



[1] "Consensus Conference" Impiego della stimolazione elettrica e magnetica in ortopedia e traumatologia, Italian Journal of Orthopaedics and Traumatology, 24, 1, 13-31, 1998

[2] Bassett C.A., Mitchell S.N., Gaston S.R.: Pulsing electromagnetic field treatment in ununited fractures and failed arthrodeses. JAMA, 5, 247(5), 623-862, 1982

[3] Traina G.C., Cadossi R., Ceccherelli G., Dal Monte A., Fontanesi G., Giancetti F., Mammi G.I., Negri V., Pisano F., Poli G., Rinaldi E., Virgili B.: La modulazione elettrica della osteogenesi. Giornale Italiano di Ortopedia, Suppl.XII (2), 165-176, 1986

[4] Brighton C.T., Wang W., Seldes R., Zhang G., Pollack S.R.: Signal transduction in electrically stimulated bone cells. J.B.J.S., 83-A, 1514-1523, 2001

[5] Brighton C.T., Pollack S.R.: Treatment of recalcitrant non-union with a capacitively coupled electrical field. J.B.J.S., 67-A, 577-585, 1985

[6] Brighton C.T., Shaman P., Heppenstall R.B., Esterhai J.L., Pollack S.R., Friedenber Z.B.: Tibial nonunion treated with direct current, capacitive coupling, or bone graft. Clin Orthop, (321): 223-234, 1995

[7] MacDonald M., Bonneau M.: Clinical experience with capacitively-coupled electric fields. 3<sup>rd</sup> International Conference on Bioelectromagnetism and 1<sup>st</sup> Slovenian-Croatian Meeting on Biomedical Engineering, 8-12 October 2000

[8] Goodwin C.B., Brighton C.T., Guyer R.D., Johnson J.R., Light K.I., Yuan H.A.: A double-blind study of capacitively coupled electrical stimulation as an adjunct to lumbar spinal fusions. Spine, Vol. 24, 13, 1349-1357, 1999

[9] Carter E.L., Vresilovic E.J., Pollack S.R., Brighton C.T.: Field distributions in vertebral bodies of the rat during electrical stimulation: a parametric study. IEEE Trans. Biomed. Eng., Vol.36, 333-345, 1987

[10] Mattei A., Spurio Pompili G.F., Impagliazzo A.: Esperienza sul trattamento dei ritardi di consolidazione e delle pseudoartrosi con stimolatore capacitivo. VII Corso Internazionale – Stimolazione biofisica della riparazione endogena nel tessuto osseo e cartilagineo, Ospedaletto di Pescantina, 2001

DISTRIBUTED BY



IGEA srl . Via Parmenide, 10/A . 41012 Carpi (MO) ITALY .  
Tel. +39 059 699600 . Fax +39 059 695778  
www.igea.it . e-mail: info@igea.it

IGEA/E005/03/02

SPINAL  
BONE GROWTH  
STIMULATOR



## IGEA PRESENTS OSTEOSPINE: NON-INVASIVE PORTABLE AND LIGHT

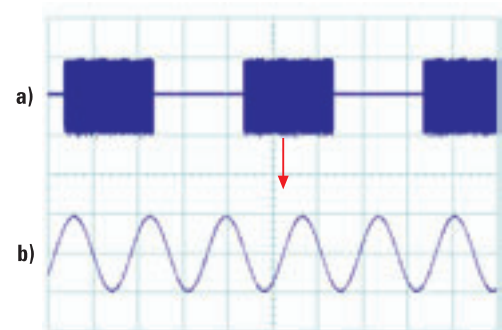
Igea boasts upwards of twenty years' experience in the field of clinical biophysics. Our firm and steady commitment in research and experimentation has led to the realization of Osteospine.

**Osteospine is the Igea's new bone growth stimulator based on employment of electrical fields, specifically designed for the treatment of arthrodesis and vertebral fractures.**

Clinical studies, performed in the last two years, have demonstrated the effectiveness of Osteospine in promoting osteogenesis and its lack of side effects. Osteospine enables the patient to employ the device easily and in complete comfort, in perfect compatibility with daily activity.



Characteristics of the Osteospine signal



- a) Burst signal with 12.5 Hz frequency and 50% duty cycle.  
b) Sine wave signal with 60 kHz frequency.

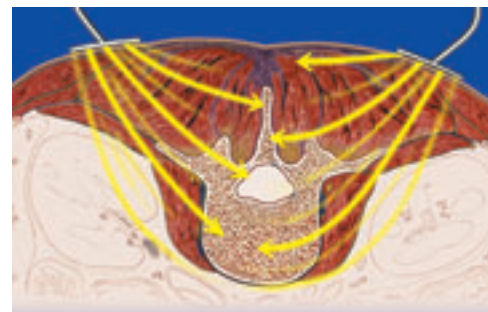
## DOCUMENTED THERAPEUTIC EFFECTIVENESS



Stimulation of endogenous reparative osteogenesis with electrical fields is a therapeutic choice already well consolidated in modern orthopaedics and traumatology.

**Osteospine is able to control and supply the electrical current density needed to promote osteogenesis at the level of the site of treatment: 15÷30µA/cm<sup>2</sup>. The signal of Osteospine complies therefore with the characteristics of a Focused Osteogenetic Signal (FOS) for therapeutic effectiveness.**

Representation of the electrical field in the spine



## INDICATIONS FOR USE

### SPINAL FUSION

### FAILED SPINAL FUSION

Duration of treatment: 10 hours/day until complete healing.

**The adhesive Igea electrodes are placed at the site of treatment, at the sides of the spinal column, at 10 cms distance from one another and in direct contact with the skin.**

Osteospine can be used in presence of internal synthesis devices.

## THE ADVANTAGES OF OSTEOSPINE

- Non-invasive, portable and easy to use. Very limited weight and size (weight: 136 g; size: height 100 mm, width 70 mm, depth 27 mm).
- Battery operating: supplied with rechargeable battery, giving average 30 hours working.
- Fitted with a microprocessor which guarantees the optimum functioning.
- The Igea electrodes, size 50x90 mm and with contact impedance 157.5 Ohm at 60 kHz frequency, are essential for correct working of Osteospine.
- Electrical safety is certified by IMQ. Osteospine is manufactured in compliance with the standard IEC-601-1 and 601-2-10. It complies with the requirements of the Directive 93/42 EEC and is marked CE0051.



**OSTEOSPINE™**