conclusion

The perinatal FA fortification decreases the incidence of neural tube defect in the offsprings. The recommended dose is 0.4 mg/day; however in high risk women it should be higher. Drugs impairing the metabolic pathway of folate should be taken in consideration. Neither the increase nor the decrease of cancer risk after FA fortification is proved. The mode of population wide perinatal administration of folic acid is yet not solved. Up to now only the enrichment of flour seems to be efficient.

AAAAAAAAAAAAAAAAAAAAA SZAMOSI A 20

Szamosi Anna

The effectiveness of the therapy against conjunctivitis has lowered in the last few years. In spite of the fact that new and new therapeutic possibilities were widespread known the contagiousity of infectious eye diseases seems to be the same than before the antibiotic therapy

We discuss the potential causes of the difficulties of the therapy and the importance of the consultation between the pediatrician and the ophthalmologist underlined the importance of the teaching of parents and teachers.

AAAAAAAAAAAAAAAAAAAAA OROSZLAN 17

THE PREVALENCE OF OVERWEIGHT AND OBESITY AMONG SECONDARY SCHOOL CHILDREN

Marianna Oroszlán-Bán MD, Anett Hársfa, Anita Enger-Pozsonyi, Eszter Vígh and György

Oroszlán MD.

Aim of the study

According to the most recent data the prevalence of obesity in Europe is the highest in Hungary (BMI > 30 in 28,5% among adult population). The prevalence of childhood obesity and overweight is also high. One of the predisposing factors for these is the level of education. We determined the prevalence of overweight and obesity among secondary school children in two types of school systems in Hungary.

Material and methods

We collected data in two types of school systems in Szombathely, Hungary. The first one is a high school providing a higher level of education. The second one is a technical college providing lower education. Both schools have trained health personnel on site. In both schools, mandated routine weight and height screening for students is performed yearly. The patient cards of the school children were analyzed and the BMI was calculated.

Results

135 of 1109 students (12,3%) in the high school have a BMI between 25 and 29,9. The number of obese (BMI \geq 30) students was 47 (4,3%) in this school. (The students aged 14 through 20 years) 93 of 599 school children (15,4%) in the technical college have a BMI between 25 and 29,9. The number of obese (BMI \geq 30) children was 48 (8%) in this school. (The students aged 14 through 20 years) The prevalence of overweight and obesity was higher among boys than girls in both types of school.

Conclusion

The level of education results in a difference in the prevalence of overweight and obesity even in childhood. Boys are frequently overweight and obese than girls.

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BANKI 2

ABSTRACT

Child section of The Society of Hungarian Arteriosclerosis

The relation between the obesity of childhood and the chronic disease of young adults

- Eating habits, manner of life, state of health in child & adolescent community. / prospect of life of the growing up generation for the future !/
- The obesity is a very big problem in childhood because its frequency is rapidly increasing. This is a real epidemic around the World. It is getting more and more alarming in Europe and in Hungary as well.
- The obesity is a multifactorial process. In Hungary about 60% of people struggle against

overweight, 30-40% against obesity.

- The mission of the Child section is the PREVENTION!
- The aim in our region (Ajka and surrounding area): To work together with the district to filter out the endangered target groups. To examine their obesity with associated illnesses especially hypertony, cardiovascular and hormon disorders, than to treat and to care them.
- We estimated the nourishment of children in nursery and school in the surrounding area of Ajka, seeing what they eat, what kind of quality their food.
We studied their greens, fruit, sweet and sugary drink consumption. Moreover their activity, other pastime-than computering, telecasting, inactivity. And what they said about their satisfaction, how they estimate themselves, especially their health state.
- The method: surveying individuals, families about their health by examinations / physical, laboratories, instruments / and questionaries
- We could found the results at obes children with hypertony, dyslipidemy, hepatosteatosy, IGT, 2TDM, PCO syndrom. And we have seen so many links between the obesity and chronic diseases: hypertony, asthma, GERD, psychiatric problems
- Fat children have high risc to cardiovascular diseases in their adult ages. The vascular disorders at youth are very similar to adult's alterations.
- Asthma and obesity are coming together more frequently – wheezing, less of pulmonal volume and compliance (Pickwick sy.) at obes children there are increasing inflamed factors. These have effects on the asthma progress in the future.
- GERD- The obesity enlarges the risc of reflux . Many times children get respiratoy illnesses with stubbon cough - dangering the Barett sy.
- Hormonal disorders, like hypothyreosy, PCOP syndrom
- Other serious difficulties: orthopedic disorders, psychiatric and autoimmun illnesses.

Summary: All these results we try public in schools, at parents meeting to teach them how to change their life style making better their health.

