**Electron microscopic investigation on the morphological changes of the acquired enamel pellicle, treated with astringent solutions**

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**Objectives:** The aim of the present study was to investigate the effect of different astringent solutions on the acquired enamel pellicle in vitro and in situ.
**Methods:** Bovine enamel slabs, fixed to individual upper jaw splints, served for pellicle formation in situ. The samples were immersed in one of eight astringent solutions (in vitro) and rinsed before they were prepared for scanning electron microscopy (SEM) and transmission electron microscopy (TEM).
Four of the eight astringent solutions were further tested in situ. After pellicle formation, two enamel slabs were removed to serve as a control pellicle. Two more samples were removed directly after rinsing with one of the solutions whereas the last two samples were left intraorally for another 30 minutes. The ultrastructure of the pellicles was investigated by SEM and TEM.
**Results:** The effects observed on the pellicle's morphology were very different, depending on which astringent solutions were used: Some samples showed electron-denser pellicles in comparison to the control pellicle. For other specimens a demineralization of the tooth, infiltrated with pellicle components, was detected. An increased thickness was observed for other specimens.
**Conclusion:** Astringent solutions have a great impact on the pellicle's morphology. Comparable effects are observed in situ and in vitro.