

# Dental Bone Graft Substitute Market

TechSci Research  
Analysts in  
Conversation with:  
**Zoltan Kasap**

(Executive Director Global  
Sales & Marketing)  
Botiss Medical AG



**TECHSCI RESEARCH**  
*from NOW to NEXT*



# Introduction

TechSci Research is a global market research and consulting company with offices in the United States, United Kingdom, and India. TechSci Research provides market research reports in verticals such as Healthcare, Chemicals, Agriculture, Consumer Goods, ICT, Infrastructure, Automotive, Oil & Gas, Water & Wastewater, Power, among others. The company uses innovative business models that focus on improving productivity, while ensuring creation of high-quality reports. The proprietary forecasting models use various analyses of both industry-specific and macroeconomic variables on a state-by-state basis to produce a unique 'bottom-up' model of a country, regional and global industry prospects. Combined with the detailed analysis of company activity and industry trends, the result is a uniquely rich evaluation of the opportunities available in the market.

We also provide market intelligence and consulting on emerging technologies and on industries that are in the early stages of development and are expected to revolutionize the market in the coming years.

For each topic that we cover, TechSci Research Analysts interact with several key opinion leaders and industry experts to carefully understand, analyze, and predict a particular market. Our "Key Opinion Leaders Insight" series is one such initiative wherein we are bringing key stakeholders operating in an industry under one platform together wherein knowledge, insights and views can be shared with each other. Under this initiative we aim at bringing prominent academic medical research and healthcare market opportunities under one piece of writing. And insights mentioned in the interview section are the sole opinion of the expert.



This document features dental bone graft substitute, which is currently high in demand across the dental industry. The growing geriatric population which is more susceptible to various oral problems along with the increasing awareness related to oral health among the population worldwide is expected to increase the demand for dental bone graft substitute. Additionally, growing expenditure on dental services is further expected to drive the growth of global dental bone graft substitute market. Furthermore, growing popularity of dental tourism along with coverage of dental procedures under health insurance in various countries is further expected to increase the demand for dental bone graft substitute procedures in the coming years.

Besides, growing popularity of dental implants, dental bone grafting and dental bone regeneration is driving the growth of global dental bone graft substitute market. Furthermore, benefits associated with dental bone graft substitutes are expected to support the growth of Global Dental Bone Graft Substitute Market. These benefits include non-reactive nature of dental bone graft substitutes to antigen and antibodies. The dental bone graft substitutes are also bioresorbable in nature. Additionally, dental bone graft substitutes have the ability to restore tooth functionality without affecting the aesthetics. Also, dental bone graft substitutes can be used in a wide range of applications from refilling a local bony defect as a result of infection or trauma to refiling a peri-implant defect caused due to peri-implantitis.

The increasing research & development activities conducted by various academic & research organizations and companies operating in the dental space. Research is being carried out majorly in relation to various biomaterials which can be used in the development of different dental bone graft substitutes. This in turn is not only attracting investments but also leading to new product launches, mergers & acquisitions, collaborations, among others.

Some of the prominent players operating in the global dental bone graft substitute market include Institut Straumann AG, Medtronic Plc., Zimmer Biomet Holdings, Inc., Envista Holdings Corporation (Danaher Corporation), DENTSPLY Sirona, Inc., Johnson & Johnson, Stryker Corporation, Halma Plc.(NovaBone), Geistlich Pharma AG, RTI Surgical, among others.



**TECHSCI RESEARCH-** What has been a trend in the dental bone graft substitute procedures over the years?

**EXPERT-** The trends are constantly changing, and dental regeneration biomaterials are nowadays being used daily in oral surgery, perio and maxillofacial procedures. That is due to the concept that “there is no ideal biomaterial for every indication, but for every indication there is always something that works the best”, as well as the production of high-quality products and providing a high level of continuous education.

**TECHSCI RESEARCH-** If we talk about the dental bone graft substitute market, was there any major change due to the COVID-19 pandemic crisis?

**EXPERT-** Yes, of course we faced many challenges during COVID-19 pandemic crisis. Most importantly for us, was that we were unable to have live events and had to adapt to online education only. However, this didn't result in a decreased use of dental biomaterials. On the contrary, today their use is bigger than ever before.

**TECHSCI RESEARCH-** How would you describe the impact of biomaterials and increasing the amount of the biomaterials, specific to the dental bone grafting substitutes?

**EXPERT-** Dental regeneration biomaterials are used to generate hard and soft tissue in situations where they are needed, or where they are insufficient. For sure this contributes to successful implant treatments and we can clearly say that as a result, the biomaterials market is growing in parallel to the implant market.

**TECHSCI RESEARCH-** Is there any development or changes happening in the dental bone graft substitute industry that you feel is worth sharing or are you foreseeing any major developments happening in the industry over the years?

