

THE PROBLEM OF HUMAN TEETH CARIES

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Currently, its generally accepted that lesions of hard tissue of teeth results from a virulent effect of pathogenic microorganisms on enamel. Only a few authors held the view that the cause of caries lies in the internal environment of an organism. This dilemma still remains unsolved. Some theoretical assumptions and preliminary results of their research forced us to question the absolute truth of infectious theory of caries. In order to obtain comprehensive data on the structure of the teeth we have developed a versatile technique that enables us to examine thin sections of epoxy plate of the same teeth using light and scanning and transmission electron microscopy. Subjects of the study were the intact teeth of man and struck by surface and average caries and also teeth impacted for various reasons. In studying the last was found that despite the complete lack of contact with the contents of the oral cavity, precluding the possibility of direct exposure to microorganisms, one third of them had clear signs of carious lesions of enamel. At the same time, according to all pathomorphological signs the nature of the alteration of hard tissue was identical to that of erupted teeth, which in itself can not be explained in terms of infectious theory of dental caries. In the course of long-term studies whose results are published in the peer-reviewed journals, we collected a large number of facts, which allowed us to validate the hypothesis that dental caries should be regarded as systemic disease that develops due to local immune reaction to enamel autoantigens. The latter may be a protein-polysaccharide complex of its organic matrix, which normally occupies privileged position due to the presence of the barrier layer between the dentin and enamel. However, under certain circumstances associated with compromised immune tolerance, they become a target for lymphocytes, which penetrate from pulp to the basal layer of enamel on the dentine tubules.