Teamwork to provide innovative solutions
Implant Microdent System is a company that has been specialising in the development, manufacturing, and sale of oral implant systems since 1983. The Microdent external and internal connection implant systems have been designed and conceived to provide solutions that meet the needs of professionals who demand the highest standards of precision and quality. Always putting the satisfaction of its clients first, Microdent offers all the guarantees of quality and service that come backed by a long and ascending trajectory in the field of implantology.

Microdent facilities are equipped with the most innovative technology available, making the company a pioneer in the research and manufacturing of implants. The patents held for Microdent products show the company’s consistent dedication to research. In the field of education, Microdent has shown its special concern from its very outset, since it organizes and holds courses, seminars and practical workshops on a regular basis to bring the knowledge and tools required to achieve success with patients close to the professionals of implantology. These are travelling courses throughout the national territory and also in the company, where the firm has an auditorium and several practise rooms.

Microdent is actively present in fairs and conferences, both nationally and internationally, where it is present with stands, talks and presenting products. This business and promotional activity, together with its website, through which Microdent offers updated information on events, news and products, among others, contribute in the consolidation of its image as a top-level company.
MICRODENT BONE EXPANSION

PATENTS

The Microdent Implant System is protected with various patents on inventions and utility models.

We would like to highlight the following ones:

- MICRODENT registered trademark
- Patent in Spain for bone expanders
- Patent in U.S.A. for bone expanders
- Patent in Europa for bone expanders
- Patent for Micro-pik prosthesis fixing system
- Patent for transmucous dental implant
- Patent for overdenture ball-and-socket-joint
- Patent for security surgical instrument
- Patent for dental implant fixing by implant
- Patent for bi-cortical provisional implant
- Patent for internal connection implant
- Patent for improved dental implant
- Patent for adjustable overdenture retention system
- Patent for biomechanical union system
- Patent for melatonine using for osseous regeneration, for human and veterinarian using as an active product
- Patent for CAPITEL PILLAR prosthetic angle correction
- EASY-LOCK patent – Oscillating spherical retainer for overdentures fixation
- Patent NOVATECH
- Patent dental implant
- Patent MRT dental implant with prosthetic union
- Patent for biomechanical union system between implants and prosthesis
- Patent CORTICAL FIX
- Implant retention key patent
- Dispositive for fixing dental prosthesis patent
- Patent orthodontic implant
- MV implant patent for insertion without drilling
BONE EXPANSION CATALOGUE INDEX

EXPANSION TECHNIQUE DEVELOPMENT

DILATORS

SINUS COMPACTORS

CORTICAL-FIX

ESBIPRO TECHNIQUE

BONE EXPANSION TECHNIQUE - PROCESS ILLUSTRATION

PRACTICAL PROCEDURE

BONE EXPANSION TECHNIQUE

19 | CASE REPORT NUM. 1
21 | CASE REPORT NUM. 2
24 | CASE REPORT NUM. 3
26 | CASE REPORT NUM. 4
27 | CASE REPORT NUM. 5
29 | CASE REPORT NUM. 6
NON TRAUMATIC EXPANDERS

The non traumatic Microdent expanders developed by Microdent stand for an important technological innovation for oral implantology as a product of global reference and an essential instrument for any professional in implantology. This practical and simple bone expansion system avoids surgical trauma and allows an expansion effective measured and progressive control.

Microdent expanders have been re-designed replacing colour code plastic ring for other metallic and practical ring which assures more durability. On design level, they have included some modification updating its image. Microdent has on implantology professional disposition two expansion kits: one expanders box containing five expanders and one additional lift, and new complete bone expansion kit, with a new design, with all necessary additional material and instrument.

Many clinical features

They just need a fissure drill or circular drill to start process.

Intermediate hazel drill in type bone D-2 have been deleted from the protocol.

In bone type D-3 we use bone bloody addition excess. Using just one opening drill, we cool osteotomy.