**EXPERT-** Botiss is an innovative company that never stops developing and improving. Therefore, we are clearly dedicated on establishing

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## In Conversation with Zoltan Kasap

Executive Director Global Sales & Marketing  
Botiss Medical AG



new and exciting regenerative concepts. The best proof for this is the products that we already have in our portfolio and many more will follow over the coming years. Some of these may even completely change how we understand the regeneration process and treat patients. For sure we are not leaving behind the already well-established concepts, but there is always space for improvement and Botiss is clearly a game changer in this industry.

**TECHSCI RESEARCH-** When we talk about dental bone graft substitutes, generally which type of bone grafts are used and why? (Xenograft, Allograft, Autograft, Alloplast).

**EXPERT-** As I mentioned earlier, “there is no ideal biomaterial for every indication, but for every indication there is always something that works the best”. From this point of view, every material can be used in every indication, but the result won’t be the same. This is a very complex topic and can’t be described in just few sentences.

**TECHSCI RESEARCH-** There are different mechanisms used in a dental bone graft substitute procedure like Osteoconduction, Osteoinduction, Osteopromotion, Osteogenesis, etc. Which according to you is most widely used and why?

**EXPERT-** You will hear different terminologies and cherry-picking in the market that are meant to sound scientific to provide sales. The best is if we provide the body the right conditions to heal itself and we should not believe too much in miracles e.g. growth factors, because that can be deceptive. The main regenerative mechanisms that we actually rely on are: providing long-term volume stability with Xenografts; controlled degradation with synthetic grafts; and complete regeneration with allografts. Therefore, all these treatment options are found within the Botiss biomaterials product portfolio.

**TECHSCI RESEARCH-** For what purpose, are dental bone graft substitutes majorly used and why? (Out of Socket Preservation, Ridge Augmentation, Periodontal Defect Regeneration, Implant Bone Regeneration, Sinus Lift).

**EXPERT-** Yes, dental regeneration biomaterials can be regularly used in each one of these indications and every material can be used in every indication, but the result won’t be the same. That’s why our portfolio is specifically developed to provide the best treatment options for each of these and is supported by extensive educational concepts.

**TECHSCI RESEARCH-** Similarly, what according to you are the major barriers to adoption for dental bone graft substitute procedures or major challenges that are hindering the growth of dental bone graft substitute industry in Europe?

**EXPERT-** The new Medical Device Regulation (MDR) is definitely an exceptional challenge to have a new product on the market. These new regulations are much stricter, harder and very complicated, but it’s a necessary step to separate the “good” from the “bad” products on the market and in order to put patient treatment on the safe side. This will definitely change the map of the biomaterial players but won’t stop the market growth.



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bioresorbable in nature. Additionally, dental bone graft substitutes have the ability to restore tooth functionality without affecting the aesthetics. Also, dental bone graft substitutes can be used in a wide range of applications from refilling a local bony defect as a result of infection or trauma to refilling a peri-implant defect caused due to peri-implantitis.

