Innovative
Tissue Regeneration
Technologies

Bonus BioGroup

Investors Presentation

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This presentation includes statements that are, or may be deemed, ‘‘forward-looking statements.’’ In some cases, these forward-looking statements can be identified by the use of forward-looking terminology, including the terms “believes,” “estimates,” “anticipates,” “expects,” “plans,” “intends,” “may,” “could,” “might,” “will,” “should,” “approximately,” “potential” or, in each case, their negative or other variations thereon or comparable terminology, although not all forward-looking statements contain these words. They appear in a number of places throughout this presentation and include statements regarding our intentions, beliefs, projections, outlook, analyses or current expectations concerning, among other things, the bone regeneration market size and its growth potential, our position and potential in the bone regeneration market, our product pipeline, potential benefits of our product candidates, that our technology platform is flexible and may be adapted to a variety of clinical indications, the timing and design of trials for our product candidates or whether such trials will be conducted at all, completion and receiving favorable results of trials for our product candidates, and regulatory action with respect to our product candidates.

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One is advised to read carefully the factors described in the “Risk Factors” section of the private placement memorandum to better understand the risks and uncertainties inherent in our business and underlying any forward-looking statements.

Overview

Bonus BioGroup is a biotechnology company applying an innovative technology to generate viable tissue-engineered bone grafts. The company is targeting a multi-billion dollar worldwide market for the treatment of skeletal disorders.

2008	Foundation of the company by experts in the field of tissue engineering and cell therapy, including Dr. Shai Meretzki, founder of Pluristem, and Professor Avinoam Kaduri, who served as Chairman of the European Organization of Biotechnology Companies.
2013	Establishment of the world's first viable human bone graft manufacturing facility, in Haifa, Israel. The facility is Good Manufacturing Practices (GMP) and ISO-9001 certified.
2014	Launch of the first clinical trial evaluating the safety and efficacy of BonoFill™, an injectable viable bone graft for maxillofacial bone regeneration.
2016	Launch of a second clinical trial evaluating the safety and efficacy of BonoFill™, injectable viable bone graft, second generation for maxillofacial bone regeneration.

Vision

Bonus BioGroup strives to become a global leader in the field of tissue engineering and production of viable tissue-regenerating bone grafts

Bone Tissue Regeneration

The Need

- An increasing need has risen for an effective and efficient therapeutic platform to replace current bone restoration modalities characterized by significant shortcomings

The Objective

- To develop a biological graft designed to renew, replace, or improve the function of tissues or whole organs of the skeletal system

Our Solution

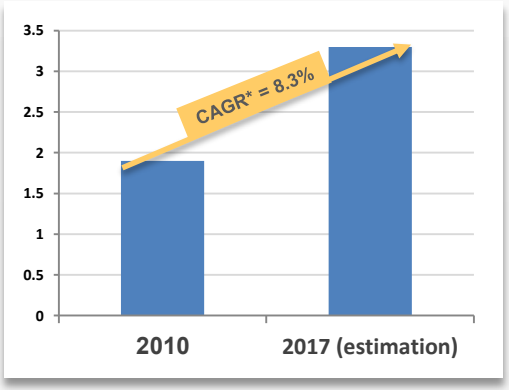
- Production of a unique autologous viable bone graft comprising of various cell types, and spatially configured in 3D to repair bone deficiencies

The Bone Regeneration Market

Natural bone has the ability to repair itself in response to injury. However, in complex clinical conditions, normal bone regeneration is impaired. These cases include large bone defects created by aging, infection, tumor resection, trauma and skeletal abnormalities or other cases in which the regenerative process is compromised.

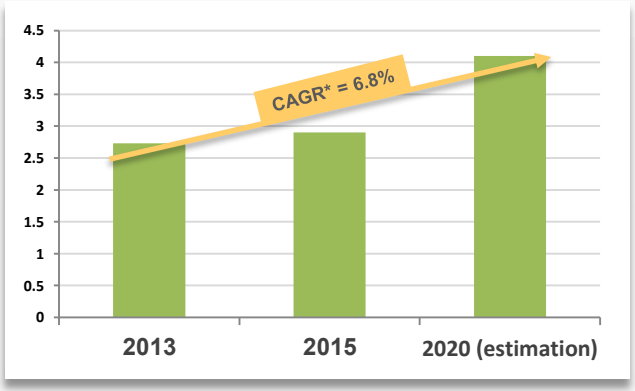
The current therapeutic approaches to these conditions are autologous bone grafts, bone substitutes and therapeutic molecules.

Global Market Evaluation
for the bone graft substitute (billion $)



Companiesandmarkets.com
Bone Graft Substitutes - Global Pipeline Analysis, Competitive Landscape and Market Forecast to 2017.