They take advantage in whole procedure the excess bone keeping compacted in new alveolus, because of expander thread design.

In bone type D-4 presenting a low percentage of bone tissue of all bone types, tri cortical anchor succeed. Being able to use larger diameter implants and to start from cortical crest from 1 to 2mm., we can insert 5mm implants.

Our expander n.6, special design, allows non traumatic sinus left, avoiding bone table fracture.

Expansion kit ref. KITEXP
kit contents:
- Expanders num. 1, 2, 3, 4 and 5
- Bone dilators num. 2, 3, 4 and 5 in duplicate
- Sinus compactor
- Short extensor
- Expanders manual key
- Bolt
- Expander pilot drill
- Crest longitudinal opening drill
- Circular saw

CONSIDERATIONS ABOUT DIFFERENT BONE TYPES

TYPE A BONE
Bone with:
- Width > 5mm.
- Height: 10 – 12 mm.
- Lenght > 5mm.
- Angle > 30%

TYPE B BONE
Bone with:
- Width > 2,5 - 5mm.
- Height: 10 – 12 mm.
- Lenght > 15mm.
- Angle > 20%

TYPE C BONE
Bone with:
- Unfavourable height and width bone and unfavourable length and angle bone.

TYPE D BONE
Featured by:
- Intense atrophy
- Basal bone loss
- Plane upper jawbone
- Mandible on pencil
Many advantages with outstanding features

- Non traumatic use.
- Expand thin crests, increasing the thickness without loosing the bone.
- Compact bone around the implant for better osseointegration.
- Perfect control of the insertion axis.
- Economic, since in some cases it replaces drill erosion.
- The gradual thread introduction causes bleeding, favouring osseointegration.
- Excellent expander manual or mechanical control minimizes labial drilling risks in the upper compact jawbone labial side.
- Universal application for all system implants.

Surgical technique

<table>
<thead>
<tr>
<th>EXPANDER NO 1</th>
<th>EXPANDER NO 2</th>
<th>EXPANDER NO 3</th>
<th>EXPANSOR NO 4</th>
<th>EXPANSOR NO 5</th>
<th>EXPANSOR NO 6</th>
</tr>
</thead>
<tbody>
<tr>
<td>OF INITATION</td>
<td>OF INITATION</td>
<td>EXPANDER</td>
<td>EXPANDER</td>
<td>EXPANDER</td>
<td>SINUS COMPACT</td>
</tr>
<tr>
<td>SHORT</td>
<td>LONG</td>
<td>Ø TIP 1,00mm</td>
<td>Ø TIP 1,90mm</td>
<td>Ø TIP 2,50mm</td>
<td>STRAIGHT Ø</td>
</tr>
<tr>
<td>Ø TIP 1,50mm</td>
<td>Ø TIP 3,00mm</td>
<td>TO 2,30mm</td>
<td>TO 3,80mm</td>
<td>TO 4,50mm</td>
<td>3,50mm</td>
</tr>
<tr>
<td>LENGTH 10,00mm</td>
<td>LENGTH 16,00mm</td>
<td></td>
<td>8mm Ø 2,75mm</td>
<td>8mm Ø 3,40mm</td>
<td>FOR IMPLANTES</td>
</tr>
<tr>
<td>COLOR AMARILLO</td>
<td>COLOR VIOLETA</td>
<td>COLOR AZUL CLARO</td>
<td>10mm Ø 3,70mm</td>
<td>10mm Ø 4,00mm</td>
<td>Ø 4,00 - Ø 4,20mm</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>12mm Ø 4,00mm</td>
<td>12mm Ø 4,50mm</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>14mm Ø 4,30mm</td>
<td>14mm Ø 4,80mm</td>
<td></td>
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</tbody>
</table>

Particular recommended for:

Narrow crest regardless the bone type.
II, III and IV bone type.
I bone type combined with traditional drill system.
Non traumatic sinus lifts through implant site.
This is a series of instruments designed by Microdent and incorporated into its well-known bone expansion technique called Esbipro. Microdent dilators act in combination among themselves during expansion process. Dilators main function is to maintain controlled the bone table expansion sequentially, just before to proceed to implant insertion in the mouth, acting naturally as a final retainer and avoiding other intermediate solutions.