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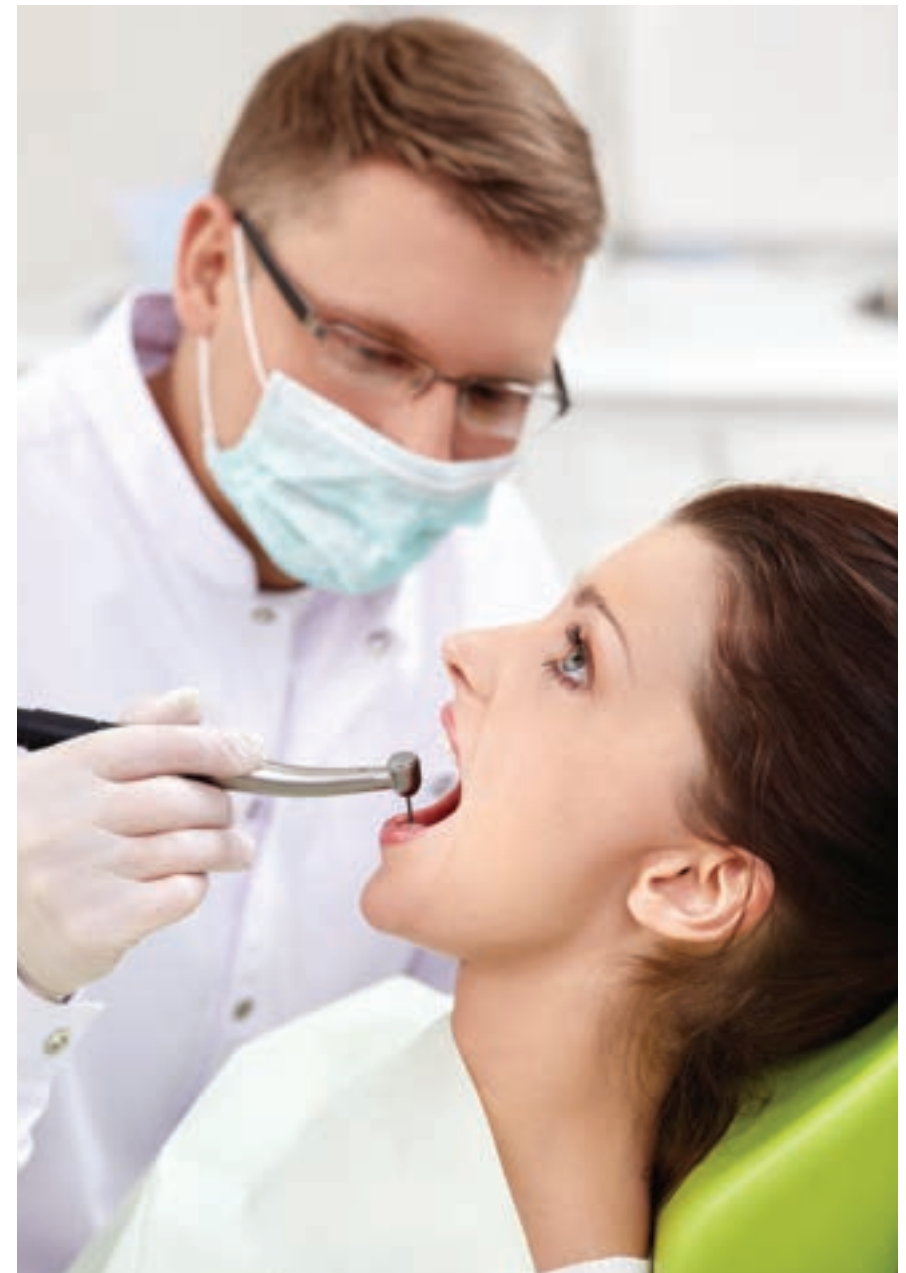
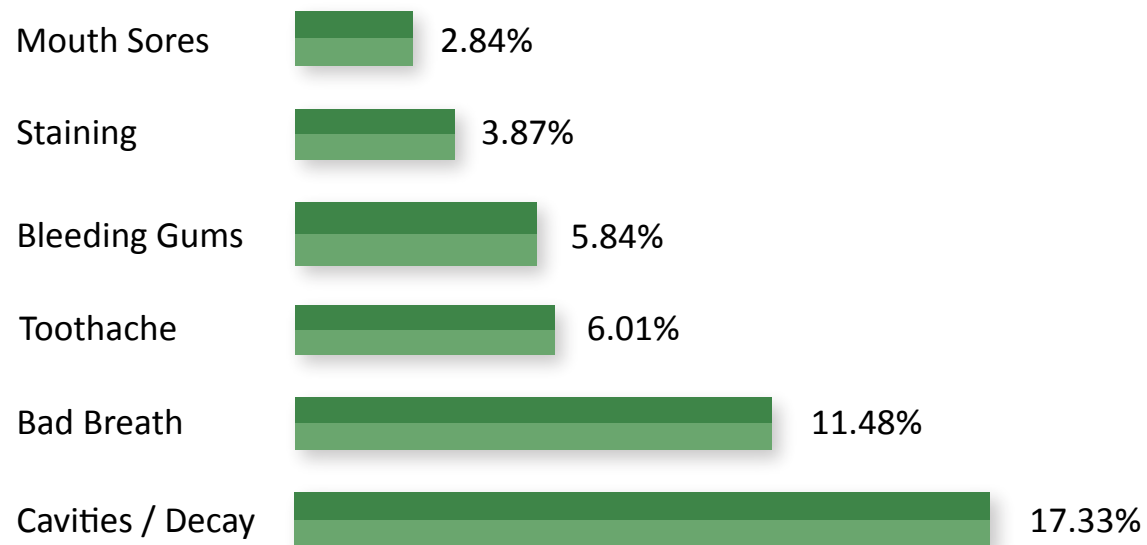
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# TechSci Research on Global Dental Bone Graft Substitute Market