Global market Evaluation
for regenerative medicine products used in bone and joint applications (billion $)



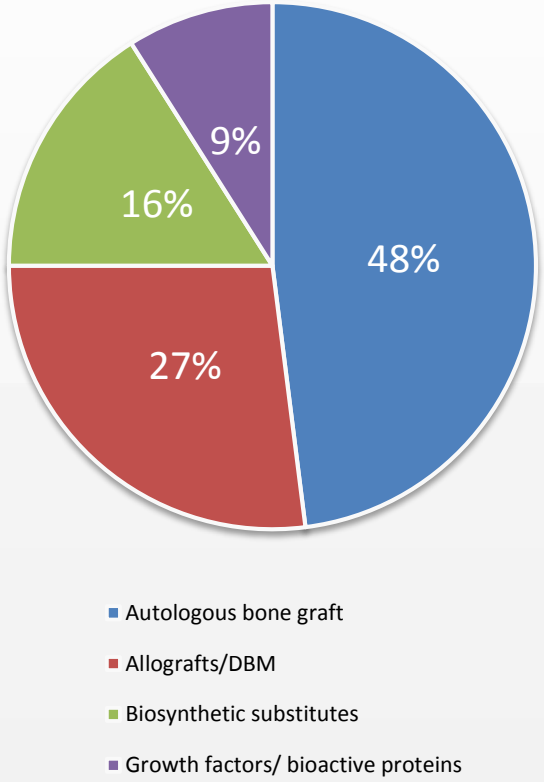
BCC research report,
orthopedic-implants-regenerative-products

Market growth is driven by:

- Increase in orthopedic procedures
- Increased Aging population
- Increased preference for bone graft substitutes as replacements or complementary to autograft procedures
- Higher adoption of bone graft substitutes for orthopedic procedures
- Increase in reimbursement for orthopedic procedures

*CAGR: Compound Annual Growth Rate

Bone Grafts: Current Modalities



Autologous bone graft – the gold standard

Bone is relocated from one location to another in the patient's body.

***Limitations**: Invasive surgical procedure, donor site morbidity, insufficient graft volume and quality*.

Allografts/DBM

Bone grafts obtained from human cadavers, living donors or animal sources.
Demineralized Bone Matrix (DBM) produced by partial dissolution of bone tissue and gain of vital organic ingredients to support bone growth.

***Limitations**: Inferior bone properties, risk of infection, suitable for small bone defects, long recovery.*

Biosynthetic substitutes

Synthetic or natural biomaterials that promote bone regeneration.

***Limitations**: Inferior bone properties, only relevant for small bone defects, long recovery*.

Growth factors/ bioactive proteins

Normally regulate cellular bone activity and affect on bone regeneration. include BMP, TGF-β, IGF, PDGF, FGF.

***Limitations**: Inferior bone properties, suitable for small bone defects, long recovery.*

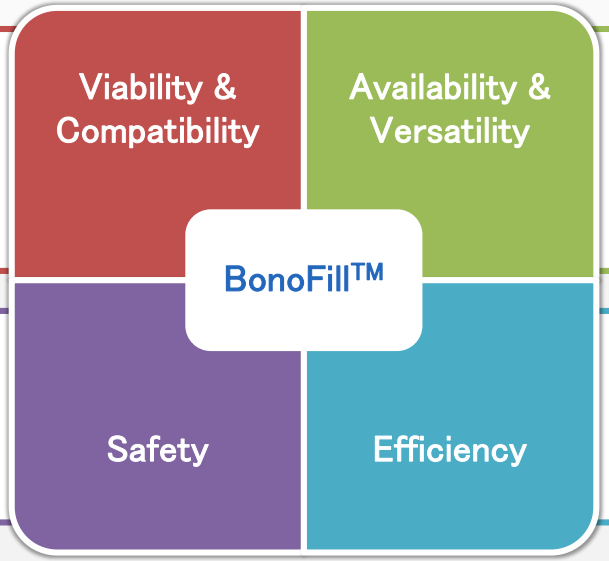
Our Solution: BonoFill™

BonoFill is a novel, autologous, tissue-engineered viable bone graft designed to replace current inferior solutions.

Advantages of BonoFill™:

- Demonstrates high quality bone properties which are biologically and histologically identical to those of natural bone

- Derived from patients' own cells thus personalized to eliminate the risks of rejection and surgical failure