With dilators use you can provide a new and important complete bone expansion process. The new technique allows a sequence where to practise a more precise control over the expansion.

New bone expansion kit is available with a pair of each measure of dilators, identified by complementary expander colour.

Microdent makes continuously courses and workshops showing and practicing work process with new Dilators.

**INSTRUMENTAL FOR BONE EXPANSION**

<table>
<thead>
<tr>
<th>Drill</th>
<th>Circular drill</th>
<th>Drill 701</th>
<th>Manual spanner</th>
<th>Tightening</th>
</tr>
</thead>
<tbody>
<tr>
<td>To perforate the crest and allow the introduction of the expander ref. 1025</td>
<td>This is used to open the crest lengthwise.</td>
<td>Used at high speed for crest longitudinal cut.</td>
<td>This provides a very sensitive control of the expansion.</td>
<td>Handle of the manual spanner.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>DH02</th>
<th>DH03</th>
<th>DH04</th>
<th>DH05</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image1" alt="DH02" /></td>
<td><img src="image2" alt="DH03" /></td>
<td><img src="image3" alt="DH04" /></td>
<td><img src="image4" alt="DH05" /></td>
</tr>
</tbody>
</table>
BONE EXPANSION

SINUS COMPACTORS

They form part of Microdent bone expander surgical instrument. Microdent compactors are mostly used to prepare Implant site in further phase to expander use. It is a very useful instrument for upper maxilla for compacting by pressure executed in sinus floor wall, causing a little high increase and reaching in this way to insert a longer implant in this zone. If, on the contrary, you dispense with expander use in the Surgery, you can use directly Microdent bone compactors to prepare the Implant site, respecting final drill pass according to compactor diameter.

**Microdent Compactor Ref. 3535 Num. 6**
Recommended for fixing 3,75; 3,80 and 4,00 diameter Implants.
2,50mm maximum diameter final drill passage

**Microdent Compactor Ref. 4040 Num. 7**
Recommended for fixing 4,20 and 5,00 diameter Implants.
2,80mm maximum diameter final drill passage

**Microdent Compactor Ref. 5050 Num. 8**
Recommended for fixing 5,00 and 5,50 diameter Implants.
3,50mm maximum diameter final drill passage

<table>
<thead>
<tr>
<th>Compactor Num. 6</th>
<th>Compactor Num. 7</th>
<th>Compactor Num. 8</th>
</tr>
</thead>
<tbody>
<tr>
<td>3535</td>
<td>4040</td>
<td>5050</td>
</tr>
</tbody>
</table>

① 8,10, 12 and 14 depth marks.
INTRODUCTION

Cortical Fix double adjustable action sinus lift makes reference to a new instrument for oral surgery developed and patented by Microdent and destined to increase sinus subantral zone second cortical by slow and controlled compression. Helped by this dispositive they achieve larger implant insertion and, consequently, stability, security and osteointegration condition improve in this zone where bone quality is often precarious. Dispositive original design has a very simple functionality and scarce traumatic incidence because of Cortical Fix self threading in bone insertion, which follows the same protocol as it was an normal implant. Moreover, once piston is activated in alveolus where dispositive is fixed, the Cortical Fix body is removed, placing a larger definitive implant, with suitable measures for an excellent primary retention. With Cortical Fix incorporation to Implantologic Surgery, Microdent has pretended:

- To enrich upper maxilla bone by compression, therefore we have developed a bone intermediate compacter acting previously to dispositive fixation.
- To keep threaded body without movement during piston activation, being this condition indispensable to second cortical progressive lift, avoiding sinus perforation because of its slow detachment.