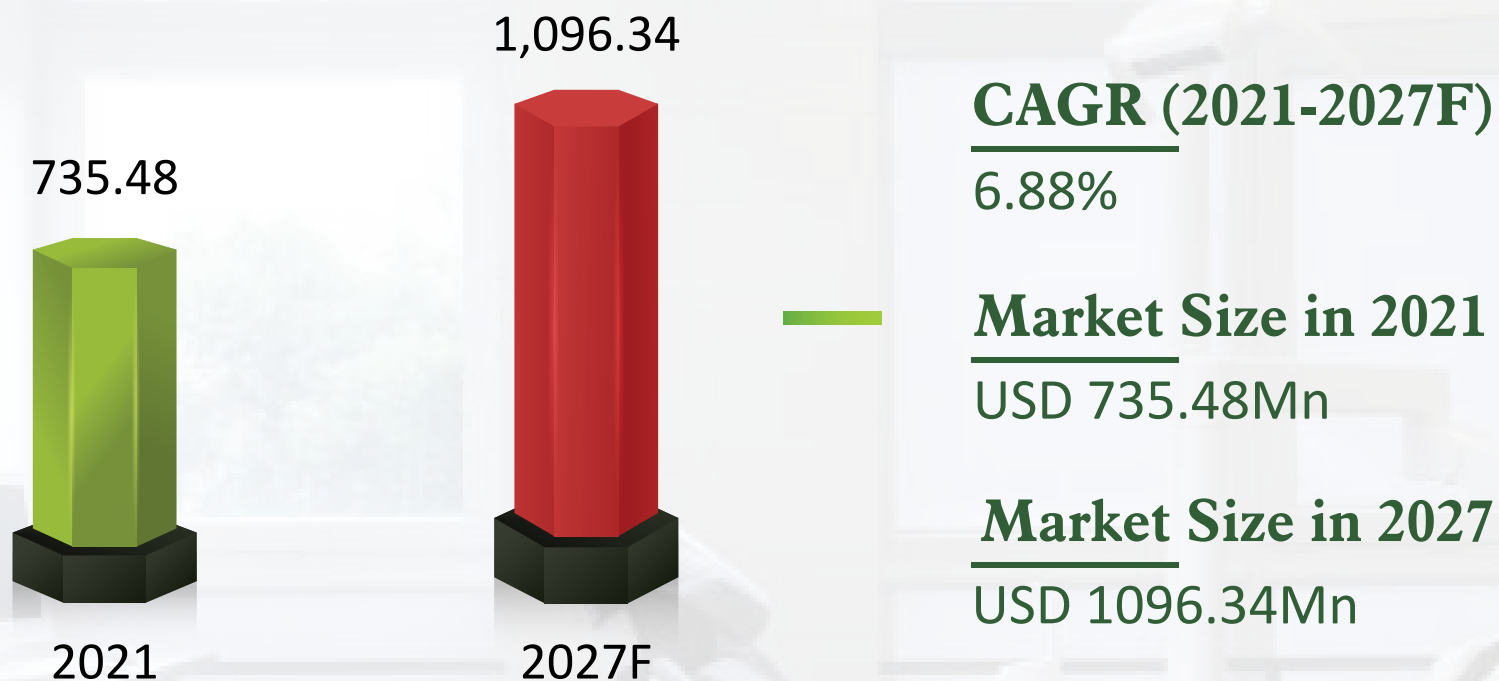
The growing prevalence of periodontal diseases, tooth decay and tooth loss are driving the growth of global dental bone graft substitute market. In periodontal disease, the gums, periodontal ligament, and alveolar bone around the teeth all get affected. Consumption of food rich in sugars and acids, increasing tobacco consumption and an increasing smoking habit of population especially the youth are all contributing to tooth decay.

Oral Health Problems Among Indians in 2020, By Type



The increasing number of dental injuries and disorders among population worldwide is expected to support the growth of global dental bone graft substitute market. The growing awareness related to maintaining oral health along with increasing expenditure on oral care is expected to drive the growth of global dental bone graft substitute market.

## Global Dental Bone Graft Substitute Market Size, By Value (USD Million), 2021 & 2027F



The figure above illustrates the global dental bone graft substitute market size for the year 2021 and 2027. The global dental bone graft substitute market in 2021 stood at USD735.48 million and is expected to grow at a CAGR of 6.88% and reach USD1096.34 million in 2027.

The increasing expenditure by different governments across the globe to create awareness related to oral health among the population and improvising the dental health infrastructure is expected to boost the market growth during the forecast period. Additionally, growing geriatric population worldwide susceptible to various kinds of tooth problems is expected to increase the demand for dental bone graft substitutes in the coming years. According to United Nations, Department of Economic and Social Affairs, Population Division, the number of persons aged 65 years or above in 2019 was about 702.9 million and this number is expected to increase to 1548.9 million by 2050.



