

# GUIDED TISSUE AND BONE REGENERATION **DENTAL CASE STUDY BOOK**



## LITERATURE FOR DENTAL PROFESSIONALS

From complex procedures to innovative solutions, this study book reflects decades of experience and provides a wealth of insights relevant to dental practice. Whether you are looking for clinical insights, want to improve your practice, or simply appreciate the collaborative exchange that drives medical progress, use this resource as a guide in the intricate world of regenerative dentistry.

This book is not only a collection of clinical indications and selected products, but also a tribute to the collaboration with key opinion leaders and researchers who have placed their trust in our products. We thank these experts for their independent research and the valuable insights they have shared.

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Are you looking for something specific? Simply press Ctrl+F in the document and use the search function.

Disclaimer: The cases are performe by the investigators solely. The information provided originated from each author. The reader should consult the current product IFUs for indications and warnings for each product. For further assistance with the IFUs please contact info@curasan.com.



The aim of this dental case study book is to demonstrate to the reader the versatility of curasan products used for various clinical dental problems. **CERASORB**<sup>®</sup>, a pure-phase β-tricalcium phosphate, forms the basis for other **CERASORB**<sup>®</sup>-based products, which usually consist of 65% - 85% **CERASORB**<sup>®</sup>. **CERASORB**<sup>®</sup> has been present worldwide for over 25 years. **CERASORB**<sup>®</sup> is an established β-TCP-based bone regeneration material used in various clinical procedures, including sinus floor elevation, treatment of periodontal defects and alveolar ridge reconstruction, based on available clinical data and literature research. In addition, it has achieved effective results in combination with PRP (Platelet Rich Plasma) in implantology. Examples include single-stage bone grafting and implant placement.

The success of **CERASORB**<sup>®</sup> and curasan's other β-tricalcium phosphate-based products is supported by a number of <u>clinical trials</u>, <u>systematic reviews</u> and <u>meta-analyses</u> conducted by independent researchers worldwide. These studies have shown that **CERASORB**<sup>®</sup> is a safe and effective bone regeneration material. The material is inevitably resorbed and replaced by new bone. In addition, **CERASORB**<sup>®</sup> has been shown to be as effective as autologous bone graft substitutes in some applications.

This collection of studies focuses solely on providing the reader with a better understanding of the different applications of **CERASORB**<sup>®</sup> in various bone and tissue grafting procedures and indications. This study book is just a start. The amount of material available on **CERASORB**<sup>®</sup> and other curasan products is beyond the scope of this study book.



## Peri-implantitis:

Product	Title	Year	
CERASORB® M	Peri-Implantitis – Decontaminating and Regenerative Treatment Protocol	2020	<u>Visit case</u>
CERASORB® M	Peri-implantitis treatment with CERASORB® M	2018	Visit case
OSBONE® OSGIDE®	Surgical approach combining implantoplasty and reconstructive therapy with locally delivered antibiotic in the treatment of peri-implantitis: A prospective clinical case series.	2021	<u>Visit case</u>

## Socket and ridge preservation:

Product	Title	Year	
<b>CERASORB® Foam</b> in combination with I/A-PRF	Delayed immediate implant placement and direct soft-tissue management with CERASORB® Foam and I/A-PRF	2021	<u>Visit case</u>
CERASORB® Foam	Experiences with a collagen composite in socket preservation	2019	Visit case
CERASORB® Foam and stypro®	Alveolar ridge preservation with CERASORB® Foam and stypro®	2017	<u>Visit case</u>

## Sinus floor elevation:

Product	Title	Year	
CERASORB® M	Sinus augmentation and simultaneous implant placement using one-stage Sandwich Technique	2021	<u>Visit case</u>
CERASORB® M	Sinus floor elevation and its risk	2010	<u>Visit case</u>

## **Cystic defects:**

Product	Title	Year	
CERASORB® M, OSGIDE®	Treatment of Maxillary Inflammatory Odontogenic Cyst with Laser Therapy – Case Report	2022	<u>Visit case</u>
CERASORB® M	CERASORB® M in Dental Surgery	2007	Visit case
CERASORB® M Foam, OSGIDE®	Mandibular dentigerous cyst: Enucleation and bone reconstruction	2020	<u>Visit case</u>

## **Periodontal defects:**

Product	Title	Year	
CERASORB® Paste	Augmentation and defect filling in oral surgery: A multicenter non-interventional study.	2017	<u>Visit case</u>



## Alveolar ridge reconstructions:

Product	Title	Year	
CERASORB® M, OSBONE®	Use of β-Tricalcium phosphate versus Hydroxyapatite Ceramics: A clinical comparison	2017	<u>Visit case</u>
CERASORB®	Immediately Loaded Dental Implants in Deficient Alveolar Bone Sites Augmented with $\beta$ -Tricalcium Phosphate	2006	<u>Visit case</u>

## Implant bed preparation:

Product	Title	Year	
OSBONE®	OSBONE® – Multicenter study	2012	<u>Visit case</u>





## Legend

Single patient

**XY** Multiple patients



Product	Title // Clinical Experience Summary	Year	
CERASORB® M, OSGIDE®	Treatment of Maxillary Inflammatory Odontogenic Cyst with Laser Therapy – Case Report	2022	<u>Visit case</u>
	A case report provides a comprehensive account of the treatment and a one-year postoperative follow-up for the management of an odontogenic cyst using laser therapy and CERASORB® M in conjunction with OSGIDE®.		
CERASORB® M	Sinus augmentation and simultaneous implant placement using one-stage Sandwich Technique	2021	<u>Visit case</u>
	The result of a sinus augmentation and simultaneous implant placement using the one-stage sandwich technique with CERASORB® M in a 25-year-old female patient.		
CERASORB® M	Peri-Implantitis – Decontaminating and Regenerative Treatment Protocol	2020	<u>Visit case</u>
	A case report discusses the treatment of a 65-year-old patient with CERASORB® M for peri-implantitis, with a 12-month post-operative follow-up.		
CERASORB® M, OSGIDE®	Decontaminating and Regenerative Treatment of Peri-Implantitis with Implacure Protocol in Zygomatic Implants	2020	<u>Visit case</u>
	This clinical case features a 55-year-old female who received a zygomatic implant in the anatomical location of 1.6. The case is followed up for six years.		
CERASORB® M	Fast-Versus Slow-Resorbable Calcium Phosphate Bone Substitute Materials — Texture Analysis after 12 Months of Observation	2020	<u>Visit case</u>
	This study aimed to evaluate the effects of the resorbability of bone substitute materials during regeneration to the jawbone. The study included 88 patients during the 12-month follow-up. All the patients had undergone oral surgical procedures using two different subs- titute materials — CERASORB® (high-rate resorbable (β-tricalcium phosphate)) and Endobone (low-rate resorbable (hydroxyapatite)		
CERASORB® M	Minimally invasive sinus lifts according to JEDER – a field report	2019	Visit case
	The case study details the sinus lift surgery performed using CERASORB®.		
CERASORB® M	Determination of the relative jawbone density using digital measurement method after defect filling with $\beta$ -TCP, taking into account the clinical course	2018	<u>Visit case</u>
	A total of 411 patients received treatment with CERASORB® M (particle size 500-1000 $\mu m$ ) between 2006 and 2012. The purpose was to assess the outcomes in socket and ridge preservation procedures.		
CERASORB® M	Peri-implantitis treatment with CERASORB® M	2018	<u>Visit case</u>
	CERASORB® M in Peri-implantitis treatment.		



Product	Title // Clinical Experience Summary	Year	
CERASORB®, CERASORB® Foam	From granules to foam	2016	<u>Visit case</u>
	A clinical case study was conducted on four patients to compare the outcomes of CERASORB® and CERASORB® Foam in sinus floor elevation procedures.		
CERASORB®	Lateral ridge split and immediate implant placement in moderately resorbed alveolar ridges: How much is the added width?	2013	<u>Visit case</u>
	Outcome of Alveolar ridge reconstruction in 25 patients using CERASORB® using Lateral ridge split and immediate implant placement. Results of Alveolar Ridge Reconstruction in 25 Patients with Lateral Ridge Split and Immediate Implant Placement Using CERASORB®.		
CERASORB®	Effect of a Multiporous Beta–Tricalcium Phosphate on Bone Density Around Dental Implants Inserted into Fresh Extraction Sockets	2013	<u>Visit case</u>
	Socket and ridge preservation procedures were performed on 28 patients using CERASORB® with a particle size range of 500–1000 µm.		
CERASORB®	Long-Term Results of Implants Immediately placed into extraction sockets grafted with $\beta$ -Tricalcium phosphate: A Retrospective Study.	2013	<u>Visit case</u>
	A ten-year retrospective study was conducted on 58 patients to evaluate the effectiveness of CERASORB® in socket and ridge preservation procedures. The study aimed to assess the long-term outcomes of using CERASORB® for these dental procedures.		
CERASORB®	Evaluation of Relative Efficacy of β-Tricalcium Phosphate with and without Type I Resorbable Collagen Membrane in Periodontal Infrabony Defects: A Clinical and Radiographic Study	2013	<u>Visit case</u>
	A randomized control trial was conducted involving 10 patients to assess the effectiveness of CERASORB® in the treatment of periodontal defects.		
CERASORB® M	Evaluation of horizontal ridge augmentation using beta tricalcium phosphate and demineralized bone matrix: A comparative study	2013	<u>Visit case</u>
	A case report providing details on 20 patients who underwent horizontal ridge augmentation procedures using CERASORB® M.		
CERASORB®	CERASORB®: Fundamentals of material science and histomorphological experience	2013	<u>Visit case</u>
	This study showcases a sample of synthetic bone augmentation material (β-tricalcium phosphate granules). This material has de- monstrated clinical efficacy, specifically in sinus floor augmentati- ons, defect filling following cystectomy and root tip resections, and enhancing implant sites using membrane technology.		
CERASORB®	The influence of substitute materials on bone density after maxillary sinus augmentation: a microcomputed tomography study	2012	<u>Visit case</u>
	A randomized control trial was conducted with 30 patients to assess the outcomes of CERASORB® in sinus floor elevation procedures.		



Product	Title // Clinical Experience Summary	Year	
CERASORB®	Histologic and Histometric Evaluation of Bovine Cancellous Bone and Beta-Tricalcium Phosphate 45 Months After Grafting in Maxillary Sinus	2011	<u>Visit case</u>
	Histological and histometric assessment conducted after 45 months of utilizing CERASORB® for sinus floor elevation.		
CERASORB® M	Sinus floor elevation and its risk	2010	<u>Visit case</u>
	Use of CERASORB® M in Sinus floor elevation.		
CERASORB®	Long-term results after lateral and osteotome technique sinus floor elevation: a retrospective analysis of 2190 implants over a time period of 15 years	2010	<u>Visit case</u>
	A research investigation involving 983 patients conducted from 1992 to 2007 to assess the use of CERASORB® for sinus floor procedures.		
CERASORB®	Clinical and radiographic evaluation of pure beta-tricalcium phosphate and autogenous bone graft in treatment of two to three-wall periodontal defects	2010	<u>Visit case</u>
	Results from a Randomized Control Trial involving 24 patients, investi- gating the use of CERASORB® for the treatment of periodontal defects.		
CERASORB®	Choice of Graft Material in Relation to Maxillary Sinus Width in Internal Sinus Floor Augmentation.	2010	<u>Visit case</u>
	In a case study of 57 patients, a total of 100 implants were inserted using three distinct sinus floor augmentation approaches. This case study delves into the outcomes by analysing postoperative cone- beam CT (CBCT) scans and measuring the distance from the lateral wall to the medial wall at the apical endpoint of the implant within the maxillary sinus.		
CERASORB®	Use of platelet-rich plasma in periodontal surgery — a prospective randomised double blind clinical trial	2009	<u>Visit case</u>
	A randomized control trial involving 22 patients was carried out to assess the use of CERASORB® in the treatment of periodontal defects.		
CERASORB®	Clinical evaluation of alveolar ridge preservation with a $\beta$ -tricalcium phosphate socket graft.	2009	<u>Visit case</u>
	A case study of 30 patients underwent treatment with CERASORB® (particle size ranging from 150 µm to 500 µm) to assess its effective- ness in socket and ridge preservation procedures.		
CERASORB® M	Evaluation of the success of the clinical application of $\beta$ tricalcium phosphate for alloplastic reconstruction bony defects in the jaw and facial area	2009	<u>Visit case</u>
	A case report detailing the treatment of a group of 21 patients who underwent treatment with CERASORB® M for cystic defects.		



