

论文

大学生膳食中铅摄入量及食用安全性评价

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摘要:

目的 了解辽宁省锦州市在校大学生膳食中铅污染状况及食用安全性,为合理膳食提供依据。**方法** 采用双份饭法收集489名大学生连续3 d食物,经湿法消化后,用石墨炉原子吸收光谱法测定12类膳食中铅的含量,并估算其每天实际摄入量,与世界卫生组织(WHO)/联合国粮农组织(FAO)食品添加剂联合专家委员会(JECFA)推荐的暂定每周可耐受摄入量(PTWI)相比较,评价大学生膳食中铅摄入量的安全性。**结果** 在12类膳食中铅平均含量较高的是蛋类、蔬菜类、水产类,分别为0.321、0.116和0.097 mg/kg;大学生膳食中铅的主要摄入来源为蔬菜、蛋类和谷类,分别占每日总铅摄入量的39.12%、17.58%和16.29%;铅摄入量的平均值、中位数值和 $P_{97.5}$ 值均低于PTWI值,但 $P_{97.5}$ 极端值超过了PTWI值1.39倍。**结论** 大学生膳食中铅的摄入量相对安全,但存在铅摄入量较高的个体,并且大量摄入含铅量较高的食物仍存在潜在危害,因此有必要降低高铅食物摄入量。

关键词: 铅摄入量 膳食研究 安全性评价

Determination and safety evaluation of dietary lead intake among college students

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Abstract:

Objective To assess the lead pollution and safety in diet among college students in Jinzhou city and to provide scientific basis for diet safety. **Methods** The duplicate food portions of 489 students were collected over 3 consecutive days. The contents of lead in duplicate samples were determined by graphite furnace atomic absorption spectroscopy (GFAAS) after wet digestion. The intake level of lead in diet was calculated and evaluated by comparing to provisional tolerable weekly intake (PTWI) recommended by World Health Organization/Food and Agriculture Organization (WHO/FAO) and the safety of diet lead intakes of the students was assessed. **Results** The contents of lead in egg products, vegetables, and aquatic product were 0.321, 0.116, and 0.097 mg/kg, respectively. The main sources of lead were from vegetables, egg products, and grain, with the percentages of daily lead intake of 39.12%, 17.58%, and 16.29%, respectively. The average intake, median intake and 97.5 percentile were lower than PTWI, but percentile 97.5 extremum was 1.39 times of PTWI. **Conclusion** The intake of lead in diet of the college students was at safe level, but there were individuals with high level of lead intake and the intake of food with high content of lead should be reduced.

Keywords: lead intake diet study safety evaluation

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