

schools, probably tied to a long series of suggestions regarding nutrition and physical activity provided by teachers and parents, even if the incidence of hypertension remain high. There is an evident need to better

monitor the consumption of alcoholic drinks and salty foods.

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## 49 – Obesity and hypertension today in comparison to past years

A Spagnolo<sup>1</sup>, P Musacchio<sup>2</sup>, V Austini<sup>1</sup>, G Colavecchi<sup>1</sup> and E Menghetti<sup>1</sup>

<sup>1</sup>ISFOL ex Institute of Social Affaires, Rome, Italy: <sup>2</sup>UOCI Mother and Child ASL RMD, Rome, Italy

*Introduction:* We wanted to compare the past situation regarding the prevalence of obesity and hypertension in Italy, above all in Rome, with the current situation in the City of Rome in order to verify eventual changes that have occurred following the issuing of suggestions by experts on a correct diet and better physical activity.

*Methods:* Two thousand forty-five children between the ages of 6 and 17 years in three Italian cities (Varese, Rome, Catanzaro) were compared with about 700 children in Rome aged 10–12 years. The first study was carried out in 2005–2008, the second in 2010. In both studies the height-weight measurement was carried out in accordance with data collection criteria, while for the second study the measure of blood pressure was done using OMRON2, calibrated with the mercury sphygmomanometer used in the earlier study.

The diagnoses of obesity and hypertension was made using the same standards in both studies: Cole

and coll. for obesity and the TASK FORCE table for hypertension.

*Results:* In the first study 6.1% of the sample was obese (6.1% in Rome) while 19.8% were obese (21.7% in Rome); taken together 5.5% had hypertension (3.1% in Rome). In the second study, the more recent one, 3.3% were obese (23.1% were overweight) and 7.8% had hypertension.

*Conclusion:* We can affirm that obesity has decreased in the last few years (in terms of stationary overweight children) while hypertension has increase. It is probable that the continuous nutritional suggestions to increase the intake in fruit, vegetables and fish have brought results while it is necessary to fight to reduce the consumption of salt and alcoholic drinks.

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## 50 – The influence of lifestyle on obesity and arterial hypertension

A Spagnolo<sup>1</sup>, P Musacchio<sup>2</sup>, L Tawill<sup>3</sup>, AM Gabrielli<sup>2</sup> and E Menghetti<sup>1</sup>

<sup>1</sup>ISFOL ex Institute of Social Affaires, Rome, Italy: <sup>2</sup>UOCI Mother and Child ASL RMD, Rome, Italy: <sup>3</sup>IDI Hospital, Reparto Pediatrico, Rome, Italy

*Introduction:* Evaluate the attention paid by the family and minors to correct nutritional habits, physical activity and lifestyle changes in recent years.

*Method:* Two questionnaires, completed both by parents and minors, were used to gather data. The study included 381 males and 312 females from five schools in

Rome during the 2009–2010 school year. The weight, height and blood pressure were measured for each minor. The questionnaires included a series of questions regarding eventual reductions in the consumption of past, condiments and fats *v.* an increase in the intake of fruit, vegetables and fish. The questions also focused

on eventual increases in physical activity and a decrease in the number of hours spent watching TV or using a computer.

**Results:** In light of a reduction in the number of obese subjects to 3.3% and the fact that 7.8% have hypertension, one sees a reduction in the consumption of pasta in 40% of the cases in the past 2 years, of condiments and fat in 69%, and an increase in: the consumption of fruit (73%), vegetables (74%) and fish (53%); physical activity (68%); and reduction of TV time (86%). It is also important to note that the parents in 77% of the cases support an increase in the number

of school hours dedicated to physical education for their children.

**Conclusions:** Parents and minors adherence to the study is important in leading to a reduction in the number of obese children in line with a reduction in the intake of condiments and fats and increase in the consumption of fruits, vegetables and fish. Moving towards support for greater physical activity with parents wanting more school hours dedicated to physical education is also very important.

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## 51 – Relationship between cardiorespiratory fitness levels and dietary intake among European adolescents: the HELENA Study

MM Cuenca<sup>1</sup>, FB Ortega<sup>1,2</sup>, I Huybrechts<sup>3</sup>, RJ Ruiz<sup>2</sup>, G Vicente-Rodriguez<sup>4</sup>, M Sjostrom<sup>2</sup>, F Gottrand<sup>5</sup>, K Widhalm<sup>6</sup>, M Gonzalez-Cross<sup>7</sup>, LA Moreno<sup>4</sup>, S De Henauw<sup>3</sup>, M Kersting<sup>8</sup> and MJ Castillo<sup>1</sup>

<sup>1</sup>Department of Medical Physiology, School of Medicine, University of Granada, Granada, Spain: <sup>2</sup>Unit for Preventive Nutrition, Department of Biosciences and Nutrition, Karolinska Institutet, Huddinge, Sweden:

<sup>3</sup>Department of Public Health, Ghent University, Ghent, Belgium: <sup>4</sup>Escuela Universitaria de Ciencias de la Salud, Universidad de Zaragoza, Zaragoza, Spain: <sup>5</sup>Faculte de medecine, University of Lille, Lille, France: <sup>6</sup>Division of Clinical Nutrition and Prevention, Department of Pediatrics, Medical University of Vienna, Vienna, Austria:

<sup>7</sup>Polytechnic University of Madrid, Spain: <sup>8</sup>Research Institute of Child Nutrition Dortmund, Rheinische Friedrich-Wilhelms-Universitat Bonn, Germany

**Introduction:** Cardiorespiratory fitness (CRF) and dietary behavior are important factors related with adolescent's health status. The objective of the present study was to analyse the relationship between CRF levels and dietary intake in European adolescents.

**Method:** The present study comprised a total of 1894 adolescents from eight European cities. CRF and dietary intake were measured using the 20-m shuttle run test and 24 h dietary recalls (HELENA-DIAT) on two non-consecutive days, respectively. Weight and height were measured and BMI calculated. Partial Pearson's correlation and analysis of covariance (ANCOVA) were performed. The adolescents were grouped by different CRF levels (unhealthy *v.* healthy) according to the FITNESS-GRAM standards and BMI categories (non-overweight *v.* overweight) according to International age- and gender-specific cut-off points.

**Results:** Energy and nutrient intake (macronutrients, vitamin C, fibre and calcium) were positively associated with CRF in males ( $P < 0.05$ , except fat) and negatively

associated with BMI ( $P < 0.05$ , except protein, vitamin C, fibre and calcium in males and calcium in females). Non-overweight males with healthy CRF showed the highest energy and nutrient intake ( $P < 0.05$ , except vitamin C and fibre). In females, calcium intake differed between BMI categories, independent of the CRF levels.

**Conclusions:** Dietary intake differs between adolescents with different CRF levels and BMI categories. Non-overweight males with better CRF levels seemed to report higher energy and nutrient intake. This is an important finding, because it is probable that overweight in adolescents is due to energy imbalance, caused by low exercise time.

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