Bone lift gain achieved is approximately 4mm. (piston movement)

<table>
<thead>
<tr>
<th>CF42L</th>
<th>CF42C</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ø 3,80</td>
<td>Ø 3,80</td>
</tr>
<tr>
<td>L 8,0</td>
<td>L 5,0</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>CF50L</th>
<th>CF50C</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ø 4,60</td>
<td>Ø 4,60</td>
</tr>
<tr>
<td>L 8,0</td>
<td>L 5,0</td>
</tr>
</tbody>
</table>

You can fix 4,20mm. diameter implants and lengths between 8 and 12mm.
You can fix 4,20mm. diameter implants and lengths between 6 and 10mm.
You can fix 5,00mm. diameter implants and lengths between 8 and 12mm.
You can fix 5,00mm. diameter implants and lengths between 6 and 10mm.

Previous drilling for this model can´t be higher than 2,80mm. diameter.

Previous drilling for this model can´t be higher than 3,20mm. diameter.

Made on surgical stainless steel
**SURGICAL INSTRUMENTAL REQUIRED FOR FIXING CORTICAL FIX IN THE BONE**

<table>
<thead>
<tr>
<th></th>
<th>Long CF06L</th>
<th>Short CF06C</th>
<th>Extensor CF03</th>
<th>Dismantling key CF07</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Keys for control and advance piston:</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ref. CF06L long</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ref. CF06C short</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Extensor ref. CF03</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dismantling key ref. CF07</td>
<td></td>
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</tr>
</tbody>
</table>

- Bone intermediate compactor ref. CF42R and CF50R
- Drill for plucking and cortical drilling ref. FC20C
- Initial 1,80mm diameter drill with depth limit ref. FT180C
- Initial 2,80mm diameter drill with depth limit (for 4,20mm implants) ref. FT280C (with limit)
- Final 3,20mm drill with depth limit (for 5,00mm implants) ref. FT320C (with limit)

<table>
<thead>
<tr>
<th>CF42R</th>
<th>CF50R</th>
<th>FC20C</th>
<th>FT180C</th>
<th>FT280C</th>
<th>FT320C</th>
</tr>
</thead>
<tbody>
<tr>
<td>8mm</td>
<td>8mm</td>
<td>5mm</td>
<td>4.2mm</td>
<td>1.90mm</td>
<td>5mm</td>
</tr>
<tr>
<td>3.5mm</td>
<td>5mm</td>
<td>4.2mm</td>
<td>1.90mm</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

- Bone intermediate compactor for Cortical Fix {4,20).
- Bone intermediate compactor for Cortical Fix {5,00}.

*Due its triangular shape diameter created is 2,20mm.

**Important:**
Inserting Cortical Fix, adjustable piston must be totally deactivated [anticlockwise].
CORTICAL FIX
DISPOSITIVE RESUMED DESCRIPTION

Cortical Fix sinus lift consists of two complementary bodies (A) and (B) Figure 1. Body “A” is fixed in upper maxilla bone until the limit. Body “B” is the adjustable piston responsible of lift and compression.

Positioning graphic example

In X-ray 1 you can observe Cortical Fix dispositive fixed in bone. In figure 2 body “A” is positioned. In figure 3 body “B” has been extended ending left.

Pictures A, B, C and D show a surgery example with Cortical Fix use.
DIGITAL SUPPORT

ESBIPRO TECHNIQUE

ESBIPRO TECHNIQUE 3D VIDEO (Ostogenical Process Bioactive Estimulation)

Microdent has on their customer disposal a 20 minutes duration 3D complete Video with Esbipro technique animation process.

GENERAL PURPOSE

Bone lost process reversal redefining three-dimensionally the quantitative and qualitative parameters and density improvement by means of direct physiological functional stimulus with maximum control non traumatic technique application and Microdent thread expander use.

