Implant site preparation with PIEZOSURGERY®, the revolutionary technique – safe and precise!

- less inflammatory cells compared to implant site preparation with drills
- more active neo-osteogenesis
- better control of site preparation
- significant bone preservation
- easier and more precise bone perforation thanks to the new PILOT inserts
- positioning of implants up to 5 mm diameter
Most dental implants are positioned using a drilling surgery technique. Piezoelectric bone surgery appears to be more efficient in promoting osseointegration of porous implants. This study used biomolecular and histologic analyses to compare the osseointegration of porous implants positioned using traditional drills versus the piezoelectric bone surgery technique.

**Background:** Most dental implants are positioned using a drilling surgery technique. However, dentistry recently experienced the implementation of piezoelectric surgery. This technique was introduced to overcome some of the limitations involving rotating instruments in bone surgery. This study used biomolecular and histologic analyses to compare the osseointegration of porous implants positioned using traditional drills versus the piezoelectric bone surgery technique.

**Methods:** Porous titanium implants were inserted into minipig tibias. Histomorphology and levels of bone morphogenetic protein (BMP)-4, transforming growth factor (TGF)-beta2, tumor necrosis factor alpha, and interleukin-1beta and -10 were evaluated in the peri-implant osseous samples.

**Results:** Histomorphological analyses demonstrated that more inflammatory cells were present in samples from drilled sites. Also, neo-osteogenesis was consistently more active in bone samples from the implant sites that were prepared using piezoelectric bone surgery. Moreover, bone around the implants treated with the piezoelectric bone surgery technique showed an earlier increase in BMP-4 and TGF-beta2 proteins as well as a reduction in pro-inflammatory cytokines.

**Conclusion:** Piezoelectric bone surgery appears to be more efficient in the first phases of bone healing; it induced an earlier increase in BMPs, controlled the inflammatory process better, and stimulated bone remodeling as early as 56 days post-treatment.
STEP BY STEP

**IM1**
- Initial pilot osteotomy
- **OPTIONAL** check the preparation axis with alignment PIN IM 1

**IP3-4**
- To optimize concentricity of implant site preparation between Ø 3 and Ø 4 mm, preparation of the cortical basal bone

**IM2**
- Pilot osteotomy in anterior or posterior region
- **OPTIONAL** check the preparation axis with alignment PIN 2-2.4

**IM4**
- To finalize the implant site preparation; insert with double irrigation to avoid overheating

**IP2-3**
- To optimize concentricity of implant site preparation between Ø 2 and Ø 3 mm, preparation of the cortical basal bone

**OT4**
- To correct pilot osteotomy axis (differential implant site preparation), to finalize the implant site preparation close to the alveolar nerve

**IM3**
- To enlarge or to finalize the implant site preparation; insert with double irrigation to avoid overheating

**IM**
- Implant positioning

The inserts for the implant site preparation are dedicated to bone quality of the maxilla.
IMPLANT SITE PREP KITS

IMPLANT PREP KIT PRO

EQUIPPED WITH:
- IM1, IM2A, IM2P, IM3A, IM3P, OT4, IM4A, IM4P, IP2-3, IP3-4, 3 PINS IM1, 3 PINS 2-2.4, 2 insert trays

IMPLANT PREP KIT

EQUIPPED WITH:
- IM1, IM2A, IM2P, IM3A, IM3P, OT4, 2 insert trays

WITH A KIT YOU SAVE UP TO 20% COMPARED TO A PURCHASE OF SINGLE INSERT

IMPLANT SITE PREP INSERTS