

# Impact of Dental Cements on Soft Tissue in Dental Implants: A Comprehensive Overview

Martin Marc\*

Department of Dentistry, University of Toronto, Toronto, Canada

## ABOUT THE STUDY

Dental implants have revolutionized the field of dentistry by providing a long-lasting solution for tooth replacement. The success of dental implants depends not only on osseointegration but also on the health and stability of the soft tissues surrounding the implant. Soft tissue management plays a crucial role in ensuring the esthetics, function, and longevity of dental implant restorations. Dental cements are commonly used to secure prosthetic components to implants and have a direct impact on the soft tissues surrounding the implant. This article explores the effects of dental cements on soft tissue associated with dental implants and discusses the key considerations in selecting an appropriate cement for implant restorations.

### Importance of soft tissue management

Soft tissue management is essential in implant dentistry as it influences the esthetic outcome, peri-implant health, and long-term stability of the implant-supported restoration. The soft tissue acts as a seal around the implant and protects the underlying bone from infection and inflammation. Proper soft tissue management ensures an optimal emergence profile, healthy peri-implant mucosa, and natural-looking gingival contours.

### Role of dental cements

Dental cements play a critical role in implant restorations by anchoring the prosthetic components to the implant. They provide a seal between the abutment and the implant, preventing microleakage and bacterial colonization. The choice of cement can have a significant impact on the soft tissues surrounding the implant. Factors such as biocompatibility, tissue response, and mechanical properties of the cement should be carefully considered.

### Biocompatibility

Biocompatibility is a crucial factor when selecting a dental cement for implant restorations. The cement should not induce

any adverse tissue reactions or inflammation. Ideally, the cement should be inert and non-toxic to the surrounding soft tissues. Some cements contain substances that may cause cytotoxicity or allergic reactions, leading to soft tissue irritation or even implant failure. Therefore, it is essential to choose a cement that has been extensively tested and demonstrated good biocompatibility.

### Tissue response

The interaction between the dental cement and the soft tissues can influence the tissue response and long-term stability of the implant restoration. Excessive cement excess can lead to soft tissue inflammation and peri-implant mucositis. Inadequate removal of excess cement can cause chronic irritation and contribute to the development of peri-implantitis. Therefore, it is crucial to use a cement that can be easily removed from the soft tissues after cementation, minimizing the risk of tissue complications.

### Mechanical properties

The mechanical properties of dental cements can affect the soft tissues surrounding the implant. The cement should have adequate strength and rigidity to withstand occlusal forces without fracturing or debonding. A weak cement may result in micro-movements of the implant restoration, leading to tissue irritation and bone loss. On the other hand, an excessively rigid cement may transmit excessive forces to the surrounding tissues, causing tissue trauma or implant failure. The cement should strike a balance between strength and flexibility to ensure long-term success.

### Types of dental cements

Several types of dental cements are commonly used in implant dentistry, including Zinc Oxide-Eugenol (ZOE) cements, Glass Ionomer Cements (GIC), resin-modified glass ionomer cements (RMGIC), and resin cements. Each type of cement has its advantages and disadvantages concerning soft tissue management.

**Correspondence to:** Martin Marc, Department of Dentistry, University of Toronto, Toronto, Canada, E-mail: m.marc@gmail.com

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ZOE cements have been used traditionally due to their ease of use and sedative properties. However, they have a high solubility rate and can induce soft tissue irritation. GICs and RMGICs have

better biocompatibility and bond to tooth structure and metals. They release fluoride, which can help prevent caries.