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Total Diet Study: Mg and Mn content estimation of a Market Basket of São Paulo state (Brazil) by Instrumental Neutron Activation.

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Total Diet Studies (TDS) have been carried out to estimate dietary intakes of the essential and toxic elements for a large-scale population over a specific period of time. In general, a Market Basket (MB) approach is adopted. In this study, the TDS was based on the evaluation of food representing a MB, which reflected the dietary habits of the São Paulo State population, corresponding to 72% of the average food consumption for the state of São Paulo. In the present TDS, magnesium and manganese concentrations were determined in 30 of the most consumed food groups of a Market Basket of São Paulo State - Brazil. Element concentrations were determined by instrumental neutron activation analysis in freeze-dried samples and the values in the table-ready food groups ranged: Mg 37.9 (beverages) to

450.4 mg/kg (breads) and Mn 0.10 (prime grade beef) to 14.6 mg/kg (flours). The average daily Mg and Mn intakes were calculated by multiplying the concentration of each element in each table-ready food group by the respective weight (g/day) of the food group in the MB and adding the products from all food groups. The results of daily dietary intakes in this study were 90.85 mg Mg day-1 and 1.34 mg Mn day-1. Theses values were lower than the adequate intake (AI) proposed by the Food and Nutrition Board, Institute of Medicine (USA, National Academies) for adults. The low levels of Mg and Mn intakes presented in this TDS are probably due to the fact that MB of this study represented only 72% of the weight of the most consumed household foods of São Paulo State.

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