

INAA OF ENAMEL AND DENTINE SAMPLES OF A GROUP OF CHILDREN AND ADULTS: A COMPARATIVE STUDY

Marco A. B. Soares, Eduardo M. Adachi, M. Saiki - Instituto de Pesquisas Energéticas e Nucleares- IPEN-CNEN/SP. Determinations of trace element in dental tissues have been carried out for several purposes such as in the investigations of dental caries, for monitoring exposure to toxic elements, anthropological studies and to detect nutritional deficiencies. Most analyses of teeth are made using entire tooth. In present study, however, tooth tissues were separately and enamel and dentine were analyzed individually. Tooth samples of a group of 10 children and 10 adults were acquired from Dentistry School. The enamel and dentine samples were separately from each other and then washed using acetone and purified water. These samples were dried at 40 0C during about 24 h and ground in an agate mortar for analyses. Instrumental neutron activation analysis (INAA) followed by gamma ray spectrometry was applied in these analyses and the elements Ca, Cl, Mg, Mn, Na, Sr and Zn were determined. Dentine and enamel result comparisons between both the adult and child group are being done. Element concentrations obtained for enamel and dentine tissues indicated significant difference for the elements Cl, Mn and Sr. Element present in deciduous teeth were the same magnitude of those obtained in permanent teeth. The certified reference materials NIST 1400 Bone Ash and NIST 1486 Bone Meal were also analyzed to control the quality results. Acknowledgments: To FAPESP and CNPq for financial support

11439 ✓