

Frequently Asked Questions about Biomimetic Dentistry by Matt Nejad, DDS

Dr. Matt Nejad have condensed over 1,400 research articles into a teaching program to train dentists around the world in Biomimetic dentistry. He has trained over 300 dentists world-wide over the past decade, helping dentists achieve excellence in Biomimetic Dentistry. Below are Dr. Nejad's answers to Frequently Asked Questions about Biomimetic Dentistry.

Q: What is biomimetic dentistry?

A: Translated literally, Bio-mimetic dentistry means "imitate life (Bio="life, mimetic="imitate"). The natural tooth is the perfect structure as a result of its biology, function, esthetics, and biomechanics. Biomimetic dentistry is a treatment approach which follows the simple philosophy that restorative treatments must "mimic" these properties of natural teeth and strive to preserve pulp vitality with conservative treatment options which restore structural integrity.

Q: What is wrong with traditional dentistry?

A: Traditional dental techniques rely on mechanical retention. As a result, more tooth preparation is required and the resulting structure does not function like a natural tooth. Stress concentration patterns, mechanical properties, and function of the mechanically restored tooth is nothing like the intact tooth. As a result, margins are not adequately sealed, cracks develop from harmful stress patterns, and the teeth experience significantly higher chance of pain, sensitivity, bacterial invasion, and loss of pulp vitality.

Q: Is biomimetic dentistry the same as adhesive dentistry?

A: Not exactly, however adhesive dentistry is fundamental to biomimetic dentistry. Biomimetic dentistry requires, materials which have properties similar to enamel, dentin, and DEJ in conjunction with the absolute maximum adhesion and bond strength. In the natural tooth, enamel and dentin have an extremely high bond strength and this needs to be re-created for a restored tooth to function like a natural tooth. Simplified adhesive techniques and inferior materials fail to adequately restore the tooth to the standard necessary to be considered biomimetic. Only the best and strongest adhesion is able to make a tooth behave biomimetically.

Q: What are the advantages of biomimetic dentistry?

A: There are countless advantages obtained through biomimetic dentistry including:

- increases the bond strength by 400%
- preserve tooth structure with minimally invasive treatment approaches

- minimize excessive preparation of teeth for crowns
- minimize root canal treatments by 90-95%
- prevent catastrophic failures
- · eliminate post-op pain and sensitivity
- · restore badly damaged teeth, otherwise considered un-restorable

Q: Who invented biomimetic dentistry?

A: The principles of biomimetic dentistry were developed by researchers at prestigious universities in Japan, Sweden, Switzerland, The Netherlands, Italy, Turkey, The United States, and many other countries. Groundbreaking work by many top researchers in adhesive dentistry and restorative dentistry has contributed to the concepts and techniques which make up biomimetic dentistry. Officially, the first mention of "biomimetics" in the field dentistry is credited to Pascal Magne who really innovated the biomimetic dentistry concept and the biomimetic approach to restorative dentistry. Pascal authored the first textbook explaining the concepts of Biomimetic Dentistry ("Bonded Porcelain Restorations in the Anterior Dentition. A Biomimetic Approach.") and he is regarded the as the father of biomimetic dentistry. Matt Nejad was trained by Pascal Magne and continues to work closely with Pascal Magne advancing concepts and techniques in biomimetic dentistry.

Q: Do Biomimetic procedures take longer?

A: Typically yes, but not always. Treatment time varies from one operator to another, however the best treatment typically takes more time. Biomimetic restorations require good isolation, as well as careful caries removal concepts, and special adhesive application techniques which all can increase the treatment time. However, biomimetic restorations typically last far longer than traditional restorations and experience less complications and symptoms.