

The Nobel Biocare Procera® is a system developed for manufacturing of individualized dental restorations. Utilizing the latest scanning, CAD/CAM and manufacturing technologies, high accuracy and a perfect precision of fit is ensured. By combining the Procera® manufacturing technology with the use of alumina and zirconia ceramics, which are biocompatible materials with good mechanical properties, Nobel Biocare provides individualized, highly esthetical dental solutions<sup>1-15</sup>.

Since the introduction in 1991, more than 7 million Procera® ceramic crowns have been produced.

## **Procera® Crowns, Bridges and Laminates**

The Procera® Crown Titanium was the first restoration to be produced by the Procera® System. It was introduced already in 1984, and long-term studies evaluating its clinical performance have shown good results<sup>16-23</sup>. Over the time, the use of the Procera® Crown Titanium has been replaced by the all-ceramic Procera® Crown Alumina and Procera® Crown Zirconia.

The Procera® Crown Alumina was introduced in 1991, and clinical long-term studies have shown cumulative success rates of 98% after 5 years and 92% after 10 years in function<sup>2,24-42</sup>. Results from long-term studies have also revealed a good prognosis for Procera® Crown Alumina on posterior teeth<sup>25,30,36,42</sup>. In addition, the good precision of fit of the Procera® Crown Alumina has been repeatedly reported<sup>43-48</sup>.

The Procera® Bridge Alumina was introduced in 1999. Tests have shown that the restorations exceed the biomechanical requirements for all-ceramic fixed partial dentures, and excellent esthetic and functional outcomes have been reported<sup>49</sup>. The Procera® Bridge Alumina is available in up to 4 units, and is intended for anterior regions.

The Procera® Crown Zirconia was introduced in 2001, and in 2004 the Procera® Bridge Zirconia was launched. Zirconia has a flexural strength and fracture toughness almost twice as high as that of alumina, which makes zirconia very resistant to masticatory forces, still with maintained exact precision of fit<sup>50-57</sup>. The Procera® Bridge Zirconia is available in up to 14 units.

The Procera® Implant Bridge was introduced in 1996. Both full and partial bridge frameworks are available. The bridges are produced using CAD/CAM technology and are milled out of one piece of pure titanium. Good precision of fit as well as good clinical performance has been reported<sup>48,58-69</sup>. A cumulative survival rate of 98% after 5 years' of function has been reported<sup>67</sup>. The Procera® Implant Bridge Zirconia was introduced in 2007, and is available in up to 14 units. Clinical studies with the aim to evaluate the long-term performance of the Procera® Implant Bridge Zirconia are ongoing.

Procera<sup>®</sup> Laminates are thin (0.25-0.40 mm) alumina shells, used for patients with discolored anterior teeth, providing possibilities for excellent esthetics<sup>70,71</sup>.

### Procera Abutments

The Procera<sup>®</sup> Abutment Titanium was launched in 1998 and the Procera<sup>®</sup> Abutment Alumina and Procera<sup>®</sup> Abutment Zirconia were introduced on the market in 2002 and 2003, respectively. In vitro studies, case reports and prospective clinical studies have proven the good performance of these individualized abutments<sup>26,51,72-84</sup>. Good esthetic results have been reported<sup>72,74,75,77,78,82</sup>. The Procera<sup>®</sup> Abutment Alumina was completely replaced by the Procera<sup>®</sup> Abutment Zirconia in June 2005.

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