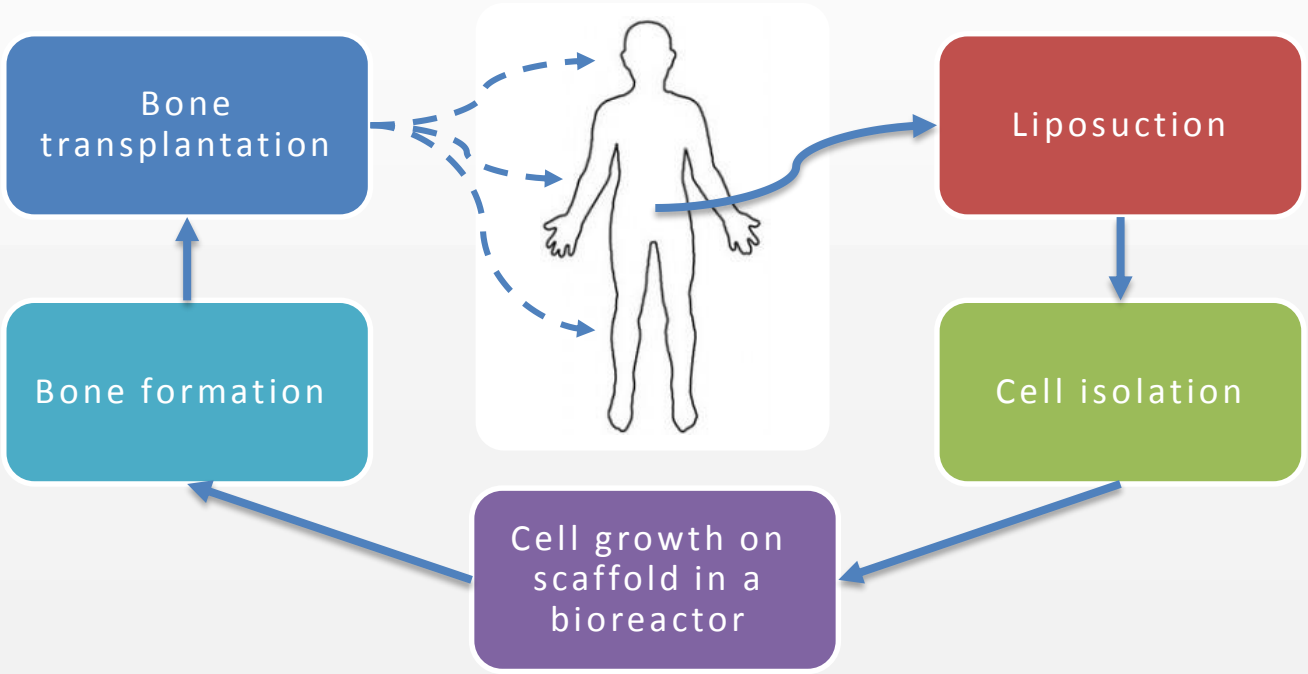


- Available in large quantities
- Repairs a broad range of bone defects
- Tailored to precisely fit patients' deficient sites

- Provides improved and accelerated bone regeneration compared to current solutions

Technology

Bonus BioGroup has developed a unique technology to grow viable bone grafts from cells isolated from patients' fat tissue.



Key Benefits of BonoFill™

- Accommodates a broad range of skeletal deficiencies resulting from aging, trauma and disease
- Fully integrates with the patient's body and avoids any immunological response
- Demonstrates expedited and improved clinical outcomes compared to existing alternatives
- Personalized for perfect matching with each patient's bone deficiency
- Reduces the risk of surgical failure

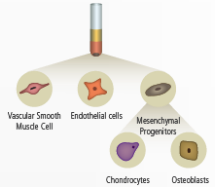
Properties of BonoFill™

Autologous cell source:

Grown from adipose cells originating in the patient and harvested in a simple procedure termed liposuction, thus eliminating the risk of tissue rejection and surgery failure.

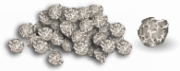
Multi-cell bone graft:

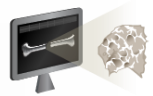
Contains both mature and premature bone-forming cells which maintain their ability to proliferate and secrete growth factors, and cells which enhance graft vascularization (generation of new blood vessels). This cell composition promotes bone regeneration in the transplantation site.



3D supporting matrix (scaffold):

Consists of FDA- and EMA-approved mineral scaffold most suitable to support bone cell expansion *in vitro* and to provide the desired supportive properties *in vivo*.





Dynamic cell cultivation platform:

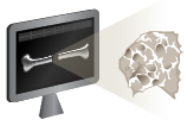
Bone tissues are extensively grown on scaffolds in a bioreactor system. This platform provides a homogenous environment and allows scalability and automated control, leading to cost effectiveness, safety and high-density of the bone graft product.

Tailor-made bone graft:

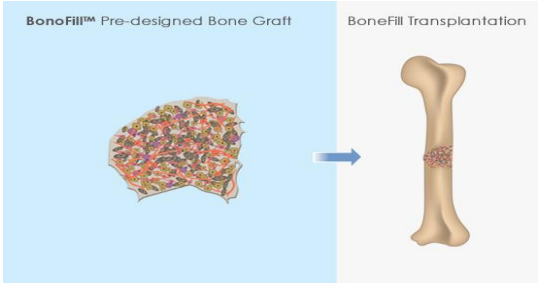
BonoFill™ is a personalized, available-upon-demand product, which can be used to treat a variety of bone and joint defects. BonoFill™ is designed to precisely fit patients' anatomical deficiencies.

BonoFill™ Products

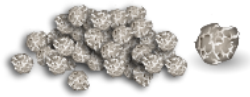
Solid cut-to-shape bone graft



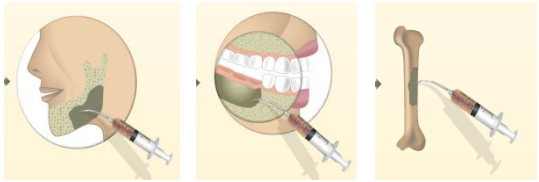
The solid bone graft is generated by seeding a variety of bone-forming cells collected from the patient on a scaffold geometrically pre-configured in a shape reflecting the patient's particular bone gap.