2014-12-07. Ajka

Dr. Bánki Annamária
pediatrition, lipdologic expert

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MOLNAR15

Metabolic syndrome in young children: definitions and results of the IDEFICS study

Dénes Molnár¹, Wolfgang Ahrens^{2,3} on behalf of the IDEFICS consortium

¹Department of Paediatrics, Clinical centre, University of Pécs, Pécs, Hungary, ²Leibniz Institute for Prevention Research and Epidemiology – BPIS, Bremen, Germany, ³Institute of Statistics, Faculty of Mathematics and Computer Science, Bremen University, Bremen, Germany

During the past few years the term ‘metabolic syndrome’ has become one of the most frequently used in the field of medical sciences. It describes the clustering in an individual of several disorders that are highly prevalent in western societies and which represent major risk factors for cardiovascular disease, such as type 2 diabetes mellitus, dyslipidaemia, central obesity and essential hypertension. The coexistence of these disorders seems to be more frequent than would be expected by chance, and their clustering seems to add substantial cardiovascular risk above and beyond that of the individual risk factors. Moreover, there are several indications in favour of a common pathophysiological background for the syndrome, at the centre of which lies insulin resistance.

Brief History:

The first description of the clustering of various components of the metabolic syndrome (MS) are more than 90 years old. The different names given to the clustering of metabolic abnormalities are summarized in the table below.

Table 1. Names given to the clustering of metabolic syndrome disorders

Terms	
Hypertension-hyperglycaemia-hyperuricaemia syndrome (Hypertoni-Hyperglycemi-Hyperurikemi syndrom)	Kylin, 1923
Metabolic trisynndrome (trisynndrome metabolique)	Camus, 1966
Plurimetabolic syndrome	Avogaro and Crepaldi, 1967
Syndrome of affluence (wohlstandssyndrom)	Mehnert and Kuhlmann, 1968
Metabolic syndrome (metabolische syndrom)	Hanefeld and Leonhardt, 1981
Syndrome X	Reaven, 1988
Deadly quartet	Kaplan, 1989
Insulin resistance syndrome	DeFronzo and Ferrannini, 199; Haffner, 1992

Due to the epidemic of obesity in childhood and the consequent „tsunami of chronic diseases”, the MS was extended to the paediatric population; though it was difficult to apply the adult cut-offs to children. The concept went through on different refinement and dispute, but still the prevalence of the risk factors contributing to the MS varies substantially depending on the cut-offs used. It is especially so in pre-pubertal children where according to the definition of the International Diabetes Federation MS cannot be diagnosed, just the risk of MS in children with high waist circumference. The lack of consensus is due in part to our evolving understanding of normal developmental changes associated with childhood and puberty and to the lack of age and gender specific reference values for HDL-C, triglyceride, insulin, HOMA, waist circumference, etc.

One of the aims of the IDEFICS study (Identification and prevention of Dietary- and lifestyle-induced health EFfects in Children and infantS; www.ideficsstudy.eu/idefics/) was to estimate the prevalence of the MS using reference standards obtained in healthy European children aged 2-10.9 years from the IDEFICS

study. Based on the distribution of components of the MS in the IDEFICS cohort, we proposed a new definition of the MS to guide paediatricians' decision to conduct either close monitoring (monitoring level) or even an intervention (action level) in affected children (table 2.). We also developed a quantitative cardiovascular risk score and described its distribution in the IDEFICS cohort.

Table 2. Proposed new definitions of paediatric MS based on the IDEFICS study

According to the definition of IDEFICS the prevalence of MS (action level) was 0.2% in normal/thin, 4.5% in overweight and 13.2% in obese children.

Definition	Excess adiposity	Blood pressure	Blood lipids	Blood glucose/insulin
IDEFICS-monitoring level	WC \geq 90 th percentile	SBP \geq 90 th percentile or DBP \geq 90 th percentile	Triglycerides \geq 90 th percentile or HDL cholesterol \leq 10 th percentile	HOMA-insulin resistance \geq 90 th percentile or Fasting glucose \geq 90 th percentile
IDEFICS-action level	WC \geq 95 th percentile	SBP \geq 95 th percentile or DBP \geq 95 th percentile	Triglycerides \geq 95 th percentile or HDL cholesterol \leq 5 th percentile	HOMA-insulin resistance \geq 95 th percentile or Fasting glucose \geq 95 th percentile

Conclusion: MS in children, especially in children younger than 10 years of age is ill-defined. However, it is of clinical relevance to identify those children who are at risk as early as possible, as they would probably benefit from lifestyle modifications. We do hope that our newly proposed definition and continuous MS score will help to improve clinical practice.

Acknowledgements: This work was done as part of the IDEFICS study (www.idefics.eu). We gratefully acknowledge the financial support of the European Community within the Sixth RTD Framework programme Contract No 016181 (FOOD).

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References:

1. Sarafidis PA, Nilsson PM The metabolic syndrome: a glance at its history. *J Hypertens* **24**: 621-6, 2006.
2. Molnar D. The prevalence of the metabolic syndrome and type 2 diabetes mellitus in children and adolescents. *Int J Obes Relat Metab Disord*. 2004; **28**(Suppl 3): S70-4.
3. Bokor S, Frelut ML, Vania A, Hadjiathanasiou CG, Anastasakou M, Malecka-Tendera E *et al*. Prevalence of metabolic syndrome in European obese children. *Int J Pediatr Obes*. **3**(Suppl 2):3-8, 2008.