Product	Title // Clinical Experience Summary	Year	
CERASORB®	Simultaneous implantation with sinus lift surgery for reduced bone supply – a retrospective Clinical Study	2009	<u>Visit case</u>
	In this case study, total of 231 immediate implants were placed in 138 patients with the sinus lift procedure from November 2001 to De- cember 2005. The case reports show the success of CERASORB® in Sinus lift procedure.		
CERASORB®	Sinus Floor Elevation with $\boldsymbol{\beta}$ -tricalcium phosphate and Platelet-rich Plasma	2009	<u>Visit case</u>
	A case study involving 29 patients focused on maxillary sinus augmentation procedures, where $\beta$ -tricalcium phosphate ( $\beta$ -TCP) was employed in group A and a combination of $\beta$ -TCP and plateletrich plasma (PRP) in group B. Bone biopsies were collected during the secondary dental implant insertion, which took place after 3-6 months for groups A1 and B1, and 7-10 months for groups A2 and B2, for subsequent analysis.		
CERASORB®	Massive sinus grafts by tricalcium phosphate. Long-term results massive sinus-lift procedures with $\beta$ -tricalcium phosphate: Long-term results	2009	<u>Visit case</u>
	A prospective study conducted between January 2002 and May 2008 monitored a group of twenty patients (comprising 33 sinuses) who exhibited severe sinus floor atrophy (classified as Cawood class 4 to 6) and had undergone a sinus lift procedure utilizing betaTCP.		
CERASORB® M	Evaluation of CERASORB® M as a bone graft used for sinus lift and dental implant installation.	2009	<u>Visit case</u>
	The purpose of this study was to assess the sinus lifting procedure involving bone grafting and the subsequent placement of a dental implant in the augmented area approximately 5 to 6 months later.		
CERASORB®	Use of platelet-rich plasma in periodontal surgery — a prospective randomised double blind clinical trial	2008	<u>Visit case</u>
	A double-blinded randomized control trial was conducted with 22 patients to evaluate the use of CERASORB® in the treatment of intra-bony defects.		
CERASORB®	Effect of $\beta$ -tricalcium phosphate particles with varying porosity on osteogenesis after sinus floor augmentation in humans	2008	<u>Visit case</u>
	This study investigates how bone formation, and the expression of osteogenic markers are influenced by two different $\beta$ -tricalcium phosphate (TCP) particulate bone graft materials, characterized by varying porosities, six months after performing sinus floor augmentation.		
CERASORB® M	CERASORB® M in Dental Surgery	2007	Visit case
	A post-market surveillance investigation was conducted on 148 patients who underwent treatment for cystic defects and bone augmentation using CERASORB® M. The study period extended from September 2004 to April 2006.		



Product	Title // Clinical Experience Summary	Year	
CERASORB®	Sinus lift and endosseous implant placement. A retrospective ten-year study.	2007	<u>Visit case</u>
	A comprehensive retrospective study spanning a decade, conducted from 1994 to 2004, involving a case study of 159 patients, was undertaken to assess the long-term outcomes of CERASORB® in sinus floor elevation procedures.		
CERASORB® M	Augmentation of a mandibular bone defect after alveolar ridge distraction the application of $\beta$ -tricalcium phosphate ( $\beta$ -TCP)	2007	<u>Visit case</u>
	A total of 21 patients received augmentation using Beta-TCP to address substantial bone and facial skull defects. This study represents the initial report of a successful application of Beta-TCP for pre-implantation coverage of a sizable, trough-shaped mandi- bular defect following distraction.		
CERASORB®	Immediately Loaded Dental Implants in Deficient Alveolar Bone Sites Augmented with β-Tricalcium Phosphate	2006	<u>Visit case</u>
	The outcomes of 338 patients who underwent alveolar ridge reconstruction using CERASORB® from 1999 to May 2002.		
CERASORB®	Maxillary sinus floor grafting with $\beta$ -tricalcium phosphate in humans: density and microarchitecture of the newly formed bone	2006	<u>Visit case</u>
	CERASORB® was used for sinus floor elevation indication in a group comprising 17 patients.		
CERASORB®M	One-stage immediate or two-staged late insertion of 3i implants in reconstructed or to be reconstructed area.	2006	<u>Visit case</u>
	A case review of a patient treated with CERASORB®M for cystic defects		
CERASORB®	Synthetic, pure-phase beta-tricalcium phosphate ceramic granules (CERASORB®) for bone regeneration in the reconstructive surgery of the jaws	2006	<u>Visit case</u>
	A comprehensive review of a case report spanning the years from 1997 to 2002, involving the treatment of 152 patients using CERASORB® for cystic defects.		
CERASORB® M	A new resorbable membrane	2006	<u>Visit case</u>
	The case reports delve into the outcomes associated with the use of CERASORB® M in sinus floor augmentation procedures.		
CERASORB® M	Defect reconstruction with alloplastic bone graft substitutes	2006	<u>Visit case</u>
	The study encompasses the treatment results of 500 patients who received CERASORB® and CERASORB® M between 2003 and 2005.		
CERASORB®	Clinical application of bone grafting material for implantation with open healing.	2005	<u>Visit case</u>
	The treatment results for two patients, aged 68 and 56, who received CERASORB® for various purposes such as socket and ridge preservation (ranging from 150 to 500 µm) and cystic defect repair (ranging from 1,000 to 2,000 µm).		



Product	Title // Clinical Experience Summary	Year	
CERASORB®	Maxillary sinus floor augmentation using a beta-tricalcium phos- phate (CERASORB®) alone compared to autogenous bone grafts.	2005	<u>Visit case</u>
	Clinical study conducted on 10 patients for evaluation of CERASORB® for the indication of sinus floor elevation.		
CERASORB®	Augmentation under special consideration of aesthetics: Two different procedures in comparison	2005	<u>Visit case</u>
	A patient was treated with CERASORB® for socket and ridge preservation.		
CERASORB®	Alveolar Ridge Preservation: Bone Augmentation after Extraction	2005	<u>Visit case</u>
	The results of a field study conducted by the German Society of Dental Implantology (DGZI) involving 80 patients to evaluate the use of CERASORB® (particle size: 500–1,000 µm) in socket and ridge preservation procedures.		
CERASORB®	Usage of CERASORB® in complex treatment of chronic generalized periodontitis (clinical-experimental study)	2005	<u>Visit case</u>
	A clinical-experimental study involved 127 patients to analyse the results of using CERASORB® in the treatment of periodontal defects.		
CERASORB®	Histomorphology of bone regeneration after sinus floor augmentation with two forms of TCP granules – a case report.	2005	<u>Visit case</u>
	A case report presents the histomorphological findings obtained from a biopsy performed 4.5 months following sinus floor elevation using CERASORB®.		
CERASORB®	A prospective multicentre randomized clinical trial of autogenous bone versus beta-tricalcium phosphate graft alone for bilateral sinus elevation: histologic and histomorphometric evaluation	2005	<u>Visit case</u>
	In 20 patients undergoing bilateral sinus grafting, two distinct graft materials were employed: beta-tricalcium phosphate (CERASORB®) and autogenous bone. The aim was to ascertain whether the use of pure-phase $\beta$ -TCP (CERASORB®) could eliminate donor site morbidity.		
CERASORB®	Localization of osteogenic and osteoclastic cells in porous β-tricalcium phosphate particles used for human maxillary sinus floor elevation.	2005	<u>Visit case</u>
	In these case reports, findings aimed at gaining a deeper insight into the conversion of TCP particles into bone tissue. Specifical- ly, examine the presence of cells with osteogenic or osteoclastic capabilities concerning these particles. In biopsies taken six months following sinus floor augmentation, both bone growth within the TCP particles and their substitution with soft connective tissue was observed.		
CERASORB®	Synthetic, phase-pure beta-tricalcium phosphate ceramic. Bone regeneration in reconstructive surgery of the jaws	2004	<u>Visit case</u>
	An Analysis of 152 Patient Cases Treated with CERASORB® for Cystic Defects.		



Product	Title // Clinical Experience Summary	Year	
CERASORB®	Alternative bone expansion technique for immediate placement of implants in the edentulous posterior mandibular ridge: a clinical report	2004	<u>Visit case</u>
	The case report highlights the outcomes of alveolar ridge augmen- tation procedures conducted on 30 patients using CERASORB®.		
CERASORB®	The implant treatment of exceptional defect situations	2004	<u>Visit case</u>
	In this case study, the results of three distinct cases are showcased: two instances involving apical cysts and one case concerning a periodontal defect, all of which were managed using CERASORB® combined with PRP.		
CERASORB®	Supporting measures for the internal Sinus lift to protect the mucous membrane of the maxillary sinus (Schneider's membrane)	2004	<u>Visit case</u>
	Review of three patients with post-operative OPGs, showcasing the outcomes of an internal sinus lift procedure using CERASORB®.		
CERASORB®	Retrospective case study on the sinus lift with CERASORB® and PRP	2004	<u>Visit case</u>
	A case study presenting the outcomes of patients from three distinct age groups who underwent a sinus lift procedure using CERASORB® and PRP.		
CERASORB®	Long-term results with different bone substitutes used for sinus floor elevation.	2004	<u>Visit case</u>
	A 5-year study from 1996 to 2001 examined the failure rates (graft material resorption or implant loss) in 810 maxillary sinus augmentations using various graft materials or combinations, including autogenous bone, calcium carbonate-coated polymer, algal-origin hydroxyapatite, coral-derived calcium carbonate gel, $\beta$ -tricalcium phosphate, autogenous bone mixed with these substitutes, and a combination of $\beta$ -tricalcium phosphate and platelet-rich plasma.		
CERASORB®	Histomorphometry of human sinus floor augmentation using a porous $\beta$ -tricalcium phosphate: a prospective study	2004	<u>Visit case</u>
	The outcomes of histomorphometric measurements, conducted to measure the degree of bone augmentation at the test and control sites, were determined following the retrieval of biopsies from the augmented areas after six months of utilizing porous beta-TCP (100%) in a split-mouth model for sinus floor augmentation.		
CERASORB®	Dentinogenesis Imperfecta – a rare case from practice Early implantation to avoid bone loss.	2004	<u>Visit case</u>
	The case report delves into the treatment of a 19-year-old patient with dentinogenesis imperfecta using CERASORB®.		
CERASORB®	Repair of bony defect with combination biomaterials	2004	Visit case
	A report is presented on the extended-term outcomes of augmen- tations conducted on substantial bone defects using various bone substitute materials in two patients.		



