

# BruxZir Solid Zirconia

SIX-YEAR CLINICAL PERFORMANCE

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dentaladvisor.com

RATING SYSTEM: Excellent + + + + + Very Good + + + + Good + + +

**98%**  
rating at  
recall

**Glidewell Laboratories**  
glidewell dental.com

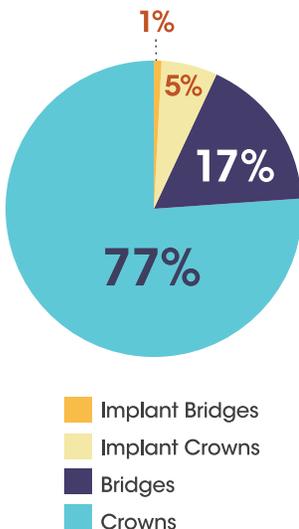
## Description

A total of over 2450 *BruxZir Solid Zirconia* restorations have been placed and monitored over the past six and a half years. The restorations included single crowns, implant crowns and three-, four-, five- and six-unit bridges (Figure 1). The restorations were cemented with adhesive and self-adhesive resin cements.

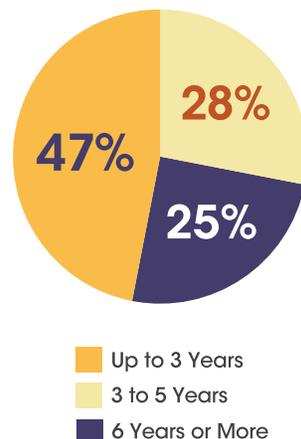
## Clinical Evaluation Protocol

1383 *BruxZir Solid Zirconia* were recalled out of 2450 total restorations placed. Among the recalled restorations 47% had been in function for up to three years, 28% up to five years and 25% up to six or more years (Figure 2). The majority of restorations (67%) were fabricated by Glidewell Laboratories, while the remaining restorations (33%) were fabricated by Apex Dental Milling. These restorations were evaluated in the following areas: esthetics, resistance to fracture/chipping, resistance to margin discoloration, wear resistance, and retention. They were rated on a scale of 1 to 5: 1 = poor, 2 = fair, 3 = good, 4 = very good, 5 = excellent.

**Fig. 1:** Distribution of BruxZir Solid Zirconia restorations at placement.



**Fig. 2:** Time in service for recalled BruxZir Solid Zirconia restorations.



BruxZir #30



BruxZir Bridge #18-20

## Results at Six Years

### Esthetics

The esthetics of *BruxZir Solid Zirconia* restorations was excellent (Figure 3). This rating is based on the uniformity and consistency of the shades in comparison to other monolithic zirconia restorations. *Zirconia restorations tend to be more opaque, but newer zirconias like BruxZir 16 and BruxZir Anterior definitely exhibit greater translucency.* Since many patients whiten their teeth, they actually like the opacity of zirconia.

### Resistance to Fracture/Chipping

Chipping and fracture of *BruxZir Solid Zirconia* restorations have been practically non-existent (Figure 3). Only five single crown fractures have been observed, mainly due to insufficient clearance after tooth preparation. Having less than 1 mm clearance is not recommended for posterior teeth. Two, five-unit bridges fractured and were replaced with PFM bridges. In both cases, the clearance was minimal and the patients were heavy bruxers. Sufficient clearance is especially important in longer span bridges. Two additional crowns fractured after root canal treatment. It is advisable to use round, fine grit diamond burs to make the access opening.

## Consultants' Comments

- "Nicest implant crown I have seen, with enough opacity to mask the metal abutment."
- "Just did a patient exam and she had two beautiful bridges - a five-unit bridge at 64 months and a four-unit bridge at 47 months."
- "I have been using **BruxZir** restorations for almost seven years and have not been disappointed, neither have my patients."
- "It gives me great pleasure to recall **BruxZir** restorations year after year and have such great outcomes."

"BruxZir has been a slam dunk restoration in my practice for almost six years with nice esthetics and no failures."

### Resistance to Marginal Discoloration

Only eight (0.5%) of the **BruxZir Solid Zirconia** restorations exhibited slight marginal discoloration at the six year recall (Figure 3). The opacity of the crowns helps camouflage most staining and microleakage to a certain extent. **Furthermore, microleakage is a function of the bonding agent and cement rather than the zirconia itself.**

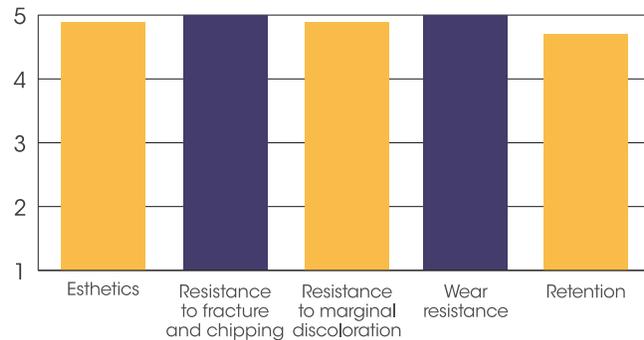
### Wear Resistance

Zirconia is a very wear resistant material and hardly any wear was observed on **BruxZir Solid Zirconia** crowns (Figure 3), while slight wear was observed on opposing enamel. More wear was noted on gold restorations when opposing zirconia crowns.

### Retention

Ninety (3.7%) out of 2450 **BruxZir Solid Zirconia** restorations debonded and required re-cementation over the six-year recall period (Figure 3). This debonding rate is slightly higher when compared to non-zirconia crowns (2%) that DENTAL ADVISOR has documented over more than 20 years. It is advisable to prime zirconia crowns prior to cementation to improve retention. In fact, DENTAL ADVISOR observed that when primed, debonded crowns retained the cement on the internal surface of the crown but not on the tooth itself.

**Fig. 3:** Results of BruxZir Solid Zirconia restorations at six years.



## Conclusions

Over the six-year evaluation period, **BruxZir Solid Zirconia** has proven to be **an excellent choice for all types of dental restorations** because of its **excellent esthetics and long-term dependability**. It is **highly recommended for crowns and bridges** as well as implant-supported crowns and bridges.

**BruxZir Solid Zirconia** received a clinical performance rating of **98%**