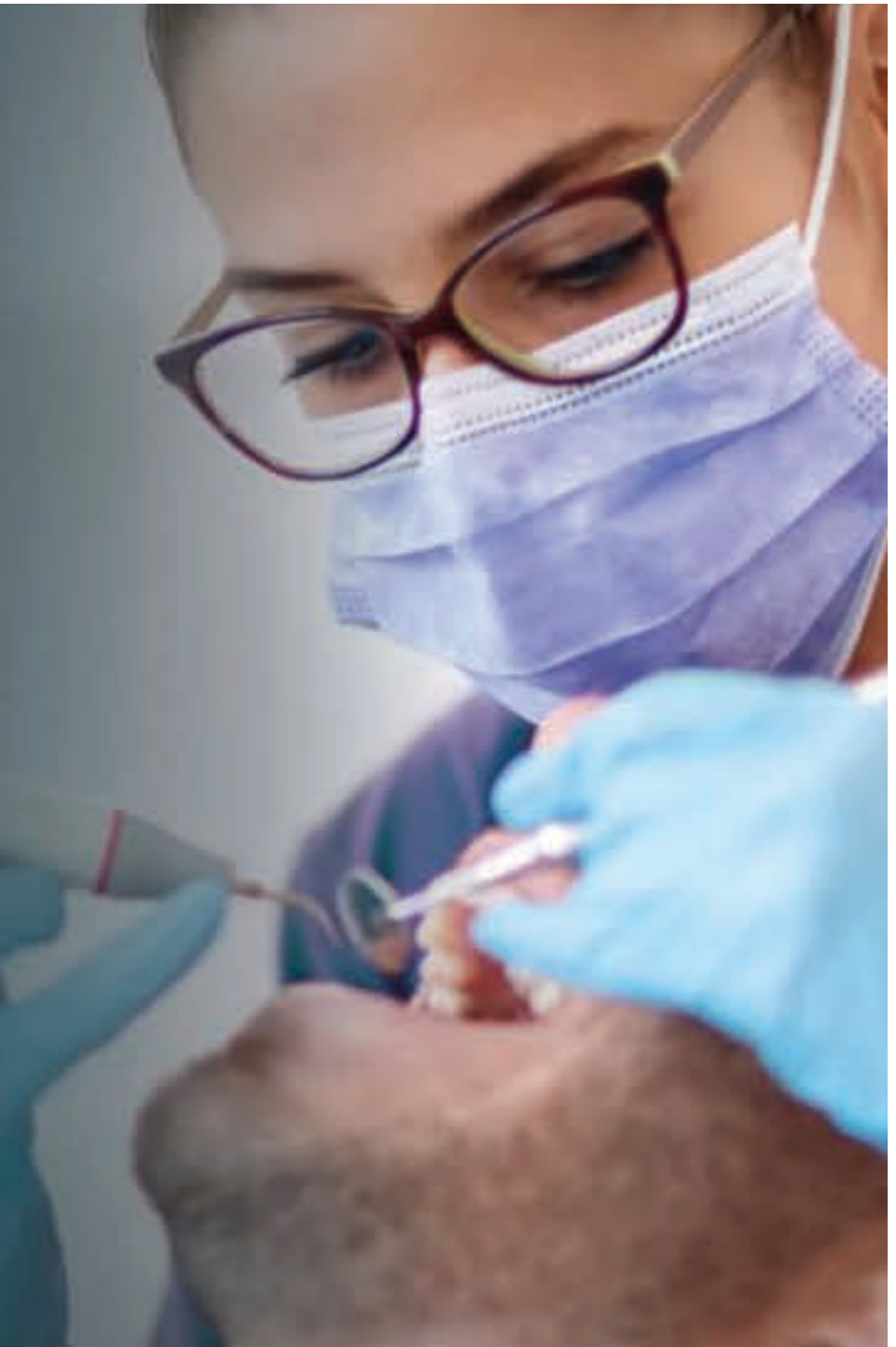
## Number of Persons Aged 65 Years or Above by Geographic Region, 2019 & 2050

Region	Number of Persons Aged 65 Years or Above in 2019 (Million)	Number of Persons Aged 65 Years or Above in 2050 (Million)	Percentage Change Between 2019 and 2050
World	702.9	1548.9	120
Sub-Saharan Africa	31.9	101.4	218
Northern Africa and Western Asia	29.4	95.8	226
Central and Southern Asia	119.0	328.1	176
Eastern and South-Eastern Asia	260.6	572.5	120
Latin America and the Caribbean	56.4	144.6	156
Australia and New Zealand	4.8	8.8	84
Oceania, excluding Australia and New Zealand	0.5	1.5	190
Europe and Northern America	200.4	296.2	48

Besides, increasing dental tourism especially in developing countries is expected to support the market growth in the coming years. Asia Pacific region is one of the key destinations for availing dental tourism services with India being the leader. Other key countries attracting dental tourists in the Asia Pacific region include Vietnam, Thailand, Malaysia, among others.

Additionally, increasing research & development activities for developing different types of dental bone graft substitutes is expected to create lucrative opportunities for the market growth in the coming years. Various academic & research institutions and companies operating in the dental space are focusing on new product developments especially those made up of new and affordable types of biomaterials is further expected to drive the market growth. This has resulted in increase in number of clinical trials being launched by various companies and academic & research institutions across the globe. The dental bone graft substitute market is witnessing a lot of mergers & acquisitions, expansions, and collaborations in the last few years, thereby opening up new opportunities for the market growth.

To gain a holistic view of the market, data from different segments of the dental bone graft substitute market has been analyzed minutely. These segments include dental bone graft substitute types such as allograft, xenograft, autograft, synthetic bone graft, and others; type of material from which dental bone graft substitute are produced like human cell source, collagen, animal cell source, and others; different mechanisms including osteoconduction, osteoinduction, osteopromotion, and osteogenesis; various applications such as socket preservation, ridge augmentation, periodontal defect regeneration, implant bone regeneration, and sinus lift and regions including North America (United States, Canada, Mexico), Europe (Germany, Italy, France, Poland, Spain, United Kingdom), Asia Pacific (China, India, Japan, South Korea, Thailand, Australia, Malaysia, Vietnam), South America (Brazil, Argentina, Colombia), and Middle East & Africa (Turkey, Egypt, Saudi Arabia, UAE, South Africa).





