

physical activity inquiry, the connection between physical activity and food intake.

Results The overweight prevalence was 7.1% and that of obesity 12.2%. The overweight and obese children, as compared to the normal weight ones eat, daily, sweets (57.7%, 62.1% vs. 12.3%), soft drinks (23.9%, 39.9% vs. 5.2%), fast-food (22.8%, 36.7% vs. 9.4%), meat products (54.6%, 76.1% vs. 43.8%), fruits (16.8%, 7.3% vs. 48.5%), vegetables (41.3%, 13.9% vs. 84.5%), cereals (31.1%, 24.7% vs. 49.8%), milk products (18.1%, 32.2% vs. 62.3%). 54.7% of the overweight children and 60.1% of the obese do not perform any physical activity in their spare time, as compared to the normal weight (29.8%). The food consumption while watching TV or playing on the computer was associated with overweight and obesity in children.

Conclusions Following the nutritional and physical activity investigation in the school children, I noticed an alimentary abuse, both quantitative and qualitative, associated with a physical activity decrease.

1445 THE GROWTH AND NUTRITIONAL STATUS AMONG SCHOOL CHILDREN IN NOVI SAD IN SCHOOL YEAR 2010/2011

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Aim To examine physical growth and nutritional status of school children in Novi Sad, during the school year 2010/2011 and determine differences in relation to primary and secondary school children.

Methods On the medical examination of school children aged 7–14 (primary school) and 15–19 (secondary school) in Novi Sad we registered the total number of children: with normal weight (from -1.5SD to +1.5SD), obese (+1.5 to 3SD) and thin children (from -1.5SD to -3SD); of average height (from -1.5SD to +1.5SD), tall (+2SD, +3SD) and short (-2SD, -3SD) (nomogram provided by Vukovic).

Results From the total number of the enrolled pupils (n=40861) we have examined 37.25% (n=15222): there were 12783 (83.98%) of average height, 2325 (15.27%) tall pupils and low height pupils 114 (0.75%); 11990 (78.77%) of well-nourished, obese 2404 (15.79%) and underweight children 828 (5.44%). After comparing the data from primary and secondary schools, a statistically significant difference, considering a total number of tall, short, obese, and thin pupils, was in favor of primary school children (p<0.01). There were more children with normal weight in secondary schools (p>0.05), and more obese children in primary schools (p>0.05).

Conclusion During 2010/2011, the assessment of growth and nutritional status results of school children were in favor of primary school children. There were more children with normal weight children in secondary schools, and more obese children in primary schools, but the differences were not significant.

1446 INFANT FEEDING CHOICES MAY HAVE GENDER EFFECT ON GROWTH DURING INFANCY

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Background and Aims A retrospective analysis of healthy Japanese children was conducted to determine whether the growth pattern is altered by breast-feeding (BF) or formula-feeding (FF).

Methods The data of 204 elementary students, age 6 to 9 years were obtained from their parents by questionnaires. The BF and FF group were defined as those fed by only breast milk or formula at 4 months of age. Seventy-one children (31 boys, 40 girls) were in BF and 30 (19 boys, 11 girls) were in FF. The anthropometric data at

birth, 1, 4, 7, 10, 18, 36 months-old and investigation time in BF was compared to those in FF.

Result No significant differences were observed in the anthropometric data between BF and FF girls. The BF boys mean body weight (BW) at 18 months was almost 1,000g lower than those in FF. The BW-SD score was significantly smaller from 4 to 18 months, and BMI was lower from 10 to 36 months in BF boys. However, both BWSD and BMI had no differences between BF and FF boys from 6 to 9 years. Multiple regression analyses showed that the birth weight, prepregnancy BW, and infant feeding choice were significant factors associated with BWSD, and feeding choice was the only significant factor associated with BMI at 18 and 36 months.

Conclusion Infant feeding choices may have gender effect on growth during infancy. When we evaluate infant growth, we should consider not only infant feeding choices, but also gender, birth weight and prepregnancy BW.

