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***Corresponding Author:***
Naji Ziad Arandi, Department of Conservative Dentistry and Endodontics, Arab American University, Jenin, West bank 009724, State of Palestine.
E-mail: Naji.arandi@aaup.edu

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# Glass Hybrid Glass Ionomer Restorative Materials: A Literature Review

*Naji Ziad Arandi*

*Department of Conservative Dentistry and Endodontics, Arab American University, State of Palestine*

## Abstract

The emergence of glass hybrid glass ionomers (GH-GICs) represents a significant innovation in restorative dentistry, addressing the limitations of traditional materials through enhanced mechanical strength, fluoride release, and ease of application. Given the absence of prior comprehensive literature reviews on this topic, this systematic review was conducted to provide general practitioners with essential insights. A comprehensive literature search was performed in the PubMed, Scopus, and Web of Science databases from 2010-2023, using terms related to GH-GICs, their properties, and their clinical performance. The studies included were published in English and included *in vitro* and *in vivo* research as well as randomized controlled trials. Compared with conventional glass ionomers, GH-GICs exhibit improved mechanical properties, fluoride release, and remineralization potential, showing clinical performance comparable to that of resin composites in small to moderate class I and class II posterior restorations. However, limitations such as marginal adaptation, surface wear, and reduced aesthetics persist, particularly in larger restorations. While resin coatings improve initial wear resistance, their limited longevity and reduced fluoride release present additional concerns. GH-GICs remain promising for specific clinical scenarios, especially in high-caries-risk, pediatric, and geriatric patients, but further long-term studies are needed to confirm their efficacy fully and extend their applications.

**Keywords:** bulk-fill, glass hybrid, glass ionomers, high viscosity, restorative dentistry