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Evaluation of calcium content of drinking water supplies and its effect on calcium deficit in Jordan

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ABSTRACT

In this study, calcium intake by Jordanians from diet and different sources of water was evaluated. For this purpose, a questionnaire was prepared and distributed to 300 persons in three major cities namely: Amman, Irbid, and Zarqa. The questionnaire included the type of diet which people eat daily and the type of water they drink. The amount of calcium intake was calculated by knowing the calcium content of the diet, the type of water and calcium bioavailability. The concentration of calcium in sold-RO water, home-RO water, bottled water and rain water was determined using an atomic absorption spectrophotometer. The calcium content in tap water was obtained from the Jordanian water authority determined by ion chromatography. It was found that 63% of the Jordanian people who live in Amman, 43% living in Irbid and 30% living in Zarqa depend on reverse osmosis (RO) water for drinking and cooking due to high salinity of tap water. Results showed that such water contains not more than 6 mg/L calcium which is much less than the world standards of 20 mg/L [1]. Calculations showed that calcium intake by most Jordanians, specially, in Amman and Irbid where RO water is mostly used is less than the recommended amount. If such reduction in calcium intake is not balanced in the diet serious health problems such as osteoporosis may result especially in elderly people and women.

Keywords: Reverse osmosis; Calcium; Osteoporosis; Bioavailability

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