

## Effect to Apatite-containing Dentifrices on Dental Caries in School Children

T. KANI, M. KANI, A. ISOZAKI, H. SHINTANI, T. OHASHI and T. TOKUMOTO  
Department of Preventive Dentistry, Asahi University of School of Dentistry, Japan

Tooth brushing is widely practiced in Japan. There are many primary schools where tooth brushing after school lunch is promoted in the school dental health program for prevention dental caries. Fluoride, dextranase, chlorhexidine, urease, and other agents are added to tooth pastes as supplementary components, and these agents play a role in the prevention of dental caries and periodontal disease.

Hydroxyapatite is an inorganic constituent of mineralized biological tissues. Apatite is now used as a component of artificial bone in the medical field. This material is especially useful in dentistry, where it has been used in artificial tooth roots to support an implant denture, as a dental alveolar bone substitute, and in dental cement. Further development and clinical trials of these materials are currently being conducted as a substitute for tooth and bone.

The inorganic substance of teeth is hydroxyapatite. Initial caries progresses by decalcification of enamel. If this decalcified initial caries lesion could be repaired with apatite, then it would help to restore the tooth with the same inorganic component as the original tooth. It is possible for hydroxyapatite to remineralize a microdefect created in an apatite pellet or an artificial caries lesion. Since hydroxyapatite absorbs gulcan produced by *Streptococcus mutans* and salivary protein, a combination of apatite and salivary protein will inhibit plaque formation, and can be expected to enhance the effect of tooth brushing.

From these facts, apatite containing dentifrices can be expected to have a cariostatic effect. This study was designed for the purpose of evaluating the effect of clinical trial of an apatite containing dentifrice in caries prevention. A tooth brushing program was instituted and carried out for three years in primary schools. The study investigated the caries prevalence in school children who used dentifrice containing synthetic hydroxyapatite.