LM™ PERIODONTAL SURGERY

LM feel the difference

MINIMALLY INVASIVE
PRECISION AND EFFICIENCY

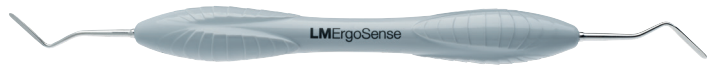
NEW!

LM™ MICROSURGICAL INSTRUMENT SELECTION

Ultimate delicacy and sharpness

- Developed in cooperation with Prof. Dr. Axel Endruhn, Buenos Aires, Argentina
- Versatility for various surgical techniques
- Focus on patient and efficiency with fewer post-operative challenges
- LM™ high-quality instruments providing ease of use and efficiency
- LM-ErgoSense® silicone handle for exceptional ergonomics and slip prevention
- Sharp and precise instrument tip designs for safety and efficiency

SCAN THE QR CODES FOR HOW TO USE VIDEOS



LM™ Inicia LMErgoSense® 171-172ES

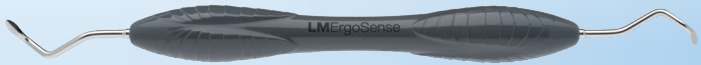
LM™ Eleva LMErgoSense® 173-174ES

LM™ Tunella LMErgoSense® 175-177ES

LM™ Papilla Solleva LMErgoSense® 181-182ES

LM™ Papilla Remota LMErgoSense® 179-180ES

LM™ Coltello LMErgoSense® 187-188ES



LM™ Orban Redondo LMErgoSense® 185-186ES

LM-ErgoSense® instrument handle
ENHANCING COMFORT AND PERFORMANCE

- LM-ErgoSense® silicone instrument handle with larger diameter and functional design provides exceptional grip proven to be ergonomic and efficient in scientific clinical testing.*
- Handle diameter 13.7 mm
- Read more about instrument ergonomics at www.lm-dental.com

- The LM-ErgoSense® handle is available with an integrated LM DTS™ RFID tag, a unique feature for improved asset management and patient safety.
- More information about the LM Dental Tracking System™ solution at www.dentaltracking.com

* Reference studies: (1) Sormunen E., Nevala N: Evaluation of ergonomics and usability of dental scaling instruments; Dental scaling simulation and Field study, part III. Finnish Institute of Occupational Health, LM-Instruments Oy. (2) Nevala N, Sormunen E, Remes J, Suomalainen K: Ergonomic and productivity evaluation of scaling instruments in dentistry. The Ergonomics Open Journal 2013; 6, 6-12.

Periodontal surgery
INDICATIONS AND TECHNIQUES

Most periodontal conditions and diseases (e.g., periodontitis) are largely preventable and can be treated in their early stages without surgical intervention. Periodontal surgery is recommended when nonsurgical therapy is insufficient.

The main differences between conventional periodontal surgery and periodontal microsurgery lie in the techniques, precision, and recovery times.

CONVENTIONAL MACROSURGICAL PROCEDURES require larger incisions, leading to more tissue trauma. This causes longer recovery times with increased discomfort and a higher risk of complications.

PERIODONTAL AND PERI-IMPLANT MICROSURGERY are particularly beneficial for patients, achieving a quicker recovery and better aesthetic results.

Microsurgery utilizes advanced magnification tools and specialized instruments for highly precise procedures. Enhanced accuracy minimizes damage to surrounding tissues and reduces the need for extensive incisions. The technique is less invasive, resulting in smaller incisions and less tissue trauma. Recovery is faster with less pain and improved aesthetic outcomes.

INDICATIONS FOR PERIODONTAL SURGERY

- Reduction of deep periodontal pockets ≥ 6 mm that persist after the initial phase of non-surgical periodontal therapy.
- Treatment of intrabony defects ≥ 3 mm where it's adviced to promote the regeneration of periodontal tissues.
- Furcation involvement in some cases where specific surgical intervention can be considered.
- Correction of mucogingival deformities in teeth and implants.
- Treatment of gingival recessions using soft tissue grafting techniques or periodontal plastic procedures.
- Increase of keratinized tissue in areas with insufficient gingiva.
- Treatment of peri-implantitis or correction of peri-implant soft tissue defects.
- Preparations for prosthetic treatments.

