A woman's midsection is shown from the waist up, wearing a blue, off-the-shoulder top. A sheer, light blue fabric is draped over the right side of her body, creating a soft, ethereal effect. The background is plain white.

**Vaginal rejuvenation
with GYNELASE™
laser**

Vaginal Rejuvenation

What is it?

A new form of gynaecological, urological and aesthetic gynaecological minimally invasive incisionless treatments with Gynelase™, unique CO₂ laser.

Why use the CO₂ laser for vaginal rejuvenation?

- This technology has been routinely used in gynaecology for the past 30 years.
- Its benefits are well known in perineal, vulvar, vaginal, cervical and laparoscopic surgery.
- Its effectiveness for inducing skin collagenases is also well known.

Vaginal Rejuvenation

Three areas are treated for different problems:

- **Treatment of laxity of the vaginal walls**
- **Treatment of mild / moderate urinary incontinence**
- **Rejuvenation of external genitalia:**
 - Labioplasty of labia majora and / or labia minora
 - Mons pubis
 - Perineum

Vaginal Rejuvenation

Vaginal laxity treatment

Background

- With the onset of menopause at about 55 years of age, the ovarian function of women decreases, and therefore menopausal women undergo certain changes.
- Signs and symptoms of menopause include: Hot flushes, spontaneous sweating, insomnia / drowsiness, vaginal dryness, painful intercourse, itching, bleeding, etc. These symptoms may significantly affect the self-esteem of women and their quality of life.

Vaginal Atrophy

Vaginal Atrophy

- One of the most important signs in menopause is vaginal atrophy.
- Hormonal treatments for vaginal atrophy is not enough to stop symptoms and is not free from side effects and / or complications.

Vaginal Rejuvenation

Vaginal Laxity

It may be accompanied by:

- Urinary incontinence, manifested in involuntary loss of urine when coughing, sneezing, laughing, exercising or during sexual intercourse.
- Decreased vaginal muscle tone. Less elasticity and control of the vagina may result in decreased sexual satisfaction of women during intercourse.

Vaginal Rejuvenation

Menopause treatments

- **Hormone Replacement Therapy.** It is the prescription of estrogen, alone or associated with progestin, to reduce the discomfort associated with urogenital atrophy and prevent unexpected negative effects of estrogen deficiency in the cardiovascular, skeletal and autonomic nervous system.
- More specifically estrogen therapy alone is called **Estrogen Replacement Therapy (ERT).**

Vaginal Rejuvenation

Menopause treatments

- **Local or transdermal estrogenic vaginal therapy.** Topical therapy is preferable to systemic therapy due to the beneficial effects on vaginal atrophy and the absence of some systemic contraindications of estrogen intake.
- Estrogens are absorbed by the vaginal wall and enter in the circulatory system, except for the case of preparations designed to prevent absorption.

Vaginal Rejuvenation

Menopause treatments

- **Lubricants and moisturizers.** Non-hormonal treatments are local and can alleviate the symptoms associated with vaginal dryness. They are a combination of protective agents and non-hormonal soluble substances in aqueous base, which are beneficial to the vaginal epithelium. Non-hormonal therapy is indicated in women contrary to hormonal therapies or with a history of sensitivity to hormones.

Vaginal Rejuvenation

Menopause treatments

- **Phytoestrogens.** They are non-steroidal molecules of vegetable origin (Trifolium soybean are the most common) that interact with estrogen and other hormones such as androgens and thyroid hormones. There may be contraindications. There is no clinical data of its effectiveness and safety to treat menopause.
- We do not know if they are safe in patients with thyroid problems, for their inhibitory effects on thyroid function. The risk/ benefit of phytoestrogens for breast cancer is still unclear.

Why use the CO₂ laser for vaginal rejuvenation?

- Given the high energy absorption by tissue water, the CO₂ laser increases the temperature causing cutting, coagulation, vaporization and production of new collagen by forming heat shock proteins.
- The CO₂ laser has been widely used in skin rejuvenation treatments in the past.

Vaginal Rejuvenation

Background CO₂ laser ablative skin rejuvenation (resurfacing):

- With a wavelength of 10600nm, the CO₂ laser is highly absorbed by the intra and extracellular water, heating tissue.
- In the 90s, with the development of the first scanner systems, this technology was applied to produce skin ablation and for the deep heating of the dermis.
- It is considered as the **gold standard** for skin collagen stimulation.

Vaginal Rejuvenation

Background of the CO₂ laser for resurfacing:

The CO₂ laser is able to:

- Vaporize superficial pigmented skin lesions
- Coagulate unaesthetic vessels
- Induce new collagen formation (collagen renewal or neocollagenesis)
- Rejuvenate skin

Vaginal Rejuvenation

- The thermal effect of the CO₂ laser causes a denaturation of collagen. The body reacts favouring the formation of new collagen (neocollagenesis) in much higher amount than the existing.
- The improvement of patients and the final result will depend on the amount of existing collagen, the regenerative capacity of the body and the repetition of the process if necessary.
- If several treatment sessions are needed, the interval between them should not be less than 4 weeks.

