FRUIT AND VEGETABLE INTAKE AMONG COLLEGE STUDENTS IN NITRA – COMPARATIVE STUDY

Tünde Juríková, Ildikó Viczayová, Jiří Mlček, Jiří Sochor, Štefan Balla, Mojmír Baroň

ABSTRACT
The aim of the study was to collect and analyse the frequency of fruit (fresh, dried, canned and nuts) and vegetable (fresh, tinned, legumes, soya) consumption in the group of 242 respondents aged 19 – 22 years-students of Constantine the Philosopher University in Nitra; to evaluate differences according to field of study and language in which they study (Hungarian or Slovak) by questionnaire method. On the base of collected data it can be concluded that in general the consumption of fresh fruits and vegetables can be considered as very low (only once a day) together with canned and dried fruit (nuts) and tinned vegetable (rarely). Furthermore, the majority of respondents took legumes only 1 – 3 times a week or rarely and soya had never been consumed. The statistically significant differences between college students of PEEH and the rest of assayed group of students had not been confirmed so the higher level of knowledge in health has not been connected with the higher consumption of fruits and vegetables. On the other hand, statistically significant differences have been proved between the following assayed groups of university students: RTH ↔ RTS (χ² 7.90, p <0.05), J ↔ RTH (χ² 9.95, p <0.05), J ↔ RTS (χ² 10.00, p <0.05), J ↔ PEES – SK (χ² 9.91, p <0.05). Statistically significant differences were assayed also in consumption of dried fruits or nuts among the following field of study: J ↔ RTS (χ² 9.48, p <0.01), RTH ↔ RTS (χ² 12.57, p <0.05), RTS ↔ PEES (χ² 8.19, p <0.01). Consumption of fresh vegetables was statistically different between the students J↔RTS (χ² 9.95, p <0.05) and RTS ↔ PEES (χ² 8.19, p <0.01).

Keywords: fruit consumption; vegetable consumption; college student; nut; soya; dietary habit

INTRODUCTION
Western countries lifestyle increase the risk for premature development of chronic diseases (cardiovascular, diabetes, metabolic syndrome, osteoporosis, cancer) (Henauw et al., 2007). Poor dietary habits, sedentary leisure time spending and a lack of physical activity are lifestyles that – once installed – have a strong tendency to track from childhood into adulthood and then become extremely resistant to modification (Koplan et al., 2005). This fact has led to increasing interest in studying the dietary habits of pupils, students and most often adolescents (Babinska et al., 2007, 2008 and Bašková, 2011). Unfortunately, the population of college students who present connection between the students and adults has been much less studied in last years than other population groups. College students differ in irregular eating patterns, frequent snacking and frequent skipping of meals, consumption of fast foods (Juríková and Viczayová, 2014), overuse consumption of energetic drinks and caffeine (Balla et al., 2013). According to results of marketing study of Pap et al. (2012) 1/3 of students of secondary schools have changed eating habits towards unhealthy foods at university. The most comprehensive study including 3172 respondents from Slovakia has been provided by Stefánikova et al. (2003). They examined the changes in eating habits of college students of medicines during 1992 – 2002. The result of the study has confirmed the positive increase in consumption of legumes (including soya) by 32%, on the other hand decrease in consumption of fruit by 25%. Comparative study of Kimaková et al. (2011) of eating habits of college students of medicine and lawyers aged 21–26 years had not proved the statistically significant differences between them and focused on high consumption of fast food resulted in problems with digestion.

The regular intake of fruit and vegetables is given by socio – demographic variables (age, gender and socio – economic status) (Aranceta et al., 2003; Moreno et al., 2008 a,b; Currie et al., 2008), family background (Bere et al., 2008; Friel et al., 2005; Cooke et al., 2004). Knowledge level about health promoting effect of fruit and vegetables is considered to be the most important factor that positively influences the regular consumption of fruit and vegetables (Cooke et al., 2004). Certainly, the school play significant role in formation of positive attitude to regular consumption of fruit and vegetables (Story et al., 2008) by programmes and activities (French and Wechsler, 2004).

