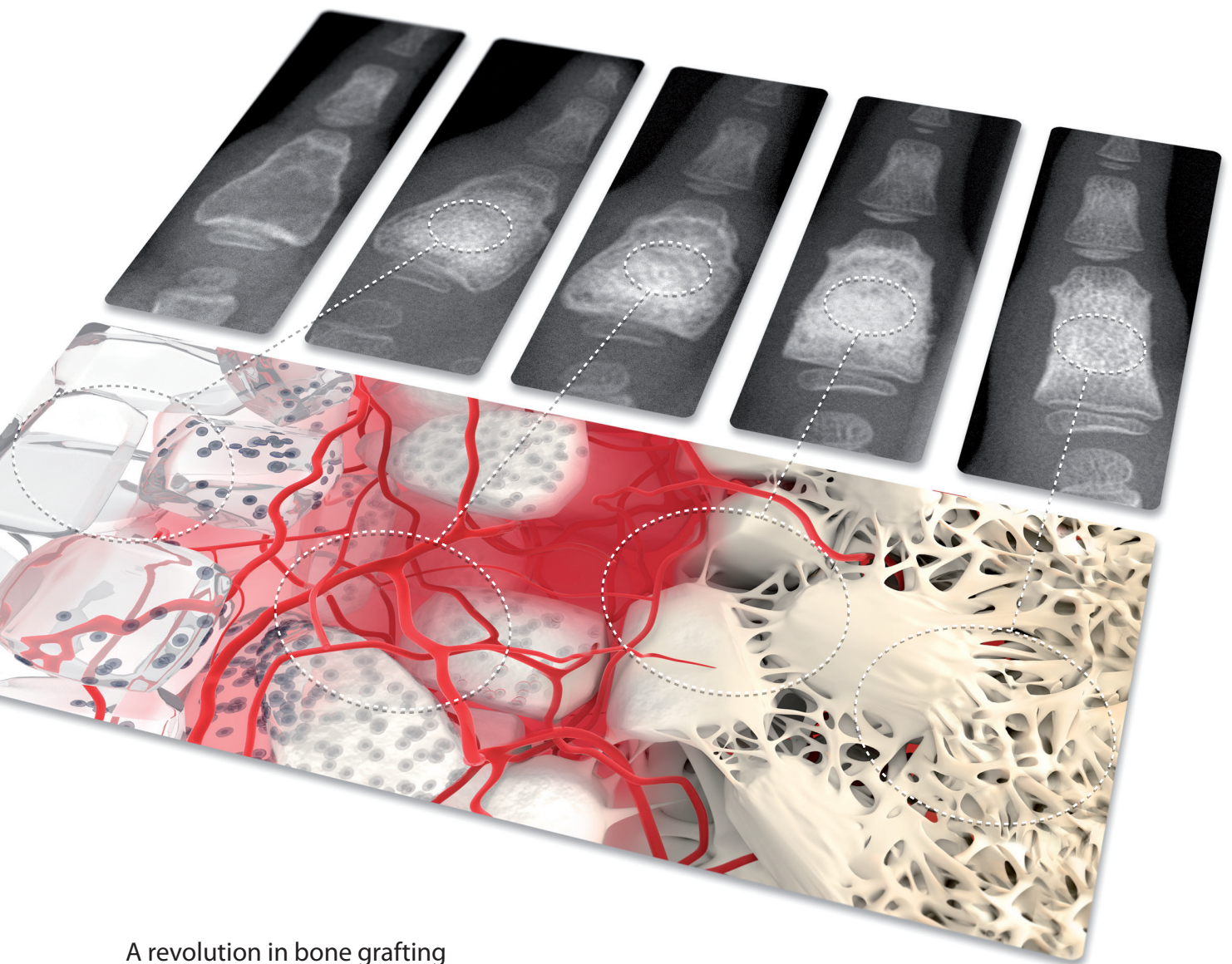


BonAlive[®]

granules



A revolution in bone grafting

*"BonAlive[®] is osteoconductive with
osteostimulative properties - **accelerating bone remodelling**"*

Nina C Lindfors, MD, PhD, MSc,
Specialist in hand surgery, orthopaedic and trauma surgery
Helsinki Central University Hospital, Finland

Getting further with BonAlive® granules

BonAlive® is a fully synthetic osteoconductive and *osteostimulative** bone graft substitute that actively promotes new bone formation and *inhibits bacterial growth*. BonAlive® is a biomaterial with over 15 years of proven safety and performance for bone cavity filling in orthopaedic and head and neck surgery. The composition of BonAlive® (S53P4) by weight is: SiO₂ 53%, Na₂O 23%, CaO 20% and P₂O₅ 4%.

BonAlive® has been used with great success for treating bone defects derived from:

- Benign bone tumours
- Fractures
- Chronic bone infections^{14,15}

The clinical advantages of BonAlive®

Osteostimulation

Effectively promotes the growth of new bone^{1,2,3}

Slow resorption

Encourages long-term bone growth^{4,5,6}

Safe

Fully synthetic and resorbable⁴

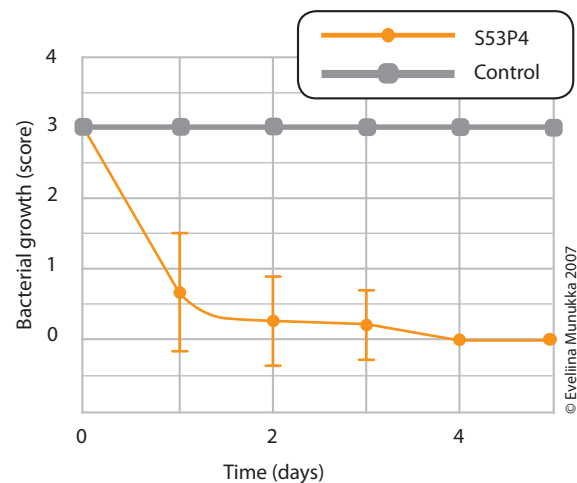
Bacterial growth inhibition

Effectively prevents the growth of clinically relevant bacteria^{7,8,9,10}

BonAlive® inhibits bacterial growth

BonAlive® is a bone graft substitute that inhibits bacterial growth. Studies have shown that the material has a bacterial growth inhibiting effect on a vast number of anaerobic and aerobic bacterial species that are related to ENT, CMF and orthopaedic complications.^{8,9,10,11,12}

The average growth of 29 bacterial species grown together with S53P4.