1447 WEIGHTING THE FACTORS ASSOCIATED WITH CHILDREN OBESITY: AN INTERNATIONAL PERSPECTIVE TOWARD AN UNIFIED MODEL

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Beside genetic predisposition, several factors have been proposed to promote overweight and eventually obesity in children, from the socio- and built- environment down to behavioural attitudes (Bouchard, 2007). How this model is shared by different cultural settings is however unclear and less investigated.

Using a unified protocol for data collection, a cross-sectional study has been performed on 960 children in India, Italy, Germany, France, UK, Argentina, Mexico and Brazil. Children CDC z-scores for BMI have been evaluated in association with several known factors influencing overweight and obesity (maternal and neonatal aspects, socio-economic familiar status, BMI of parents, physical activity, nutrition habits, screen activities). Based on a random-effect mixed effect model and the Kullback-Leibler Entropy Measure, the capability to explain variability in BMI of such factors has been computed. Percentages of explained variation are given as follows: India 41.4%, Italy 46.6%, Germany 65.6%, France 52.3%, UK 70.1%, Argentina 62.3%, Brazil 59.7%, Mexico 58.2%. Capability of proposed factors to capture variability in BMI is significantly higher in UK (p=0.03) than in other countries, being significantly lower in an emerging country like India (p=0.042). These results may suggest that more intense research should be specifically targeted to capture risk factors which are specific for that given cultural setting in addition to the general ones.

1448 EARLY FORMULA FEEDING PRACTICES AND THEIR POTENTIAL CONTRIBUTION TO LATER OBESITY RISK

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Background and Aims Early feeding practices, including early introduction to solid foods and overfeeding, are known risk factors for childhood obesity. This study aimed to assess maternal formula feeding practices and infant formula feeding patterns, factors that are known to potentially contribute to later obesity risk.

Methods This Irish prospective observational study involved the recruitment and follow-up of 450 eligible mother-infant pairs to 6 weeks postpartum. Data related to formula milk consumption patterns, formula type/brand changing, additions of solids to bottle

feeds were examined, and available infant 6 week weight measurements recorded.

Results In total, 368 (81.8%) mothers provided any formula milk to their infants at 6 weeks; of these, 14 (3.8%) reported to adding solid foods to their infant's bottle feeds. Almost 50% of formula feeding mothers ($n = 181$) reported to changing their infant's formula type/brand at least once during the first 6 weeks, mainly due to increased hunger and feeding frequency (2–3 hourly) (54.8%). Where 6 week infant weight measurements were available ($n = 184$), a mean of 205ml (SD 45ml) of formula milk/kilogram body weight/day was consumed by these infants.

Conclusion Several formula feeding practices with potential implications for later obesity risk were identified in this study including premature introduction to solids (≤ 6 weeks) and consumption of excessive formula milk volumes at 6 weeks relative to infant feeding guidelines. Early provision of recommended feeding guidelines including specific advice on age-appropriate milk volumes to parents who formula feed should be considered in obesity prevention programmes.

1449 THE GROWTH AND NOURISHMENT OF PUPIL POPULATION IN THE MUNICIPALITY OF NOVI SAD IN SCHOOL YEARS 2010/2011 AND 1996/1997- COMPARISON

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Purpose to examine the growth and nourishment of the school children in Novi Sad, in the school year 2010/2011 and 1996/1997 and determine differences in growth and nourishment between two school year periods.

Methods During regular health checks in primary and secondary schools in Novi Sad, we registered a total number of children with average height (from -1.5 SD to $+1.5$ SD), tall ($+2$ SD, $+3$ SD), short (-2 SD, -3 SD), with normal weight (from -0.5 SD to $+1$ SD), obese ($+1.5$ SD to $+3$ SD), and thin pupils (from -1.5 SD to -3 SD).