Vaginal Rejuvenation

Background of the CO₂ laser for resurfacing:

The discovery and development of fractional photothermolysis allowed to offer less radical treatment than traditional resurfacing, but with several other advantages.

- **Reduced downtime**
- **Less risk of side effects and infections**
- **Less anesthesia**
- **Pain reduction**

Vaginal Rejuvenation

- Fractional photothermolysis consists of making small thermal injuries, leaving healthy tissue between the injuries, producing a thermal effect with a much faster recovery.
- The percentage of heat affected area can be very variable.
- The higher the percentage of affected area, the greater the thermal effect.

Vaginal Rejuvenation

- Scanner systems are much more sophisticated optical elements than diffractive lenses and consist of movable mirrors governed by a processor, changing the position of the laser beam for each impact.
- The delivery of the beams is not simultaneous, but sequential.

Vaginal Rejuvenation

Background of the CO₂ laser for resurfacing:

In the GyneScan™ scanner many variables can be adjusted:

- **Spot density**
- **Spot size**
- **Spot Separation**
- **Geometric form**
- **Spot sequence**



Vaginal Rejuvenation

Benefits for vaginal rejuvenation

- Precision
- Sterile technique (non-contact)
- Virtually painless procedure
- No hospitalization
- Minimal or no downtime. Fast recovery
- Reconstitutes the vaginal Ph.
- Improves the sexual life by reducing the vaginal diameter and increasing the friction and force of the vagina
- Improves social relations (incontinence). Repositions the urethra
- Recovers tone and lubrication of the vagina

Vaginal Rejuvenation

Prerequisites for treatments

- **Complete clinical history**
- **General exploration**
- **Complete gynaecological examination (or urological).**
- **Cervico-vaginal cytology**
- **Colposcopy and biopsy if clinical or cytological suspicion of genital injury**
- **Gynaecological ultrasound**

Vaginal Rejuvenation

Mechanism of action and effects of CO₂ laser treatment



The lax front, side and back walls of the vagina receive fractionated CO₂ laser spots. This produces thermal micro-injuries that induce a repair response and promote neocollagenesis.

- **Low vaporization**
- **Greater thermal effect**
- **Increases collagen %**
- **Reduces laxity**
- **Renews the vaginal mucosa**
- **"Real" rejuvenation**

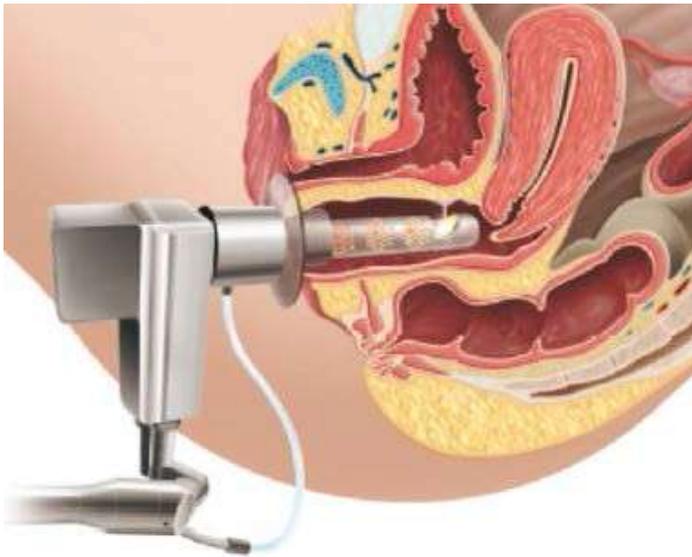
Vaginal Rejuvenation

Mechanism of action and effects of vaginal narrowing with CO₂ laser



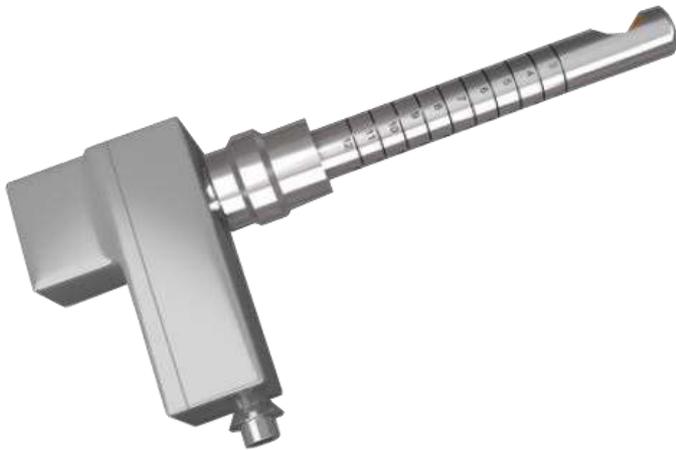
- Laser impacts on the vaginal mucosa are performed according to a protocol that establishes the parameters of laser emission, the order and sequence of work.
- To achieve the desired results, it may be necessary to perform more than one treatment session.

