

# Survival Rate Of Composite Veneer - A Review

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## Abstract

Composite veneers are a minimally invasive and increasingly popular choice for aesthetic dental restorations. Their clinical durability and success are determined by multiple factors, including material composition, patient habits, and the technical expertise of the dental practitioner. This review evaluates the existing research on the lifespan of composite veneers, with a focus on the key elements that affect their durability, clinical performance, and patient satisfaction. These elements include adhesive bonding methods, patient oral hygiene practices, and mechanical stressors that influence the long-term success of composite veneers.

**Keywords:** Composite Veneers, Longevity, Aesthetic Restorations, Adhesive Bonding, Clinical Outcomes, Dental Composites

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## I. Introduction

Composite veneers have become a mainstay in cosmetic dentistry due to their ability to enhance tooth appearance with minimal preparation and lower cost compared to porcelain veneers. However, questions about their longevity under real-life conditions remain. Clinical trials and retrospective studies present survival rates ranging from 5 to 10 years, though these findings can vary widely based on material quality, technique, and patient care. This review consolidates findings from various clinical studies to provide an in-depth analysis of the factors that influence the lifespan of composite veneers.

## II. Materials And Methods

The studies selected for this review were published in peer-reviewed journals over the past 20 years. Searches were conducted on databases such as PubMed, Scopus, and Google Scholar using keywords like "composite veneer longevity," "failure rate," and "dental composite veneers." Only studies specifically focused on composite veneers were included, excluding those on porcelain veneers or other restorative materials. Relevant studies were analyzed based on parameters such as material failure, occlusal forces, bonding systems, and patient-related factors.

## III. Factors Influencing Longevity

### 1. Material Characteristics

Over the years, the development of composite materials has advanced significantly, improving their aesthetic and mechanical properties. The resin matrix, filler particle composition, and curing process all play critical roles in determining the veneer's durability. Research indicates that nano-hybrid and micro-hybrid composites tend to exhibit better wear resistance and structural integrity compared to earlier generations of composites.

### 2. Bonding and Adhesion Techniques

The strength and durability of the bond between the composite veneer and the tooth surface are vital for its longevity. The choice between self-etch and total-etch bonding systems influences this bond strength, with total-etch systems generally showing higher survival rates due to their superior bonding capabilities. Achieving a dry, isolated field during application is essential for the success of the bonding process.

### 3. Patient-Specific Factors

Patient habits such as smoking, bruxism (teeth grinding), and dietary choices can significantly affect the survival of composite veneers. Patients with bruxism are more prone to veneer fractures or debonding due to excessive occlusal stress. Studies show that those who maintain good oral hygiene and avoid damaging habits tend to have a higher veneer survival rate compared to those with risk factors like poor hygiene or parafunctional habits.

#### 4. Clinical Expertise

The skill of the dental professional performing the procedure is one of the most crucial factors. Even with high-quality materials, poor clinical technique can drastically reduce the veneer's lifespan. Proper tooth preparation, precise composite layering, and adequate light-curing all contribute to the veneer's success. Evidence from studies suggests a correlation between clinician experience and the long-term success of composite veneers.

#### 5. Modes of Failure

The two primary failure modes for composite veneers are fractures and debonding. Fractures typically result from mechanical stress, such as chewing or trauma, while debonding is frequently associated with poor adhesion during placement. Other less common failure modes include wear, marginal discoloration, and loss of surface polish, all of which compromise both the functional and aesthetic aspects of the veneer over time.

#### Clinical Survival Rates

Reported survival rates for composite veneers differ across studies, with the majority citing an average of 5 to 7 years of longevity. A study by Gresnigt et al. (2016) showed an 80% survival rate after five years, while da Costa et al. (2012) found a 90% success rate at the three-year mark. These variations highlight the significant impact of factors such as material choice, patient compliance, and regular follow-up on clinical outcomes.

### **IV. Discussion**

A combination of advancements in material technology and patient-specific factors influences the lifespan of composite veneers. Although modern composites have improved durability, patient behaviors—such as diet, oral hygiene, and parafunctional habits like bruxism—remain significant determinants of veneer failure. Furthermore, the technical proficiency of the dental practitioner is essential in ensuring long-term success. Continued research, particularly through long-term randomized control trials, is necessary to develop clearer clinical guidelines to enhance composite veneers' longevity further.

### **V. Conclusion**

Composite veneers are a viable and cost-effective solution for aesthetic dental restorations. However, their survival rate is affected by multiple variables. While current data suggest that composite veneers typically last between 5 and 7 years, ongoing advancements in material science and bonding systems may extend their durability. In the meantime, careful patient selection, skilled clinical techniques, and consistent post-procedure care are key factors in maximizing the survival of composite veneers.