The growth of most species was already totally inhibited at the first time point (1d). 3 = good growth (positive control), 2 = moderate growth, 1 = weak growth, 0 = no growth.



BonAlive® granules
in an easy-to-use
applicator

BonAlive® in Orthopaedic surgery

BonAlive® has been used successfully for more than a decade to fill bone cavities after evacuation of bone tumours and in fracture management. It has been clinically proven that the long-term performance of BonAlive® is equivalent to that of autogenic bone.⁴

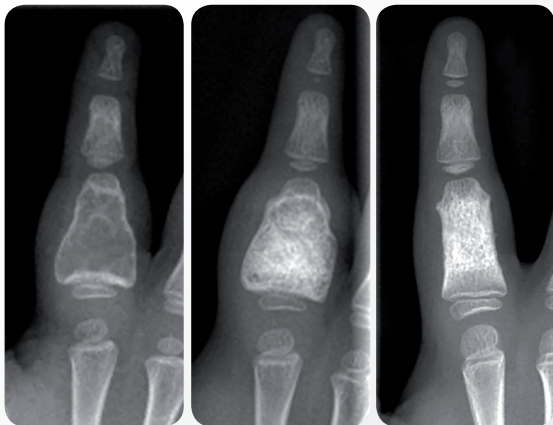
BonAlive® induces a high but balanced local bone turnover by actively participating in the bone formation process.¹ The high level of bone remodelling can be seen e.g. in paediatric patients.¹³ The proven performance of BonAlive® shows that it is well tolerated and a safe bone graft substitute, which can be used to treat versatile bone defect indications.

Indications:

- Bone cavity filling

› Patient case

BonAlive® granules in the treatment of benign bone tumours¹³



preoperative

postoperative
1 month

postoperative
24 months

BonAlive® was used to treat a recurrent aneurysmatic bone cyst (ABC) in the proximal phalanx of the finger, in a three-year-old child, with good results. During the two-year follow-up, the filled cavity appeared dense on X-ray and no sign of a recurrent cyst was observed. The phalanx had grown in length and remodelled to an almost normal shape.

Images © Nina C. Lindfors, Helsinki University Hospital

BonAlive® in Head and Neck surgery

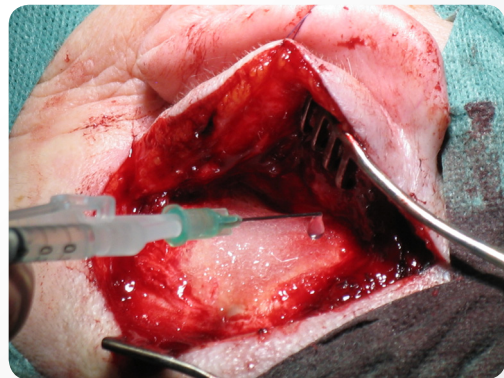
The use of BonAlive® has provided successful and reliable long-term clinical outcomes for over 15 years in frontal sinus surgery, mastoid cavity obliteration and repair of skull base defects.^{5,14,15} BonAlive® has shown excellent performance in the treatment of chronically infected frontal sinuses and mastoid cavities.^{5,15} BonAlive® is a safe material that can be used in close proximity to the dura after coverage with fascia lata.¹⁴

Indications:

- Bone cavity filling in cranio-maxillofacial area
- Frontal sinus obliteration
- Mastoid cavity obliteration

› Patient cases

BonAlive® granules in mastoid cavity obliteration¹⁵



Seven patients (3 females and 4 males in the age of 30-70 yrs) with radical cavities due to chronic suppurative otitis media or cholesteatoma surgery were treated by filling the cavities in the mastoid area with BonAlive® granules. The area was filled with ~5 gr of granules (500-800 µm) of BonAlive® and closed with a musculoperiosteal flap and temporalis muscle fascia to keep the BonAlive® granules in position. During the follow-up; 22-98 months (mean: 57 months) the radical cavity was totally eliminated in two patients and in five patients reduced to a small dry cavity. No BonAlive®-associated infection or extrusion of the material was seen.

Image © BonAlive Biomaterials Ltd, Turku

BonAlive® granules



BonAlive® granules are available for Orthopaedic and CMF applications:

Product	Ref. no	Granule size	Package size	Package description
BonAlive®granules CMF / ORTHO	11110	0.5-0.8 mm - small	1 cc	Pouch
	11120	0.5-0.8 mm - small	2 cc	Pouch
	13130	0.5-0.8 mm - small	5 cc	Syringe
	13140	0.5-0.8 mm - small	10 cc	Syringe
BonAlive®granules ORTHO	11320	1.0-2.0 mm - medium	2 cc	Pouch
	13330	1.0-2.0 mm - medium	5 cc	Syringe
	13340	1.0-2.0 mm - medium	10 cc	Syringe
	13430	2.0-3.15 mm - large	5 cc	Syringe
	13440	2.0-3.15 mm - large	10 cc	Syringe

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