Product	Title // Clinical Experience Summary	Year	
CERASORB®	Use of platelet-rich plasma in major maxillary sinus augmentation	2003	<u>Visit case</u>
	Outcomes of Sinus Floor Elevation Treatment in Three Patients Utilizing CERASORB®.		
CERASORB®	Endodontic and surgical treatment of a geminated maxillary incisor	2003	Visit case
	A case review of a patient who underwent socket and ridge preservation procedures using CERASORB®.		
CERASORB®	Bone replacement and non-resorbable membranes. Clinical use of alloplastic bone replacement material and micro-porous, non-re-sorbable membranes.	2003	<u>Visit case</u>
	A comparative analysis of two cases, one aged 41 and the other aged 36, who underwent socket and ridge preservation procedures using CERASORB® (particle size: 500–1,000 μm).		
CERASORB®	Histologic effect of pure-phase beta-tricalcium phosphate on bone regeneration in human artificial jawbone defects	2003	<u>Visit case</u>
	The impact of pure-phase beta-tricalcium phosphate (beta-TCP) CERASORB® on bone regeneration was assessed by implanting hollow titanium cylinders in the posterior jaws of five volunteers.		
CERASORB®	Subantroscopic laterobasal sinus floor augmentation (SALSA): an up-to-5-year clinical study	2003	<u>Visit case</u>
	The article examines the results of 118 sinus augmentation procedu- res that have been performed on 83 patients since 1996. These pro- cedures involved the use of particulate alloplastic augmentation material (tricalcium phosphate) in combination with varying amounts of autogenous bone and blood.		
CERASORB®	Le Fort I Osteotomy in Atrophied Maxilla and Bone Regeneration with Pure-Phase $\beta$ -Tricalcium Phosphate and PRP	2003	<u>Visit case</u>
	This paper demonstrates the effective utilization of synthetic pure-phase beta-tricalcium phosphate (beta-TCP) CERASORB®, in conjunction with autogenous bone at a 4:1 ratio and the patients' platelet-rich plasma, for vertical augmentation in severely atrophied maxillae.		
CERASORB®	Autogenous bone versus beta-tricalcium phosphate graft alone for bilateral sinus elevations (2-3D CT, histologic and histomorpho- metric evaluations)	2002	<u>Visit case</u>
	A Comparative Study with Histologic and Histomorphometric Analyses of Sinus Floor Elevation in 10 Patients Utilizing CERASORB®.		
CERASORB®	A concept for the treatment of various dental bone defects	2002	Visit case
	A case report detailing the treatment of 267 patients who under- went socket and ridge preservation using CERASORB®.		



Product	Title // Clinical Experience Summary	Year	
CERASORB®	Autogenous Bone Versus β-Tricalcium Phosphate Graft Alone for Bilateral Sinus Elevations (2- and 3-Dimensional Computed Tomographic, Histologic, and Histomorphometric Evaluations): Preliminary Results	2001	<u>Visit case</u>
	The study's objective was to evaluate two graft materials, beta- tricalcium phosphate (CERASORB®) and autogenous bone, within the same patient. Bilateral sinus grafting was conducted on four chosen patients, employing CERASORB® exclusively on one side (the experimental group) and autogenous bone on the other side (the control group).		
CERASORB®	CERASORB <sup>®</sup> and PRP in regenerative periodontal and implant supported therapy.	2001	<u>Visit case</u>
	A case study presenting the outcomes of CERASORB® and PRP treatment administered to two non-smokers compared to a smoker (experimental).		
CERASORB®	Histology of human alveolar bone regeneration with a porous tricalcium phosphate. A report of two cases	2001	<u>Visit case</u>
	This case report involves an analysis of histological findings related to treatments using porous $\beta$ -phase tricalcium phosphate particles ( $\beta$ - TCP), specifically CERASORB <sup>®</sup> . These particles were used in two patients for the restoration or augmentation of alveolar bone before dental implant placement. In one instance, $\beta$ -TCP was utilized to fill a significant alveolar defect in the posterior mandible after the removal of a residual cyst, while in the other case, it was employed to augment the sinus floor.		
CERASORB®	The value of beta-tricalcium-phosphate (CERASORB®) in pre-prosthetic surgery	2000	<u>Visit case</u>
	The treatment results of 52 patients who received CERASORB® for the management of cystic defects.		
CERASORB® M, OSGIDE®	Implacure <sup>®</sup> protocol – decontaminating treatment and regenerative of peri-implantitis	-	<u>Visit case</u>
	A patient was treated with CERASORB® M and OSGIDE® and was assessed in the context of peri-implant defects.		
CERASORB® M	Comparison of bone-graft substitutes. Risks and benefits of synthetic and bovine derivate materials.	_	<u>Visit case</u>
	A case report focusing on the comparison of treatment outcomes for a patient who underwent socket and ridge preservation using CERASORB® M versus bovine-derived material.		
<b>CERASORB® Foam</b> and I/A-PRF	Delayed immediate implant placement and direct soft-tissue management with CERASORB® Foam and I/A-PRF	2021	<u>Visit case</u>
	CERASORB® Foam and I/A-PRF in the treatment of delayed implant placement, and direct soft-tissue management with a customized healing abutment to achieve efficient and effective results.		



Product	Title // Clinical Experience Summary	Year	
CERASORB® M Foam, OSGIDE®	Mandibular dentigerous cyst: Enucleation and bone reconstruction	2020	<u>Visit case</u>
	Use of CERASORB® M Foam, OSGIDE® in cystic defects		
CERASORB® Foam	Experiences with a collagen composite in socket preservation	2019	<u>Visit case</u>
	CERASORB® Foam socket preservation study with review of two different cases.		
<b>CERASORB® Foam</b> and <b>stypro</b> ®	Alveolar ridge preservation with CERASORB® Foam and stypro®	2017	<u>Visit case</u>
	CERASORB® Foam and stypro® used for Alveolar ridge preservation.		
CERASORB® Paste	Injectable Bone Substitute Material on the Basis of β-TCP and Hyaluronan Achieves Complete Bone Regeneration While Undergoing Nearly Complete Degradation	2018	<u>Visit case</u>
	A prospective study was carried out on 21 patients to evaluate the effectiveness of CERASORB® Paste in socket and ridge preservation. This study aimed to assess the outcomes and benefits of using CERASORB® Paste for these dental procedures.		
CERASORB® Paste	Augmentation and defect filling in oral surgery A multicentre non-interventional study.	2017	<u>Visit case</u>
	A multicentre observational study involving 41 patients was conducted to assess the use of CERASORB® Paste in treating small bone or jaw defects.		
CERASORB® Paste	Observational study of a $\beta$ -TCP-based bone substitute material paste	2015	Visit case
	The aim of the following study was to investigate a novel paste-like $\beta$ -tricalcium phosphate ( $\beta$ -TCP)-based bone substitute material for socket preservation and sinus floor augmentation. In addition, the tissue response to the same bone substitute material in a small animal model was evaluated in a preclinical in vivo study.		
OSBONE®, OSGIDE®	Surgical approach combining implantoplasty and reconstructive therapy with locally delivered antibiotic in the treatment of peri- implantitis: A prospective clinical case series.	2021	<u>Visit case</u>
	A prospective clinical case series involving 43 patients was conducted to evaluate the treatment outcomes of a combination approach, which included implantoplasty and reconstructive therapy with locally delivered antibiotics, for the management of peri-implantitis. The study included a one-year post-operative follow-up to assess the results.		



Product	Title // Clinical Experience Summary	Year	
OSBONE®	New Oral Surgery Materials for Bone Reconstruction — A Comparison of Five Bone Substitute Materials for Dentoalveolar Augmentation	2020	<u>Visit case</u>
	A comparative study involving 263 patients was conducted to evaluate the outcomes of five different bone substitute materials, including OSBONE®, for alveolar ridge augmentation procedures.		
OSBONE®	Use of $\beta$ -Tricalcium phosphate versus Hydroxyapatite Ceramics: A clinical comparison	2017	<u>Visit case</u>
	Comparative study with OSBONE® versus $\beta$ -TCP on three different patients within the age group of 9 year, 52 year and 65 years.		
OSBONE®	OSBONE <sup>®</sup> – Multicentre study	2012	Visit case
	A multicentre, open-label study involving 190 patients was carried out to evaluate the utilization of OSBONE® in procedures for sinus floor elevation and implant bed preparation. The study was conducted over an observation period spanning from May 2010 to May 2012		



## Peri-implantitis treatment with CERASORB® M

Authors: Dr. Fernando Duarte, DDS, MSc; Clitrofa-Clinic / Trofa, Portugal

### Summary:

- > Product used: CERASORB® M (500 1000 µm)
- > Indications: Peri-implants defect

## **Clinical Experience Summary:**

- > **CERASORB® M** is one of the most hydrophilic materials for bone regeneration, which is a key factor for long-term success in peri-implantitis treatment.
- > CERASORB® M completely remodels.
- Therefore, bone regeneration materials such as CERASORB® M are the right treatment for this disease.
- > The quality of the regenerated bone tissue is the same as natural bone, showing reproducible results.

Published by: curasan AG (2018)

Summary taken From: https://www.puredent.dk/pdf/Cerasorb-Case\_Dr-F-Duarte.pdf



- > 01 The x-ray scan supported the diagnosis of an advanced peri-implantitis.
- > 02 A full mucoperiosteal flap with two vertical release incisions was first elevated. There was a massive defect around the implants.
- > 03 CERASORB® M granules (500 1000 µm) were used to fill the defect and promote bone regeneration. The operation field was covered with OSGIDE®, a bioresorbable membrane for guided bone/tissue regeneration.
- > 04 The 6-months post-op x-ray shows a sufficient bony regeneration in the former defect area.



#### <u>~</u>~





## Delayed immediate implant placement and direct soft-tissue management with CERASORB® Foam and I/A-PRF

Author: Dr Haki Tekyatan, Germany

## Summary:

- > Product used: CERASORB® Foam in combination with I/A-PRF
- > Indications: Socket Preservation

## **Clinical Experience Summary:**

- > Socket preservation in the aesthetic zone with **CERASORB® Foam** combined with I/A-PRF ensure a predictable and reliable long-term result in terms of bone and soft tissue regeneration.
- > When hydrated in its biologic state, **CERASORB® Foam** can be easily shaped and adapted to the alveolar walls under slight compression.

Published by: Implants: International magazine of oral implantology, 3/21

Summary taken From: https://media.zwp-online.info/archiv/pub/sim\_int/im/2022/im0222/ Tekyatan\_40.pdf

#### BEFORE



- > 01 Radiograph of tooth #12 showing failed endodontic treatment with the dislocated post.
- > 02 Radiographic control of the implant in region #12 after installation of the definitive crown.



## Sinus augmentation and simultaneous implant placement using one-stage Sandwich Technique

Authors: Drs Fernando Duarte, Carina Ramos, Paulo Veiga & Marco Infante da Câmara, Portugal

## Summary:

- > Product used: CERASORB® M
- > Indications: sinus floor elevation

## **Clinical Experience Summary:**

- > Maxillary sinus graft is an increasingly common procedure in implantology, and the use of resorbable and biomimetic bone regeneration materials, such as CERASORB® M, in combination with platelet-rich fibrin (sticky bone), should be considered.
- > This technique has a safety, predictability, and longevity character for the rehabilitation of the posterior maxillary sector, and it can be performed alone or in conjunction with other reconstructive procedures.

Published by: The Journal of Oral Implantology, 2005;31(4):205-8

Summary taken From: https://www.clitrofa.com/PublicacoesCientificas/Implantologia/Sinus\_ Augmentation\_and\_Simultaneous\_Implant\_Placement\_using\_One-Stage\_Sandwich\_Technique.pdf

#### Preoperative







#### Before

 Preoperative CT with coronal and sagittal section.

> 2A & 2B: Osteotomy by piezoelectric surgery and sticky bone for reconstruction.











> 3A, 3B & 3C: Intra-op images of bone reconstruction and implant placement.





 > 4A & 4B: Autologous fibrin membranes and sutures.

**Postoperative: Post six months** 



#### After

> 5A & 5B: CT scan with coronal and sagittal sections.