Understanding the factor of education and defining population of college students with the least healthy food habits (at greatest risk) has great importance for the development of relevant interventions, programmes and policies.
MATERIAL AND METHODOLOGY
The questionnaire was designed to determine intake frequency of fruits and vegetables among 242 respondents – students of Constantine the Philosopher University in Nitra during 2013 – 2014 years. The university students aged 19 – 22 year had the following distribution according to field of study: Pre-school and elementary education in Hungarian language (PEEH n = 32), Pre-school and elementary education in Slovak language (PEES n = 55), Journalism (J = 38), Regional Tourism in Hungarian language (RTH n = 45) and Regional Tourism in Slovak language (RTS n = 72). Students were asked for the filling the questionnaire in fruit (fresh, dried or canned) and vegetable consumption (fresh, tinned, legumes and potatoes) and chose the frequency: 3 and more times a day, daily, 1 – 3 times a week, rarely or never. Because of the fact that 200 asked students were female gender, statistical evaluation of frequency of fruit, vegetable and nuts consumption was provided only according to field of study and language of study (Hungarian – Slovak) by the method of $\chi^2$ square statistic on the level of probability $p = 0.05$ resp. 0.01 in the statistical programme STATGRAPHIC. Among the assayed groups only the students of PEEH have incorporated the health education into the study programme as subjects: Health education, Nutrition of children, Human and environment, Movement and Health. So we supposed that there would be statistically significant differences between students of PEEH and students of the rest field of study.

RESULTS AND DISCUSSION
Our study was aimed at mapping of consumption of fruits and vegetables of 242 college students on the base of field of study and evaluate if health education had statistically significant importance on the regular consumption of fruits and vegetables.

Consumption of fruit (fresh or processed) is 51.9 kg/capita/year that is lower by 53.7% in comparison with recommended value (96.7 kg/capita/year) (Habánová, 2012). The majority of university students indicated to eat fruit in fresh form only once a day (RTH 28.9% – RTS 47.2%) (Figure 1).

This finding is in accord with study of Kimáková et al. (2011) in which the 25.3% medicinal students and 27.2% lawyers and 61% students of Slovak Agriculture University Sramkova (2001) consumed fruit only once a day. More negative trend has been confirmed in study Fatrova-Šramkova et al. (2010) evaluated the eating habits of Slovak population in which 62% of women consumed the fresh fruit only three times a weeks. Similarly, in the study evaluated 145 college students of Slovak Agriculture University 34.6% consumed fresh fruit only 1 – 3 times a week (Kopčeková and Kolesárová, 2009). Moreover, the consumption of canned and dried fruit is lower with prevailing frequency only rarely (RTH 46.7% - PEEH 53.1%; PEES 31% - PEEH 59.4%) (Figure 2 and Figure 3).

Consumption of vegetables (fresh or processed) in Slovakia represents 101.5 kg/capita/year that is lower value by 20.4% than recommended amount (Habánová, 2012). On the basis of analysed dates this trend has been confirmed too, only the students of RTS ate 3- more portion a day (40.3%). The majority of students preferred consumption only once a day (J 22.2% - PEEH 50.0 %) (Figure 4).

Results are in accord with study of Kimakova et al. (2011) in which the 24% of medicinal students and 17.5% lawyers consumed the fresh vegetable only once a day. The study of Fatrova-Šramkova et al. (2010) also confirmed that the adult Slovak population aged 25 – 75 years preferred to consume fresh vegetable only once a day (J 22.2% - PEEH 50.0 %) (Figure 4).
In the study of Kopčeková and Kolesárová (2009) examined 145 college students of Slovak Agriculture University and found out that the prevalence of them 36.6% consumed fresh vegetable 1 – 3 times a week that is in accordance with assayed students of PEES and PEEH. Tinned vegetable was consumed in lower amount, the majority of students chose answer only rarely (RTS 41.7% – J 61.1%) (Figure 5).

Cognizance of healthy food have been associated with positive attitudes towards healthy eating habits but there has not been significant differences between the people.

| Frequency   | J   | RTS | RTH | PEES | PEEH |
|-------------|-----|-----|-----|------|------|
| 3-more times a day | 0.0% | 4.2% | 0.0% | 4.0% | 0.0% |
| Once a day     | 16.7%|
| 1-3 times a week | J   | RTS | RTH | PEES | PEEH |
| Rarely         | 11.10%|
|                | 17.80%|
|                | 21.90%|
|                | 4.20%|
|                | 9.70%|
|                | 14.00%|
| Never          | 16.70%|
|                | 22.20%|
|                | 12.50%|

**Figure 3** Evaluation of frequency of dried fruit consumption among college students.

PEES and PEEH. Tinned vegetable was consumed in lower amount, the majority of students chose answer only rarely (RTS 2.8% – J 22.2%) (Figure 5).

