



Evolution of Adhesives & Curing Mechanisms

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Dental adhesives have evolved through many generations — currently up to 8 generations. Early successful adhesives, total-etch & self-etch, were two component, 2-layers and light-cured. They were followed by 1-step & 1-layer hydrophilic adhesives, which only lasted a very short period.

The latest adhesive generation, called "Universals", were developed in 2010. Up to this point, all adhesives required light curing after application before the application of the resin composite or cement. However, some manufactures have recently introduced universal adhesive systems which do not require light activation. They are composed of two components and are self-curable upon mixing. It is different approach, and some clinicians don't understand the working mechanism.

This presentation will go over how dental resin, including adhesive, are polymerized. We will discuss the curing mechanism of two-component, self-cure adhesive resins such as universal Bond (US) or Bondmer Lightless (Japan).

<Curriculum Vitae>

Dr. Byoung Suh received his bachelor's degree in Chemistry at Sung-Kyun Kwan University in Seoul, South Korea, his master's degree in Chemistry from California State University in San Francisco and his PhD degree in Dental Medicine from Tsurumi University in Yokohama, Japan.

Dr. Suh founded BISCO, Inc. in 1981. As a result of his personal research efforts, he introduced the first multi-surface bonding agent in 1990, All-Bond[®]2, which revolutionized the dental bonding concept for the entire industry. This system has been used by over 100,000 dentists in 70 countries and has produced over 200 research publications. It has since become the industry standard against which all new bonding materials are compared.

In addition to his dental materials research, Dr. Suh has become a well-known and sought-after lecturer and teacher throughout the world. Besides lecturing extensively in the US and Canada, he has traveled to over 40 countries and has given more than 250 lectures and presentations at various dental associations, universities, and dental research conventions. Dr. Suh has also authored or co-authored over 150 articles and abstracts and has completed a great amount of research on bonding. He published his first book, Principles of Adhesion Dentistry, in February 2013.