## Alveolar ridge preservation with CERASORB® Foam and stypro®

Authors: Prof. Dr. Dr. Frank Palm, Dr. Jan Rupp, Dres. Palm, Roser & Colleagues, Konstanz, Germany

## Summary:

- > Product used: CERASORB® Foam, stypro®
- > Indications: socket and ridge preservation

## **Clinical Experience Summary:**

- > Due to its composite structure, **CERASORB® Foam** is a unique grafting material that promotes safe and rapid bone regeneration, especially in socket and ridge preservation.
- > When molded with blood, **CERASORB® Foam** is one of the simplest and easiest products to use from all grafting materials for socket and ridge preservation.
- > As a collagen material, **stypro**<sup>®</sup> sponge can speed up the blood clot formation thus promoting a faster and stable healing of soft tissue.

#### Published by: curasan AG (2017)

Summary taken From: https://www.futuredent.gr/image/data/The\_Specific\_Case\_CerasorbFoam\_ stypro.pdf

#### BEFORE



AFTER

- > 01 & 02 The extraction sockets and the soft tissue show two massive defects in the extraction socket.
- > 03 A large amount of new hard and soft tissue was clinically inspected.
- > 04 In the molar region a full healing and a large amount of new bone tissue was notice.



> 05 Panoramic scan after implantation



## Peri-Implantitis – Decontaminating and Regenerative Treatment Protocol

Authors: Duarte, Fernando Manuel Pinto, de Oliveira, Leonel Alves; Portugal

## Summary:

- > Product used: CERASORB® M
- > Indications: Peri-Implantitis

## **Clinical Experience Summary:**

- > A clinical case of a 61-years-old woman reported pain in an implant which was placed in 46 five years ago.
- > Periapical x-ray showed significant bone loss of about 35% of the implant length and a probing depth greater than 5mm.
- > The granules of the synthetic **CERASORB® M** hydrated with a solution of piperacillin / tazobactam was mixed with liquid phase platelet-rich fibrin.
- > The objective was to promote the initial stability and the continuous release of antibiotics for the biomaterial and the environment.
- > After 12 months of follow-up, the patient has a favorable clinical aspect, and a good recovery of bone trabeculation was visible radiologically. The patient was free of symptoms.

Published by: Preprints.org (2020)

Summary taken From: https://doi.org/10.20944/preprints202012.0597.v1



> 01 & 02 Bone loss on initial radiography. removal of the crown and installation of a healing device to protect the prosthetic connection zone of the implant





- > 03 piezo surgery decorticalization reaching the medullary bone.
- > 04 & 05 monomeric phase fibrin dripping to generate a means of continuity and adhesion with the sticky bone.



- > 06 polymeric fibrin membranes covering the graft material.
- > 07 temporary crown.
- > 08 radiograph control with 12-month follow-up.



## Experiences with a collagen composite in socket preservation

Autors: Prof. Dr. Dr. Frank Palm, Dr. Jan Rupp; Konstanz, Prof. Werner Götz; Bonn, Germany

### Summary:



> Indications: Socket Preservation

## **Clinical Experience Summary:**

- > The healing in the **CERASORB® Foam** group was as good as the healing in the stypro<sup>®</sup> group.
- > Both materials stabilized the hematoma, which was very good for the healing process.
- > To achieve good healing, both materials should be inserted without compression.
- > There is almost no difference in the surgical steps when using both products; however, a simple suture is recommended.
- Surgery for oroantral communication can be avoided by applying CERASORB® Foam. However, the bone loss in the stypro® group was significantly higher than in the CERASORB® Foam group.
- > The reason for the higher bone loss could be the lack of calcium in the **stypro**® product.

Published by: Implants: International magazine of oral implantology, 4/19

Summary taken From: https://media.zwp-online.info/archiv/pub/sim\_int/im/2019/im0419/Palm\_14.pdf

#### Case 01 - Socket preservation after severe periodontal disease affecting the bone.





- > 01 A panoramic radiograph taken preoperatively revealed the advanced stage of the periodontal disease and indicated the unsalvageable teeth that needed extraction before the treatment could be carried out.
- > 02 One-month post-op follow-up.









- > 03 Insertion of the implants and coverage with healing caps
- > 04 Post-implantation panoramic radiograph.

Case 02 - Alveolar ridge preservation with CERASORB® Foam.





- > 1 Extraction of teeth.
- > 2 Augmentation with **CERASORB® Foam** and closure with single returned sutures.
- > 3 Histological examination of the areas grafted with **CERASORB® Foam**.



## Surgical approach combining implantoplasty and reconstructive therapy with locally delivered antibiotic in the treatment of peri-implantitis: A prospective clinical case series.

Authors: Iria González Regueiro DDS, MSc, PhD; Natalia Martínez Rodriguez DDS, MSc, PhD; Cristina Barona Dorado DDS, MSc, PhD; Ignacio Sanz-Sánchez DDS, MSc, PhD; Eduardo Montero DDS, MSc, PhD; Javier Ata-Ali DDS, MS, MPH, PhD; Fernando Duarte DDS, MSc; José María Martínez-González DDS, MD, PhD, MDV, FEBOS; Spain, Portugal

## Summary:

- > Product used: OSBONE® (250-1000 µm), OSGIDE®
- > Indications: Peri-Implantitis

## **Clinical Experience Summary:**

- > Forty-three patients diagnosed with peri-implantitis were included.
- > The treatment success rate of the 43 dental implants included in the study was 86% at 1 year after surgery.
- > The combination of a resective and reconstructive surgical approach together with locally delivered antibiotic achieved a high disease resolution rate after 1 year of follow-up and constitutes a viable option for the management of peri-implantitis.

Published by: WILEY (2021)

Summary taken From: https://doi.org/10.1111/cid.13049







- > 01 Implantoplasty of the buccal dehiscence.
- > 02 Dressing impregnated with 37% orthophosphoric acid and 2% chlorhexidine Di gluconate.
- > 03 OSBONE® (250–1000 µm); synthetic hydroxyapatite bone substitute hydrated with piperacillin/ tazobactam 100/12.5 mg and compacted into the defect.
- > 04 OSGIDE<sup>®</sup>; Resorbable collagen membrane hydrated with piperacillin/ tazobactam solution placed over the graft.







> Periapical radiograph at baseline (5A) and 1 year after surgery (5B) showing a complete radiographic defect fill



#### GBR/GTR PERSPECTIVES: PRE- AND POST-OPERATIVE PERFORMANCE REPORTS

## Sinus floor elevation and its risk

Authors: Dr. Matthias Kebernik, Prof. Dr. Dr. Frank Palm; Germany

## Summary:

- > Product used: CERASORB® M
- > Indications: Sinus Floor Elevation

## **Clinical Experience Summary:**

- > Survival rates in the region of a sinus lift range from 61.7 to 100% (91.8% on average) and do not differ significantly from the survival rates of implants placed in a non-augmented bone bed (95.7% after 9-14 years in situ)
- > Overall, implants with rough surfaces have a higher success rate than machined implants.
- > The use of autogenous bone has no advantage over a mixture of bone and bone substitute in terms of implant success.
- > In conclusion, sinus floor augmentation by sinus floor elevation is a very safe and widely used method in implant surgery.
- > It offers a high probability of success in the intersection of the dental implants in the area of the posterior maxilla and thus offers a significant expansion of prosthetic possibilities.

Published by: Oral Surgery Journal (2010)

#### Summary taken From:

https://media.zwp-online.info/archiv/pub/sim/oj/2010/oj0110/oj0110\_14\_18\_kebernik.pdf















- > 01 Perforation of Schneider's membrane
- > 02 Application of fibrin glue
- > 03 Closure of perforation
- > 04 Augmentation with CERASORB® M
- > 05 Filled sinus lift
- > 06 Lateral overlay osteoplasty



## Mandibular dentigerous cyst: Enucleation and bone reconstruction

Authors: Duarte F, Ramos C; Portugal.

## Summary:

- > Product used: CERASORB® M, CERASORB® Foam, OSGIDE®
- > Indications: Cystic defects

## **Clinical Experience Summary:**

- > Bone regeneration was performed with **CERASORB® M** (curasan) in granules and foam combined with fibrin and **OSGIDE®** resorbable membrane.
- > CERASORB® M has no local or systemic toxicity and no risk of allergic reaction.
- > These findings confirmed the diagnosis of dentigerous cyst.
- > Twelve-month post-op follow-up: In postoperative orthopantomography and computed tomography, there is evidence of bone neoformation in the area previously occupied by the lesion.

Published by: JSPIR (Journal of Surgery, Periodontology, and Implant Research) (2020)

Summary taken From: <a href="https://www.researchgate.net/publication/347797600\_Mandibular\_dentigerous\_cyst\_Enucleation\_and\_bone\_reconstruction\_-\_Case\_report">https://www.researchgate.net/publication/347797600\_Mandibular\_</a> dentigerous\_cyst\_Enucleation\_and\_bone\_reconstruction\_-\_Case\_report

#### BEFORE





AFTER

- > 01 unilocular, well-defined, homogeneous radiotransparent image that surrounded the dental crown of the included 38 tooth, extending to the 35 tooth region.
- > 02 Evidence of bone neoformation in the area previously occupied by the lesion.



## Use of β-Tricalcium phosphate versus Hydroxyapatite Ceramics: A clinical comparison

Authors: Priv.-Doz. Dr. Dr. Arwed Ludwig, Dr. Gregor Thomas; Germany

#### Summary:

- > Product used: CERASORB® M, OSBONE®
- > Indications: Alveolar ridge reconstruction.

## **Clinical Experience Summary:**

- > **CERASORB® M**: big and microporous surface increases osteoconductivity. Fast migration of blood vessels and bone cells leads to quick resorption and bone transformation.
- > **OSBONE**<sup>®</sup>: 80% porosity. Immediate start of osseointegration, which is completed after approx. 3–6 months.
- > Both materials are synthetic origin and thus free of foreign materials or allergens.

The interconnecting, open-cell porous structure ensures good biocompatibility.

- > **CERASORB® M** is preferred for alveolar defects without subsequent implant placement or single-tooth defects, while **OSBONE®** is preferred for multi-wall defects.
- > For absolute high augmentation and lateral augmentation as well as for peri-implantitis, hydroxyapatite should be preferred due to its volume constancy.

Published by: Implants: International magazine of oral implantology, 11/16

Summary taken From: https://epaper.zwp-online.info/epaper/sim/ij/2016/ij1116/Ludwig\_36.pdf

#### Case 1: 9-year-old patient

#### BEFORE





AFTER

03

- > 01 Extensive follicular cyst in the region of 23
- > 02 Post-Operative x-ray image after six years (The defect was filled with β-TCP)



#### Case 2: 52-year-old patient

#### BEFORE







- > 01 A follicular cyst in region 23 with retained and displaced tooth 23.
- > 02 Filling of the defect with β-Tricalcium phosphate soaked in the patient's own blood.



AFTER

#### Case 3: 65-year-old patient









- ) 1A Sinus floor augmentation using  $\beta$ -TCP and autologous bone mixture.
- ) 1B Lateral bone augmentation performed with a mixture of β-TCP and autologous bone & covering with a resorbable membrane in region 21 and 22.
- > 1C Simultaneous implant placement in region 46 and 36.
- > **02** After a six-months healing phase The prosthetic restoration placed after uncovering the implants.