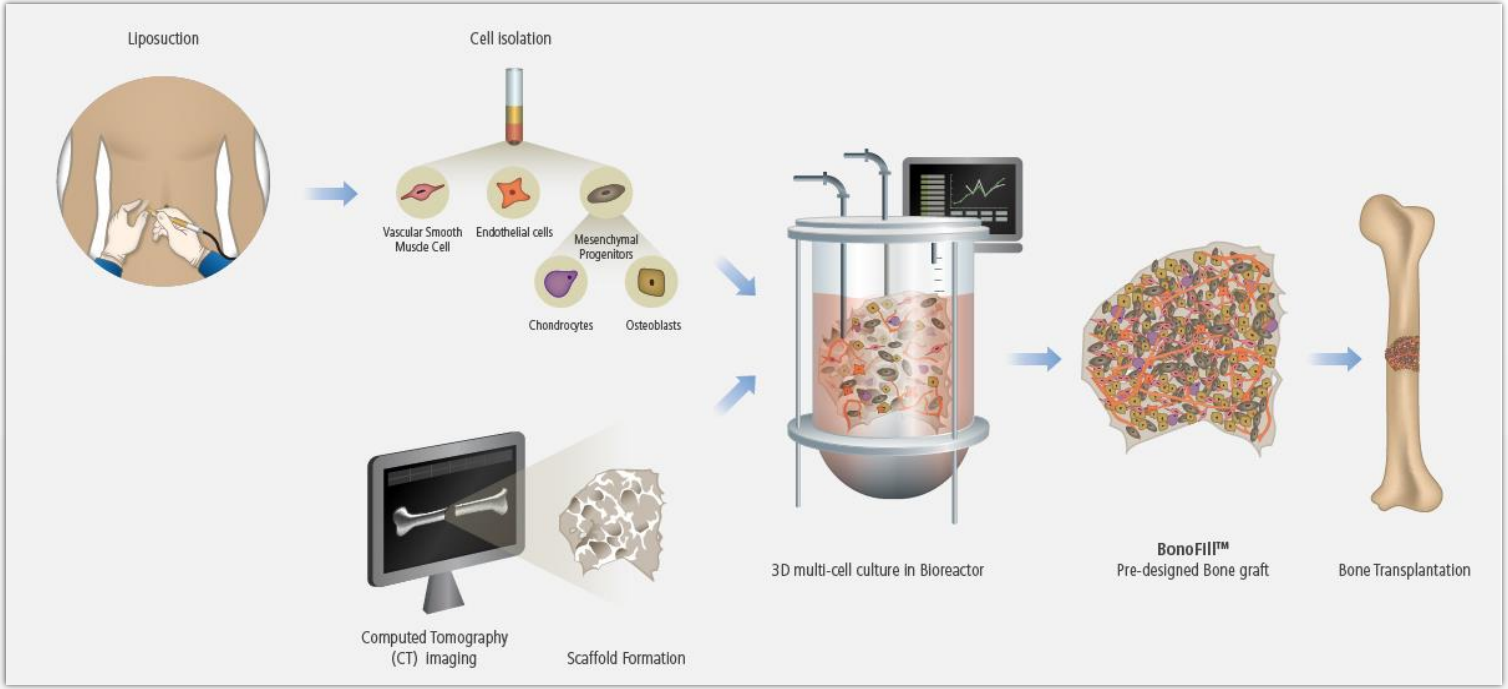
Injectable void-filling self-setting bone graft



The injectable bone graft is generated by seeding a variety of bone-forming cells collected from the patient on mineral particles. The injectable bone graft is provided in a prefilled syringe, and is suitable for the treatment of bounded bone defects.



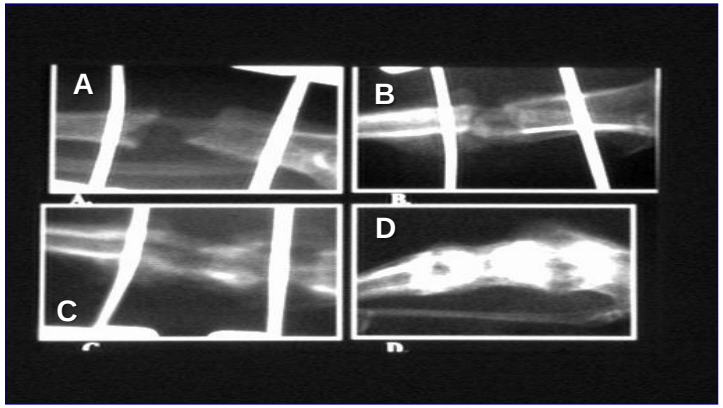
The Solid Pre-Designed Bone Graft



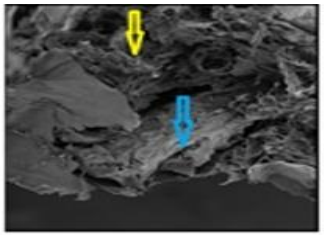
Adipose tissue sample is collected from the patient, from which cells are isolated, seeded on a 3D scaffold and grown in a bioreactor. The scaffold is predesigned to precisely match the patient's 3D bone gap previously captured by Computed Tomography (CT) image. The cell-seeded scaffold is used to generate **BonoFill™ –** a viable bone graft applicable in various bone repair indications.

