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### **Level of caries activity and an estimate in the increase of permanent teeth caries: a three-year follow up study in preschool senior children**

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**Abstract** The aim of this study was to examine relationships between the level of caries activity in preschool senior children and the increase of dental caries 3 years after the permanent teeth erupted. A total of 1133 preschool senior children aged 5-6 years were examined yearly during 3-year duration. A Caries Activity Test (Cariostat Test) was used at the first examination of this study. The results were as follows;

1. The caries prevalence rate of the subjects was 84.1% and the mean dft was 5.89 at the first examination.
2. There was a significant relationship between the CAT score and dft at the first examination ( $P < 0.001$ ).
3. The subjects were divided into 3 risk groups by CAT score: low-risk group (20.4%), middle-risk group (43.3%) and high-risk group (36.3%).
4. Increments of DFT from 1 year to 3 years after the permanent tooth erupted for the high-risk group were more than twice for those of the low-risk group ( $P < 0.001$ ). The prevalence of the permanent tooth decay for the high-risk group was also higher than that of the low-risk group ( $P < 0.001$ ).

The results showed that the usage of the CAT Test for preschool senior children was useful to predict increase in permanent teeth caries over 3-year duration.

**Key words** Caries Activity Test, Caries prediction, Caries prevalence, Cariostat Test, Permanent tooth

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