4. Csábi G, Török K, Jeges S, Molnar D. Presence of metabolic cardiovascular syndrome in obese children. *Eur J Pediatr* **159**: 91-4, 2000.
5. Ahrens W, Moreno LA, Marild S, Molnar D, et.al. Metabolic syndrome in young children: definitions and results of the IDEFICS study. *Int J Obes* **38**(Suppl 2):S4-S14, 2014.

AA KISS-TÓTH 10

Dietary- and physical activity habits of children between 4-10

Bernadett Kiss-Tóth, Nestlé Hungary

The Hungarian Dietetic Association and Nestlé Hungary established a professional cooperation in order to survey the BMI, dietary intake- and physical activity patterns of children between the age of 4-10 in the first half of 2014. The aim of the study was to reveal those problems, which are typical for the nursery- and elementary school-aged children and compare those with the results of the previous studies.

The sample has become representative for Budapest and Kecskemét cities, including the verified 3-day dietary record of 799 children.

Out of the anthropometric data of children, their body weight and height was measured with validated devices and BMI scores were calculated. The cut-off points for under-, normal-, overweight and obese children were sourced from Cole et al. The filling, checking, verification and recording of the 3-day dietary records were done by dietitians, preliminary trained by the Hungarian Dietetic Association.

The ratio of overweightness and obesity became 21% by the children participated in the study, proven to be the highest (28%) among elementary school-aged boys. It was demonstrated with correlation analysis, that there was a positive correlance between the higher BMI and higher energy intake by both age groups with a 20% energy difference between the underweight and obese BMI groups. This could be rarely demonstrated in adulthood.

As regards of the other parameters, the adult-specific problems could be identified in the dietary patterns of children as well, like the inappropriate consumption of dairy products, vegetables, fruits and whole-grain meals, while the overintake of fatty cold cuts, refined grains and salt. These results prove the importance of the education at the early stages of life on healthy eating and lifestyle. This education can be effectively performed with the cooperation of all concerned

stakeholders, like the adults, the education- and healthcare institutions, the professional bodies and the food industry.

Further references:

1. Kiss-Tóth, B.: Négy-tíz éves gyermekek táplálkozásának és fizikai aktivitásának felmérése – reggelizési szokásokra vonatkozó eredmények összefoglalója. Új DIÉTA, 4, 23, 2014.
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AAAAAAAAAAAAAAAAAa WIDHALM 23

The morbid obese adolescent: conservative and surgical treatment

K. Widhalm, O. Helk

Morbid obesity in adolescent age has become a prevalent and pressing issue over the last decades. Today many young individuals are affected with the burden of severe overweight and its consequences of mental- and physical well-being. The management of affected subjects poses a great challenge for the involved clinical practitioners, dieticians and other health professionals. It is striking that – although great efforts have been made – conservative forms of treatment lead more often than not to inadequate success.

Nevertheless, several work-groups provided evidence for conservative treatment-models which seems promising, although long-term results are often lacking. If conservative approaches fail, surgical methods often provide an effective means of treatment. These procedures are very invasive and often accompanied by severe side-effects like nutritional deficiencies or, in some cases, consequent surgical interventions. Therefore it is of utmost importance that these patients are referred to specialized centers for bariatric surgery with close monitoring and treatment in a multidisciplinary team. In this session a review of publications from international work groups on both conservative- and surgical interventions will be presented as well as experiences from the Viennese center for bariatric surgery on the implementation of adequate follow-up programs. A special focus will be set on data from a long-term follow up of currently 4 years on nutritional deficiencies and metabolic complications in 26 adolescent patients after bariatric surgery. All patients had received oral multivitamin supplementation as well as intramuscular Vitamin B12 injections. Vitamin D and Vitamin A deficiencies were the most prevalent in our collective.

AAAAAAAAAAAAA Pöppelmayer 18

EDDY – a prevention project against the development of obesity and cardiovascular risk factors in 11-13 years old children in Vienna

Authors: C. Poepelmeyer, O. Helk, N. Barkhordarian, O. Prochazka, N. Cvjetkovic, K. Buchinger, S. Mehany, B. Wessner, H. Klinglmayr, G. Schwarz, O. Pachinger, K. Widhalm

Diseases of the cardiovascular system are responsible for about 43% of all deaths in Austria and correlate strongly with obesity and its consequences. According to the HELENA data approximately 23% of the adolescents in Vienna are overweight or obese. For this reason, it is necessary to find concepts to combat obesity and prevent its origin. While it seems to be difficult to achieve a sustainable change of eating habits in adults, there are few data regarding the success and preventive effect of interventions in childhood and adolescence.

The EDDY project is an interventional cohort study with duration of two years. The cohort is scaled in an intervention group and a control group and consists of 147 students from two secondary schools in Vienna and two Viennese high schools. The intervention group will receive a comprehensive, age-appropriate 12-hour nutrition training and a five-hour physiological training as well as sport and exercise intervention. Before and after intervention and at two follow-ups after 6 and 12 months, subjects are physically measured (BIA, height) and blood samples are taken for determination of blood lipids and vitamin status. In addition, knowledge of nutritional issues and eating habits as well as psychological parameters are measured with adequate questionnaires.

