

Dietary polyphenol intake, risk of hypertension and age status in adult Russian/Siberian population

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Background:

Consumption of polyphenolic compounds from various food sources is associated with a reduction in cardiovascular risk factors. The region of residence, the food habits of the population, and age have a significant impact on consumption.

Methods:

Participants: the Siberian urban population (Novosibirsk, HAPIEE study, 9324 (4,249 men and 5,075 women) aged 45-69. Dietary data collected using a 141-item food frequency questionnaire. Data on the polyphenols were taken from the Phenol-Explorer database (3.6). Total polyphenols (TPH) were considered as a sum of all individual classes: flavonoids, phenolic acids, stilbenes, lignans and other polyphenols and their food sources. The consumption of polyphenolic compounds in the age groups of 45-49, 50-54, 55-59, 60-64 and more than 65 years was analyzed. To assess the relationship between CVD risk factors and the consumption of TPH, the odds ratio was calculated in quartiles of TPH consumption (OR).

Results:

The consumption of TPH in men was 1273 (647) and 1203 (626) mg/day in women ($P < 0,05$). The main class for both men and women were flavonoids, as well as phenolic acids. For men, respectively, 68 and 21% of the total consumption of TPH, for women 70 and 20%. Chances of developing hypertension in quartiles of high and low consumption of TPH showed a risk reduction in whole population by 58%, in quartiles of high and low consumption of total flavonoids - by 56% and phenolic acids - by 21%. The main sources of TPH were tea, coffee, fruits, vegetables and rye bread. With increasing age, both men and women experience a decrease in TPH consumption by 9.5 and 11%, respectively, of flavonoids - by 10.6 and 15%. This is due to a decrease in fruit consumption with increasing age.

Conclusions:

The consumption of polyphenol compounds in the Siberian urban population associated with reduction of hypertension and determined by age.

The study was carried out in the framework of budget theme No. AAAA-A17-117112850280-2.

Key messages:

- Consumption of polyphenolic compounds in the Siberian population is associated with a reduced risk of hypertension.
- In recommendations for the prevention of hypertension in the older age group, it is necessary to consider the increase in the consumption of fruits and berries from local sources.