The Solid Pre-Designed Bone Graft
Preclinical Results

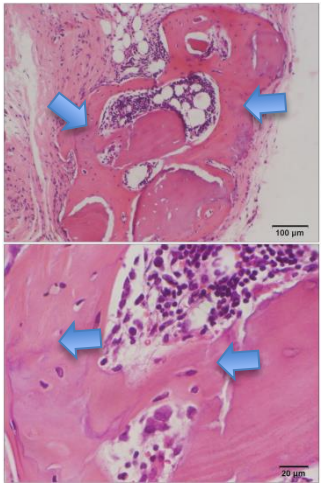
BonoFill™ transplantation into critical sized bone defect in an animal model



Human viable bone graft transplanted into an animal model for bone defect repair.
X-ray images of tibia on the day of bone defect induction time 0 (A), and two weeks (B), four weeks (C) and six weeks (D) following the transplantation.

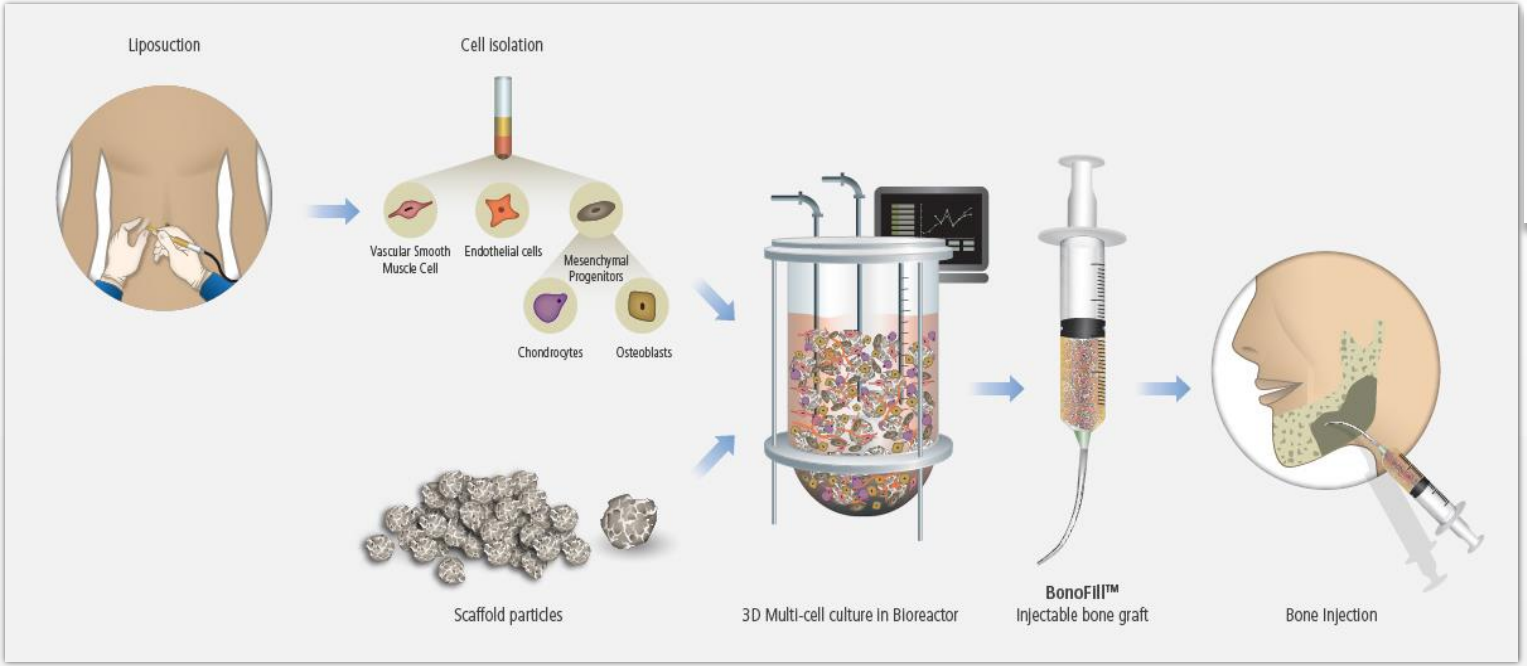


A scanning electron microscope image of a solid bone graft following 21 days of cell cultivation.
Blue arrow - scaffold
Yellow arrow - cell tissue



Transplantation of a solid bone graft into an animal revealed formation of new bone tissue capable of supporting bone marrow growth and hematopoiesis.
Arrows mark new bone formation.
magnification x10, x40

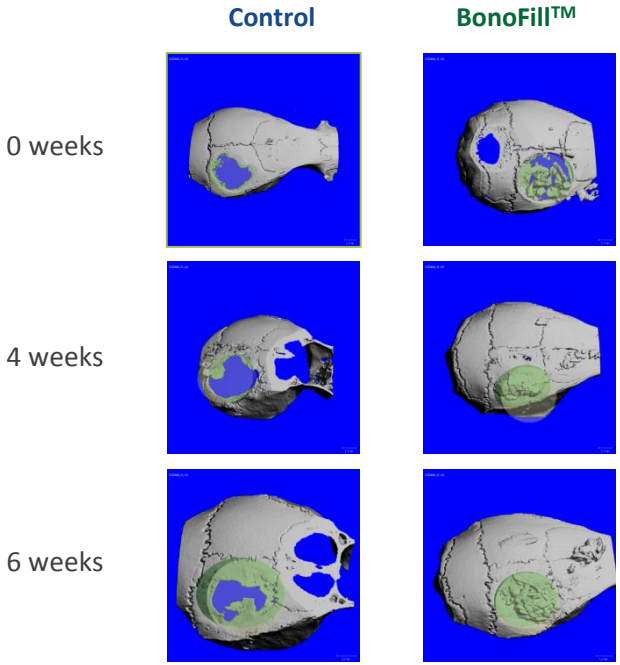
The Injectable Void-Filling Self-Setting Bone Graft