The main issue relates to the effect of an intervention with education in nutrition and sports programs on body composition, metabolic factors, nutrition knowledge and intellectual capacity of Viennese students aged 10 to 14 years. Preliminary outcomes show an improvement of nutrition knowledge in 10 of 12 categories surveyed, as well as a significant reduction in the consumption of junk food, sweets and salty snacks.

Previous data from the running prevention project indicate that the intervention (based on both on nutrition knowledge and on stimulating daily physical activities) is able to improve the nutrition habits and possibly the physical performance. It should be pointed out, that the inclusion of parents and teachers are so far not satisfying realized, however this will be very essential for the long-term effect.

AAAAAAAAAAAAa HELK 8

Measurement of body composition in childhood

Helk O., Buchinger K., Pöppelmeyer C., Widhalm K.

Introduction: Overweight and obesity are generally classified by using the BMI-z score or representative percentiles for the respective population. Over the last years several work groups have suggested other parameters like waist-to-hip ratio or body fat-percentages as more suitable prognostic factors in regard to metabolic- and cardiovascular complications in adulthood. We present data from 136 generally healthy adolescents aged 11-13 and compare the classification of their weight by both BMI percentiles and percentiles calculated for body fat percent.

Methods: 136 healthy subjects from the general population were recruited from public schools. Height and weight were measured as well as body composition using the bio impedance analysis technique (Tanita MC980). Afterwards the percentile values for the BMI-z score and bodyfat percent were calculated, intercorrelated and compared.

Results: BMI-percentiles and Bodyfat-percentiles correlated significantly (Spearman's correlation co-efficient 0.889, $p < 0.05$). According to body-fat percentiles 8.8% of the subjects were overweight or obese ($>90^{\text{th}}$ percentile) with 1% classified as underweight ($<10^{\text{th}}$ percentile). When using BMI percentiles 27.2% percent of subjects were above the 90^{th} percentile with 10.8% being classified as underweight.

Discussion: Although BMI- and bodyfat percentiles correlate significantly they differed greatly in regard to the classification for over- and underweight in our population. It appears that the selected method determines the diagnosis in many adolescent subjects. More research is needed to secure our findings and in order to evaluate their possible clinical implications.

AAAAAAAAAAAAAAAAAAAAaa MANCO 13

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The "Origin of the cardiovascular risk" study proves that the cardiovascular disease origins very early in childhood. High levels of total cholesterol, triglycerides and reduced levels of HDL-cholesterol are prevalent even in preschoolers with moderate obesity as well as high blood pressure and non alcoholic fatty liver disease. Subtle changes of the heart morphology and function become evident even in obese children of this age with no features belonging to the metabolic syndrome. Most of these changes seem related to the increased body mass with no relationship to the condition of insulin resistance and associated dysmetabolism. The MD-pedigree project is a European sponsored project on virtual human physiology aimed at developing models to predict cardiovascular risk in children and adolescents. The obese avatar will be tool for general pediatricians and health care providers to test also the ability of any therapeutic intervention to modify such risk. The portfolio of therapeutic interventions effective to reduce the risk in the youth is quite limited and the weight loss remains the main player. Lipid or blood pressure lowering agents and insulin sensitizer are pharmacological options in a limited number of obese patients. Major bariatric surgery can be considered in extreme obesity.

AAAAAAAAAAAAAAAAAAAAa GASTALDELLI 7

Defining cardiometabolic risk and its prevention

Amalia Gastaldelli

Cardiometabolic risk (CMR) comprises a cluster of traditional and emerging risk factors that are good indicators of a patient's overall risk for metabolic, e.g., type 2 diabetes, and cardiovascular

diseases (CVD). Metabolic disorders occur long before cardiovascular abnormalities and are often inter-related.

Traditional risk factors for CMR are age, gender (male), elevated blood pressure, hyperlipidemia, hyperglycemia, smoking. Additional recognized risk factors include abdominal obesity, insulin resistance and increased plasma concentration of pro-inflammatory and pro-coagulative markers. These are the main components of metabolic syndrome (MS), that act synergistically, via mechanisms that are not all elucidated. MS is a multifactorial syndrome, defined by the presence of at least three factors among atherogenic dyslipidemia, hypertension, prediabetes and a pro-inflammatory and pro-thrombotic state and associated with an increased risk of both relative CVD and diabetes whether or not classical risk factors are present. However, neither MS alone is sufficient to assess absolute CVD risk. In addition, the question of whether or not MS has any stronger value than considering the cumulative effect of the individual risk factors has not been answered. Epidemiological studies suggest that multiple factors raise risk more than the sum of accompanying single risk factors. In addition, liver enzymes are not part of the definition of MS and new risk factors, as ectopic fat accumulation in liver, heart and pancreas even in absence of obesity have been related to increased CMR, development of diabetes and CVD. Several epidemiological studies have highlighted that non alcoholic liver disease (NAFLD) is strongly associated with Insulin resistance and obesity. NAFLD can progress to liver cirrhosis and hepatocellular carcinoma, and is associated with higher incidence of CVD and type 2 diabetes, thus increasing the risk of morbidity and mortality.