Microsurgery and minimally invasive techniques
IMPROVED OUTCOMES AND HEALING PROCESS

Microsurgery refers to procedures performed under magnification, such as a microscope or loupes, and micro-instruments. Minimally invasive techniques reduce the size of the necessary incisions, thereby decreasing healing time, associated pain, morbidity and the risk of infections and other complications.

REVASCULARIZATION	MICROSURGERY	MACROSURGERY
3 days	53,3 %	44,5 %
7 days	84,8 %	64,0 %
Mean root coverage	98,0 %	90,0 %

> Minimally invasive surgery is here to stay. Its evolution and improvements allow us to apply it more and more to new situations and fields of periodontal and peri-implant surgery."
>
> Prof. Dr. Axel Endruhn, Buenos Aires, Argentina

BIOLOGICALLY FOCUSED SURGERY FOR BETTER HEALING PROCESS AND PATIENT SATISFACTION

- Preservation of vascularization
- Promotion of tissue regeneration
- Significantly improved mean root coverage
- Improved probability of achieving complete root coverage, aesthetics and post-surgical recovery

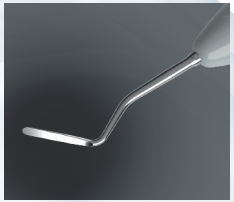
Reference studies: (1) Burkhardt R, Lang N (2005) Coverage of localized gingival recessions: comparison of micro- and macrosurgical techniques. J Clin Periodontal 32(3):287-293 (2) Di Gianfilippo R, Wang I-C, Steigmann L, Velasquez D, Wang H-L, Chan H-L. Efficacy of microsurgery and comparison to macrosurgery for gingival recession treatment: a systematic review with meta-analysis. Clinical Oral Investigations (2021) 25:4269–4280

LM™ INICIA
Intrasulcular Knife

Fixed-blade microsurgical knife for intrasulcular incisions, to separate the epithelium and supracrestal gingival connective fibers.

- Tunneling technique
- Tooth extraction
- Immediate implant placement
- Peri-implant plastic surgery
- Hard-to-reach areas

- Intrasulcular incisions
- Separation of the epithelium and supracrestal gingival connective fibers
- Maintenance of thickness and integrity of marginal tissues
- Separation of the anterior/front part of the papilla during tunneling procedures



INICIA

Third person singular form of the verb "iniciar" in Spanish, which means "to begin" or "to start".

The point of the blade is sharp for cutting, but the side edges are rounded.

Flat and very thin design to access hard-to-reach areas.

Slightly flexible yet rigid blade enabling correct and precise incisions.

The shank angulations facilitate working at interproximal, vestibular, lingual and palatal levels, allowing parallel access to the dental surface.

LM™ ELEVA

Micro Periosteal Elevator

Micro-sized periosteal elevator for full-thickness (mucoperiosteal) separation.

- Tunneling technique
- Coronally Advanced Flap (CAF)
- Tooth extraction sites
- Flapless procedures (ARP)
- Immediate implant placement
- Guided Bone Regeneration (GBR)
- Periodontal regeneration
- Flap procedures

- Elevation of periosteum
- Especially useful for minimally invasive microsurgery

ELEVA

Spanish verb meaning "raise" or "elevate". Used to indicate lifting something, or improving its status.

Precise and slightly beveled tip edge for effective separation of periosteum from the bone tissue.

The absence of cutting edges prevents unwanted damage to the soft tissues.

An additional function is to facilitate the insertion of the graft into the tunnel while it's pulled with sutures.

One curved and one straight working end facilitates access to different areas.

Shank angulation allows entry more apically if required.

LM™ TUNELLA

Tunneling Knife

Small-sized tunneling knife with two different shank angulations for split-thickness (supra - periosteal) dissections.