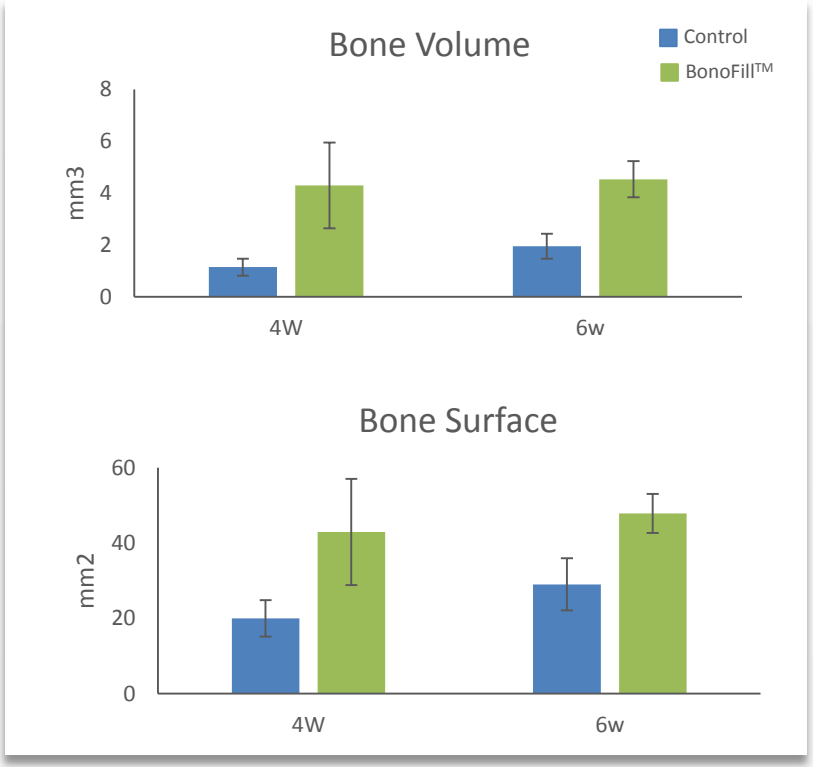


Adipose tissue sample is collected from the patient. Cells are then isolated, seeded on mineral 3D particles and grown in a bioreactor. The injectable **BonoFill™** is semi-solid in texture, allowing syringeability. It is suitable for the reconstruction of confined bone defects in various indications, such as maxillofacial and long bone deficiencies.

The Injectable Void-Filling Self-Setting Bone Graft
Preclinical Results

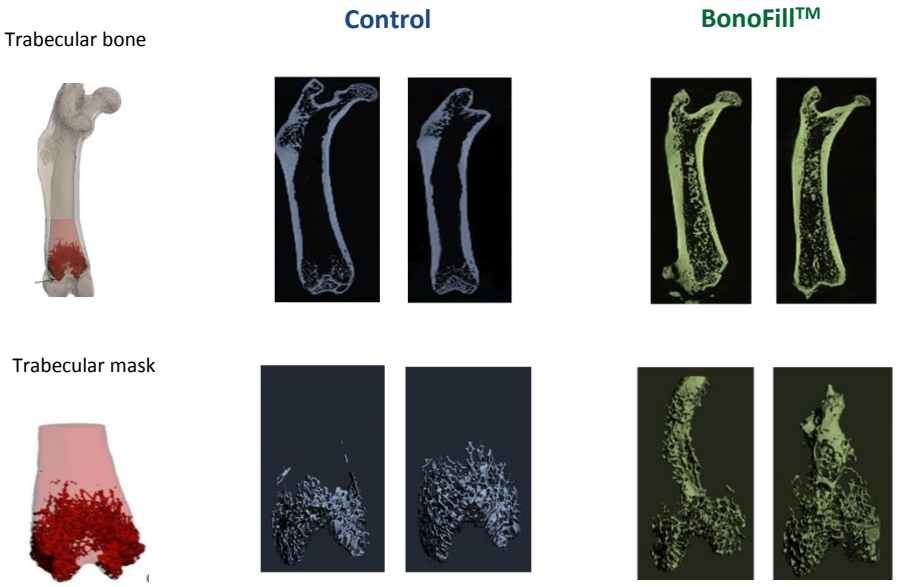
BonoFill™ transplantation into a cranial critical sized bone defect in an animal model





The Injectable Void-Filling Self-Setting Bone Graft
Preclinical Results

BonoFill™ transplantation in a preclinical model: Intra-femoral bone injection

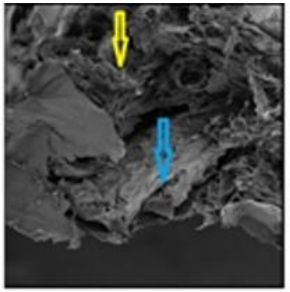


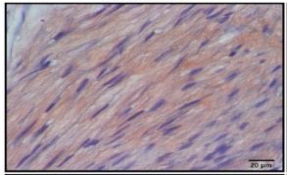
Micro-CT scan of the treated legs 16 weeks post transplantation