Cognizance of healthy food have been associated with positive attitudes towards healthy eating habits but there has not been significant differences between the people.

| Frequency   | J   | RTS | RTH | PEES | PEEH |
|-------------|-----|-----|-----|------|------|
| 3-more times a day | 0.0% | 4.2% | 0.0% | 4.0% | 0.0% |
| Once a day     | 16.7%|
| 1-3 times a week | J   | RTS | RTH | PEES | PEEH |
| Rarely         | 11.10%|
|                | 17.80%|
|                | 21.90%|
|                | 4.20%|
|                | 9.70%|
|                | 14.00%|
| Never          | 16.70%|
|                | 22.20%|
|                | 12.50%|

**Figure 5** Evaluation of frequency of tinned vegetable consumption among college students.

| Frequency   | J   | RTS | RTH | PEES | PEEH |
|-------------|-----|-----|-----|------|------|
| 3-more times a day | 0.0% | 2.8% | 0.0% | 0.0% | 0.0% |
| Once a day     | 0.0%|
| 1-3 times a week | J   | RTS | RTH | PEES | PEEH |
| Rarely         | 11.10%|
|                | 17.80%|
|                | 21.90%|
|                | 5.6%|
|                | 2.2%|
|                | 5.0%|
| Never          | 16.7%|
|                | 22.2%|
|                | 15.3%|

**Figure 6** Evaluation of frequency of legumes consumption among college students.
with higher and lower levels of education (Herath et al., 2008; Urala and Lähteenmäki, 2007; de Jong et al., 2003; Verbeke, 2005). In the same way, the results of statistical evaluation pointed to the fact that there had not been significant differences in fruit consumption (fresh, dried or canned) and nuts, vegetable (fresh, tinned, legumes) among students with field of study PEEH ↔ J, PEEH ↔ RTH, RTH ↔ PEEH and RTH ↔ PEES. So the hypothesis that the students of PEEH (have cognizance of healthy eating) will have consumed higher amount of fruit and vegetable and distinguished from another group of students can be refused. Our results are in accord with study of Barath et al. (2014) who were not noticed significant differences in fruit and vegetable consumption between the students of PEEH and PEES. In the similar way, Kimáková et al. (2011) has not found statistically significant differences in fruit and vegetable consumption between the medical students and lawyers. This fact can be given by trend to choose food according to taste preference. Children have not consumed enough fruit and vegetable despite the fact that they have cognizance of positive effect of consumption of fruit and vegetable as it has been proved by HELENA study. The young people understood the importance of healthy eating and knew they did not always eat as well as they should. To them, the problem with ‘healthy’ food including fruit and vegetable was that it is boring and does not taste very nice (Gilbert et al., 2007). In another marketing study realised in Hungary by Pap et al. (2012) 75% of respondents (college students) had cognizance of health promoting effect of fruit and vegetable but they preferred to consume sweets or sugared drinks. By contrast, statistically significant differences in fresh fruit and vegetable consumption have been proved between the following assayed groups of university students: RTH ↔ RTS (χ² 7.90, p <0.05), J ↔ RTH (χ² 9.99, p <0.05), J ↔ PEES – SK (χ² 9.91, p <0.05).

Statistically significant differences were assayed also in consumption of dried fruits or nuts among the following field of study: J ↔ RTS (χ² 9.48, p <0.01), RTH ↔ RTS (χ² 12.57, p <0.05), RTH ↔ PEES (χ² 8.19, p <0.01). Consumption of fresh vegetables was statistically different between the students J↔RTS (χ² 9.95, p <0.05) and RTS ↔PEES (χ² 8.19, p <0.01).

In comparison with acceptable interval of rational consumption 2.1 – 3.2 kg it is necessary to increase the consumption of leguminous plants at least by 0.5 kg because in Slovakia the consumption of legumes has been very low in the long term (Habánová, 2012). According to achieved dates (Figure 6) the consumption of legumes was not efficient only 1-3 times a week PEEH (46.9%) or rarely (PEES 37% – J 50.0%). Similarly, Faturova-Sramkova and Gregusova (2009) examined the eating habits of 392 pupils from elementary schools in Nitra found out that 1/4 of girls and 1/5 of boys consumed legumes only twice a week. Our findings are also in accord with study of Faturova-Sramkova et al. (2010) in which from 400 adults aged 25 – 75 years only 35% consumed legumes once a week. This negative trend was confirmed by Jurkovičova (2005) within study in Slovakia found out that 1/3 respondents consumed legumes rarely or never. According to study of eating habits of pupils of primary school the biggest problem was recognized in consumption of legume in Czech Republic (Tláskal et al., 2012) that can be given by their indistinctive taste.