## Treatment of Maxillary Inflammatory Odontogenic Cyst with Laser Therapy – Case Report

Authors: Duarte F, Ramos C, Thomé M; Portugal

## Summary:

- > Product used: CERASORB® M, OSGIDE®
- > Indications: Cystic Defects

## **Clinical Experience Summary:**

- > A 55-year-old female patient was diagnosed with odontogenic cysts in the second quadrant.
- > During the treatment, application of Er:YAG and Nd:YAG lasers was done along with immediate bone regeneration.
- For bone regeneration CERASORB® M combined with fibrin and OSGIDE® a resorbable membrane) were used.
- > Sticky bone is biologically solidified bone graft which is entrapped in a fibrin network. Sticky bone graft granules are strongly interconnected to each other by fibrin network.
- > Sticky bone has numerous advantages:
  - > It is moldable, so well adapted over various shape of bony defect.
  - > Micro and macro movement of grafted bone is prevented.
  - > Fibrin network entraps platelets and leukocytes to release growth factors, so bone regeneration and soft tissue is accelerated.
  - > No biochemical additives are needed to make sticky bone.
  - > Fibrin interconnection minimizes soft tissue ingrowth into the sticky bone graft.
- > The use of membranes with their barrier effect has significant positive effects on alveolar ridge preservation outcomes.
- > After a 12-month follow-up period, the patient is pain free and the lesion has no signs of recurrence.

Published by: JSPIR (Journal of Surgery, Periodontology, and Implant Research) (2022)

Summary taken From: https://doi.org/10.35252/jspir.2022.1.003.1.05



#### BEFORE



- > 1A Initial computed tomography coronal section
- > 1B Initial computed tomography sagittal section
- > 1C Initial computed tomography cross section





- > 2A Intraoperative image of the cystic cavity
- > 2B Laser cystic cavity preparation
- > 2C Sticky bone for cyst cavity reconstruction
- > 2D Sticky bone for cyst cavity reconstruction
- > 2E Fibrin membrane and glue placement
- > 2F OSGIDE® resorbable membrane covering all bone reconstruction.



#### Postoperative period of twelve months:



- > 3A Final computed tomography coronal section
- > 3B Final computed tomography sagittal section
- > 3C Final computed tomography cross section



## Augmentation and defect filling in oral surgery: A multicenter non-interventional study.

Author: Henriette Lerner, Germany

### Summary:

- > Product used: CERASORB® Paste
- > Indications: Small bone/jaw defects

## **Clinical Experience Summary:**

- CERASORB® Paste is a bone regeneration material in paste form based on fine β-TCP granules and hyaluronic acid matrix.
- > In the present open multicenter study under everyday conditions this material showed itself to be suitable for filling smaller jaw defects, in particular; because it is also easy to handle.
- > It is noteworthy that no side effects of any kind and no intolerance reactions were observed.

Published by: Implants: International magazine of oral implantology, 2/17

Summary taken From: https://www.researchgate.net/publication/316158479\_Augmentation\_and\_ defect\_filling\_in\_oral\_surgery\_A\_multicentre\_non-interventional\_study

#### Final evaluation of defect fillings/augmentation

	Bone Augmentation/regeneration (n=41)	Tolerability (n=41)
Very good	21 (51.2%)	24 (34.2%)
Good	11 (26.8%)	14 (58.5%)
Satisfactory	3 (7.3%)	0
Unsatisfactory	4 (9.8%)	1 (2.4%)
No answer	2 (4.9%)	2 (4.9%)

Tab 1: After a total of 54–664 days (mean: 342 days; median: 381 days).



## **OSBONE® – Multicenter study**

Authors: Dr. Andreas Holweg, Henriette Lerner, and Dr. Kay Pehrsson - Germany

## Summary:

- > Product used: OSBONE®
- > Indications: Implant bed preparation (0.25 -1 µm), sinus floor elevation

## **Clinical Experience Summary:**

> The new bone substitute **OSBONE®** is particularly well-suited for use in indications where increased mechanical stability is required, as it offers ideal structures for osseointegration, possesses slow resorption kinetics, and exhibits excellent biocompatibility.

#### Published by: EDI Product Studies (2012)

Summary taken From: <u>https://www.researchgate.net/publication/264558639\_Application\_of\_a\_</u> synthetik\_hydroxyapatite\_in\_dental\_surgery

#### Fig. 1a & Fig. 1b: Overall evaluation of efficacy and tolerability





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### CERASORB®M in Dental Surgery

Author: ZA Dieter Bilk; Germany

#### Summary:

- > Product used: CERASORB® M
- > Indications: Cystic defects, Bone Augmentation.

#### **Clinical Experience Summary:**

- > **CERASORB® M** accelerates resorption, this structure promotes speedy ingrowth of newly formed bone tissue, diffusion of blood and body fluids, deep penetration of osteogenic and endothelial cells, and replacement of the synthetic matrix with bone.
- > The tissue developing in minor defects filled with **CERASORB® M** will offer adequate stability for implant placement within 4 to 6 months.
- > Larger defects like those resulting from sinus grafting will usually require a waiting period of 6 to 9 months until implants can be placed; very large defects may even require 12 months.

Published by: EDI Journal (2007)

Summary taken From: <u>https://curasaninc.com/wp-content/uploads/2015/documents/Cerasorb\_M\_</u> in\_Dental\_Surgery.pdf







### Survival of Immediately Loaded Dental Implants in Deficient Alveolar Bone Sites Augmented with β-Tricalcium Phosphate

Authors: Ormianer; Israel, Zeev DMD; Palti, Ady DMD; New York, Shifman, Arie DMD; Israel

#### Summary:



- > Product used: CERASORB®
- > Indications: Alveolar ridge reconstruction

#### **Clinical Experience Summary:**

- > The strength of this study is the large group of patients treated by the same surgeon (A.P.) using the same surgical protocols in 2 different centers.
- > Higher implant success rates were gained, despite the immediate loading of the implants.
- > Implant failures could be attributed to prosthodontic parameters, such as the condition of the opposing arch.

Published by: Implant Dentistry Journal (2006)

**Distribution of implant placement** 

Summary taken From: https://journals.lww.com/implantdent/fulltext/2006/12000/survival\_of\_ immediately\_loaded\_dental\_implants\_in.14.aspx











# Clinical application of bone grafting material for implantation with open healing.

Author: Dr. Thomas Hoch; Germany

#### Summary:



- > Product used: CERASORB®
- > Indications: socket and ridge preservation (150–500 μm), cystic defect (1,000–2,000 μm)

#### **Clinical Experience Summary:**

- > **CERASORB**<sup>®</sup> has proven to be a bone augmentation material that is easy to use and compatible, as well as providing a high degree of certainty with regard to later bone quality in the augmentation area.
- > As purely synthetic material that is completely resorbed synchronously with new bone formation finds it larger in patient's acceptance, especially because of the lack of a second intervention (donor operation) and its biological compatibility.
- In the case of small defects, CERASORB® in smaller (150–500 μm) granulation for large augmentation areas in large or mixed granulation (1,000–2,000 μm + 500-1,000 μm) can be used.
- > At the end of the resorption, vital bone is formed again at the defect side, which can naturally remodel itself.
- > The use of PRP can also accelerate bone maturation and significantly improve bone quality as well as wound healing of the soft tissue.
- > Due to their smooth, anti-adhesive surface, the use of PTFE membranes allows open healing and thus enables treatment with less trauma.

Published by: Implantology Journal (2005)

Summary taken From: https://media.zwp-online.info/archiv/pub/sim/ij/2005/ij0405/ij0405\_06\_08\_ hoch.pdf



# The value of beta-tricalcium-phosphate (CERASORB®) in pre-prosthetic surgery

Authors: A Szúcs, Z Suba, K Martonffy, K Hrabák, S Gyulai-Gaál, F Dóri, G Szabó; Budapest, Hungary

#### Summary:

> Product used: CERASORB®



> Indications: Cystic defects

#### **Clinical Experience Summary:**

- > Disturbance of wound healing was not observed in any of the cases, and both the radiological and the histological examinations revealed that transformation of the implanted beta-tricalcium phosphate into bone could be detected as early as in the second month.
- > During the 10-month follow-up period, this transformation was continuous, but was not complete; completion is to be expected only after 12 months.
- > It is important that load-bearing tissue had already developed after 4-6 months.
- > Studies to date suggest that autologous bone is not necessary for either sinus grafting or the filling of large cysts: **CERASORB**<sup>®</sup> alone is suitable for this purpose.

Published by: Fogorvosi szemle (2000)

Summary taken From: https://pubmed.ncbi.nlm.nih.gov/10703176/



### Histologic and Histometric Evaluation of Bovine Cancellous Bone and Beta-Tricalcium Phosphate 45 Months After Grafting in Maxillary Sinus

Authors: Farokh Khatiblou, DMD, MSD; Iran

#### Summary:

> Product used: CERASORB®

> Indications: Sinus floor elevation

#### **Clinical Experience Summary:**

- > The 2-stage sinus floor augmentation procedure conducted using the osteotome technique.
- > Histomorphometric analysis of the core taken from the beta-TCP grafted site revealed 23.08% calcified bone and 76.92% marrow and connective tissue with no grafting material residue.
- > Similar analysis of the core taken from the BCB grafted site showed 24.81% calcified bone and 75.19% marrow and connective tissue with no grafting material residue.
- > It was noted that, the sinus floor augmentation procedure adequately increases the vertical dimension of the resorbed alveolar process in the posterior maxilla, thus enabling placement of implants and achieving sufficient primary stabilization.
- > In conclusion, the histologic and histomorphometric result of this report demonstrated close similarity between the quality of the new bone replacing the 2 grafting materials 45 months after grafting into the same sinus of the same patient.

Published by: Journal of Oral Implantology (2011)

Summary taken From: https://meridian.allenpress.com/joi/article/37/6/727/2375/Histologic-and-Histometric-Evaluation-of-Bovine



# Maxillary sinus floor grafting with $\beta$ -tricalcium phosphate in humans: density and microarchitecture of the newly formed bone

Authors: Zsuzsanna Suba, Daniel Takács, Danica Matusovits, József Barabás, András Fazekas, György Szabó; Budapest, Hungary

#### Summary:



- > Product used: CERASORB®
- > Indications: Sinus floor elevation

#### **Clinical Experience Summary:**

- > **CERASORB**<sup>®</sup> proved to be an effective bone-replacing material with osteoconductivity; it was capable of gradual disintegration, thereby providing space for the regenerating bone.
- > The osteointegration of the grafts was studied histologically.
- > Trabecular bone volume (TBV) and trabecular bone pattern factor (TBPf) were quantified by histomorphometry.
- > Six months after insertion of the grafts, the bone of the augmented sinus floor was strong and suitable for anchorage of dental implants, irrespective of whether autogenous bone or **CERASORB**<sup>®</sup> particles had been applied.

Published by: Clinical Oral Implants Research (2006)

Summary taken From: https://onlinelibrary.wiley.com/doi/10.1111/j.1600-0501.2005.01166.x



# Maxillary sinus floor augmentation using a beta-tricalcium phosphate (CERASORB®) alone compared to autogenous bone grafts.

Authors: Steven A Zijderveld, Ilara R Zerbo, Johan P A van den Bergh, Engelbert A J M Schulten, Chris M ten Bruggenkate; Amsterdam, The Netherlands

#### Summary:



- > Product used: CERASORB®
- > Indications: Sinus floor elevation

#### **Clinical Experience Summary:**

- > One year of follow-up showed no implant losses or failures had occurred.
- Although autogenous bone grafting is still the gold standard, according to the clinical results, the preimplantation sinus floor elevation procedure used, which involved a limited volume of beta-tricalcium phosphate, appeared to be a clinically reliable procedure in this patient population.

Published by: The International Journal of Oral and Maxillofacial Implant (2005)

Summary taken From: https://pubmed.ncbi.nlm.nih.gov/15973955/



# One-stage immediate or two-staged late insertion of 3i implants in reconstructed or to be reconstructed area.

Author: Dr. Med. Dent. Dr. SC. HUM. Stefan Schermer; Germany

#### Summary:

- > Product used: CERASORB® M
- > Indications: Cystic defects

#### **Clinical Experience Summary:**

- > After three to six months, good resorption of the KEM and in relation to the time, individual situation, and patient's medical history a very good osseointegration of the implants can be seen.
- > Complication rate was less than 5% absolute.
- > To a total loss of the KEM and the implant
- > Wound healing disorders or postoperative complications occurred in less than 1% of the treated cases.

