Longevity of restorations in posterior teeth and reasons for failure.

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Authors: Hickel R, Manhart J

Abstract

PURPOSE: This article compiles a survey on the longevity of restorations in stress-bearing posterior cavities and assesses possible reasons for failure.

MATERIALS AND METHODS: The dental literature predominantly of the last decade was reviewed for longitudinal, controlled clinical studies and retrospective cross-sectional studies of posterior restorations. Only studies investigating the clinical performance of restorations in permanent teeth were included. Longevity and annual failure rates of amalgam, direct composite restorations, glass ionomers and derivative products, composite and ceramic inlays, and cast gold restorations were determined for Class I and II cavities.

RESULTS: Annual failure rates in posterior stress-bearing restorations are: 0% to 7% for amalgam restorations, 0% to 9% for direct composites, 1.4% to 14.4% for glass ionomers and derivatives, 0% to 11.8% for composite inlays, 0% to 7.5% for ceramic restorations, 0% to 4.4% for CAD/CAM ceramic restorations, and 0% to 5.9% for cast gold inlays and onlays.

CONCLUSION: Longevity of dental restorations is dependent upon many different factors that are related to materials, the patient, and the dentist. The principal reasons for failure were secondary caries, fracture, marginal deficiencies, wear, and postoperative sensitivity. A distinction must be made between factors causing early failures and those that are responsible for restoration loss after several years of service.

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