Abstract

Introduction: A sufficient intake of calcium enables correct bone mineralization. The bioavailability of calcium in water is similar to that in milk. Objective: To determine the concentration of calcium in public drinking water and bottled mineral water. Methods: We used ion chromatography to analyse the calcium concentrations of public drinking waters in a representative sample of 108 Spanish municipalities (21,290,707 people) and of 109 natural mineral waters sold in Spain, 97 of which were produced in Spain and 12 of which were imported. Results: The average calcium concentration of public drinking waters was 38.96 ± 32.44 mg/L (range: 0.40- 159.68 mg/L). In 27 municipalities, the water contained 50-100 mg/L of calcium and in six municipalities it contained over 100 mg/L. The average calcium concentration of the 97 Spanish natural mineral water brands was 39.6 mg/L (range: 0.6-610.1 mg/L). Of these, 34 contained 50-100 mg/L of calcium and six contained over 100 mg/L. Of the 12 imported brands, 10 contained over 50 mg/L. Assuming water consumption is as recommended, water containing 50-100 mg/L of calcium provides 5.4-12.8% of the recommended intake of calcium for children aged one to thirteen, up to 13.6% for adolescents, 5.8-17.6% for adults, and up to 20.8% for lactating mothers. Water with 100-150 mg/L of calcium provides 10-31% of the recommended dietary allowance, depending on the age of the individual. Discussion: Public drinking water and natural mineral water consumption in a third of Spanish cities can be considered an important complementary source of calcium.

Keywords