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Associations between caries activity, salivary buffer tests and caries increment in Mongolian children

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Abstract The aim of the study was to evaluate caries increment in combination with a caries activity test (CAT21 Test) and a salivary buffer test (CAT21 Buf Test)—to predict future caries activity in Mongolian preschool children living in Ulaanbaatar City. The effectiveness of combining both tests and deft (decayed, extracted, filled teeth) means was also investigated. The caries prevalence in subjects was 94%, and deft mean value was 6.8. The caries increment after one year was 2.3 teeth. From the distribution of CAT21 Test scores a low risk was found in 38.6% and high risk in 61.4% of the examined children. From the CAT21 Buf Test scores, the high risk (lower buffer capacity) was found in 79.8% of the examined children. When the combination CAT21 Test and CAT21 Buf Test scores were divided into four groups (low-low/low-high/high-low/high-high), the mean deft-teeth showed a significant difference among the four groups (ANOVA $P < 0.001$). One year after the caries increment was evaluated in combination with the CAT21 Test scores and CAT21 Buf Test scores, the low-low risk group showed the lowest mean deft-teeth. On the other hand, the high-high risk group showed the highest mean deft-tooth (ANOVA $P < 0.05$). Based on these results, the CAT21 Test and CAT21 Buf Test are useful for clinical application of preschool children in predicting future caries activity. Furthermore, when the CAT21 Test and the CAT21 Buf Test were combined, a higher correlation was shown with the caries status.

Key words Caries activity test (CAT21 Test), Cariostat method, Dental caries, Salivary buffer test (CAT21 Buf Test)

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