

The global dental implant market: Everything has a price

The global dental implant market continues to grow and expand. According to Grand View Research, the market was valued at \$4.6 billion in 2019 and is expected to grow at a compound annual growth rate (CAGR) of 9.0% from 2020 to 2027¹. Europe accounts for the largest share of the global dental implant market, followed by North America and then Asia. The dental implant market is an oligopoly, with five companies controlling approximately three-quarters of the market. Straumann is the market leader, followed by Envista (Nobel Biocare), Dentsply, BioHorizons Camlog and Zimmer Biomet. While these well-established implant companies control a significant share of product sales, companies offering affordable value and discount options are on the rise. In fact, value implants are expected to grow at a CAGR that is double that of premium implants, and will almost match premium implants for the number of units sold by 2025². Even the largest companies have recognised the trend towards lower-cost implant options and have acquired more affordable implant brands for their portfolio. Today there are over 300 global dental implant manufacturers, several of which produce multiple different implant systems.

The current dental implant market has been segmented into premium, value and discount categories; however, the criteria for inclusion in each of these categories have not been well defined. Some companies emphasise the need for basic scientific research and long-term clinical studies to earn the designation of a premium brand. Jokstad et al³ evaluated the literature to search for scientific support for any claims of superiority related to specific implant characteristics. They found that the vast majority of studies came from a small number of manufacturers or company-sponsored research and concluded that there was little evidence to support any assertions of superiority. There are now hundreds more implant systems in use, with a relative lack of scientific documentation. In the United

States, to obtain Food and Drug Administration (FDA) clearance, a company only has to submit a 510(k) to show substantial equivalence of a new implant to predicate devices introduced into the market before 28 May 1976. The 510(k) clearance allows dental implant manufacturers to advertise their device without the need for additional animal or clinical studies. The FDA does, however, have a surveillance system to keep track of dental implant problems after a device has been brought to market. One study found the most common adverse event reported was failure to integrate (77.3%), followed by loss of integration⁴.

Some may argue that the difference between premium, value and discount implant brands is one of cost. Premium implant systems may cost three times as much as discount brands. Companies may justify higher costs due to research and development costs or higher manufacturing standards, but they may also be due to educational programmes, practice support, product marketing and the economy in the country of distribution. Does a lower cost suggest a lower-quality product? Not necessarily, as some established implant companies have begun to offer value and discount brands. In some parts of the world, however, dental implants may be manufactured and sold without demonstrating adherence to any international standards³. Discount implant brands also raise other issues. What are the ethical implications of choosing a discount brand over a premium system? Should patients be informed about their options and offered a choice, or should the dental practitioner decide? Should the specialist in restorative dentistry and the dental laboratory use authentic prosthetic parts, or are lower-cost compatible components acceptable? Clone abutments may appear similar to the original components, but they may also display considerable differences and variations in their mechanical properties, fit and microleakage and may void the manufacturer's warranty⁵.

There is a definite market need for lower-cost implant options. These would allow more patients to afford the benefits of implant therapy, and would also help clinicians in lower socioeconomic areas to purchase and use implant components. The existence of affordable implant brands has been one of the main factors driving the global dental tourism industry. Another reason for using discount implant brands is the potential for greater cash flow and profitability for the dental office. It would also reduce the overhead costs of maintaining an inventory. Several reputable dental implant companies offer value and discount implant brands; however, it would seem prudent to exercise caution in using implant systems with no clinical records or documentation, especially if the company has not disclosed whether general principles of good manufacturing practice were adhered to and quality assurance systems were used according to the International Organization for Standardization or the FDA³.

The multitude of dental implant systems has created some additional problems. It can be difficult for dental practitioners to identify obscure implant types if future treatment is needed; thus, databases (www.whatimplantisthat.com) have been created to assist clinicians in this task. It would be helpful for clinicians to routinely provide patients with an implant identification card including information on the implant manufacturer, location, date of placement, size and prosthetic parts. Using a discount brand from a smaller company may be risky as the company may not be capable of manufacturing a high volume of components; this could create product availability issues. There is also a risk that the company will fail and go out of business, making it difficult to obtain components for future repairs or retreatment.

Much has changed since the 1980s when we had a limited number of available dental implant systems. Today, clinicians have an overwhelming choice of implant brands with a variety of design

features and a range of prices. Clinicians should use their best judgement when selecting an implant manufacturer and brand. Factors such as track record, compliance with regulatory requirements, practice support, educational courses, digital workflow solutions and peer-reviewed clinical studies are key determinants of the overall value proposition when choosing between implant manufacturers and should be considered carefully. Certain value and discount brands may well fulfil the needs of our implant practices; however, it is important that we prioritise the health of our patients and favourable long-term clinical outcomes over the economics of lower costs.



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