Eating Habits in Young Athletes
Diet and Lifestyle Analysis in Florence

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1 OBJECTIVES

Considering that the eating habits of each individual consolidate in school age, it is clear how important a proper eating behaviour can ensure both a healthy and proper growth and development in the developmental age, and if it can continue to persist its beneficial effects, even in adult life.
Diet should meet the demands of all the nutrients and energy to allow the increase in body mass, maintaining all physiological processes and adequate physical activity.

By contrast, poor eating habits, not only can determine the onset of chronic degenerative diseases in the long run, but they can also determine, in the short term, the lack of essential nutrients and compromise the development of the organism of the child.

Childhood obesity is considered an important predictor of obesity in adulthood (De Onis M., 2010). A high BMI during adolescence predicts high mortality from cardiovascular disease in adulthood even when the excess weight is lost. According to the estimates of the Childhood Obesity Surveillance Initiative (COSI, 2010) of the WHO, about one in three children aged between 6 and 9 years were overweight in 2010 (EU, 2014) against estimated 1:46 in 2008.

Although less sensitive than skinfold thicknesses, the body mass index (weight/height^2) is widely used in adult populations, and a cut off point of 30 kg/m^2 is recognised internationally as a definition of adult obesity (WHO, 1995).

Body mass index in childhood changes substantially with age (Rolland-Cachera M.F., 1982).

For a proper growth is therefore necessary to correct poor eating habits and an adequate physical activity: it has been demonstrated that the sport is able to decrease the overweight and obesity (Shelley E., 2010).

This study is aimed to investigate how young people that practicing sports overweight or obesity occurs.
For references of overweight and obesity we decided to adopt the guidelines of Cole (Cole J., 2010).

2 METHODS

330 young athletes, 232 males and 97 females (age: 14.56 ± 3.57, height 1.63 ± 0.14 m,) were subjected to the completion of a questionnaire to assess lifestyle and eating habits (INRAN, Istituto Nazionale di Ricerca per gli Alimenti e Nutrizione). The first part of the questionnaire included a general information (weight, height, age, sex, and most widely used means to go to school), a second part related to physical activity and sport practiced (practice of physical activity in addition to sports practiced months/years of activity and hours per week devoted to the performance of it). The different sports were subsequently divided according to component static - dynamic (Asmussen E, 1981) (Jere H., 2005). The second part of the questionnaire included eating habits. After the information about where the meals were consumed regularly throughout the day (breakfast, snack, lunch, snack and dinner), there was a section on food allergies and possible adoption, and frequency of dietary supplements.
Finally there was the part related to the frequencies of weekly consumption of food groups.

3 RESULTS

From the analysis of questionnaires was possible to detect that:
- The percentage of overweight children is 12.7% and that of obese children is equal to 1.8%; 0.6% is underweight.

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In addition, there are more females overweight and obese than males respectively 12.4% and 4.1% versus 8, 8% and 0.6% of males.
- The 2.4% of boys reported smoking cigarettes.
- Most of the boys reported that goes to school on foot, 27%, 25.8% go by car, 22.4% used public transport, 14.5% took the moped, while only 3.9 % use the bike to go to school. The choice of the means to get to school is no significant differences by gender.
- 19.4% reported not perform other physical activities as well sporting activities; average is lower than that in females, 13.4% compared to 15.5% males.
- the most popular sport is soccer, 37%, water polo with 8.2% follows with 7.3% basketball, volleyball 7.0%, 5.5% gymnastics, 4.2% practice athletics, dance and karate, tennis 3.9%. Among males, the most popular sport appears to be soccer, 36.7%, followed by basketball with 7.3%, 4.5% as swimming, tennis and athletics with 3.0%. Among females appears to be the most popular sport volleyball with 17.5%, followed by 15.5% with gymnastics, dance with 13.4%, 12.4% with swimming, karate with 7.2%, skating with 4.1% and, with smaller percentages of other types of sports.
- For the category of sports there is a greater adherence to those activities where the dynamic component prevails over the static. Do not look for sex differences with respect to the category of sports.