Results From the total of 40861 pupils (7–19 years) in school year 2010/2011, we examined 15222 (37.25%):11095 (41.52%) in primary and 4127 (29.19%) in secondary schools, and in school year 1996/1997, from the total of 23248 enrolled pupils, 20704 (89.05%) were examined, in primary schools 12135 (94.80%) and in secondary schools 8569 (82.01%).

After comparing data from primary and secondary schools, in the school year 2010/2011, a statistically significant difference was in favor of primary school children, where there was the number of obese children ($p=0.000$) and thin children ($p=0.000$) in 2010/2011, while the number of obese children in secondary school in the school year 1996/1997 accounts for obese ($p=0.000$) and thin children ($p=0.000$), which is favor of secondary school children.

Conclusion Comparing the data between two school years, there were significantly more obese and thin children in 2010/2011 in primary schools, while in 1996/1997 there were more in secondary schools.

1450 EVALUATION OF NUTRITIONAL KNOWLEDGE AND ASSESSMENT OF DIETARY INTAKE OF SECOND GRADE SCHOOL CHILDREN

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Aim Assessment of nutritional knowledge and physical activity rate among the children and evaluation of their nutritional intake.

Methods Cross-sectional study was conducted in randomly selected schools of Tbilisi. In each school was selected one group of

the second grade children and their parents by cluster selection method. A population of 290 children aged 6–8 years and their parents were interviewed.

Results In general, the level of knowledge related to rich sources of nutrients was poor. The most of the children can't identify the role of calcium (72.6%), proteins (68.1%) and iron (84.6 %). Children prefer to eat foods they like (71.8%), such as sweets and cakes, hamburgers and etc. The most of the children (83.3%) have normal weight for age, underweight was revealed in 3.1%, overweight in 12.3% and obesity in 1.4% cases. The assessment of dietary intake show, that intake of fruits and vegetables, as well as milk and milk products is quite low, while intake of bread and pastry, and sweets are quite high. Daily consumption of sweets was significantly higher in girls (64.2%) than in boys (47.5%) ($p<0.01$). Only 62 % of children eat the breakfast, most children 60.4% view TV during the meal time or play computer games. The most of the children play the active games approximately 30–60 minutes, quite often children play active games only 20–30 minutes.

Conclusion The dietary intake of children does not correspond to WHO recommendations. It is recommended to implement nutrition education programs for children and parents.

1451 NUTRIENT ADEQUACY OF THE DIETS OF UAE INFANTS AND TODDLERS

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Background Compared with other population subgroups, less is known about the dietary status of UAE infants and toddlers, especially how subgroups of different ages vary in their food consumption and nutrient intakes.

Objectives To assess the nutrient adequacy of the diets of UAE infants and toddlers 6 to 24 months of age.

Design Descriptive analysis of the usual nutrient intakes of infants and toddlers using 24-hour recall.

Subjects Families were recruited consecutively from the infants attending the preventive medicine department for immunization, until the number needed was attained. The study included UAE national infants (infants born to UAE national fathers) only. A sample of 1,000 infants and toddlers was selected from 2 cities, Dubai and Al Ain, in the UAE.

Results Percentage of breast feeding was found to be 49.6% in infants aged 6–11 months and 38.4% at 12–24 months. 65.6% percent of infants 6 to 11 months consumed cow's milk or camel's on a daily basis before the recommended age of 12 months or later. In most infants aged between 6 and 12 months had higher than the RDA levels of energy, protein, fats and carbohydrates, but surprisingly toddlers ingested less fat than RDA.

Conclusions More parents and caregivers can benefit from guidance about the introduction of developmentally appropriate, micronutrient-rich first solid foods such as iron-rich infant cereals, iron-fortified grain products, meats, soft fruits, and cooked vegetables and the importance of breastfeeding through the first year of life.

1452 OBESITY AND ALIMENTATION PATTERN IN ADOLESCENT HEALTH

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Introduction Obesity is one of the most important health problems in children all over the world. The disease is detected more often nowadays and is correlated with lifestyle.