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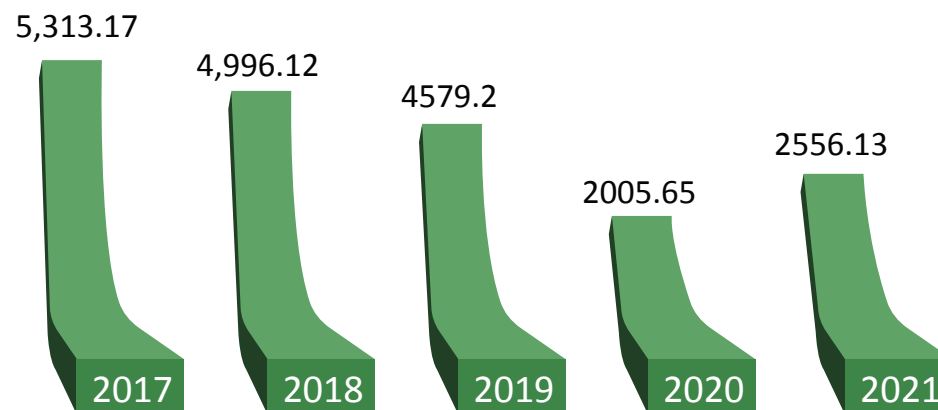
## Analysis on Global Dental Bone Graft Substitute Market

Among the different products of dental bone graft substitutes which is dominating in the Global Dental Bone Graft Substitute Market?

Among the different products, Bio Oss, Grafton, and Osteograft, Bio OSS dominated among the different products of dental bone graft substitutes with an overall share of around 46.75%. This can be ascribed to the excellent osteoconductive properties of Bio OSS lead to effective and predictable bone regeneration.

Bio OSS is made from organic components of bovine bone similar to human bone. Bio OSS is porous and non-antigenic. The growing demand for biomaterials and environmentally friendly alternatives is expected to support the growth of Bio OSS products in the Global Dental Bone Graft Substitutes Market in the coming years. Besides, growing expenditure on dental services by consumers is further expected to support the growth of biomaterials in dental industry.

Household Spending on Dental Services in the United Kingdom  
(USD Million), 2017-2021

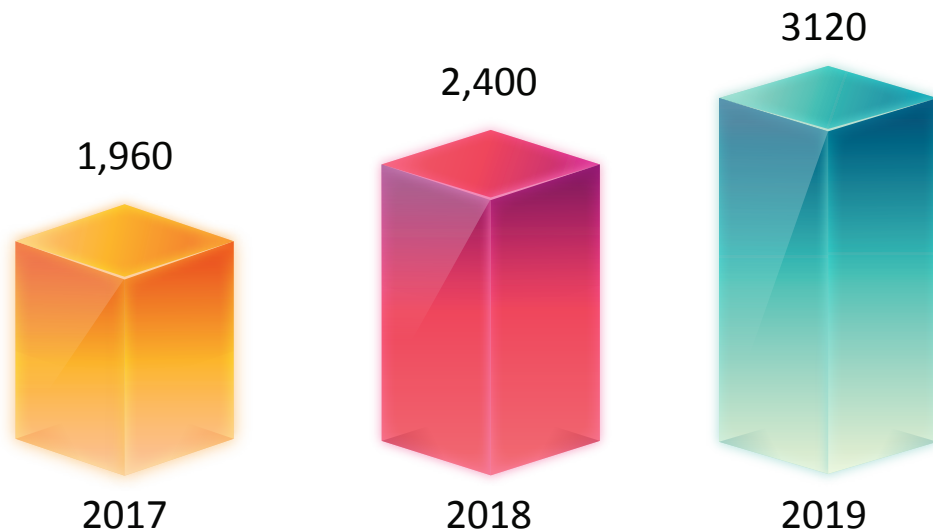




Which application segment is expected to dominate the Global Dental Bone Graft Substitute Market in the coming years?

In terms of the different applications such as socket preservation, ridge augmentation, periodontal defect regeneration, implant bone regeneration and sinus lift, the socket preservation is expected to dominate the Global Dental Bone Graft Substitute Market in the coming years. Sinus Lift application segment held a share of 34.06% in 2021 and is expected to grow at a CAGR of 7.66% during the forecast period. Socket preservation is a method which is used to decrease bone loss after tooth extraction from tooth socket in the alveolar bone. The growing number of dental implant procedures being performed coupled with increasing awareness among population related to oral health and hygiene is expected to support the segmental growth.

Number of Dental Implants in China, 2017,2018,2019 (in Thousands)



After socket preservation, ridge augmentation application is expected to dominate the global dental bone graft substitute market during the forecast period owing to its quick recovery time and painless procedure. The demand for this procedure is increasing in order to achieve long-term survival and successful implant placement. Moreover, alveolar volume gain is also possible with the help of ridge augmentation, thus boosting the growth.

Which region is dominating the Global Dental Bone Graft Substitute Market?