SPECIFIC PURPOSES

Bone expansion


Sinus bone lift

Gain on bone height. Favourable inter maxillary relation. Intra-oral relations normalization.

Lateral bone condensation

Density – Bone Quality improvement. Support surface rise – Greater resistance to load.

Technique

Total thickness minimally invasive long flap without tissue download. Lateral corticotomy without lateral bone download or lateral download fracture. Microdent thread expanders use.

SIMULATIONS

Video realized with collaboration of
Dr. Elías Fornés Ortuño
Dr. Joaquín García Rodríguez
Dr. Javier Martínez Osorio
Bone Expansion Technique

**Process Illustration**

- Crest with great bone resorption.
- Flap lift as small as possible without download.
- Progressive depth.

- Osteotomy using 701 drill on tungsten with disc or with piezoelectric surgery.
- Insertion of expander num. 1
- Insertion of expander num. 2

- Insertion of expander num. 3 for 3.80 mm. implants.
- Insertion of expander num. 4 for 4.20 mm. implants.
- Insertion of expander num. 5 for 5 - 5.50 mm. implants.

- * Suitable drill use to give form to field apical third.

- * Only for bone type 1.

- Implant site ready for insertion.
- Inserted implant.

- Rest period.
- Prosthesis placing.
SURGICAL TECHNIQUE FOR MICRODENT BONE EXPANDERS USE

PRACTICAL PROCEDURE

Bone preparation with 1mm. little drillings.

Lengthwise expansion with circular drill joint drillings.

We try to expand to the maximum circular drill allows, or insert if we use piezo electrical surgery.

We observe produced groove relieving tensions to the bone when we make the expansion.

We expand with a little expander 1,20mm. pilot drill, used for setting expander insertion point, helping also to get an optimum insertion axel.

We recommend use expander manual key, so we will have sense of touch and sensitivity in the expansion.

We start expansion always in the middle for going on in extremes.
We can observe placed expander in the crest initiating the expansion.

We follow expansion sequence with red expanders [num. 2] and we start expansion in the extremes with yellow ones [num. 1]

We go on expanding on the extremes with red expanders [num. 2]
We move green expanders (num. 4) to the extremes. We can appreciate how required expansion has been reached.

Finished practice with 4 internal connection Ø 4,20 mm Trylogics implants inserted.

We expand until desired height.

If we want to insert wide platform implants (Ø 5,0 mm), we will continue the expansion with dark blue expanders (num. 5) following the same protocol from to the middle to the extremes.

In order to keep controlled bone table amplitude, we also can use dilators [catalogue page 10]. In this case, we would leave inserted green dilators while we follow expander sequence for Ø 5 mm implants. We can replace manual key by rattle key.

We remove holder implant and we observe reached expansion.

Cover screw placing and final practice.

Although we used bolt key when effort requires it, we continue to keep sensitivity produced by making expansion with manual key.

We move green expanders (num. 4) to the extremes. We can appreciate how required expansion has been reached.

We insert green expanders (num. 4) in the middle, and we move sky blue ones (num. 3) to the extremes continuing with the protocol.

After placing red expanders (num. 2), we follow the sequence with sky blue (num. 3) starting for the middle and moving the red ones (num. 2) to the extremes. Once expander is totally inserted, we advise you to keep expander during a few seconds in order to expander can cause micro fractures dilating the bone.

Although we used bolt key when effort requires it, we continue to keep sensitivity produced by making expansion with manual key.

We move green expanders (num. 4) to the extremes. We can appreciate how required expansion has been reached.

We insert green expanders (num. 4) in the middle, and we move sky blue ones (num. 3) to the extremes continuing with the protocol.
BONE EXPANSION TECHNIQUE

CASE REPORT NUM. 1

48 aged patient with absence of 11 tooth site by traumatism three years ago. During this time he wore a removable partial prosthesis.

