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**FEATURES OF APPLICATION OF MODERN ADHESIVE SYSTEMS
AS A DENTAL LINER**

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Mechanisms of retention of filling materials to hard tooth tissues remain one of the most important problems in modern dental practice. However, with the advent of composite materials and the first adhesive systems, doctors decided that they had found the right way to solve the problem. However, even with the advent of modern IV, V, VI and VII systems, it is still crucial to adhere to the correct protocol for the use and selection of the adhesive.

Adhesive systems are a set of complex substances - the etching component (if present), a primer and a bond that provide a micromechanical connection to the hard tissues of the tooth of various dental materials. At the present stage of the development of dentistry, high-tech materials are used, through which the aesthetic, anatomical and functional parameters of the tooth can be restored.

In addition to the strength of bonding the filling material to the tissues of the tooth, it is also important to eliminate the toxic effect of the filling material on the pulp. For a long time, bioinert fillers (glass ionomer and polycarboxylate cements) have been used to isolate the pulp from filling materials with a potential negative impact on the pulp. But they also separated the composite material from the adhesive layer, and as a consequence, the adhesive strength decreased. This was one of the causes of many complications.

Dentin with pulp form a single functional system - the dentin-pulp complex. It was proved that the best protection of the pulp from the stimuli is its own dentin, and the greater the thickness of the dentin, the better: at a thickness of "dentinal bridge" in 0.5 mm pathological effect on the pulp is reduced by 75%, and at a thickness of 1 mm - 90%. Accordingly, the best dental liner are sclerosed and replacement dentin (the most mineral types of dentin).

If there is still a deep carious process and the thickness of the dentin is very small, then the first task is to create a seal for the pulp. Dentine tubules are the direct pathway of microorganisms and toxic components of the filling material to the pulp. Using the adhesive protocol reduces the contamination by microorganisms (by etching), and reliably seals the dentinal tubules (by polymerization), and of course creates a large adhesion force of the filling material to the tooth tissues (about 20 MPa), which is the largest among all filling materials.

Therefore, through the application of modern adhesive systems, dentists have found the right path to maximum adhesion strength, but are not sure whether they are sufficient to reliably isolate the pulp from adverse effects and prevent complications. But recent studies have shown that modern adhesive systems are not only high-quality "dental liner", but also have reparative properties, and in some cases can be used to directly cover the pulp. And most complications after filling with composite materials, without the use of dental liner, arise only because of ignorance or failure to observe the protocol of using a particular generation of the adhesive system.