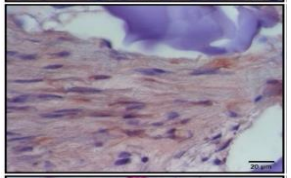
Intra-femoral injection preclinical model
(three wall gap)

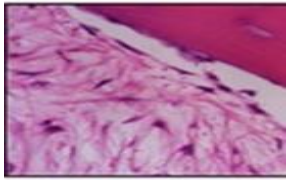
results

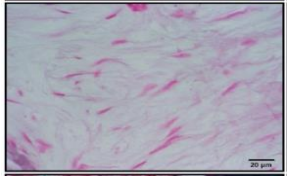
Bone Graft Analysis Reveals Normal Bone Properties

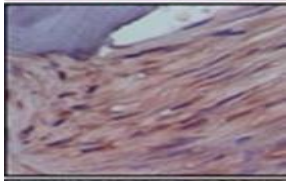


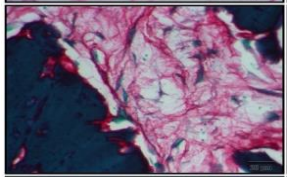


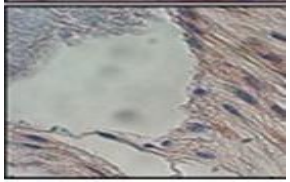


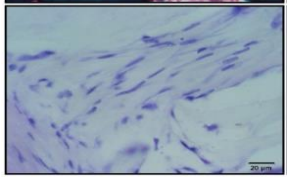












Scanning electron microscope image of the solid bone graft following 21 days of cell cultivation. Blue arrow – scaffold, yellow arrow - cell tissue.

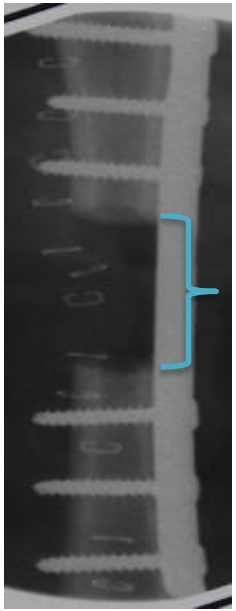
Histology and immunohistochemical staining of adipose tissue-derived mesenchymal stem cells grown on a scaffold for 21 days.
H&E staining of histological sections demonstrates formation of a multi-layered tissue which fills all gaps within the scaffold.
CD146 and CD105 immunohistochemistry confirmed that the bone grafts harbored MSCs.

Collagen type I and osteocalcin proteins
Collagen fibers and elastic fibers content were evaluated using Masson Goldner (elastic fibers), Picro Sirius Red, and Toluidine Blue stain and showed normal physiological properties.

The Injectable Void-Filling Self-Setting Bone Graft
Preclinical Results

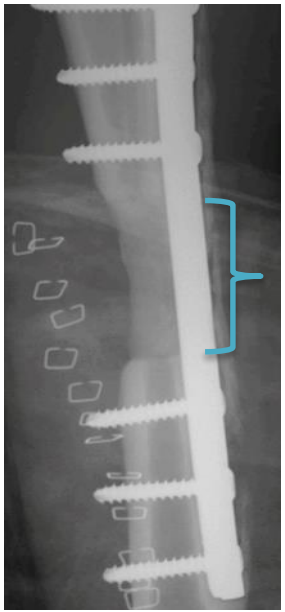
BonoFill™ transplantation in a severe critical sized bone defect model

Day of transplantation



Empty 3.2cm critical gap

BonoFill™ after 2 months



Full bridging of the gap

BonoFill™ CT after 3 months

Total bone repair

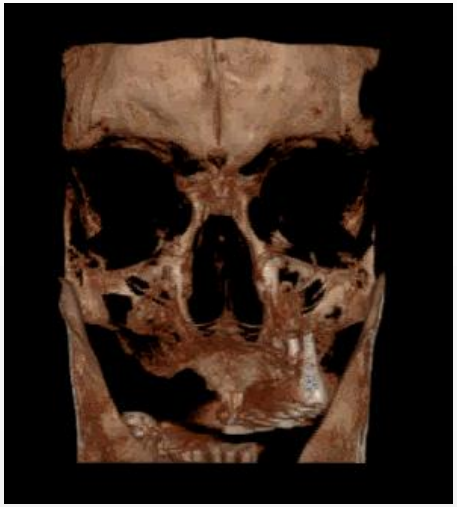
The Injectable Void-Filling Self-Setting Bone Graft
Preclinical Results

BonoFill™ transplantation in an over-sized critical bone defect model

BonoFill™ transplantation in an over-sized critical bone defect in the tibia severe bone gap model prior to transplantation and 3 months following the transplantation

Clinical Trials

Maxillofacial Bone Regeneration (2014, 2016)



Clinical evaluation of BonoFill™ as bone graft for the repair of maxillofacial deficiencies has so far been performed in two phase I/II, open label, first-in-human, clinical trials.

