

## **PIXE analysis of mothers' and infants' hairs collected at medical checkups held in Fukuoka city**

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### **Abstract**

This is the third report of our project to examine relationships between atopic dermatitis and hair minerals of infants and mothers. The hair minerals are measured using the proton-induced x-ray emission (PIXE) method. The second report published last year described the characteristics the hair minerals of mothers and children and some differences of them between one month and ten months after birth. This study examined the accuracy of the PIXE measurements by statistically analyzing two independent measurements obtained from different hairs of the same person.

The project is expected to proceed as follows:

- 1) The results of the PIXE measurements will be reported to the participation doctors.
- 2) Association analysis of the amount of minerals, dining habit, and clinical performance.
- 3) Statistical analysis for causal relationships between mineral deficiency/excess and atopy/allergy conditions.
- 4) Redefine the participating mother/child population as a new cohort to study the effects of environment, dining and minerals on their health conditions.
- 5) Cooperation with the "Birth cohort project" by the Ministry of Environment.
- 6) Cooperation of the birth cohort study by Norway