- Periodontal plastic surgery
- Tunneling technique
- Coronally Advanced Flap (CAF)
- Tooth extraction sites
- Flapless procedures (ARP)
- Immediate implant placement
- Guided Bone Regeneration (GBR)
- Flap procedures

- Split-thickness incisions in gingival and mucosal tissues
- Supraperiosteal dissections
- Reduced risk of perforation
- Controlled and precise cuts

TUNELLA

Latin word for "tunnellus" referring to a small structure or channel, similar to a tunnel.

Small-sized working end ensures entry into the tissues without tensions.

The small size of the working end allows access to narrow spaces.

One blade with an angled shank and the other with straight shank for improved access. Having both tips in the same instrument is ergonomic for the surgeon.

The sharp side of the blade faces the periosteum, while the polished and smooth part is in contact with mucosa, preventing perforations.

Delicate tips and sharpness facilitate working with less force.

LM™ PAPILLA SOLLEVA

Micro Papilla Elevator

Papilla and periosteal instrument designed to separate and elevate the base of the papilla from the interproximal bone.

- Base of papilla elevation
- Tunneling technique
- Tooth extraction
- Flapless procedures (ARP)
- Immediate implant placement
- Peri-implant plastic surgery

- Separation the base of the papilla from interproximal bone tissue
- Elevation of the papilla without cutting it
- Tunneling of the papilla

SOLLEVA

Third person singular form of Italian verb meaning "to lift", "to raise" or "to elevate" something.

Sharp end of the tip enables cutting the connective fibers between the base of the papilla and interproximal bone.

The sides of the working ends are blunt, preventing the laceration of the gingival margins.

Mirrored working ends and angulations allow operating from both the mesial and the distal sides of the papilla.

The length of the working end enables operating from the labial side and insinuating towards the palatal and lingual sides, and also working from the palatal or lingual side towards the labial side if separation of the base of the complete papilla is necessary.

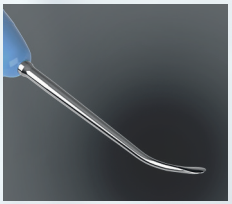
LM™ PAPILLA REMOTA

Periosteal and Micro Papilla Elevator

Periosteal and micro papilla elevator for elevating interdental papilla, and for remote vertical incisions.

- Access through remote incisions
- Tunneling technique
- Immediate implant placement
- Peri-implant plastic surgery
- Extraction sites

- Elevation and coronal displacement of the soft tissue through a remote incision
- Elevation of the interdental papilla in minimally invasive flapless surgeries
- Elimination of adhesions and frenulum



REMOTA

Spanish word meaning "remote". It refers to something that is distant or removed.

Two different tip designs that are complementary in surgical procedures.

The shorter "spoon-shaped" tip without cutting edges for elevating the interdental papilla.

The longer flat working end for full-thickness separation to be used from apical and lateral areas through remote incisions.

Provides excellent tissue release.

LM™ COLTELLO
Microsurgical Knife

Microsurgical knife for initial incisions, periosteum elevation, and split-thickness separations.

- Tunneling technique
- Flap surgery
- Immediate implant placement
- Peri-implant plastic surgery
- Hard-to-reach areas

- Inicial incisions
- Elevation of periosteum
- Elimination of adhesions and frenulum
- Working on areas not accessible with fixed-blade scalpels

COLTELLO

Italian word meaning "knife" in general.

A sharp-pointed tip allows for precise contact with the underlying bone.

Shank angulations and a small working end with an edge provide access to hard-to-reach areas.

Blade with great cutting power.

Shank firmness allows the use of pressure needed for elevation of the soft tissue margins.

Sharp and small mirrored working ends are useful to lift and separate periosteum from the bone.

LM™ ORBAN REDONDO
Microsurgical Knife

Modified design of the Orban knife for intracrevicular incisions and split-thickness separations.