On the basis of collected data we can conclude that the frequency of soya consumption is very low (Figure 7). The majority of respondents chose answer that they have never consumed soya (PEES 60% – RTS 68.9%) or rarely (19.4% RTS – 24.4% RTH). Our results are in contrast with study of Stefanikova et al. (2003) examined the increase in legumes and soya consumption among college students during ten years. Čurlej et al. (2015) studied the phytoestrogens dietary intake from Middle – North Slovakia region and found out that no respondents aged 50 – 60 years old utilised soya as important source of phytoestrogens. The statistically significant differences in soya consumption were confirmed between PEEH ↔ RTS (χ² 8.82, p <0.01); RTH ↔ RTS – SK (χ² 12.56, p <0.05).

CONCLUSION

The frequency of fruits and vegetables was measured by questionnaires completed by college students aged 19 – 22 years old at Constantine the Philosopher University in Nitra. Based on achieved results, fruits and vegetables were the most popular in fresh form but they did not meet the recommended daily requirement of five or more portion. Generally, the majority of participated students consumed only one portion of fresh fruit and one portion of fresh vegetable a day. The legumes and dried fruit with nuts have been consumed only rarely and soya hasn’t. This trend can be considered as negative in eating habits of college students. There has not been proved statistically significant differences among students of PEEH and the rest of evaluated field of study, so in our study the significance of higher level of knowledge of this group of students has not been confirmed. So we can conclude that incorporation of subjects in healthy lifestyle in the group
of university students is not sufficient enough. The health education must present continual process from childhood with support of family followed by preschool and school education. Unfortunately the health education has not been incorporated into state education programme as obligatory subject in Slovakia. So there has not been adequate space for systematic and regular acquirement of healthy behaviour. Similarly, the significance influence of language in which they studied the programme has not been confirmed expressly. According to statistic evaluation there has been proved statistically significant differences between the following assayed groups of college students: RTH ↔ RTS (χ² 7.90, p < 0.05), J ↔ RTH (χ² 9.99, p < 0.05), J ↔ RTS (χ² 10.00, p < 0.05), J ↔ PEES – SK (9.91, p < 0.05).

Statistically significant differences were assayed also in consumption of dried fruits or nuts among the following field of study: J ↔ RTS (χ² 9.48, p < 0.01), RTH ↔ RTS (χ² 12.57, p < 0.05), RTS ↔ PEES (χ² 8.19, p < 0.01). Consumption of fresh vegetable was statistically different between the students J ↔ RTS (χ² 9.95, p < 0.05) and RTS ↔ PEES (χ² 8.19, p < 0.01).

REFERENCES

Arançeta, J., Pérez-Rodrigo, C., Ribas, L., Serra-Majem, L. 2003. Sociodemographic and lifestyle determinants of food patterns in Spanish children and adolescents: the enKid study. European Journal of Clinical Nutrition, vol. 57, suppl. 1 no., p. 40-44. http://dx.doi.org/10.1038/sj.ejcn.1601813 PMid:12947451

Babinská, K., Vítárušová, E., Hlavatá, A., Resínský, J., Babinská, K. M., Košťálová, P., Pribilincová, Z., Kovács, L. 2008. Stravovacie návyky žiakov z Nitrianskeho kraja, 1. vyd., Nitra: FSŠ, 20 p. ISBN 978-80-223-2430-4

Babinská, K., Vítárušová, E., Rosínský, J., Babinská, K., Košťálová, P., Hlavatá, A., Pribilincová, Z., Kovács, L. 2007. Konzumácia ovocia In: Nové trendy vo výžive detí. Bratislava: LF UK v Bratislave, s. 17-28. ISBN 978-80-223-2430-4

Bašková, J., Juríková, E., Kopírek, M. 2005. Vieme zdravo žiť? Bratislava: Slovenský vydavateľský zväz, 323 p.

