

## **DETERMINATION OF TRACE ELEMENTS IN SCALP HAIR OF AN ELDERLY POPULATION BY NEUTRON ACTIVATION ANALYSIS**

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most convenient tissue for trace element determinations there is also considerable controversy of using hair to evaluate nutritional status and clinical symptoms. In the present study instrumental neutron activation analysis was applied for element determinations in scalp hair samples from a healthy elderly population of São Paulo city, to further establish element concentration reference or normal ranges values for this group. The hair samples were collected from 43 individuals aged 50-80 years and living in the São Paulo Metropolitan region. The hair samples were washed four times with each of the following solutions: Triton X100, acetone and purified water. Concentrations of the elements As, Br, Ca, Cl, Cr, Cu, Fe, K, La, Mn, Na, Sb, Se and Zn were determined using short and long irradiations at the IEA-R1 research nuclear reactor. The induced gamma activities of the samples and standards were measured using a gamma-ray spectrometer. The result indicated a difficulty to define reference ranges due to wide concentration variations between the individuals due to natural hair composition probably as a result factors such as age, hair color, dietary habits, sex and, geographical origins. Comparisons made between the results indicated that most of the elements determined are within the previous data obtained from a control group aged 21-45 years. The method was tested by the analysis of reference materials and the results showed agreement with the reference values. Acknowledgments: To FAPESP and CNPq for the financial support.