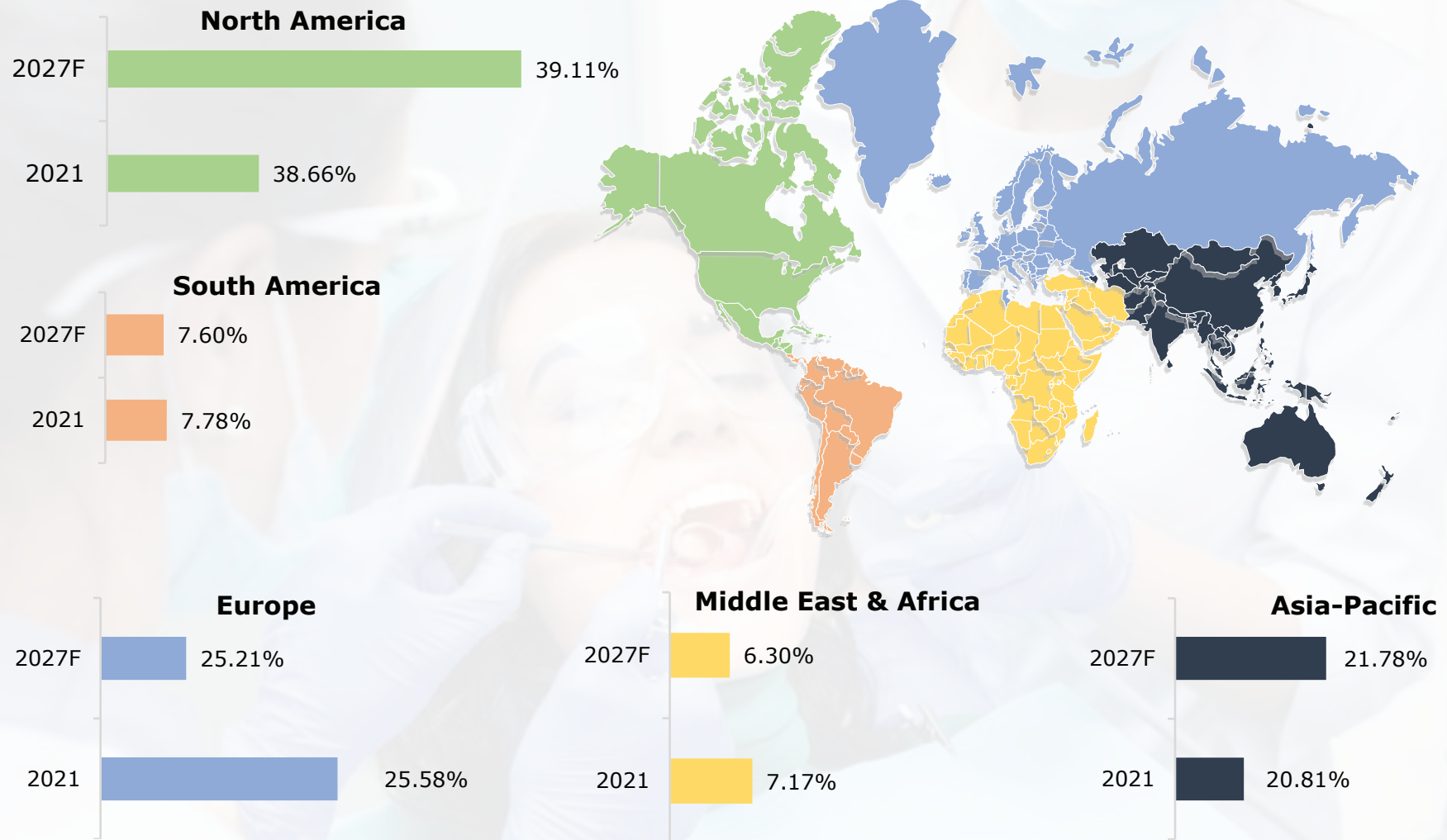
North America dominated the global dental bone graft substitute market in 2021 followed by Europe, Asia Pacific, South America, and Middle East & Africa and is expected to continue maintaining its dominance during the forecast period. This can be ascribed to the growing prevalence of dental problems and tooth decay in the region especially in the United States.

According to the American college of Prosthodontists, more than 36 million Americans do not have any teeth, and 120 million people in the United States are missing at least one tooth. These numbers are expected to grow in the next two decades. In the geriatric population the ratio of edentulous individuals is 2 to 1. About 23 million are completely edentulous and about 12 million are edentulous in one arch.

Europe holds the second largest share in the global dental bone graft substitute market on account of the favorable reimbursement scenario and insurance coverage for major procedures.