Published by: Implantology Journal (2006)

Summary taken From: https://www.berlin-klinik.de/pdf/Spaet-Insertion\_von\_3i-Implantaten\_2.pdf



#### Use of platelet-rich plasma in major maxillary sinus augmentation

Authors: G Moro, V Casini, A Bastieri; Italy

#### Summary:

- > Product used: CERASORB®
- > Indications: Sinus floor elevation

#### **Clinical Experience Summary:**

- > After successful treatment it was possible to detect tissue regeneration both horizontally and vertically (approximately 4 mm), with formation of high-quality bone tissue, which subsequently enabled optimal osseointegration of the implants inserted.
- > The introduction of PRP into the field of regenerative techniques has opened new horizons, especially in the branch of implantology.
- > This mixture is able to reduce the quantity of autologous tissue harvested.
- > The gel-like consistency also avoids the application and subsequent removal of a membrane, and in consequence the surgical trauma undergone by the patient is markedly reduced.

Published by: Minerva Stomatol (2003)

Summary taken From: https://pubmed.ncbi.nlm.nih.gov/12874530/





# Lateral ridge split and immediate implant placement in moderately resorbed alveolar ridges: How much is the added width?

Authors: Amin Rahpeyma, Saeedeh Khajehahmadi, and Vahid Reza Hosseini; Iran

#### Summary:



- > Product used: CERASORB®
- > Indications: Alveolar ridge reconstruction

#### **Clinical Experience Summary:**

- > Placement of bone substitutes in intercortical space has advantages of internal perfusion, prevention from particle migration and displacement, omission of the need for donor site and fixation screw and reduction of graft resorption probability.
- > Lateral ridge split technique is a way to solve the problem of the width in narrow ridges with adequate height.
- Ridge splitting technique in both jaws showed the predictable outcomes, if appropriate cases selected and special attention paid to details; then the waiting time between surgery and beginning of prosthodontic treatment can be reduced to 3 months.

Published by: Dental Research Journal (DRJ) (2013)

Summary taken From: https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3858733/



#### Autogenous bone versus beta-tricalcium phosphate graft alone for bilateral sinus elevations (2-3D CT, histologic and histomorphometric evaluations)

Authors: Zsolt Németh, Zsuzsanna Suba, Károly Hrabák, József Barabás, György Szabó; Budapest, Hungary

#### Summary:



- > Product used: CERASORB®
- > Indications: Sinus floor elevation

#### **Clinical Experience Summary:**

- > The radiological and histological examinations demonstrated good bone formation on both sides were seen in one year follow up.
- > As concerns the rate of formation of new bone, there was practically no difference after the implantation of autogenous bone or beta-tricalcium phosphate.
- This study has therefore provided further evidence that, when certain bone deficiencies are to be eliminated, the unpleasant phenomena accompanying the removal of the patient's own bone can be avoided through the use of new synthetic materials.
- > Accordingly, when comparing the present results with the findings of other authors, betatricalcium phosphate may be considered a good graft material even without autogenous bone.

Published by: Orvosi Hetilap (2002)

Summary taken From: https://pubmed.ncbi.nlm.nih.gov/12577407/



### Synthetic, phase-pure beta-tricalcium phosphate ceramic. Bone regeneration in reconstructive surgery of the jaws

Author: Horch HH, Sader R, Kolk A; Germany

#### Summary:

- > Product used: CERASORB®
- > Indications: Cystic defects

Published by: Deutsche Zahnärztliche Zeitschrift (2004)

Summary taken From: https://docplayer.org/101183431-Synthetische-phasenreine-betatrikalziumphosphat-keramik-knochenregeneration-bei-der-rekonstruktiven-chirurgie-der-kiefer.html

#### Long-term results after lateral and osteotome technique sinus floor elevation: a retrospective analysis of 2190 implants over a time period of 15 years Authors: Jan Tetsch, Peter Tetsch, Dominikus A. Lysek

#### Summary:

- > Product used: CERASORB®
- > Indications: Sinus floor elevation

Published by: Clinical Oral Implants Research (2010)

Summary taken From: https://onlinelibrary.wiley.com/doi/10.1111/j.1600-0501.2008.01661.x







### Decontaminating and Regenerative Treatment of Peri-Implantitis with Implacure Protocol in Zygomatic Implants

Authors: Fernando Duarte, Carina Ramos; Portugal

#### Summary:

- > Product used: CERASORB® M, OSGIDE®
- > Indications: Peri-implantitis

Published by: Scientific Archives of Dental Sciences (2020)

Summary taken From: https://www.clitrofa.com/PublicacoesCientificas/PeriImplantite/SAODS-03-0139.pdf

# Injectable Bone Substitute Material on the Basis of $\beta$ -TCP and Hyaluronan Achieves Complete Bone Regeneration While Undergoing Nearly Complete Degradation

Authors: Jonas Lorenz, Mike Barbeck, Charles James Kirkpatrick, Robert Sader, Henriette Lerner, Shahram Ghanaati; Germany

#### Summary:

- > Product used: CERASORB® Paste
- > Indications: Socket and ridge preservation

Published by: The International Journal of oral and maxillofacial implants (2018)

Summary taken From: https://www.quintessence-publishing.com/usa/en/article/847149/theinternational-journal-of-oral-maxillofacial-implants/2018/03/injectable-bone-substitute-materialon-the-basis-of-tcp-and-hyaluronan-achieves-complete-bone-regeneration-while-undergoingnearly-complete-degradation



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#### Implacure<sup>®</sup> protocol – decontaminating treatment and regenerative of peri-implantitis Authors: Fernando Duarte and Carina Ramos; Portugal

#### Summary:

- > Product used: CERASORB® M, OSGIDE®
- > Indications: Peri-implant defects

Published by: Journal Dentistry

Summary taken From: https://www.preprints.org/manuscript/202012.0597/v1

#### Determination of the relative jawbone density using digital measurement method after defect filling with B-TCP, taking into account the clinical course

Prof. Dr. J. Menke, Prof. Dr. M. Oppermann; Germany

#### Summary:

- > Product used: CERASORB® M (500-1000 µm)
- > Indications: Socket and Ridge Preservation

Published by: Semantic Scholars (2018)

Summary taken From: https://www.semanticscholar.org/paper/Bestimmung-der-relativen-Kieferknochendichte-nach-Blem/96a3bfb55d1fd00f8c90e0f4e60f16dcf098c495







#### Clinical and radiographic evaluation of pure beta-tricalcium phosphate and autogenous bone graft in treatment of two to three-wall periodontal defects

Authors: Soleymani Shayeste, Mahvidy Zade S; Tehran

#### Summary:

> Product used: CERASORB®

> Indications: Periodontal defects

Published by: Tehran University of Medical Science (2010)

**Summary taken From:** <a href="https://www.researchgate.net/publication/267707600\_Clinical\_and\_radiographic\_evaluation\_of\_pure\_beta-tricalcium\_phosphate\_and\_autogenous\_bone\_graft\_in\_treatment\_of\_two\_to\_three-wall\_periodontal\_defects">https://www.researchgate.net/publication/267707600\_Clinical\_and\_</a>

### Effect of a Multiporous Beta–Tricalcium Phosphate on Bone Density Around Dental Implants Inserted into Fresh Extraction Sockets

Author: Emad Tawfik Daif; Egypt

#### Summary:

- > Product used: CERASORB® (500-1000 µm)
- > Indications: Socket and Ridge Preservation

Published by: International Journal of Oral Implantology (2013)

Summary taken From: https://meridian.allenpress.com/joi/article/39/3/339/7597/Effect-of-a-Multiporous-Beta-Tricalicum-Phosphate





Long-Term Results of Implants Immediately placed into extraction sockets grafted with β-Tricalcium phosphate: A Retrospective Study. Authors: Noga Harel, DMD, Ofer Moses, DMD, Adi Palti, DMD, Zeev Ormianer, DMD; Israel

#### Summary:

- > Product used: CERASORB®
- > Indications: Socket and Ridge Preservation

Published by: Journal of Oral and Maxillofacial Surgery (2013)

Summary taken From: https://www.joms.org/article/S0278-2391(12)01384-5/abstract

Evaluation of Relative Efficacy of β-Tricalcium Phosphate with and without Type I Resorbable Collagen Membrane in Periodontal Infrabony Defects: A Clinical and Radiographic Study Authors: D Trinath Kishore, Tushar Bandiwadekar, R Padma, Surangama Debunath, Profulla, Ajay Reddy; India

#### Summary:

- > Product used: CERASORB®
- > Indications: Periodontal defects

Published by: The Journal of Contemporary Dental Practice (2013)

Summary taken From: https://doi.org/10.5005/jp-journals-10024-1299









### Augmentation under special consideration of aesthetics: Two different procedures in comparison

Authors: Dr. Marcel A. Wainwright; Germany

#### Summary:

> Product used: CERASORB®

> Indications: Socket and Ridge Preservation

Published by: Implantology Journal (2005)

Summary taken From: https://epaper.zwp-online.info/epaper/9853/export-article/18

# Use of platelet-rich plasma in periodontal surgery – a prospective randomized double blind clinical trial

Authors: L. Harnack, R. H. Boedeker, I. Kurtulus, S. Boehm,

J. Gonzales & J. Meyle; Germany

#### Summary:

- > Product used: CERASORB®
- > Indications: Periodontal defects

Published by: Clinical Oral Investigation Journal (2009)

Summary taken From: https://doi.org/10.1007/s00784-008-0223-7





#### **Endodontic and surgical treatment of a geminated maxillary incisor** Authors: A. Braun, T. Appel, M. Frentzen; Germany

#### Summary:

- > Product used: CERASORB®
- > Indications: Socket and Ridge Preservation

Published by: International Endodontic Journal (2003)

Summary taken From: https://doi.org/10.1046/j.1365-2591.2003.00668.x

#### A concept for the treatment of various dental bone defects

Authors: Ady Palti, Thomas Hoch; Germany

#### Summary:

- > Product used: CERASORB®
- > Indications: Socket and Ridge Preservation

Published by: Implant Dentistry (2002)

Summary taken From: https://doi.org/10.1097/00008505-200201000-00017





#### Comparison of bone-graft substitutes. Risks and benefits of synthetic and bovine derivate materials. Author: Miller RJ; USA

#### Summary:

- > Product used: CERASORB® M
- > Indications: Socket and Ridge Preservation

Published by: DW Journal (year not mentioned)\*

Summary taken From: https://dentalworld.hu/comparison-of-bone-graft-substitutes/

### Clinical evaluation of alveolar ridge preservation with a $\beta$ -tricalcium phosphate socket graft.

Authors: Horowitz RA, Mazor Z, Miller RJ, Krauser J, Prasad HS, Rohrer MD; USA

#### Summary:

- > Product used: CERASORB® (150-500 µm)
- > Indications: Socket and Ridge Preservation

Published by: Compendium of continuous education in dentistry (2009)

Summary taken From: https://roberthorowitzdds.com/lab/wp-content/uploads/2020/03/ Evaluation of Alveolar Ridge Prservation.pdf







## Use of platelet-rich plasma in periodontal surgery a prospective randomized double blind clinical trial

Authors: Böhm S, Kurtulus I, Gonzales J, Meyle J; Germany

#### Summary:

> Product used: CERASORB®

> Indications: Intra bony defects

Published by: Clinical Oral Investigation (2008)

Summary taken From: https://doi.org/10.1007/s00784-008-0223-7

#### Alveolar Ridge Preservation: Bone Augmentation after Extraction Author: Dr. Roland Hille; Germany

#### Summary:

- **Product used:** CERASORB<sup>®</sup> (150-500 μm)
- > Indications: Socket and Ridge Preservation

Published by: Implantology Journal (2005)

Summary taken From: https://media.zwp-online.info/archiv/pub/sim/ij/2005/ij0105/ij0105\_12\_18\_hille\_dgzi.pdf







#### Alternative bone expansion technique for immediate placement of implants in the edentulous posterior mandibular ridge: a clinical report Authors: Selcuk Basa, Altan Varol, Neslihan Turker; Turkey

#### Summary:



> Indications: Alveolar ridge augmentation

Published by: The International Journal of Oral & Maxillofacial Implants (2004)

Summary taken From: https://europepmc.org/article/MED/15346753

Bone replacement and non-resorbable membranes. Clinical use of alloplastic bone replacement material and micro-porous, non-resorbable membranes.

