Objectives: This matched cohort study used data from a large dental HMO in the Pacific Northwest to evaluate the degree to which pulpal involvement and subsequent endodontic therapy affects tooth survival. Root canal filled (RCF) teeth were used as an indicator of pulpal involvement. Our hypothesis was that RCF teeth would be extracted sooner than non-RCF teeth matched within subjects, controlling for tooth-level variables of interest. Methods: The HMO's treatment databases and a subsequent chart audit were used to identify 202 eligible subjects, each of whom had one tooth endodontically treated in 1987-88 and a similar contralateral tooth that was non-RCF at that time. Both teeth were followed from the endodontic access date through the extraction date, the endodontic access date (for initially non-RCF teeth), or 12/31/94, whichever was earliest. Time-to-event analyses were carried out, with Kaplan-Meier curves generated and multivariable marginal proportional hazards regression models fitted to describe the effect of RCF status on tooth survival. All statistical analyses accounted for the complex sampling strategy used in generating the dataset. Results: Teeth were followed for up to eight (median=6.7) years. RCF teeth had substantially worse survival than their non-RCF counterparts (p<0.001), with a greater effect of RCF status evident among molars than non-molars. Adjusted hazard ratios (95% confidence intervals) for loss of RCF versus non-RCF molars and non-molars were 7.4 (3.2-15.1) and 1.8 (0.7-4.6), respectively. Conclusion: Though endodontic therapy can prolong tooth survival, pulpal involvement still may hasten tooth loss, underscoring the importance of caries prevention and prompt restorative care. Supported by NIH/NIDCR Grant DE-07191; NIH/NHLBI Grant HL-57444; Permanente Dental Associates; and the University of North Carolina.