## Global Dental Bone Graft Substitute Market Share, By Region, By Value, 2021 & 2027F



### Who are the key players operating in the Global Dental Bone Graft Substitute Market?

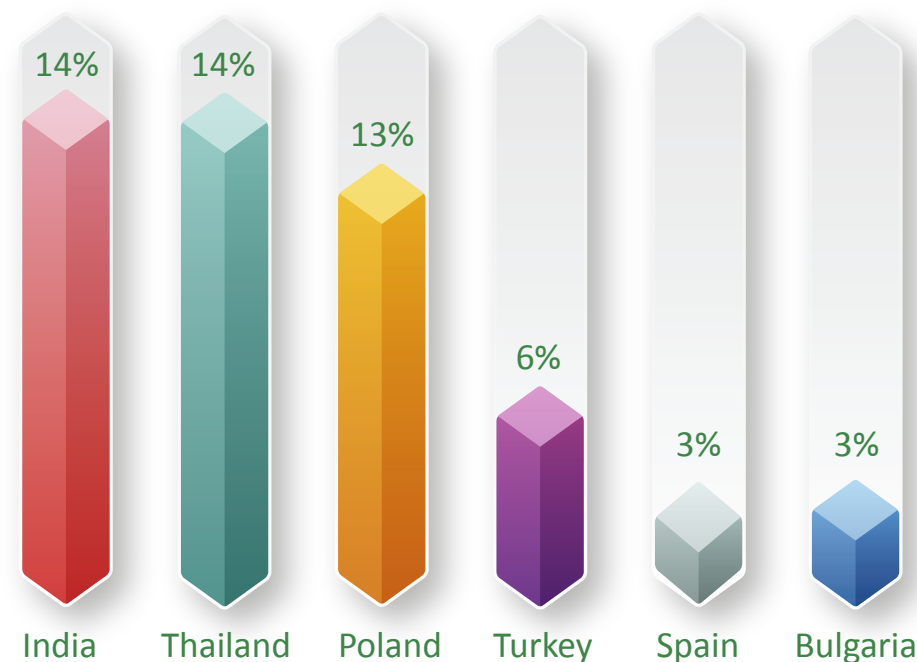
Institute Straumann AG, Medtronic Plc., Zimmer Biomet Holdings, Inc., Envista Holdings Corporation (Danaher Corporation), DENTSPLY Sirona, Inc., Johnson & Johnson, Stryker Corporation, Halma Plc., are some of the key players operating in the Global Dental Bone Graft Substitute Market. The companies operating in the market are following strategies such as mergers & acquisitions, product launches, collaborations, among others in order to improve their market positioning and have an edge over other players operating in the industry. Various key players are investing in new companies or start-ups to increase their presence, product offerings and brand values.

For instance, In March 2021, Institut Straumann signed an investment agreement with the Shanghai Xin Zhuang Industrial Park to establish its first Campus in China which will comprise a manufacturing plant, education, and innovation center in the country. This Chinese campus would provide various educational programs as well as products from the Straumann Group's implant and orthodontics portfolio for China, catering to the rapidly growing demands of Chinese dentists and patients for dental solutions.

### What are the key trends accelerating the growth of Global Dental Bone Graft Substitute Market?

Dental Tourism and growing demand for cosmetic dentistry procedures are some of the key trends accelerating the growth of Global Dental Bone Graft Substitute Market. The high costs of dental treatment in the developed countries are leading to an increase in number of patients traveling abroad to developing and emerging countries for getting different treatments. Besides, the availability of world class treatments at an affordable cost in certain developing countries is expected to support the market growth. Countries like India, Turkey, Spain, Thailand, among others are emerging out as key destinations for availing dental tourists. The availability of advanced healthcare facilities along with presence of skilled dental professionals in these countries is further supporting the market growth.

Global Market Shares in Dental Tourism by Countries



Besides, growing popularity of cosmetic dentistry among the population is expected to support the growth of global dental bone graft substitute market. The demand for cosmetic dentistry has significantly increased due to growing prevalence of sports related dental injuries. Also, the popularity of cosmetic dentistry has drastically increased among the women population and youth on account of growing importance of aesthetics among them.

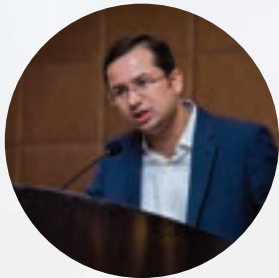




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TechSci Healthcare vertical offers market research & consulting services in the healthcare industry with a major focus on pharmaceuticals, medical devices, consumer healthcare, animal healthcare, biotechnology, and healthcare IT domains. TechSci Research also focuses on providing market intelligence on emerging technologies and niche industries that have the potential to cause a high level of disruption in the market in the next few years. We excel in conducting market viability analysis for technologies that are still in the nascent stages of their lifecycle.

## AUTHORS



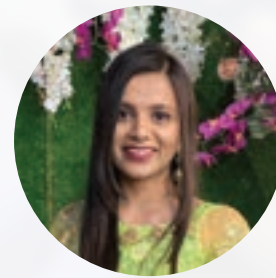
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Research Director



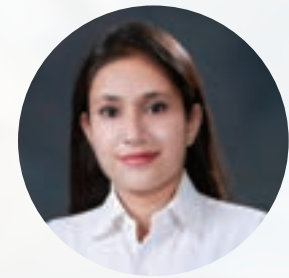
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