

LONG-TERM CLINICAL PERFORMANCE

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Description

IPS e.max Press (Ivoclar Vivadent) is a high-strength, lithium disilicate ceramic used for anterior and posterior restorations as well as anterior three-unit bridges. **IPS e.max Press** can be overlaid with **IPS e.max Ceram** to optimize esthetics. This product received a 97% clinical rating.

Clinical Evaluation Protocol

- Four dentists placed 671 **IPS e.max** restorations in 282 patients over a five-year period.
- Three hundred eighty-one restorations were evaluated (Figure 1).
- Sixty-eight percent of these were in function for five years while the remaining 32% were in function for less than five years (Figure 1). The restorations represented a variety of anterior and posterior crowns as well as inlays and onlays (Figure 2).
- Before cementation the internal surfaces of all restorations were etched with 5% hydrofluoric acid gel for 20 seconds, then rinsed and coated with a silane (*Monobond Plus*). All were cemented with either self-adhesive resin or esthetic resin cements (Figure 3). Esthetics, resistance to fracture or chipping, resistance to marginal discoloration, lack of sensitivity, and retention were evaluated and rated on a 1 to 5 scale (1=poor, 2=fair, 3=good, 4= very good, 5= excellent).

Consultants' Comments

"Good combination of esthetics and durability."

"Very versatile, highly esthetic material. I use it for most of my anterior and posterior restorations."

Patients' Comments

"The crown looks great and blends in perfectly with my other teeth."

"I love the color of my crown and that there is no gray line."

FIGURE 1: Number of Restorations at Five-year Recall

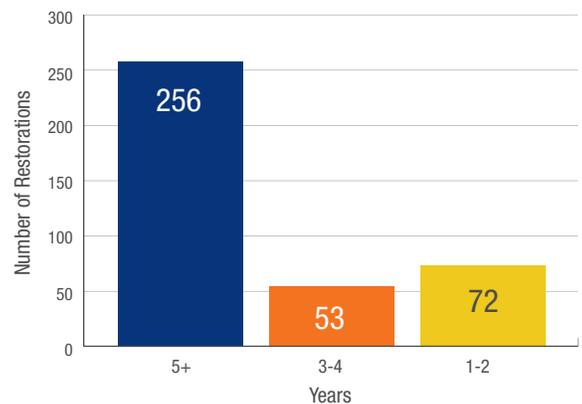


FIGURE 2: Distribution of Evaluated Restorations

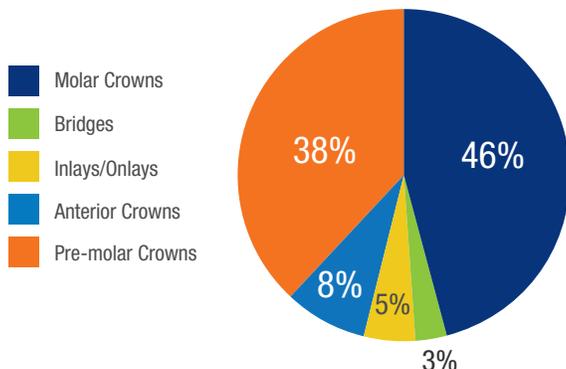
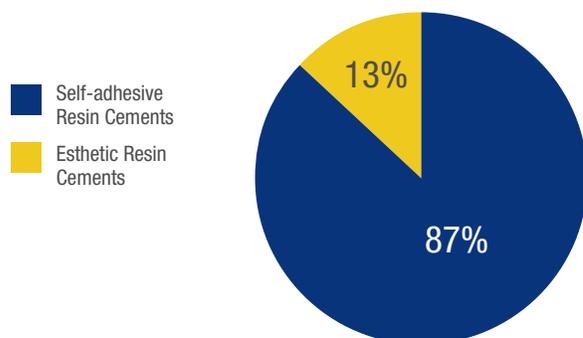


FIGURE 3: Cements Used



Results at Five Years

Esthetics

Ninety-seven percent of the *IPS e.max Press* restorations received a five or an excellent rating (Figure 4). The restorations were not only clinically acceptable but also of superior esthetic quality. Many patients remarked positively on the esthetics of the restorations. Figure 5 shows an *IPS e.max Press* onlay at five years. Only 6% of the restorations were slightly opaque and lacked sufficient translucency, which could be a function of ingot selection.

Resistance to Fracture/Chipping

Of the 381 restorations evaluated, seven fractured and were replaced over the 5 year period (Figure 4). Only 1.5% of the restorations exhibited some chipping and these were smoothed and polished. Less than 2% fractured and were replaced. This fracture rate is less than half the average fracture rate of ceramics documented by THE DENTAL ADVISOR over the past 27 years.

Resistance to Marginal Discoloration

The lack of marginal discoloration of the restorations was excellent in 96% of the cases (Figure 4). Leakage at the margins is not just related to the fit but more to the bonding and the resin cement. In 2% of the recalled cases, some graying at the margins was noted but none necessitated their replacement at five years.

Lack of Sensitivity

Only seven cases (1.5%) of postoperative sensitivity were reported by patients (Figure 4). All except for one were mild in nature and subsided over time.

Retention

Twelve restorations (4%) debonded and needed to be recemented (Figure 4). This debonding rate is similar to debonding rates of other all-ceramic restorations monitored over 27 years by THE DENTAL ADVISOR and is related to the preparation and the cement rather than the ceramic.

Summary

IPS e.max Press has proven to be a very esthetic, high-strength, durable material with excellent clinical performance over the five years. Its performance has exceeded that of traditional PFM restorations as well as many all-ceramic restorations. *IPS e.max Press* is highly recommended by THE DENTAL ADVISOR.

FIGURE 4: *IPS e.max Press* 5 Years

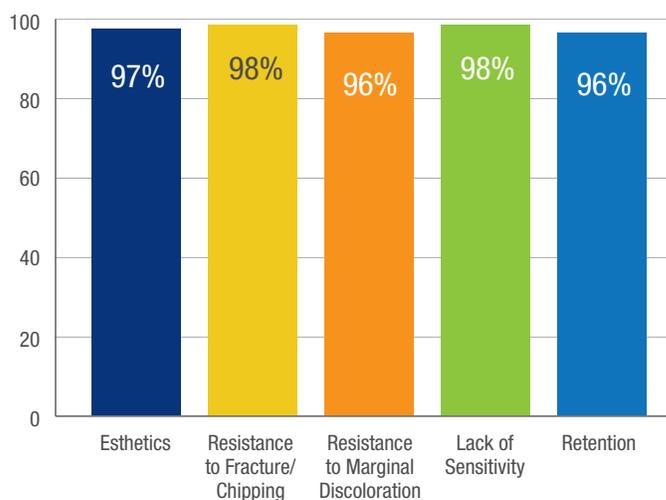


FIGURE 5: No. 29 *IPS e.max* at 5 years.