Author: Kisters GJ; Germany

#### Summary:

- > Product used: CERASORB® (500-1000 µm)
- > Indications: Socket and Ridge Preservation

Published by: Oral Surgery Journal (2003)

Summary taken From: https://media.zwp-online.info/archiv/pub/sim/oj/2003/oj0103/oj0103\_06\_12\_kisters.pdf





#### Usage of CERASORB<sup>®</sup> in complex treatment of chronic generalized periodontitis (clinical-experimental study) Author: N R Motsonelidze, T V Okropiridze, R V Kapanadze; USA

#### Summary:

> Product used: CERASORB®

> Indications: periodontal defects

Published by: Georgian Med News (2005)

Summary taken From: https://pubmed.ncbi.nlm.nih.gov/15821318/

#### Sinus lift and endosseous implant placement. A retrospective ten-year study.

Authors: Andrea Cramer, Prof. Dr. med. Dr. med. dent. R.H. Reich, Prof. Dr. med. dent. K.H. Utz.; Germany

#### Summary:

- > Product used: CERASORB®
- > Indications: Sinus floor elevation

Published by: Rheinische Friedrich-Wilhelms-University (2007)

Summary taken From: https://bonndoc.ulb.uni-bonn.de/xmlui/bitstream/ handle/20.500.11811/2897/0964.pdf?sequence=1





# Evaluation of the success of the clinical application of $\beta$ tricalcium phosphate for alloplastic reconstruction bony defects in the jaw and facial area

Authors: Richard Waluga, Prof. Dr. med. Dr. med. dent. M. Klein, Prof. Dr. med. Dr. med. dent. A. Hemprich, Priv.-Doz. Dr. med. H.-J. Bail; Germany

#### Summary:

- > Product used: CERASORB® M
- > Indications: Cystic defects

Published by: Charité – Universitätsmedizin Berlin (2009)

Summary taken From: https://refubium.fu-berlin.de/bitstream/handle/fub188/13776/ KnochenarbeitOnline.pdf

### New Oral Surgery Materials for Bone Reconstruction — A Comparison of Five Bone Substitute Materials for Dentoalveolar Augmentation Author: Marcin Kozakiewicz and Tomasz Wach; Poland

#### Summary:

> Product used: OSBONE®

> Indications: Alveolar ridge augmentation

Published by: Materials (2020)

Summary taken From: https://doi.org/10.3390/ma13132935





# The influence of substitute materials on bone density after maxillary sinus augmentation: a microcomputed tomography study

Authors: Sebastian Kühl, Hermann Götz, Christoph Brochhausen, Norbert Jakse, Andreas Filippi, Bernd d'Hoedt, Matthias Kreisler; Switzerland

#### Summary:



- > Product used: CERASORB®
- > Indications: Sinus floor elevation

Published by: The International Journal of Oral and Maxillofacial Implant (2012)

Summary taken From: https://pubmed.ncbi.nlm.nih.gov/23189308/

Evaluation of horizontal ridge augmentation using beta tricalcium phosphate and demineralized bone matrix: A comparative study

Authors: Mahmoud Shalash, Hatem A Rahman, Amr A Azim, Amani H Neemat, Hesham El-Hawary, Sherine Nasry; Egypt

#### Summary:

- > Product used: CERASORB® M
- > Indications: Alveolar ridge reconstruction

Published by: Journal of Clinical and Experimental Dentistry (2013)

Summary taken From: https://doi.org/10.4317/jced.51244





#### From granules to foam

Author: Prof. Dr Dr Stefan Schermer, Germany

#### Summary:

- > Product used: CERASORB®, CERASORB® Foam
- > Indications: Sinus floor elevation

Published by: Dent IMPLANTOL (2016)

Summary taken From: https://www.berlin-klinik.de/wp-content/uploads/Vom\_Granulat\_zum\_Foam\_Schermer.pdf

#### Synthetic, pure-phase beta-tricalcium phosphate ceramic granules (CERASORB®) for bone regeneration in the reconstructive surgery of the jaws

Authors: H.-H. Horch, R. Sader, C. Pautke, A. Neff, H. Deppe, A. Kolk; Germany

#### Summary:

- > Product used: CERASORB®
- > Indications: Cystic defects

Published by: Clinical paper reconstructive surgery (2006)

Summary taken From: https://doi.org/10.1016/j.ijom.2006.03.017

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### Fast-Versus Slow-Resorbable Calcium Phosphate Bone Substitute Materials—Texture Analysis after 12 Months of Observation

Authors: Tomasz Wach\* and Marcin Kozakiewicz; Poland

#### Summary:

> Product used: CERASORB® M

> Indications: Sinus floor elevations

Published by: Materials (2020)

Summary taken From: https://doi.org/10.3390/ma13173854

## Alveolar management? Procedure and added value for practice and patient.

Author: ZA Dieter Bilk; Germany

#### Summary:

- > Product used: CERASORB® Foam
- > Indications: Socket and ridge preservation

Published by: Dental Implantology and periodontology magazine (2016)

Summary taken From: Kg, S. V. G. &. C. (n.d.). Alveolenmanagement ? Vorgehen und Mehrwert für Praxis | Implantologie | DImagazin-aktuell.de. DI-Magazin-Aktuell. https://www.dimagazin-aktuell. de/implantologie/knochenmanagement/story/alveolenmanagement--vorgehen-und-mehrwertfuer-praxis-und-patient







#### Observational study of a $\beta$ -TCP-based bone substitute material paste

Authors: Dr. med. dent. Dr. med. habil. Jonas Lorenz, Prof. Dr. Dr. Dr. Shahram Ghanaati, Dr. medic. stom. Henriette Lerner, Prof. Dr. Dr. Dr. Robert Sader; Germany

#### Summary:

- > Product used: CERASORB® Paste
- > Indications: Socket and ridge Preservation

Published by: ZWP Online (2015)

Summary taken From: https://www.zwp-online.info/fachgebiete/implantologie/gtr-und-gbr/ anwendungsbeobachtung-einer-tcp-basierten-knochenersatzmaterialpaste

#### Simultaneous implantation with sinus lift surgery for reduced bone supply – a retrospective Clinical Study Authors: Barbara Beyrle, Prof. Dr. Klaus-Michael Debatin,

Prof. Dr. Ulrich Keller, Prof. Dr. Lutz Claes; Germany

#### Summary:

- > Product used: CERASORB®
- > Indications: Sinus floor elevation

Published by: University Hospital Ulm (2009)

Summary taken From: https://oparu.uni-ulm.de/server/api/core/bitstreams/a547ceed-3b05-43bba89c-c4b311e1c74b/content









#### **The implant treatment of exceptional defect situations** Author: Dieter Bilk; Germany

#### Summary:

- > Product used: CERASORB®
- > Indications: Cystic defects

Published by: Implantologie Journal (2004)

Summary taken From: https://epaper.zwp-online.info/epaper/9843/export-article/30

#### **Minimally invasive sinus lift according to JEDER – a field report** Authors: Dr. med. dent. Jan Foitzik; Germany

#### Summary:

- > Product used: CERASORB®
- > Indications: Sinus floor elevation

Published by: Implantologie Journal (2019)

Summary taken From: https://epaper.zwp-online.info/epaper/sim/ij/2019/ij1219/curasan\_48.pdf







### Histologic effect of pure-phase beta-tricalcium phosphate on bone regeneration in human artificial jawbone defects

Authors: P. Trisi, W. Rao, A. Rebaudi, P. Fiore; Italy

#### Summary:



- > Product used: CERASORB®
- > Indications: implant bed preparation

Published by: The International Journal of Periodontics and Restorative Dentistry (2003)

Summary taken From: https://pubmed.ncbi.nlm.nih.gov/12617370/

# Sinus Floor Elevation with $\beta-tricalcium$ phosphate and Platelet-rich Plasma

Authors: A. Nitsch, R. Gruber, I. N. C. Daevers, A. Patyk, H.-A. Merten; Germany

#### Summary:

- > Product used: CERASORB®
- > Indications: Sinus floor elevation

Published by: ZWR - Das Deutsche Zahnärzteblatt (2009)

Summary taken From: https://doi.org/10.1055/s-0029-1233295





#### **Choice of Graft Material in Relation to Maxillary Sinus** Width in Internal Sinus Floor Augmentation.

Authors: Ho-Yeol Jang, DDS, Hyoun-Chull Kim, DDS, PhD, Sang-Chull Lee, DDS, PhD, Jang-Yeol Lee, DDS; Korea

#### Summary:

> Product used: CERASORB®

> Indications: Sinus floor elevation

Published by: Journal of Oral and maxillofacial surgery (2010)

Summary taken From: https://doi.org/10.1016/j.joms.2009.09.093

Massive sinus grafts by tricalcium phosphate. Long-term results massive sinus-lift procedures with β-tricalcium phosphate: Long-term results Authors: C. Meyer, B. Chatelain, Mr. Benarroch, J.-F. Garnier, B. Ricbourg, T. Camponovo; France

#### Summary:

> Product used: CERASORB®

> Indications: Sinus floor elevation

Published by: Revue de Stomatologie et de chirurgie maxilla-faciale (2009)

Summary taken From: https://doi.org/10.1016/j.stomax.2008.10.006







#### Evaluation of CERASORB® M as a bone graft used for sinus lift and dental implant installation. Author: Wael A. Elmohandes; Egypt

Summary:



> Indications: Sinus floor elevation

Published by: International Journal of Oral and Maxillofacial Surgery (2009)

Summary taken From: https://doi.org/10.1016/j.ijom.2009.03.368

# Effect of $\beta$ -tricalcium phosphate particles with varying porosity on osteogenesis after sinus floor augmentation in humans

Authors: Christine Knabe, Christian Koch, Alexander Rack, Michael Stiller; Germany

#### Summary:

- > Product used: CERASORB®
- > Indications: Sinus floor elevation

Published by: Biomaterials (2008)

Summary taken From: https://doi.org/10.1016/j.biomaterials.2008.01.026





# CERASORB®: Fundamentals of material science and histomorphological experience

Authors: Prof. (ret.) Dr. Hanns Plenk, Dr. Johann Lederer; Vienna

#### Summary:



> Indications: Sinus floor elevation

Published by: Klinik & Praxis (2013)

Summary taken From: https://www.researchgate.net/publication/256421853\_CerasorbR\_ Materialkundliche\_Grundlagen\_und\_klinisch-histomorphologische\_Erfahrungen

#### A new resorbable membrane

Author: ZA Dieter Bilk; Germany

#### Summary:

- > Product used: CERASORB® M (500 1000 µm), Inion membrane
- > Indications: Sinus floor elevation

Published by: IMPLANTOLOGIE JOURNAL (2006)

Summary taken From: https://media.zwp-online.info/archiv/pub/sim/ij/2006/ij0106/ij0106\_22\_24\_bilk.pdf







# Histomorphology of bone regeneration after sinus floor augmentation with two forms of TCP granules - a case report.

Authors: Hanns Plenk and Johann Lederer; Vienna

#### Summary:

- > Product used: CERASORB®
- > Indications: Sinus floor augmentation

Published by: Zeitschrift für Orale Implantologie (2005)