Prevention of cardiometabolic diseases can be achieved either through weight loss, exercise, lifestyle intervention. In some cases pharmaceutical treatment has been shown to significantly reduce CMR. In all cases improvement of insulin sensitivity is associated with a reduction in CMR.

AAAAAAAAAAAAAAAAAAAAA RIGOURD 19

A new E-learning program about breastfeeding, continuing medical education in paediatrics.

L'allaitement maternel: au programme d'« e-learning » pour la Formation Médicale Continue en Pédiatrie

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Université de Bordeaux, France.

Background:

Women mostly stop breastfeeding (BF) because of a lack of support and information in the post-partum period. In spite of the European recommendations: "improvement the training of all the healthcare professionals involved in perinatal period is the first stage of the recommendations to favour BF", during their medical studies, perinatal professionals spend little time studying BF.

Summary of work:

Objectives: an E-learning program on BF as been created for healthcare professionals.

Material and method: This online program is the result of a work between expert in BF and broadcasting distance training professionals.

Summary of results: This "BF e-learning program" can be found within the French Association of Paediatrics website, in the section of the AEEP www.aEEP.asso.fr. The healthcare professional will need 3 hours to approach the subject.

He will be able to:

- Discover in the "course" tab, 5 main chapters (epidemiological data- BF benefits- Preparation for BF- BF complications- BF in the everyday life).
- Use the "navicub system" to reach lexicon or go into tackled issues by a keyword.
- Use the "documents" tab to download all the documents needed.
- Strengthen his knowledge by *studying clinical cases* and get closer to an Evidence Bases Medicine method.
- Validate his training by answering to the "quiz".
- Discuss via the "messaging" tab with the experts authors.

Conclusion: This online program on BF, is an educational method, which provides continuing medical formation and evaluates practices in paediatrics.

Take home message: By improving knowledge of healthcare professionals on this subject we hope help maintain BF.

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BRINES 4

Promoting the health of children and adults by primary school teachers.

J. Brines*, C. Martinez-Costa** and F. Nunez***.

* Professor of Pediatrics. University of Valencia. ** Professor of Pediatrics. University of Valencia. *** Associate Professor of Pediatrics. University of Valencia.

The acquisition by the child of knowledge, practical skills and attitudes on health and its problems is one of the most effective methods to promote health and prevent many later diseases. In recent years there has been increasing evidence on the effectiveness of the child's education to promote their own health and also to prevent in adulthood what are known as *Non Communicable Diseases* (WHO), the main problem of today medicine in developed countries.

The pediatrician training in the prevention of these diseases was the subject of the 1993 Rome Congress of the European Association for Pediatric Education (EAPE / AEPE). The vast field of action in this matter which could be provided by primary school was analyzed in depth and from different perspectives in the last Congress of EAPE/AEPE (Bordeaux, 2013).

The University of Valencia pioneered this way institutionalizing six years ago, and at the request of the Department of Pediatrics, Obstetrics and Gynecology, a core subject in the training program for primary school teachers. This subject, called "*Childhood, Health and Nutrition*", aims children to learn a formal body of knowledge, practical skills and attitudes to promote health and to project them on their future as adults.

Training is provided in the first year in the Faculty of Teacher Training of the University and it has 4.5 ECTS credits. The main objectives of the course are:

1. To provide to future teachers basic knowledge of biology, psychology and sociology of healthy and sick child and practical skills and attitudes to enable them to promote healthy lifestyles for children and future adults.
2. To transmit to teachers a basic understanding of the common diseases of children.
3. To train teachers in the basic management of child school emergencies until the arrival of the emergency team.

The contents are distributed as follows:

Lessons 1 and 2: Biological, psychological and social characteristics of children throughout their development.

Lessons 3-6: Healthy child nutrition and its influence on child and future adult health. Mediterranean diet.

Lessons 7 and 8: Physical activity and sport.

Lesson 9: Prevention of toxic habits (alcohol, smoking and illegal drugs).

Lessons 10 and 11: Infectious diseases of children.

Lessons 12-15: Other common childhood diseases (accidents, poisoning, bites and stings, asthma, diabetes) and less common (digestive, cardiac, neurologic, hematologic and oncologic diseases).

Lessons 16-19: Nutrition disorders in childhood. Prophylaxis of caries.

Lesson 20: Basic guidelines for cardiopulmonary resuscitation.

Training to future primary school teachers is given by teachers of University Department of Pediatrics, Obstetrics and Gynecology.

Theoretical and practical lessons, seminars, workshops and tutorials are used as teaching methods.

The distribution of the theoretical and practical teaching activities includes 20 units of two hours (90/30 mins/unit) and 67 non-contact hours in addition for tutorship, teamwork and a variable number of hours for workshops and informative updating (<http://aulavirtual.uv.es>).

The experience gained in the last 6 academic years has been assessed by students and teachers as very positive. Two negative factors are the location of the subject in the first year of degree when students are less aware of the crucial importance of the health and its disturbances, and the limited number of hours.