Treatment planning
Microdent 5mm. implants placing with bone expansion.

Absence of 11 tooth site, with great resorption.
Second view 11 tooth site absence, with great resorption
Supra ridge incision.

Flap lift without downloads.
Groove with 701 drill.
We also can make groove with disc drill or piezo electrical surgery.

We start expansion protocol with expander num. 1 (yellow).
We continue expansion with num.2 one (red).
We expand until to obtain desired expansion and we observe insertion axel.
20

We follow protocol with num. 3 one (blue expander).

We see great table separation and also the site where we will insert the implant.

5,00mm implant placing.

Implant perfectly adapted to cortical.

Inserted implant detail.

Cover screw and suture.

Case finished.
BONE EXPANSION TECHNIQUE

CASE REPORT NUM. 2

Patient 16 aged with orthodontic treatment presents agenesia in 12 and 22 tooth sites with a vestibular table collapse to this zone level.
Knife blade ridge.

Treatment planning
Implant insertion in 12 and 22 with bone expansion and ceramics prosthesis.
We start expansion sequence with initiation yellow expander (num. 1).

We continue with red expander (num. 2). We keep on the sequence with blue expander (num. 3).

We obtain desired depth with blue expander.

Expanders concentrate insertion axel and optimize it because of its conical special design.

Second expanders view, with conical special design which concentrate and optimize insertion axel.

Implant site. 3.75mm standard platform implant positioning. Implant perfectly adapted to cortical.

Cover screws, half note incision.

Implant with placed cover screws.

Suture.
Three months later.

Healing pillar positioning.

Crown recently placed.

15 days later.

Two months later.

Final result
BONE EXPANSION TECHNIQUE

CASE REPORT NUM. 3

Patient 46 years old carrying a fix prosthesis and presenting 13 and 22 pillar failure, keeping 12-11-21 edentulous zone with great bone resorption.

Treatment planning
Rest extraction on 13 and 22, bone expansion in zone from 12 to 21 with expanders and piezo electrical surgery to try to recover previous maxilla convexity lost because of intense resorption and 5mm diameter implant positioning in 13, 11, and 21 and 4,2mm diameter implant positioning in 22
Fix prosthesis placing over the implants.
BONE EXPANSION SYSTEM - Expanders use manual Green expanders (num. 4). Neo alveolus on 11 ready to place the implant, we leave the expander on 21 to keep separated tables and to make easy implant positioning.

Biomaterial filling.

Implant placing. Once implant is placed, we extract expander from 21 y we leave the site ready to implant insertion.

5mm. wide platform implants positioning.

Cover screws placing and biomaterials.

Biomaterial filling.

Biomaterial filling horizontal view.

Suture, we search the edges and we leave heal for second intention.
Patient 54 years old, carrying removable bottom prosthesis for 15 years and presenting bone flange with a lot of irregularities and with bone resorption

Treatment planning
5 standard 3,75mm x10 implants insertion, because of poor available height, by using expanders to surpass ridges on knife cut, and fix ceramics prosthesis placing.

Preparatory picture, great bone resorption. Total thickness incision, minimum flap lift, you observe cortical bone. Longitudinal osteotomy until third molar region.

Progressive manner red and blue expander. MV implant, detail of how it keeps separated walls and how is formed a clot. 5 MV implants inserted just with expanders (without drill use).

Cover screws positioning. Suture, edges approximation and healing for second intention. Situation 15 days later.
BONE EXPANSION TECHNIQUE

CASE REPORT NUM. 5

Patient 49 years old, with absence of 34, 35, 36, 44, 45 and 46 for 25 years. He presents resorption and ridge on knife cut.

Treatment planning
6 MV implant insertion with bone expansion.

Left mandibular view, total thickness incision and flap detachment, you observe cortical bone type d.I

Yellow expander insertions.

You go yellow expander in depth.

