- MAGNETIC MALLET
- TOOTH EXTRACTION
- BONE CONDENSING
- HORIZONTAL BONE EXPANSION
- VERTICAL BONE EXPANSION
- THE SINUS FLOOR ELEVATION
- LOCALIZED MANAGEMENT OF SINUS FLOOR (LMSF)  Dr. Gianni Bruschi
- BONE EXPANSION IN DELAYED HEALING SOCKETS
- FRESH EXTRACTION SOCKETS AND SIMULTANEOUS OSTEOTOME SINUS FLOOR ELEVATION
THE DEVICE

The electrical mallet (Magnetic Mallet) is a magneto-dynamical instrument assembled into a handpiece energized by a power control device, delivering forces by timing of application. The osteotomes are attached to the hand piece that push a shock wave on their tip.
**HOW MAGNETIC MALLET WORKS**

Magnetic Mallet exploits an electro-magnetic, electronically operated collision between two masses, allowing to get a high intensity impact applied in a very short timing; all that permits you to get an elastic wave, followed by a quantity of motion, which expresses itself in an inelastic shock wave on the bone.

This lets you obtain the plastic deformation of the bone. The Magnetic Mallet imparts to osteotomes a longitudinal movement along central axis, moving up and down toward pilot bone hole, providing a driving mechanism of longitudinal movements.

Such mechanical sequence of osteotomes progressively condensed internal bone wall of initial hole radially outward with respect to central axis to create high density bone tissue along substantial portion of length of implant site preparation.

*Fig. 1* This graphic shows the comparison among the four forces of the Magnetic Mallet (black, red, green and blue lines) and the force delivered by an osteotome hit by a manual hammer (fuchsia line).

Magnetic Mallet is designed to apply four forces of different strength, from the lighter one (force number 1) to the stronger one (force number 4) *Fig 1*

<table>
<thead>
<tr>
<th>FORCE NUMBER</th>
<th>65 daN</th>
<th>applied in 120 µs</th>
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<tbody>
<tr>
<td>FORCE NUMBER 2</td>
<td>85 daN</td>
<td>applied in 120 µs</td>
</tr>
<tr>
<td>FORCE NUMBER 3</td>
<td>120 daN</td>
<td>applied in 120 µs</td>
</tr>
<tr>
<td>FORCE NUMBER 4</td>
<td>260 daN</td>
<td>applied in 120 µs</td>
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ADVANTAGES FOR THE OPERATOR

1. Magnetic Mallet delivers a more precise control of osteotome of the entry direction (or directionality) of the tip into the bone. This is an important concept since bone is generally formed of parts with different density, and that the expander tends to be deflected when it moves from a bone part with a specific density to another bone part with a different density.

2. A further advantage of the handpiece, combining hand mallet and instrument, is to give the surgeon the possibility to use just one hand in carrying out the surgery, thus getting a higher control and visibility.

3. The handling of the device is very simple since the mechanical oscillations transmitted to the osteotome, are transmitted without difficulties to the bone.

4. Reducing surgical procedure time.

5. Simplified bone remodeling procedure.

ADVANTAGES FOR THE PATIENT

Improved the patient comfort avoiding benign paroxysmal positional vertigo (BPPV)7,8.
THE OSTEOTOMES

• The whole range of osteotomes are made of A630 surgical grade stainless steel.

• Osteotomes for bone condensing and expansion.
• Osteotome for vertical expansion.

• Blades.

• Instrument to insert the dental implant.