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BILLEAUD 3

HEALTH SCHOOL ORGANIZATION AND PAEDIATRICS FOR TEACHERS IN EUROPE
Claude Billeaud – AEEP/EAPE President

Shimôn Barak EAP Primary- secondary group paediatrics

There are 3 kinds of organization of the health system in schools in Europe:

- the "sanitary" says model involves contractors or general practitioners as exists in Switzerland
- The "Community" system that studied the health of students in their environments and involves school district health centers (Spain, Portugal)
- The system called "integrated" or there is school doctors who VOR monitoring of health at school.

Some countries may know a mix of these three systems due to their high degree of decentralization.

The European Association for Paediatrics Education (EAPE/AEEP) proposed an electronic survey to European Academy of Paediatrics Primary care group .

This is the survey which make it possible for the AEEP-EAPE, in collaboration with the EAP Primary Care group, to define the core curriculum in Primary Care Paediatrics for School teachers in Europe. Some remarks:

- 1) The European teaching systems are very different according to each country.
- 2) Main Systems :
 - French (Napoleonic): France, Spain, Italy, Belgium, Portugal, Switzerland
 - English: UK, Ireland, Denmark and the Northern countries.
 - German : (Humboldtian) : Germany, Austria, Czech Republic

We obtained answers for eight to eleven countries : Cyprus, Czech Republic, Netherland, Norway, Georgia, Estonia, Germany and Italy.

1/What is the organization of the educational system in your country ?

- .. 11 countries
- .. Centralized : 9
- .. Mixed : 2

2/Which Ministry is responsible for the Educational System ?

- .. 10 countries
- .. Health ministry: 2
- .. Education ministry : 8

3/In your country, school is compulsory from what age to what age ?

- .. 3 years 1
- .. 6 years 2
- .. 6-18 years 2
- .. 7-16 years 1

- .. 3-16 years 1
- .. 6-15 years 1
- .. 7-17 years 1
- .. 17 years 1

4/Is the schooling divided into different cycles ?

- .. YES : 7
- .. NO : 2

5/What are the different cycles ?

- .. Primary Middle High School : 3 cycles : 5
- .. 2 cycles : 1

5/Is there a student health service (doctors, nurses) ?

- .. YES : 5
- .. No : 3

6/ Is it dependent on a territorial authority ?

- .. Yes : 3
- .. No : 5

7/Is it dependent on another institution ?

- .. No : 6
- .. Health Insurance 1

8/ Who is responsible for this health system at school ?

- .. Public Health nurses : 3
- .. Public health physicians : 1
- .. Paediatricians : 5

9/ Are health check-ups performed ? (At what age ? with what aim ?)

- .. 2 times : (1 year and 6 years)
- .. Yes : 1
- .. Not at school :

Yearly 1

9 times (1 year, 3,5,7,9,11,13,15,17,19 years) : 1

Paediatricians : 4

GPs : 1

10/ What is the medical follow up of students with special needs (students with disabilities or suffering from chronic diseases). Specify the modalities of intervention (at home , at school , type of care and support, monitoring, links with the exterior medical structures)

- .. Not at school

Paediatricians 2

Specialised doctors : ambulatory care, Hospital : 3

primary and tertiary health care is provided by the public health care system (ambulatory primary health care plus tertiary multidisciplinary institutions. In scliffe physiotherapy, speech therapy, occupational therapy may be provided. 11

II/ We also testied the education education for school teachers

11/ Is it initial training integrated in the university curriculum ?

- .. No : 6
- .. Yes : 3

12/ is it initial training integrated and adapted to work ?

- .. Yes : 6
 - .. No : 3
- 13/ What is the approach of the initial training ?
- .. Public Health : 5
 - .. Social Paediatricians : 2
- 14/Continuous Medical Education : What are the modalities and the regulations ?
- .. In primary care paediatrics
 - .. social paediatrics
 - .. Different fields of paediatrics and allergology
- 15/ Is there a training location ?
- .. No : 4
 - .. I don't Know : 1
 - .. Yes : 2
- 16/What are the objectives of the training education ?
- .. all health problems, prophylactics 2
 - .. to update knowledge 1
 - .. it is special curriculum 1
- 17/What are the favorite thematics of training education?
- .. the problems in primary care
 - .. allergy, nutrition
 - .. first aid, insuries, psychiatric problems
 - .. vaccinations infections behaviour
 - .. for schools: empowerment
- 18/Is there transdisciplinary work ?
- .. Yes : 4
 - .. I don't know : 1
 - .. not on a regular basis - but it exists
- 19/Who are the trainers?
- .. mostly paediatricians- sub specialists from universities 3
 - .. emergency care doctors, traffic police, medical specialists 1`
 - .. mostly Phd doctors 1

20/ According to the AEEP project the school teacher education must include knowledge, practical skills and attitudes on :

- .. biological, psychological and social conditions of the children. AND functions and tasks for promoting childrens health AND functions and tasks for promoting adolescents
- .. biological, psychological and social conditions of the children. AND basic care for handicaps and chronic diseases
- .. biological, psychological and social conditions of the children. AND functions and tasks for promoting childrens health AND first aid.
- .. biological, psychological and social conditions of the children. AND functions and tasks for promoting childrens health AND functions and tasks for promoting adolescents and adults health AND first aid. AND basic care for handicaps and chronic diseases

- .. functions and tasks for promoting childrens health AND functions and tasks for promoting adolescents and adults health

21/Indicate the name of your country ?

