

Press release

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## **Research: Bioactive glass reduces the need for antibiotics in bone infection treatment**

**A recent study has shown excellent results for the use of BonAlive® bioactive glass in the treatment of bone infections. The naturally antibacterial biomaterial for bone reconstruction significantly helped the recovery of patients suffering from chronic bone infections. The one-stage treatment also saves healthcare costs and reduces the need for antibiotics.**

An international study published in January 2017\* concerns the use of BonAlive® bioactive glass in the treatment of patients suffering from chronic bone infection, also called osteomyelitis. The study was carried out in Finland, Italy, the Netherlands, Germany, Poland and Azerbaijan and included a total of 116 patients, whereof 90 percent made a full recovery.

Chronic osteomyelitis is a bacterial disease, which traditionally requires a minimum of two surgeries. The surgical treatment is supported by antibiotics administered both orally and locally in the bone.

“Bone infection is a difficult disease to treat, and many of the patients who participated in the study had undergone treatment for decades without results. With the antibacterial bioactive glass, one surgery was enough and local antibiotics were not needed. The results were equally good in all six countries”, says the coordinator of the study, hand and orthopedic surgeon Assoc. Prof. Nina Lindfors of Helsinki University Central Hospital, Finland.

To date, this study is the largest of its kind demonstrating the clinical use of bioactive glass in the treatment of chronic bone infections. The study results show that bioactive glass clearly enhances treatment in the absence of local antibiotics.

“The treatment method saves time and costs too. There is a need to explore and develop more of this kind of treatment that reduces the need for antibiotics”, says Lindfors.

### **Increasing need for antibiotic-free alternatives**

The excessive use of antibiotics has led to an increase in antibiotic-resistant bacteria in recent years, which is a serious global health threat. Antibiotic resistance is estimated to have caused the death of over 700 000 patients worldwide last year. In 2050, this number is forecast to rise to 10 million.\*\*

“To overcome the reliance on antibiotics, we need to collaborate at all levels using alternatives that effectively support healthcare. With our bioactive glass, we have been able to move from two procedures into one. In addition to regenerating new bone, bioactive glass is able to inhibit bacterial growth without local antibiotics. This is a significant step forward compared to the conventional treatment”, says CEO of BonAlive Biomaterials, Dr. Fredrik Ollila.

BonAlive bioactive glass S53P4 is a bone graft substitute that stimulates new bone growth and protects the surgical site from bacterial growth. The product received an indication approval in 2011 for bone cavity filling in the treatment of chronic osteomyelitis. Bioactive glass is used in neuro, trauma, orthopedic and ear surgery for both adults and children. Last year, BonAlive bioactive glass was used in nearly 10 000 operations around the world.

\*Advances in Microbiology, Infectious Diseases and Public Health 2017, Jan 4. doi: 10.1007/5584\_2016\_156

\*\*Tackling drug-resistant infections globally: final reports and recommendations, *The Review on Antimicrobial Resistance*, 05/2016.

**For more information:**

**Fredrik Ollila**, Founder and CEO, BonAlive Biomaterials Ltd

Tel. +358 400 931 209, fredrik.ollila@bonalive.com

**The study abstract is available at**

<https://www.ncbi.nlm.nih.gov/m/pubmed/28050878/?i=1&from=bioactive%20glass>

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**BonAlive Biomaterials Ltd** represents the development of novel antibiotic-free innovations for bone regeneration. The company manufactures and sells implantable biomaterials for bone regeneration used for surgical treatment of chronically infected bone, spine fusions and bone cavity filling. BonAlive® products are available in Europe, the Middle East, Asia-Pacific, Africa and South America. The clinical use of BonAlive® is supported by a twenty-year history of research and more than fifty scientific papers.

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