The two clinical indications are:

1. **Bone augmentation**
2. **Filling bone void following cyst removal**

The first clinical trial met recruitment goal and all subjects underwent transplantation.
The second clinical trial employing the second-generation BonoFill™ started in August 2016.

Leadership

Shai Meretzki, Ph.D., Founder, CEO and President

Dr. Meretzki has proven operational, management and leadership abilities in Life Science companies. Former founder, CEO and CTO of Pluristem Life Systems, Inc. (NASDAQ: PSTI; TASE: PLTR). Also serves as chairman of the board at Biological Industries Ltd. Israel. Holds Ph.D. in biotechnology from the Technion - Israel Institute of Technology in cooperation with the Weizmann Institute of Science, Israel.

Avinoam Kadouri, Ph.D., Founder, CTO

Dr. Kadouri is a world-renown scientist in industrial biotechnology. Serves as R&D Director and worldwide Process Development Director at Serono International for 15 years, and the Chairman of ACTIP (Animal Cell Technology Industrial Platform). A member of several advisory boards of leading biotechnology companies in the USA, Europe and Israel. Served as an associate professor in Weizmann Institute of Science, Israel.

Yossi Rauch, MBA, Executive Chairman of the Board

Mr. Yossi Rauch served as Chief Economist and Manager of the Economics Department of Leumi PIA, Israel's largest mutual fund company. He also served as the manager of the treasury department of Koor-Trade, a group of international trade companies. Holds MBA in Finance & Accounting and Computers & Information Systems from the Tel Aviv University and a BA in Economics and Business Administration from Bar-Ilan University.

Leadership

Yoni Livne, CPA – Chief Financial Officer

Mr. Livne has been serving as Chief Financial Officer since 2014. Before joining Bonus BioGroup, Mr. Livne was Chief Financial Officer at Bee Contact Communication Ltd., a publicly traded company (TASE), and Chief Controller at Dexcel Pharma, a privately held international pharmaceutical company. Mr. Livne holds an MBA in Finance and a BA in Accounting and Economics from The Hebrew University.

Ora Burger, PhD – Head of Regulatory Affairs

Dr. Burger has over 12 years of experience in the pharmaceutical, biotechnological and medical device industries, with regulatory and quality managerial experience. Prior to joining Bonus BioGroup, Dr. Burger was Director of Product Development at Diagnostic Technologies Ltd. and Vice President of R&D at Pluristem Therapeutics Inc. Has a comprehensive understanding of GLP, GMP and GCP regulations and harmonized guidance, and has vast experience in working with the FDA, EMEA and the Israeli Ministry of Health. Responsible for management of the company's clinical trials. Hold PhD from the Technion.

Manufacturing Facility

The facility was designed for the manufacture of live human bone grafts and constructed in compliance with FDA and EMA requirements for manufacturing biological products.

The facility is Good Manufacturing Practices (GMP) and ISO-9001-certified.

Successful Results

- Bonus BioGroup has been conducting successful preclinical studies since 2009
- Bonus BioGroup isolates and grows bone-forming tissue-regenerating cells on 3D scaffolds to produce live transplantable bone grafts
- In preclinical models, Bonus BioGroup's live transplantable bone grafts demonstrate tissue augmentation and bone repair within 6-10 weeks
- The company has entered clinical trials for maxillofacial bone regeneration. Within the first clinical trial all participating subjects underwent transplantation; The second clinical trial employing the second-generation BonoFill™ has started in August 2016.

Product Pipeline

Product Candidate	Discovery	Preclinical	Clinical	Status
Bone Graft for Maxillofacial Applications	→	→	→	Follow-up stages of clinical phase I/II study
Bone Graft for Orthopedic Applications	→	→		Large animal study completed Awaiting approval for stage I/II clinical study
Large Vascularized Bone Graft	→	→	In collaboration with: Hadassah Medical Organization, TECHNION Israel Institute of Technology	*In vivo* preclinical studies
Novel Nanomaterials Technology for Tissue Regeneration	→	→	In collaboration with: Bar-Ilan University, Harvard University, MIT Massachusetts Institute of Technology, BIRD Foundation - Israel-U.S. Binational Industrial R&D, Cellora	*In vivo* preclinical studies
Composite Bone & Cartilage Graft for Joint Repair	→			*In vitro* stage

Bonus BioGroup develops solutions for a variety of clinical indications, including maxillofacial and orthopedic critical-sized bone defects. Its R&D pipeline includes additional clinical indications such as joint injuries, representing complex grafts comprising of more than one type of tissue, such as bone and cartilage (osteochondral). Bonus BioGroup is collaborating with strategic partners to develop innovative technologies that can be integrated with current products and platforms, mainly in the field of graft vascularization and the generation of standalone shelf products for bone tissue reconstruction.

Why Us?

- ✓ Proven ability to manufacture and supply live tissue, including viable bone grafts
- ✓ Broad R&D pipeline
- ✓ Short and inexpensive regulation process
- ✓ Versatile technological platform suitable for a variety of clinical indications
- ✓ High entry barrier for competition
- ✓ Billion dollars market potential
- ✓ Experienced management and expert scientific team

Contact Us: info@bonus-bio.com