- .. Cyprus
- .. Czech Republic
- .. Netherland
- .. Norway
- .. Georgia
- .. Estonia
- .. Germany
- .. Italy

22/What is your current position and role ?

- .. Paediatrician at hospital 1
- .. Primary care paediatrician 3
- .. Board Dutch Association of Pediatrics 1
- .. Allergologist 1
- .. member of the board of Estonian Paediatric Society 1
- .. Deputy General Secretary of the German Academy of Paediatrics; + Member of the EB of the Professional Organization of Paediatrics. 1

In conclusion, the items in this questionnaire will be discussed at the roundtable of the EAPE/AEEP to the Budapest Congress and to the EAP Congress in Bratislava. We will try to reach especially at the workshop chaired by Prof. Brines of Valencia (Spain) together pediatricians, school doctors and teachers to define the common curriculum in primary pediatrics for teachers during their initial and continuous training

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DUGAS 5

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Prevention of School Health: Location dilemmas and Role Playing

Health is protean, admits colorful performances; but it is now widely shared that health is not limited to physical otherness or diseases, which would refer to the old dualism, and thus increase discrimination of any kind. Because according to the WHO (World Health Organization), "health is a state of complete physical well-being, mental and social well being and not merely the absence of disease or infirmity." In addition, it is also the order of the subjective and relative.

Now, when we are young – and the context of life (intra personal, socio-cultural, economic, family ...) – it is not easy to take care of yourself (addictions, risk-taking, activities risk, poor diet, lifestyle, etc.). Because the objective risk does not make sense again, is not appropriate, there is a "time inconsistency" the risk is too remote to be concerned. For example, some effort to be made in it is this worth accomplished face an uncertain future earnings? Uncertain benefit because too far away for the young hope - maybe - reach? By analogy, the dilemma often recurrent in daily life, between immediate pleasure and that deferred.

It would then increase the "shadow of the future to the present" (Axelrod, 2006) ; is the price that is more easily convince students and their families, as well as teachers to combine health at social practice without any excesses, or danger to the welfare and well-becoming of all. Therefore, the health education will pass through the filter of the "moral hazard" (Dugas, 2014), if it is to change bad habits, even his *habit* of life, feeling a little bit the fear of the effect of poor health in the broadest sense of the term. This perception will be exercised in appropriate educational situations and controlled, where the stakes - health capital - is palpable. For example, in role playing (Tisseron, 2010 ; Loyer and Dugas, 2014), *serious game* to develop relational empathy (welfare) or in situations *in vivo* secured by the teacher, but not perceived as such by the student so that they become aware and / or feel the danger (traffic safety, for example).

These "played" situations could create greater reflexive analysis by the young and, therefore, short-term decisions more in line with the intended effect as those obtained by a moralizing. In short, we can learn not to play with his health, but it requires regular education, inserted into a dynamic teaching approach. Faced with subjectivity, emotions of an individual, his life context, the choices are often not rational and optimal. We know, thanks to scientific advances, the emotions guide our reason, our decisions are not always the result of a coherent reasoning, conscious and exclusively rational, but he obeys hunches, choice, multiplying risks ... But it is also good to take the risk to themselves and dare to dare others.

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MARTOS 14

National Nutritional Environment Survey in Schools-A tool for policy making

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Healthy diet is essential for the physical development of children and it can also have a positive impact on concentration and cognitive performance as well as on behaviour. It has not only been proven to improve students' academic performance, but also to measurably reduce absence due to illnesses. Moreover, it has a significant role in the prevention of non-communicable diseases later in life.

In 2013 the National Institute for Food and Nutrition Science conducted a nation-wide representative survey, with the aim to give an overview of the school food environment. Another objective was to review the changes that might have occurred since the previous survey (2008), which concluded that school meals provided by mass caterers carry nutritional risks. Results of the present study indicated that only half of the schools were able to provide raw fruits or vegetables daily. In 20% of the schools whole-grain, brown, multi-grain bread and pastries were not introduced on the menus at all.

Unfortunately lower quality and high fat content meat products were dominant in the menu. Sweet treats were provided every second day on average. The average measured salt content of the diets was 8,6 g /d, much higher than that of the WHO recommendation. Based on the results of the surveys an extensive negotiation process, involving all relevant stakeholders, led to the legislative measures on public catering as a great achievement. The food-based regulation contains standards for frequency of certain food groups, complex measures limiting salt, sugar and fat intake defines the age-appropriate portion sizes, restricts the provision of soft-drinks among others. The decree enters into force in 2015. The survey assessed other type of food provisions (e.g. vending machines, buffet, EU school schemes). Favourable finding was the 80% participation of Hungarian schools in the EU School Fruit Scheme. However, unhealthy options dominated the selection of both vending machines and buffets.