Regarding the BMI divided by category of sport shows that the 3a group has 15.4% of overweight, the group 1b, 17.9% and 10.7% respectively of overweight and obese people in the group 2b 14.3% are overweight; in 3b there is a 37.5% overweight. In the group 1c shows a 10.1% overweight and 0.1% obese, 10.6% overweight in 2c and 1.5% obese, while in 3c there is a 100.0% of normal weight.
Regarding the eating habits has been possible to analyze that:
- only 2.4% of children reported not eating breakfast, while 24.8% reported not to carry out the mid-morning snack, as opposed to 16.4% who did not make a mid-afternoon snack. Among females 3.1% does breakfast, compared with 1.5% of males, 22.7% of mid-morning snack, against 18.4% and 12.4% of the snack mid-afternoon, males 12.7%.
- 2.7% reported to follow a particular diet. Females with 3.1% of males with 1.8%.
- 1.8% are intolerant to gluten, while 6.1% had other types of food intolerances.
- 13.9% reported making use of dietary supplements, 7.6% of these makes use of vitamins and minerals, 3.9% of only vitamins, while the 1.5% of only minerals. Among males, the use of supplements is 15.02%, of these 3.43% and 12.44% customarily occasionally.
- The frequency of weekly consumption of food shows that cereals and derivatives are consumed on average 13.5 (± 4.7), fresh meat 4.7 (± 3.1), preserved meats 3.3 (± 2.8), the fish 1.6 (± 1.4), milk and yogurt 7.0 (± 3.8), cheese 3.7 (± 3.3), fresh fruit 8.2 (± 5.5), dried fruit 0.8 (± 1.8), vegetables 7.1 (± 5.6), legumes 1.7 (± 1.7), eggs 1.5 (± 1.1), confectionery 4.8 (± 4.4) and sweetened drinks 1.6 (± 2.3).

T Student Test were used to compare the data with a significance at $P<.005$.
There is a significant difference in weekly consumption between males and females, fresh and preserved meats, milk and yogurt, vegetables and sweetened drinks ($p<0.05$).

4 DISCUSSION

In the survey for the year 2013 it was possible to detect that in Tuscany the percentage of overweight children is 19.6% and that of obese children is 7%. The data is very worrying though slightly less than the national average, being 22.2% of overweight children and 10.6% of obese children. In addition to this we must also point out that, from the data collected, it appears that the children of our region still do not reach the recommended levels of physical activity. It is estimated that 1 child in 9 appears physically inactive, more females than males, while just over 1 in 10 children has a level of physical activity recommended for his age (Regione Toscana 2012).

An analysis of the guys that lend themselves to visiting sports fitness you can see that there is a lower percentage of overweight children but especially obese than those collected in the entire region of Tuscany. This aspect is extremely important considering the risk factors, not to mention an incorrect harmonious growth of the child, which may occur with increasing age.

For what concerns the conduct of a constant physical activity, excluding sport, the results are not very encouraging: nearly 1 in 5 children does not carry out further physical activity in addition to sports.
Regarding eating habits, even if they are better than the data compared to their peers who do not practice sports, the results are not very encouraging.

Low is the consumption of cereals and derivatives, a little more than one daily serving of fruits and vegetables, far distant from at least 5 servings of fruits and vegetables recommended for a healthy diet, and consumption of fish also appears to high consumption of fresh and preserved meats but especially foods rich in simple sugars such as confectionery and sweetened drinks. Although females show a better weekly consumption habits than males, however, do not appear entirely correct.

In accordance with the previously mentioned it is important to carry out a constant and proper physical activity to maintain the BMI in the correct range.

If we break for sports groups can be seen that with increasing dynamic component decreases as the number of overweight and obese children. Treatment largely focuses on sustained lifestyle changes with family involvement.

Healthy diet and increasing physical activity are the great sections of obesity treatment.

It can be concluded from this first analysis that for proper growth of the kids is crucial the right to a healthy and proper diet and also the regular physical activity.

The limitation of the study was to not take into account people who do not practice sports.

REFERENCES

Asmussen E. Similarities and dissimilarities between static and dynamic exercise. Circ Res 1981;48 Suppl 1:I3–10.

Cole T. J., Mary C Bellizzi, Katherine M Flegal, William H Dietz, Establishing a standard definition for child overweight and obesity worldwide: international survey, BMJ 2000; Vol. 320:1–6.

De Onis M, Blossner M, Borghi E. Global prevalence and trends of overweight and obesity among preschool children. Am J Clin Nutr 2010; 92(5): 1257-64.

European Childhood Obesity Surveillance Initiative, COSI, round 2010.

European Union (EU). 2014. Action Plan on Childhood Obesity 2014-2020.

Jere H. Mitchell, William Haskell, Peter Snell, Steven P. Van Camp: Task Force 8: Classification of Sports JACC Vol. 45, No. 8, 2005:1364–7.

Regione Toscana. 2013 – Okkio alla salute. Risultati dell'indagine 2012 Toscana.

Rolland-Cachera MF, Sempé M, Guilloud-Bataille M, Patois E, Pequignot-Guggenbuhl F, Fautrad V. Adiposity indices in children. Am J Clin Nutr 1982;36:178-84.

Shelley E. Keating, Elizabeth A.Machan, Helen T. O'Connor, James A. Gerofi, Amanda Sainsbury,Ian D. Caterson and Nathan A. Johnson Continuous Exercise but Not High Intensity Interval Training Improves Fat Distribution in Overweight Adults. J*ournal Obesity* 2014.

World Health Organisation. Physical status: the use and interpretation of anthropometry. Geneva:WHO, 1995.