Curie, C., Molcho, M., Boyce, W., Holstein, B., Torsheim, T., Richter, M. 2008. Researching health inequalities in adolescents: the development of the Health Behavior in School-Aged Children (HBSC) family affluence scale. Social Science and Medicine, vol. 66, no. 6, p. 1429-1436. http://dx.doi.org/10.1016/j.socscimed.2007.11.024 PMid:18179852

De Henauw, S., Gottrand, F., De Bourdeaudhuij, I., Gonzalez-Grosso, M., Leclercq, C., Kafatos, A., Molnar, D., Marcos, A., Castillo, M., Dallongeville, J., Gilbert, C., Bergman, P., Wijndaele, K., Manios, Y., Breideness, C., Kersting, M., Moreno, L. A. 2007. Nutritional status and lifestyles of adolescents in a public health perspective. The HELENA Project - Healthy Lifestyle in Europe by Nutrition in Adolescence. Journal of Public Health, vol. 15, no. 3, p. 187-197. http://dx.doi.org/10.1079/PHJ20039539-0017-3

De Jong, N., Ocké, M. C., Branderhorst, H. A. C., Friele, R. 2003. Demographic and lifestyle characteristics of functional food consumers and dietary supplement users. British Journal of Nutrition, vol. 89, p. 273-281. http://dx.doi.org/10.1079/BJN2002772 PMid:12575912

Fatovcová-Šramková, K., Chlebo, P., Dudírková, P. 2010. Risk in Nutrition Habits of Slovak Population, Ecological Chemistry and Engineering, vol. 17, no. 1, p. 21-33.

Fatovcová-Šramková, K., Gregušová, A. 2009. Negatives in nutritional habits of students from secondary schools (In Slovak), Potravinarstvo, vol. 3, no. 3, p. 67-70.

French, S. A., Weshosler, H. E. 2004. School-based research and initiatives: fruit and vegetable environment, policy, and pricing workshop. Preventive Medicine, vol. 39, suppl. no 2, p. 101-107.

Friel, S., Newell, J., Kelleher, C. 2005. Who eats four or more servings of fruit and vegetables per day? Multivariate classification tree analysis of data from the 1998. Survey of Lifestyle, Attitudes and Nutrition in the Republic of Ireland. Public Health Nutrition, vol. 8, no. 2, p. 159-169. http://dx.doi.org/10.1079/PHN2004670 PMid:15877909

Gilbert, C. C., Sanchez, M. J., Lehoux, C., Hegyi, A., Aström, A., Hall, G., Merino, G., Masson, A., Fontaine, L., Kuti, T. 2007. Qualitative research investigating food choices and preferences of adolescents in Europe. Abstract and poster on behalf of the Helena study group. [online] 2016-06-07. [cit. 2016-06-07] Available at: www.helenastudy.com

Habánová, M. 2012. Nutričná epidemiológia, 1.ed., Nitra: SPU, 158 p. ISBN 978-80-552-0872-5

Herath, D., Cranfield, J., Henson, S. 2008. Who consumes functional foods and nutraceuticals in Canada? Results of cluster analysis of the 2006 survey of Canadians’ Demand for Nutritive Food Products Supporting Health and Wellness. Appetite, vol. 51, no. 2, p. 256-265. http://dx.doi.org/10.1016/j.appet.2008.02.018 PMid:18417254

Juríková, T., Víczayová, I. 2014. New trend in nutrition and healthy lifestyle of people In: New trend in nutrition and healthy lifestyle of people, 1. ed., Nitra: UKF, 422 p. ISBN 978-80-558-0629-7

Juríkovičová, J. 2005. Vieme zdravo žiť? Bratislava: Univerzita Komenského, 166 p. ISBN 80-223-2132-X.

Kimáková, T., Ondáčiková, E., Žeizbergerová, K. 2011. Porovnanie životného štýlu poslucháčov lekárskej a právnickej fakulty UPJŠ v Košiciach, Škola a zdraví 21, Vychova ke zdravotní gramotnosti, Masarykova univerzita [online] 2016-06-17. [cit. 2016-06-07] Available at:
http://www.ped.muni.cz/z21/knihy/2011/39/texty/cze/26_kim
akova_onacilova_ziesbergova_cze.pdf

Kopčeková, J., Kolesárová, A. 2009. Prískum konzumácie prírodných zdrojov antioxidantov v náhodne vybranej skupine univerzitných študentov. In Antioxidanty 2009: proceeding from the 1.st international scientific conference, 6. May 2009. SPU Nitra, Slovakia. 2009.

Kopelan, J. P., Liverman, T. C., Kraak, V. A. 2005. Committee on Prevention of Obesity in Children and Youth Preventing childhood obesity: health in the balance. National Academies, Washington, D.C. ISBN: 0-309-09196-9.

