

# REPAIR OR REPLACEMENT OF RESTORATIONS

## ABSTRACT

**Background.** A prospective cohort study that included dentists in The National Dental Practice-Based Research Network was conducted to quantify 12-month failures of restorations that were repaired or replaced at baseline. The study tested the hypothesis that no significant differences exist in failure percentages between repaired and replaced restorations after 12 months. It also tested the hypothesis that certain dentist, patient, and restoration characteristics are significantly associated with the incidence of restoration failure.

**Methods.** Dentists recorded data for 50 or more consecutive defective restorations. The restorations that were either repaired or replaced were recalled after 12 months and characterized for developing defects.

**Results.** Dentists (N = 195) recorded data on 5,889 restorations; 378 restorations required additional treatment (74 repaired, 171 replaced, 84 teeth received endodontic treatment, and 49 were extracted). Multivariable logistic regression analysis indicated that additional treatment was more likely to occur if the original restoration had been repaired (7%) compared with replaced (5%) (odds ratio [OR], 1.6;  $P < .001$ ; 95% confidence interval [CI], 1.2-2.1), if a molar was restored (7%) compared with premolars or anterior teeth (5% and 6%, respectively) (OR, 1.4;  $P = .010$ ; 95% CI, 1.1-1.7), and if the primary reason was a fracture (8%) compared with other reasons (6%) (OR, 1.3;  $P = .033$ ; 95% CI, 1.1-1.6).

**Conclusions.** An additional treatment was more likely to occur within the first year if the original restoration had been repaired (7%) compared with being replaced (5%). However, repaired restorations were less likely to need an aggressive treatment (replacement, endodontic treatment, or extraction) than replaced restorations.

**Practical Implications.** One year after repair or replacement of a defective restoration, the failure rate was low. However, repaired restorations were less likely to need an aggressive treatment than replaced restorations.

## KEY WORDS

Longevity; practice-based research; repair; replacement; decision; defective; restorations; cohort.