

Introduction: Recent research indicates rise in incidence of overweight and obesity among children and young people. The research focused on assessment of the influence of a comprehensive rehabilitation programme with an element of increased physical activity on fitness of children and adolescents. The research and analysis involved 434 children with diagnosed overweight and ordinary obesity in the following age groups: 8–12, 13–15, 16–18 years, qualified for the programme by the attending physician at the health resort. The research also took into account age, sex and BMI at the beginning and at the end of the stay. The patients were treated in our institution during 27 d. Physical fitness was assessed through Eurofit fitness tests at the Jagusia Health Resort Hospital for Children in Kudowa-Zdroj at the beginning and at the end of their stay in the health resort.

Method: Each child had eight types of tests including such elements of physical fitness as: agility, force, strength,

muscle endurance, suppleness, speed, balance, respiratory and circulatory endurance. Sequence of motricity tests included: balance on one leg, movement speed of the upper limb, bend forward in the sit down position, long jump off the spot, clenching fists, sit ups from lying down position, bent arm hang and shuttle run 10 × 5 m.

Results: Results of the research indicate a significant decrease of the BMI of the examined groups – on average by 5.7 kg, correlation between the body weight and physical fitness in individual fitness tests and better final results in comparison to the initial values in fitness tests (except for tests of movement speed of the upper limb).

Conclusions: Conclusions of the research indicate that the comprehensive programme for treatment of overweight and obesity among children and adolescents during rehabilitation stays results in decrease of weight and improvement of physical fitness.

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42 – Obesity related to free time activities in Portuguese children

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Introduction: The purpose of the present study was to assess the association among free time activities, body image perception and obesity.

Method: The sample included 588 children (269 girls and 319 boys) from elementary and secondary school (10.8 (SD 2.8) years old). Obesity was estimated by BMI and the cut-off points of Cole *et al.* (2000). A questionnaire was completed by parents and children to provide information about age, hours spent per week and weekend in screen activities (TV, electronic games, internet), playing, studying, doing physical activity, the use of public spaces (playground, gymnasium, swimming pool, gardens) and body image perception (Stunkard's silhouettes).

Results: The results from binary logistic regression were only significant for age (OR = 0.807; 95% CI 0.714, 0.911), playing at weekend (OR = 0.678; 95% CI 0.461, 0.997) and body image perception (OR = 11.219; 95% CI 6.988, 18.010). The OR of being obese were 0.678 times less for children that play more at weekend, and 0.807 times less for older children. On the other hand, body image is a risk factor for obesity and the OR were 11.219 times more for children that have the perception of a more obese image.

Conclusions: Age and playing at weekend are preventive factors; meanwhile, the perception of body image is a risk factor for obesity. These results are very important to take into account in programmes designed to combat obesity.

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43 – Total body percentage and motor coordination among Portuguese schoolchildren

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Introduction: Children's motor coordination may affect their activity pattern and thereby influence their bodyfatness. The aim of the present study was to analyse the relationship between motor coordination and total body fat percentage, in a Portuguese sample of schoolchildren aged 9–12 years.

Method: The sample comprised 596 urban schoolchildren (girls 46.9%), aged 9–12 years (mean 9.61 (SD 0.55) years) from North of Portugal. Total body fat percentage was calculated with Tetrapolar Bioelectrical Impedance Analysis, model Tanita TBF-300. Age- and sex-adjusted Z-scores computed total body fat percentage. Motor coordination levels were assessed with the Körperkoordination Test für Kinder (KTK) and children were classified according to age and sex KTK criteria (Schiling 1974). Date of birth, gender and school socio-economic status (eligible for benefit A, B or not eligible) were extracted from the school administrations records systems. School socio-economic status was used as a proxy measure of family socio-economic status.

Results: In motor coordination, 22.4% girls showed disturbance of coordination; 37.7% insufficiencies of coordination; 39.5% normal coordination and 0.4% good coordination. Corresponding figures for boys were 7.3%; 36.5%; 54.3% and 1.9%, respectively. Linear regression analysis showed that Z-scores total body fat percentage (unstandardized $B = -0.258$, $SE = 0.021$, $P < 0.001$) were negatively associated with motor coordination, after adjustment for socio-economic status.

Conclusions: Low motor coordination levels are negatively associated with total body fat percentage Z-scores. The early identification of children with poor motor coordination and/or high body fat percentage is crucial in order to implement and develop health-related behaviours.

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Reference: Schiling, F (1974) *Körperkoordination Test für Kinder, KTK*. Beltz Test GmbH, Weinheim.

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44 – Relations between resting blood pressure (RBP), weight status and physical activity (PA) in British schoolchildren

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Introduction: The present study aimed to assess the relations between resting blood pressure (RBP), physical activity (PA) and weight status in a multiethnic sample of British children.

Method: 790, 10–14-year-old schoolchildren (444 boys, 346 girls) underwent assessment of RBP, height, body mass (from which BMI was calculated and classified according to International Obesity Task Force criteria) and completed the physical activity questionnaire for adolescents (PAQ-A) as a measure of PA following ethics approval and informed consent. Children were classified as being from 'white' ($n = 553$), 'black' ($n = 51$) and 'Asian' ($n = 186$) backgrounds based on census classifications.

Results: Pearson's correlations indicated significant relations between BMI and systolic BP (SBP) ($r = 0.424$,

$P = 0.0001$), diastolic BP (DBP) ($r = 0.224$, $P = 0.0001$) and PA ($r = -0.255$, $P = 0.0001$). PA was significantly but weakly related to SBP ($r = -0.103$, $P = 0.02$) but not DBP ($P > 0.05$). A series of 2 (gender) by 2 (weight status) by 3 (ethnic groups) ANCOVA controlling for age found that SBP was significantly higher in overweight/obese children compared with normal weight children ($P = 0.0001$). This pattern was evident for DBP ($P = 0.0001$) and PA ($P = 0.001$). PA score was higher in boys than girls ($P = 0.01$). There were no ethnic differences in any variables (all $P > 0.05$).

Conclusions: RBP is higher and PA lower in overweight/obese children compared with normal weight children when controlling for age. Ethnic groups did not appear to influence RBP or PA in this sample.

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45 – Prevalence of cardiometabolic risk factors in overweight and obese adolescents

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