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The biocompatibility of resin-modified glass-ionomer cements for dentistry.

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Abstract

OBJECTIVES: The biological effects of resin-modified glass-ionomer cements as used in clinical dentistry are described, and the literature reviewed on this topic.

METHODS: Information on resin-modified glass-ionomers and on 2-hydroxyethyl methacrylate (HEMA), the most damaging substance released by these materials, has been collected from over 50 published papers. These were mainly identified through Scopus.

RESULTS: HEMA is known to be released from these materials and has a variety of damaging biological properties, ranging from pulpal inflammation to allergic contact dermatitis. These are therefore potential hazards from resin-modified glass-ionomers. However, clinical results with these materials that have been reported to date are generally positive.

CONCLUSIONS/SIGNIFICANCE: Resin-modified glass-ionomers cannot be considered biocompatible to nearly the same extent as conventional glass-ionomers. Care needs to be taken with regard to their use in dentistry and, in particular, dental personnel may be at risk from adverse effects such as contact dermatitis and other immunological responses.

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