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DAILY DIETARY SELENIUM INTAKE OF SELECTED BRAZILIAN POPULATION GROUPS

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Although considered as an essential element, selenium can be toxic for human and animals depending on its intake level. Its beneficial effect occurs in a small range. Below it, selenium can not perform its essential function and above it, it becomes toxic. Selenium is involved in a large number of biological processes in the human body. Its necessity in the formation of selenocysteine and selenomethionine as part of the active center of glutathione peroxidase is well known. The antioxidant effect of this enzyme prevents cells from damage caused by free radicals. The role of selenium in the detoxification from heavy metals such as mercury and lead is also important for the human body. Due to these essential characteristics, daily dietary selenium intake of individuals should be monitored accurately. In the current work, daily selenium intake of different Brazilian population groups (3 pre-school children groups from different Brazilian regions, groups of institutionalized and non-institutionalized elderly and university students) based on typical diet analysis is presented. Diets were collected by the duplicate portion method and selenium content was determined by neutron activation analysis (NAA). In average the daily dietary selenium intake found was 26.3 (± 8.3) μg/day for children from the city of São Paulo, 151 (± 4) μg/day for children from Pará, 394 (± 86) μg/day for children from Amapá, 28.4 (± 7.5) μg/day for institutionalized elderly, 32 (± 6) μg/day for non-institutionalized elderly and 37 (± 17) μg/day for university students. Most daily dietary selenium intakes observed ranged below the new estimated average requirement values (EAR). An exception is the values obtained for children groups from Pará and Amapá. In Pará the levels observed were 4 times and in Amapá 12 times higher than the recommended values. The high selenium content in Brazilian nuts, which were included in the diets of pre-school children groups may explain the strong deviation from the normally observed values and special attention should be paid to it.
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