You remove yellow expander from the middle any you place red one, without removing lateral ones, subsequently you change ones on the extremes.

Blue expander insertion.

MV implants placed in expanded zone.

Cover screws placed.

Longitudinal osteotomy from 33 to 47 made with disc and deepened by means of piezo electrical surgery.
Right jaw edentulous zone where you observe great resorption.

Yellow expander placing.

You start changing central expander (red) and next laterals.

You observe expander insertion axel.

You remove central expander and you place MV implant. Next you place ones on laterals.

Detail of removing central expander and placing MV implant.

Placed implants with its cover screws, you can observe how tables are separated.

Placed implants detail with its cover screws and separated tables.

Total thickness incision and flap lift.

Longitudinal osteotomy as long as possible, made with disc and deepened with piezo electrical surgery.
BONE EXPANSION TECHNIQUE

CASE REPORT NUM. 6

Patient 45 years old, edentulous mandible, carrying removable complete upper prosthesis for 11 years and presenting great bone resorption
Ridge on knife cut, pneumatic sinus

Treatment planning
8 implants placed using expanders and piezo electrical to make bone groove.
Total upper restoration with porcelain prosthesis

Upper maxilla, great resorption.

Total thickness incision with periosteum detachment
Intercisal lillite download.
Bone groove made with piezo electrical surgery.

BONE RESTORATION FACTORS
- Initial stimulus
- Precursive cell presence
- Vascularization.

1- Initial stimulus: With post surgical inflammation, materials with osteoinductive capacity are liberated from cut zone to necrotic zone.
2- Precursive cells in the zone with capacity to produce osteoklastiches cycles.
3- Vascularization in order to guarantee cells nurture.
-Bone reparation won't start until revascularization is initiated and sanguineous input guarantees nurture and aeration.

Depending on bone degree, speed and quality, bone will response as:
1- Bone hijacking: low or non-existent vascularization
2- Fibrotic interface: Medium degree vascularization, implant relative movement on healing.
3- Suitable bone healing: by means of osteogenic womb.

You start the expansion sequence with initiation yellow expanders [num. 1].
You go along the expansion, always from the middle to the extremes with red expanders (num. 2).

Sequence with four red expanders extending the crest.

First 3,75 x 12mm implant introduction.

Two inserted standard platform 3,75 x 12mm implants. Once implants have been inserted in 11-21, you remove expanders from zone 13-23.

You insert completely reed expanders (num. 2).

You can observe the important table separation.

Inserted implant view.

Once implants have been inserted in 11-21, you remove expanders from zone 13-23.

In zone 21-23 we insert yellow expanders.

You continue the protocol with blue expanders, from the middle to the extremes.

You go along expanding in order to insert more implants.

Four placed implants and you continue with expansion.
Implant 23 site.

8 inserted implants with its cover screws.

Suture.

Closed case 4 months later

One year later.

Surgical cases by:

**Dr. Élias Fornés Ortuño**
- Doctor on odontology.
- Postgraduate on Periodontics and Oral Implantology by New York University.
- Master on occlusion.
- Fellow for I.C.O.I.
- Barcelona 2002 Worldwide Congress lecturer.
- Author of several present a papers and scientific works published in several congress and magazines on Implantology and Periodontics.
- Esbipo Technique (Osteogenic Process Bioactive Stimulation) co-inventor.
- Private practice in Almeria with special dedication to Implantology and Periodontics.

**Dr. Joaquín García Rodríguez**
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- Postgraduate on Implantology and Periodontics by N.Y.U. 1st. year
- E.S.O.R.I.B. N.Y.U. Associate teacher
- Barcelona 2002 Worldwide Congress lecturer
- Fellow for I.C.O.I maximum degree
- Implantology European Jury member
- Esbipo Technique (Osteogenic Process Bioactive Stimulation) inventor
- Private practice in Algeciras with special dedication to Implantology and Periodontics.