Summary taken From: https://www.researchgate.net/publication/256418243\_Histomorphologie\_der\_ Knochenregeneration\_nach\_Sinusbodenaugmentation\_mit\_zwei\_Formen\_eines\_TCP-Granulates\_-\_ ein\_Fallbericht

A prospective multicenter randomized clinical trial of autogenous bone versus beta-tricalcium phosphate graft alone for bilateral sinus elevation: histologic and histomorphometric evaluation

Authors: György Szabó, Luc Huys, Paul Coulthard, Carlo Maiorana, Umberto Garagiola, József Barabás, Zsolt Németh, Károly Hrabák, Zsuzsanna Suba; Hungary

#### Summary:



- > Product used: CERASORB®
- > Indications: Sinus floor elevation

Published by: The International Journal of Oral and Maxillofacial Implant (2005)

Summary taken From: https://pubmed.ncbi.nlm.nih.gov/15973948/



Autogenous Bone Versus β-Tricalcium Phosphate Graft Alone for Bilateral Sinus Elevations (2- and 3-Dimensional Computed Tomographic, Histologic, and Histomorphometric Evaluations): Preliminary Results Authors: György Szabó, MD, DDS, PhD/Zsuzsanna Suba, MD, DDS, PhD/Károly Hrabák, MD/ József Barabás, MD, DDS, PhD2/Zsolt Németh, MD, DDS; Hungary

#### Summary:



- > Product used: CERASORB®
- > Indications: Sinus floor elevation

Published by: The International Journal of Oral and Maxillofacial Implant (2001)

Summary taken From: https://pubmed.ncbi.nlm.nih.gov/11669251/

Localization of osteogenic and osteoclastic cells in porous β-tricalcium phosphate particles used for human maxillary sinus floor elevation. Authors: Ilara R. Zerbo, Antonius L.J.J. Bronckers, Gert de Lange, Elisabeth H. Burger; The Netherlands

#### Summary:

- > Product used: CERASORB®
- > Indications: Sinus floor elevation

Published by: Biomaterials (2005)

Summary taken From: https://doi.org/10.1016/j.biomaterials.2004.05.003





# Supporting measures for the internal Sinus lift to protect the mucous membrane of the maxillary sinus (Schneider's membrane)

Author: Dr. Med. Dent. Bernhard Broos; Austria

#### Summary:



> Indications: Sinus floor elevation

Published by: Implantologie Journal (2004)

Summary taken From: https://media.zwp-online.info/archiv/pub/sim/ij/2004/ij0704/ij0704\_36\_37\_broos.pdf

### **Retrospective case study on the sinus lift with CERASORB® and PRP** Author: Dr. Werner Hotz; Germany

#### Summary:

- > Product used: CERASORB®
- > Indications: Sinus floor elevation

Published by: Implantologie Journal (2004)

Summary taken From: https://media.zwp-online.info/archiv/pub/sim/ij/2004/ij0104/ij0104\_20\_27\_hotz.pdf






# Long-term results with different bone substitutes used for sinus floor elevation.

Authors: Norbert Velich, Zsolt Németh, Christian Tóth, György Szabó; Hungary

#### Summary:



> Indications: Sinus floor elevation

Published by: The Journal of craniofacial surgery (2004)

Summary taken From: https://journals.lww.com/jcraniofacialsurgery/abstract/2004/01000/long\_term\_ results\_with\_different\_bone\_substitutes.13.aspx

# Histomorphometry of human sinus floor augmentation using a porous $\beta$ -tricalcium phosphate: a prospective study

Authors: Ilara R. Zerbo, Steven A. Zijderveld, Anje De Boer, Antonius L. J. J. Bronckers, Gert De Lange, Christiaan M. Ten Bruggenkate, Elizabeth H. Burger; The Netherlands

#### Summary:

- > Product used: CERASORB®
- > Indications: Sinus floor elevation

Published by: Clinical Oral Implant Research Journal (2004)

Summary taken From: https://doi.org/10.1111/j.1600-0501.2004.01055.x









#### Subantroscopic laterobasal sinus floor augmentation (SALSA): an up-to-5-year clinical study

Authors: Wilfried Engelke, Wolfgang Schwarzwäller, Axel Behnsen, Hans Georg Jacobs; Germany

#### Summary:

> Product used: CERASORB®

> Indications: Sinus floor elevation

Published by: The International Journal of Oral & Maxillofacial Implants (2003)

Summary taken From: https://pubmed.ncbi.nlm.nih.gov/12608679/

### **CERASORB®** and PRP in regenerative periodontal and implant supported therapy.

Authors: Siervo S, Coraini C, Siervo P, Giardini R; Italy

#### Summary:

- > Product used: CERASORB®
- > Indications: Sinus floor elevation

Published by: Implantology Journal (2001)

Summary taken From: https://www.siervo.it/wp-content/uploads/2023/01/scribd.vpdfs\_.com\_39cerasorb-un-prp-in-der-regenerativen-parodontalen-und-implantatunterstuetzten-therapie-pdf.pdf







Augmentation of a mandibular bone defect after alveolar ridge distraction the application of  $\beta$  -tricalcium phosphate ( $\beta$  -TCP)

Authors: Richard Waluga, Alexander Voigt, Nicolai Adolphs, Katja Nelson, Martin Klein; Germany

#### Summary:

- > Product used: CERASORB® M (1000-2000 µm)
- > Indications: Cystic defects

Published by: IMPLANTOLOGIE JOURNAL (2007)

Summary taken From: https://media.zwp-online.info/archiv/pub/sim/ij/2007/ij0507/ij0507\_28\_32\_waluga.pdf

#### Defect reconstruction with alloplastic bone graft substitutes

Author: Dr. Med. Dent. Dr. SC. HUM. Stefan Wolf Schermer; Germany

#### Summary:

- > Product used: CERASORB® M
- > Indications: Cystic defects

Published by: Oralchirurgie Journal (2006)

Summary taken From: https://epaper.zwp-online.info/epaper/9930/export-article/22







# Dentinogenesis Imperfecta – a rare case from practice Early implantation to avoid bone loss.

Author: Dr. Zeev Ormianer; Israel, Dr. Ady Palti; Germany

#### Summary:

- > Product used: CERASORB® (1000-2000 μm and 500-1000 μm)
- > Indications: Cystic defects

Published by: Implantologie Journal (2004)

Summary taken From: https://media.zwp-online.info/archiv/pub/sim/ij/2004/ij0204/ij0204\_06\_10\_palti.pdf

### Repair of bony defect with combination biomaterials

Authors: Norbert Velich, Zsolt Németh, Károly Hrabák, Zsuzsa Suba, György Szabó; Hungary

#### Summary:

- > Product used: CERASORB®
- > Indications: Cystic defects

Published by: The Journal of craniofacial surgery (2004)

Summary taken From: https://doi.org/10.1097/00001665-200401000-00006



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# Le Fort I Osteotomy in Atrophied Maxilla and Bone Regeneration with Pure-Phase $\beta$ -Tricalcium Phosphate and PRP

Authors: Foitzik, Christian MD, DMD, PhD; Staus, Hermann DMD; Germany

#### Summary:

- > Product used: CERASORB®
- > Indications: Le Fort I osteotomy

Published by: Implant Dentistry (2003)

Summary taken From: https://doi.org/10.1097/01.id.0000061084.09518.3e

#### Histology of human alveolar bone regeneration with a porous tricalcium phosphate. A report of two cases

Authors: I R Zerbo, A L Bronckers, G L de Lange, G J van Beek, E H Burger; The Netherlands

#### Summary:

- > Product used: CERASORB®
- > Indications: Alveolar ridge reconstruction

Published by: Clinical Oral Implants Research (2001)

Summary taken From: https://doi.org/10.1034/j.1600-0501.2001.012004379.x



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Intellectual system of modern  $\beta$ -TCP materials and its role in periodontal surgery. Author: Modina T; Austria

#### Summary:





Indications: periodontal defects

Published by: EUROPERIO 7, 7th Conference of the European Federation of Periodontology (2012) Summary taken From: Reference Poster No. #P0189

#### **CERASORB® and PRP – A Successful Combination in Augmentative Implantology** Author: ZA Dieter Bilk; Germany

Oralchirurgie Journal 2001, 2: 12–19

#### Sinus lift and modified transfer system. The treatment of a shortened row of teeth in the right maxilla using two ITI implants Author: ZA Dieter Bilk; Germany

Starget 2001, 4: 18-19

### Synthetic bone augmentation material in combination with autologous growth factors and stabilization by a titanium foil – case reports. Author: ZA Dieter Bilk; Germany

Dent Implantol 2001, 5: 198–207

Use of Bone Substitute β-Tricalcium Phosphate. Study preliminary. – About a filler. Authors: Ifi JC, Bert M, Princ G, Szabo G; France



**To avoid the atrophy of the alveolar crest after teeth extraction.** Authors: Iglhaut G; Germany

DZW-Spezial 2001, 11: 28-33

**A method to obtain safe and predictable bone regeneration.** Author: Schmedtmann; Germany

Dentale Implantologie 2001, 5: 260-267

Clinical results after application of resorbable, pure-phase β-tricalcium phosphate ceramic CERASORB® in enossal bed. Authors: Wiltfang J, Schlegel KA, Merten HA; Germany

ZWR 2001, 110 (9): 556-559

Application and experience with pure phase β-tricalcium phosphate in oral and maxillo-facial surgery Author: Foitzik C; Germany

TraumaLinc 2000, 1: 74-80

If bone is not good enough. Surgical conceptions to improve the implant sites. Authors: Kreusser B, Jakobs W; Germany

Implantologie Journal 2000, 4: 8–13



#### **Retrospective Study of Dental Implantation with Sinus Lift and CERASORB® Augmentation.** Authors: Reinhardt C, Kreusser B; Germany

Dentale Implantologie 2000, 4: 18-26

Implant insertion and augmentation of the alveolar crest in a one stage operation. Case studies with β-tricalcium-phosphate ceramic. Authors: Staus H, Foitzik C; Germany

Implantologie Journal 1999, 4: 12-5

### The use of single-phase β-Tricalcium phosphate to fill osseous defects – Biological advantages and clinical practice. Authors: Foitzik C, Stamm M; Germany

Die Quintessenz, October 1997, 48 (10): 1365–1377

#### Use of bone substitute $\beta$ -phosphate tricalcium ( $\beta$ -TCP). 3-year results. Authors: Princ G, Bert M, Ifi JC; France

Le Chirurgien-Dentiste De France No. 1250/1251. 23-30 Mars 2006: 29-32

Predictable and Safe Bone Regeneration with Different Forms of a Pure-phase β-Tricalcium phosphate. Author: ZA Dieter Bilk; Germany

Dent Implantol 2005, 9 (7): 564-572



Human histological 4 months findings using a combination of pure-phase beta tricalcium phosphate ( $\beta$ -TCP) and Platelet Rich Plasma (PRP) chair-side preparation in comparison with  $\beta$ -TCP alone, autogenous bone graft, DFDBA and Bio-Oss. Authors: Schiroli G, Chiaramondia M

Poster Presentation at the International Conference "Bone 2003", NL-Maastricht, Oct. 2003

#### **Bone regeneration materials in the dental surgery practice.** Author: Hoch T

Implantologie Journal 2002, 6 (5): 20-25

#### Treatment of periodontal defects with pure-phase β-tricalcium phosphate implant Author: Foitzik C, Staus H

ZWR 1999, 6: 378-383.

#### **Pure-phase β-tricalcium phosphate for bone substitution in periodontal disease.** Author: Foitzik C, Staus H

Die Quintessenz 1999, 50 (10): 1049–1058.

**Implant placement in exceptional defect situations.** Author: ZA Dieter Bilk; Germany

Implantologie Journal 2004, 2: 30-36







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