- Access through remote incisions
- Tunneling technique
- Immediate implant placement
- Peri-implant plastic surgery
- Extraction sites
- Hard-to-reach areas

- Precise initial incisions
- Full- and split-thickness incisions
- Elimination of adhesions and frenulum
- Tissue resection
- Precise cuts in gingivectomies and gingivoplasties

REDONDO
Spanish word meaning "round" or "circular." It can also be used to describe something that is perfect.

The rounded tip increases safety by minimizing the risk of accidental perforations or unwanted cuts.

The rounded tip facilitates soft tissue dissection without excessive tension or irregular cuts, which is crucial for tunneling or flap elevation procedures.


LMErgoSense
LMErgoSense
Sharp Diamond
LMErgoSense
LMErgoSense
LMErgoSense
LMErgoSense
LMErgoSense
LMErgoSense

MICROSURGERY IN TUNNELING PROCEDURES
Clinical protocol for gingival recession treatment

Microsurgical tunneling techniques are utilized in various periodontal and peri-implant procedures, including flapless aesthetic marginal leveling, alveolar ridge preservation, peri-implant aesthetic defects, bone regeneration, and treating single and multiple gingival recessions.

Prof. Dr. Axel Endruhn
Buenos Aires, Argentina
Director of +Perio

+perio

The selection of LM™ periodontal surgery instruments was developed in cooperation with Prof. Dr. Axel Endruhn. His innovative protocol formed the essential basis of the instrument design process.

The IETS protocol consists of four steps and four instruments for minimally invasive gingival recession treatment.

Named according to the instruments used in the four steps, the IETS protocol aims to improve the precision and outcomes of periodontal surgeries. It enhances microsurgery techniques, focusing on patient care and the efficiency of minimally invasive procedures with fewer post-operative challenges.

"Minimally invasive surgery is here to stay. Its evolution and improvements allow us to apply it more and more to new situations and fields of periodontal and peri-implant surgery. Although there are cases in which larger surgical accesses are required, having the concept of minimal invasion is crucial. It allows us to achive results that are not only more aesthetic and with fewer risks, but also offer post-operative care to our patients with less post-operative morbidity."

I E T S

INICIA ELEVA TUNELLA SOLLEVA

TREATMENT PROTOCOL

Scan the video QR for the IETS protocol steps and the use of the instruments in the minimally invasive gingival recession treatment workflow.

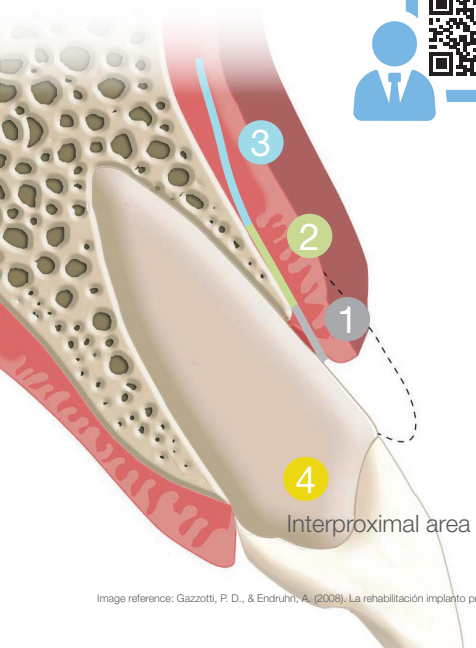
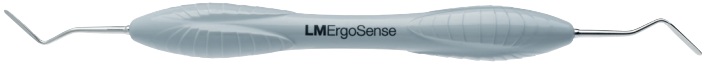


Image reference: Gazzotti, P. D., & Endruhn, A. (2008). La rehabilitación implanto protésica. Buenos Aires, Argentina: Editorial Providence.

STEP 1 LM™ Inicia

Initial intrasulcular incisions



STEP 2 LM™ Eleva

Full-thickness periosteal separation

STEP 3 LM™ Tunella

Split-thickness incisions of the gingival and mucosal tissues and supraperiosteal dissection

STEP 4 LM™ Inicia and LM™ Papilla Solleva

Separating the front and base of the interdental papilla from the interproximal bone, and elevating the base of the papilla

LMDental™

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