

Thirty year trends in cardiovascular risk factors prevalence among Siberian adolescents (1989-2019)

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Background:

Aim of the study was to assess trends of cardiovascular risk factors among Siberian adolescents during the last 30 years including period of Russian reforms (1989-2019).

Methods:

Seven cross-sectional surveys of representative samples of school children aged 14-18 since 1989 (every 5 years) were carried out. Body mass index (BMI), systolic and diastolic blood pressure, serum total cholesterol (TC), high-density lipoprotein cholesterol (HDL-C) and low-density lipoprotein cholesterol (LDL-C) were measured. Self-reported smoking and physical activity rates were obtained. To define overweight the sex- and age-specific IOTF cutoffs for BMI were used. Hypertension (HT) and lipid disorders were revealed according to international criteria.

Results:

Prevalence of high TC significantly decreased from 22 to 4% ($p < 0,01$) in males and from 32 to 17% ($p < 0,05$) in females. High LDL-C showed similar trends. Prevalence of low HDL-C was stable with some fluctuations. In the period of Russian reforms (1989-1999) the prevalence of overweight significantly decreased from 12% in boys and from 14% in girls in 1989 to 4% in 1999 ($p < 0,01$). Since 2003 rapid increasing of overweight was observed. Trends of HT have shown double decreasing during the reform period and stabilization in the post-reform time. So, since 2003 discordant trends in HT and overweight were revealed. Physical activity was stably low in boys (49-55%) and girls (83-73%). Average weekly screen time doubled from 15 (2009) to 30 h/w (2019), $p < 0,05$. Cigarette smoking rates in boys dramatically decreased from 45% (1989) to 3% (2019), in girls - from 19% to 5% ($p < 0,01$). Smoking of electronic devices was registered in 2019: 6% among boys and 3% among girls.

Conclusions:

Obtained data indicate on trends to reduction in CVD risk profile among Siberian adolescents during the period of Russian reforms. Discordant trends of HT and overweight were revealed.

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Key messages:

- Long time changes in cardiovascular risk profile among Siberian adolescents were registered.
- Against the background of a decrease in combustible smoking among adolescents, electronic smoking began to register.