Rey-López, J. P., Vicente-Rodríguez, G., Répasy, J., Mesana, M. I., Ruiz, J. R., Ortega, F. B., Kafatos, A., Huybrechts, I., Cuencea-Garcia, M., León, F. J., González-Gross, M., Sjöström, M., de Bourdeaudhu, I., Moreno, L. A. 2011. Food and drink intake during television viewing in adolescents: the Healthy Lifestyle in Europe by Nutrition in Adolescence (HELENA) study. Public Health Nutrition, vol. 14, no. 9, p. 1563-1569.

http://dx.doi.org/10.1017/S1368946211000383
PMid:21338558

Moreno, L. A., De Henauw, S., González-Gross, M., Kersting, M., Molnár, D., Gottrand, F., Barrios, L., Sjöström, M., Manios, Y., Gilbert, C. C., Leclercq, C., Widhalm, K., Kafatos, A., Marcos, A., HELENA Study Group. 2008. Design and implementation of the Healthy Lifestyle in Europe by Nutrition in Adolescence (HELENA) study. Public Health Nutrition, vol. 11, no. 3, p. 288-299.

http://dx.doi.org/10.1017/S1368980007000535
PMid:17617932

Moreno, L. A., González-Gross, M., Kersting, M., Molnár, D., de Henauw, S., Beghin, L., Sjöström, M., Hagström, M., Manios, Y., Gilbert, C. C., Ortega, F. B., Dallongeville, J., Arcella, D., Wärnberg, J., Hallberg, M., Fredriksson, H., Maes, L., Wildham, K., Kafatos, A. G., Marcos, a., HELENA Study Group. 2008. Assessing, understanding and modifying nutritional status, eating habits and physical activity in European adolescents: the HELENA (Healthy Lifestyle in Europe by Nutrition in Adolescence) Study. Public Health Nutrition, vol. 11, no. 3, p. 288-299.

http://dx.doi.org/10.1016/j.foodqual.2004.01.001

Acknowledgments:
The financial support from sources of the project IGA 11/2016/591 ZF is highly acknowledged.

Contact address:
Tünde Juriková, Institute for Teacher Training, , Faculty of Central European Studies, Constantine the Philosopher University in Nitra, Dražovska 4, 949 74 Nitra Slovakia, E-mail: jurikova@ukf.sk

Ildikó Viczayová, Institute for Teacher Training Faculty of Central European Studies, Constantine the Philosopher University in Nitra, Dražovska 4, 949 74 Nitra Slovakia, E-mail: icviczayova@ukf.sk

Jiří Mléček, Department of Food Analysis and Chemistry, Faculty of Technology, Tomas Bata University in Zlín, nam. T. G. Masaryka 5555, 760 01 Zlín Czech Republic, E-mail: mlcek@ft.utb.cz.

Jiří Sochor, Department of Viticulture and Enology, Faculty of Horticulture, Mendel University in Brno, Valticka 337, 691 44 Lednice Czech Republic, E-mail: sochor.jirik@seznam.cz.

Štefan Balla, Institute for Teacher Training, Faculty of Central European Studies, Constantine the Philosopher University in Nitra, Dražovska 4, 949 74 Nitra Slovakia, E-mail: sballa@ukf.sk.

Mojmir Baroň, Department of Viticulture and Enology, Faculty of Horticulture, Mendel University in Brno, Valticka 337, 691 44 Lednice Czech Republic, E-mail: MojmirBaron@seznam.cz.

Story, M., Kaphingst, K. M., Robinsos, B., Glanz, K., 2008. Creating healthy food and eating environments: policy and environmental approaches. Annual Review of Public Health, vol. 29, p. 253-272.

http://dx.doi.org/10.1146/annurev.publhealth.29.020907.090926
PMid:18031223

Tlaskal, P., Hrstková, H., Schwartz, J., Fiala, J., Strosserová, A., Packová, A., Lepši, V., Balíková, M., Peterková, M. 2012. Výživové zvyklosti českých školních dětí, I. Část: Výběr potravin a vitamíny, Výživa a potravinová listy, vol. 67, p. 58-60.

Urala, N., Lähteenmäki, L. 2007. Consumers’ changing attitudes towards functional foods. Food Quality and Preference, vol. 18, p. 1-12.

http://dx.doi.org/10.1016/j.foodqual.2005.06.007

Verbeke, W. 2005. Consumer acceptance of functional foods: Socio-demographic, cognitive and attitudinal determinants. Food Quality and Preference, vol. 16, p. 45-57.

http://dx.doi.org/10.1016/j.foodqual.2004.01.001