Further policy actions are needed to create comprehensive protective nutritional environment in schools.

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LENOIR 11

Marianne LENOIR Centre Médico-scolaire
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of Saône et Loire (France) 71 000 MACON
Doctor in sciences of education FRANCE
The role of health School Doctor and the pupils well-being in secondary school
Budapest Symposium: 21th and 22th march 2015

The health school doctor belongs to a department called “Health promotion for school children” and is a public health doctor for school children.

The health school doctor is first appointed after a selective exam and then follows a specific training at the French public Health School.

A school doctor works with school nurses, educational staff (school Heads, educational school officers,

teachers, and school staff in general). A school doctor is in charge of children's health from the age of five.

The workload is divided in sectors for infant schools (pupils aged 5), primary schools (6-11), secondary schools (11-15), colleges (16-18), and for various structures like universities, public schools for students in further educational studies.

The health school doctor responsibilities are multiple. A school doctor has to:

1. Concerning all school children:

- Identify possible problems at an early stage during the compulsory medical visit for 5 year old children.
- Promote awareness on Health issues.
- Organize action plans in order to improve the quality of life for students as far as hygiene, safety, and ergonomics are concerned.
- Examine children at the end of primary school and secondary school.
- Evaluate learning difficulties.

2. Concerning specific actions:

- Follow-up the previously referred school children in priority sectors.
- Organize emergency committees in case of serious events or contagious diseases alerts.
- Take action to help children victim of sexual or child abuse.
- Participate in the development of a health program for school children with a disability.
- Facilitate the integration of school children with a chronic disease.
- Examine school children in professional secondary schools in order to provide medical certificates of aptitudes for specific tasks.

3. Conduct some research in connection with the day watch

4. Organize training sessions for the national education school staff

The national education school doctor is responsible for promoting and improving the quality of life for children in schools. Mrs. Marianne Lenoir has realized a study during her PHD in science of education and has described the various factors of well-being for school children in secondary schools according to both school children and teachers. The confrontation of opinion on these factors for these 2 groups could help us define some new leads and eventually improve the well-being of children in schools

JUHASZ 9

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Ambulatory blood pressure monitoring in obese children

Objectives: The increasing incidence of childhood obesity results an increased rate of hypertension in children. Based on international guidelines it is important to monitor the ambulatory blood pressure (ABPM) to detect childhood hypertension. The aim of our study was to investigate the occurrence of hypertension in obese children and also to determine the rate of dipper and non dipper blood pressure pattern and to reveal the background of this disease.

Methods: Ambulatory blood pressure monitor system was applied to measure the normal and the pathological blood pressure. In our study 191 obese children, 89 girls and 102 boys were $\geq 10,05$ included. The average age was $14,2 \pm 1,8$ year, the average BMI was $35,9 \pm 6,1$ kg/m.

Results: The 24 h systolic and daytime systolic pressure parameters were significantly higher in boys than in girls ($p \leq 0,05$, $p \leq 0,01$). Other blood pressure parameters did not differ in the two genders. The ratio between patients with hypertension and normotension was 55% versus 45%. However, the occurrence of patients with hypertension did not differ in the sub-groups. We did not find any difference between dipper and non-dipper blood pressure patterns in group of patients with normotension and hypertension

We also investigated the following metabolic parameters: level of fasting plasma glucose, insulin, total cholesterol (TC) LDL cholesterol, triglycerides, HDL cholesterol. HOMA-IR were calculated. The mean fasting plasma glucose level and the mean HOMA-IR were higher than normal range, but the average values of other parameters were within the normal range. In addition the mean values of fasting plasma glucose level and HOMA-IR were higher in patients with hypertension than in group of patients with normotension, the result was not significant ($p \geq 0,05$)

A possible correlation among other parameters was also investigated. BMI values were significantly correlated with systolic and diastolic blood pressure values ($p \leq 0,01$, $p \leq 0,05$) No correlation was observed between blood pressure and plasma insulin levels or HOMA-IR values ($p \geq 0,05$).

Summary: The occurrence of hypertension detected by ABPM was 55% in obese children. Earlier study in Hungary showed that this percentage was only 40% if it was detected by single blood pressure measurement. The investigation of the metabolic parameters revealed that besides hypertension of obese children the most frequent conditions are insulin resistance and hyperinsulinaemia. Our results suggest that blood sugar levels could be modified or compensated by gluoregulation during childhood.

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SZAMOSI T 21

Szamosi T:

Prevention of the early CVD, the role of oxygen stress

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Atherosclerosis starts in childhood and adolescent ages. This is the base the most CVD observed in young adults. Cardiometabolic risk factors (hypertension, carbohydrate and fat metabolic disturbances, increased lipid peroxidation, non alcoholic fatty liver disease, overweight) were detected in 1380 children and adolescents (age: 6- 18 years) whose parents had CVD before their 50. Life modification treatment (special low fat, low refined sugar, high fiber diet, everyday physical exercise program accomodated to the family possibilities and cessation of passive smoking) was applied during 2 years after which risk factors were no found in 1145 cases. The role of antioxidants seems to be important in these changes.