

LONG-TERM CLINICAL PERFORMANCE

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Purpose

The purpose of this evaluation is to report on the clinical performance of *BruxZir Solid Zirconia Crowns and Bridges* at four years.

Clinical Evaluation Protocol

A total of 1,392 *BruxZir Solid Zirconia Crowns and Bridges* restorations have been placed over the past 56 months. Nine hundred and thirteen (913) restorations were recalled over four months including: single crowns (84%), 7% of which were implant crowns, and 16% that were 3- and 4-unit bridges (Figure 1). Of the 913 recalled restorations, 5% were anterior crowns and 95% posterior crowns.



BruxZir bridge at 4 years.

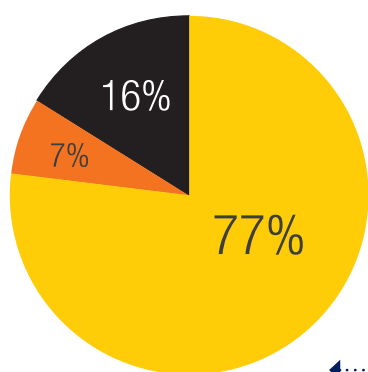


*BruxZir received a
98% clinical
performance rating
at 4-year recall.*

Clinical Evaluation Protocol

BruxZir Solid Zirconia Crowns and Bridges restorations were evaluated in the following categories: esthetics, resistance to fracture/chipping, resistance to marginal discoloration, and wear of zirconia and opposing dentition.

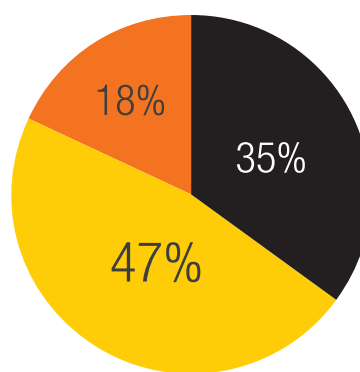
Fig. 1: Distributions of Restorations at 4-year Recall.



1,392 restorations have been placed over the past 56 months. 913 restorations were recalled over four months including: single crowns (84%), 7% of which are implant crowns, and 16% that were 3- and 4-unit bridges.

- Implant crowns
- 3- and 4-unit bridges
- Single crowns

Fig. 2: Age of Restorations at 4-year Recall.

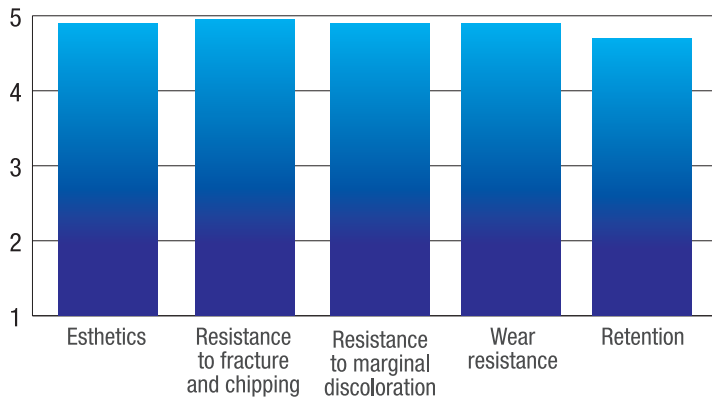


All restorations were cemented with adhesive and self-adhesive resin cements. The majority (85%) of the restorations were fabricated by Glidewell Laboratories, while 15% were fabricated by Apex Dental Milling. Of the 913 recalled restorations, 18% were over 4 years old, 35% were between 3 and 4 years old and the remaining 47% were less than 3 years old.

- Over 4 years old
- 3 to 4 years old
- Less than 3 years old

Restorations were evaluated on a 1-5 rating scale: 1= poor, 2 = fair, 3 = good, 4 = very good, 5 = excellent.

Fig. 3: Results of *BruxZir Full Zirconia and Bridges* at 4-year Recall.



■ ***BruxZir is an excellent crown material; crowns look good, and so far I have had no failures after four years of regular use.***

■ ***Great implant crowns - they are opaque enough to mask the metal abutment but still look good.***

■ ***I love the way three- and four-unit bridges fit and look.***

■ ***No fractures at four years.***

Clinical Observations

Esthetics

The esthetics of *BruxZir Solid Zirconia Crowns and Bridges* was rated excellent (Figure 3), based on the consistency of the shades and a comparison of the esthetics to other monolithic zirconia restorations. *BruxZir* tends to be less opaque than other zirconia restorations. Only 19 (2%) of the *BruxZir* restorations received a rating of 4. *BruxZir* restorations were not compared with layered ceramic restorations. *BruxZir* restorations are perfect for patients looking for more monochromatic and whiter teeth like a B1 shade. The new *BruxZir* 16 pre-shaded zirconia and Anterior *BruxZir* further improve esthetics. Note: THE DENTAL ADVISOR is now beginning a one-year recall of *Anterior BruxZir* restorations.

Resistance to Fracture/Chipping

Chipping and fracture of *BruxZir Solid Zirconia Crowns and Bridges* single crowns have been practically non-existent (Figure 3); three failures (0.3%) were observed. A second molar crown fractured, but failure was likely due to a lack of occlusal clearance and insufficient reduction. Having less than 1 mm of clearance is not recommended for molars. Two implant crowns on lower second molars fractured and one had to be replaced. The failure was again due to very low clearance and insufficient space due to implant placement. In one case, the abutment also failed. None of the three- or four-unit bridges fractured. THE DENTAL ADVISOR has been documenting the failure of ceramics for over 30 years and *BruxZir* has by far the lowest failure rate at four years.

Resistance to Marginal Discoloration

Only five of the *BruxZir Solid Zirconia Crowns and Bridges* restorations (0.5%) exhibited slight marginal discoloration at four years (Figure 3). The opacity of the crowns helps camouflage most staining or microleakage. Also staining is a function of the bonding agent or cement rather than the zirconia.

Wear Resistance

Almost no wear was observed on *BruxZir Solid Zirconia Crowns and Bridges* restorations and very minimal wear was observed on opposing natural dentition at four years (Figure 3). More wear was visible on gold crowns opposing *BruxZir* restorations.

Retention

Thirty-nine crowns (2.8%) out of the 1392 *BruxZir Solid Zirconia Crowns and Bridges* crowns debonded and required recementation (Figure 3). This debonding rate is slightly higher (2.8% vs 2.0%) when compared to non-zirconia crowns that THE DENTAL ADVISOR has documented over time. Regular use of zirconia primers could result in a reduction of the debonding rate.

Conclusions

Over the four-year evaluation period, *BruxZir Solid Zirconia Crowns and Bridges* have proven to be excellent restorations with respect to esthetics and dependability. *BruxZir Solid Zirconia Crowns and Bridges* received a 98% clinical performance rating.

“I have been using BruxZir crowns for almost five years and I have not been disappointed - neither have my patients. It is a great value.”