Vaginal Rejuvenation



- Operative technique
- Special speculum
- Scanner system

Vaginal Rejuvenation

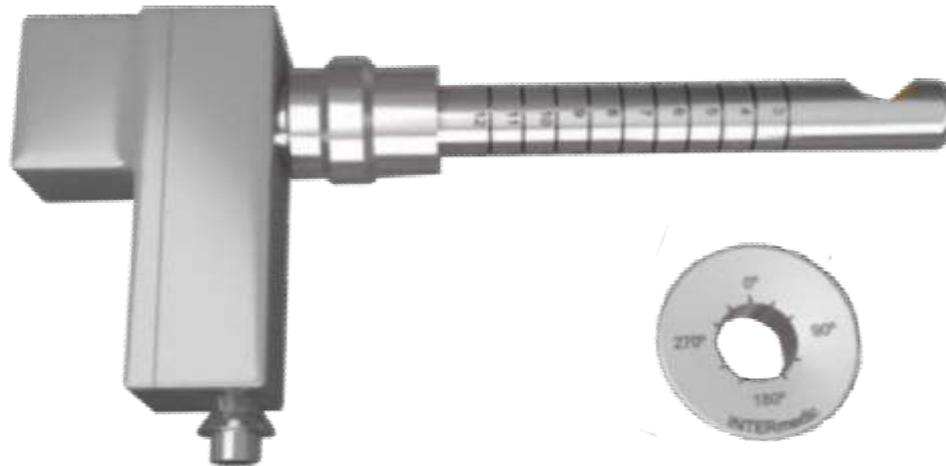


Parameter setting:

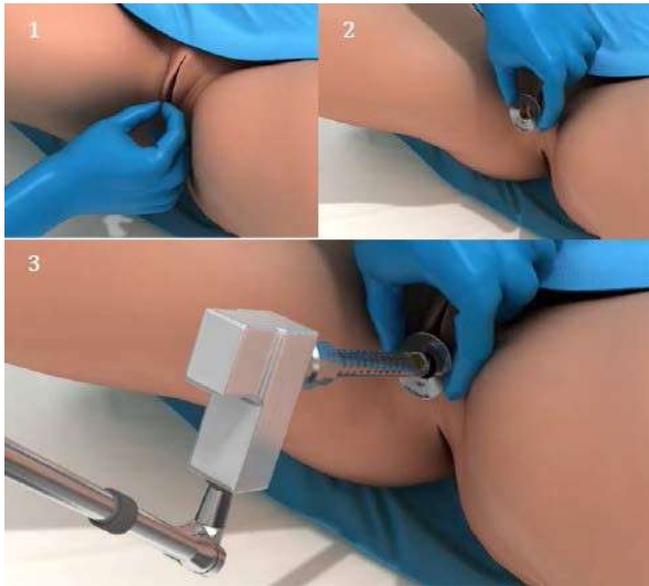
- Handpiece with reflecting mirror (CO₂ laser dosimetry and scanner parameters)

Vaginal Rejuvenation

Work tools:



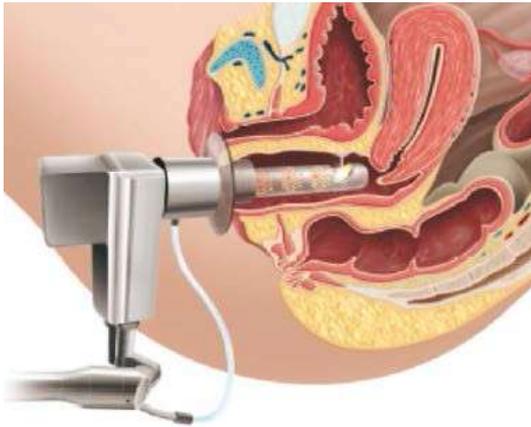
Vaginal Rejuvenation



Preparation of treatment

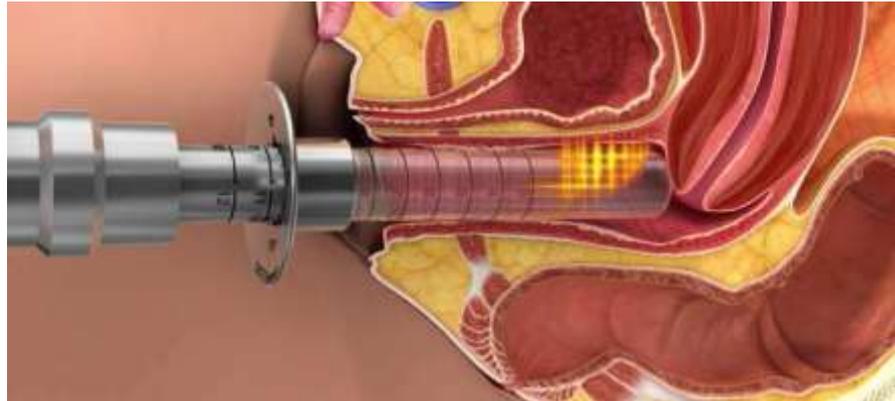
- Introduction and placing of the laser speculum

Vaginal Rejuvenation



Preparation of the treatment:

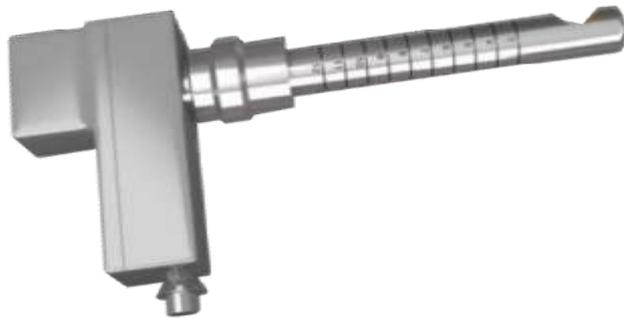
- The handpiece is inserted into the ring



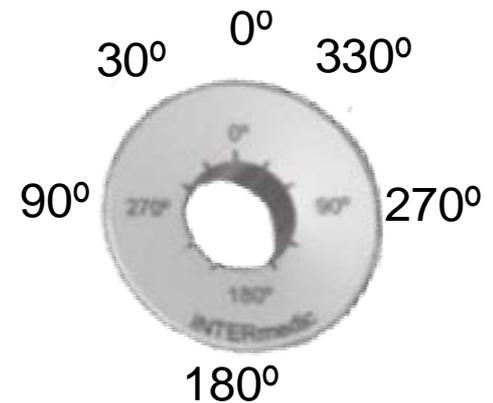
Vaginal Rejuvenation

Preparation of the treatment

Starting point of laser action with the handpiece completely into the ring.



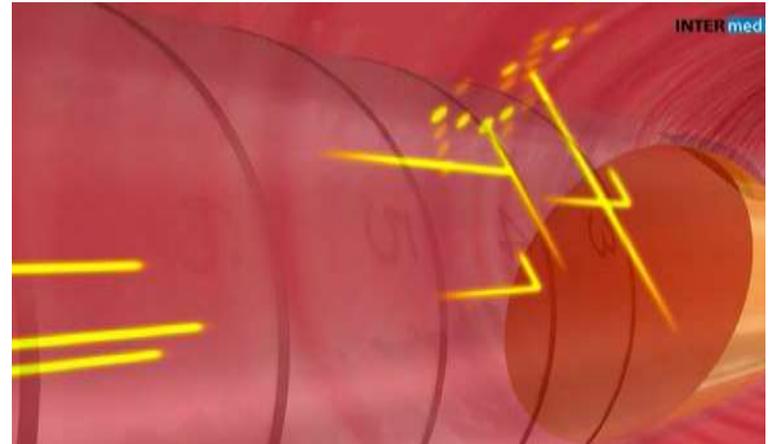
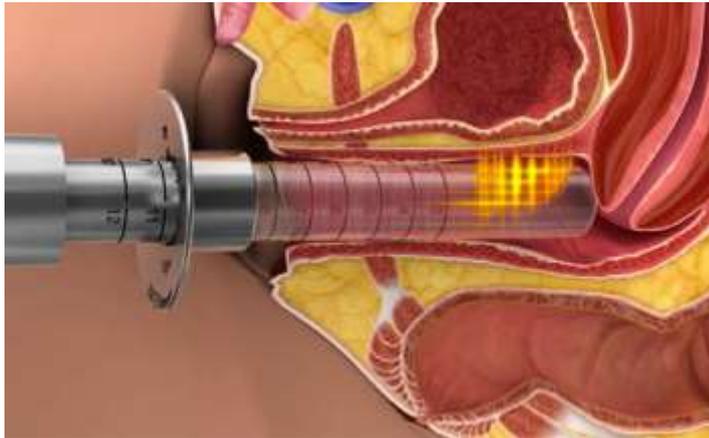
The scale marked on the circular adapter should be facing up



The laser speculum must be oriented as shown in the picture

Vaginal Rejuvenation

Procedure

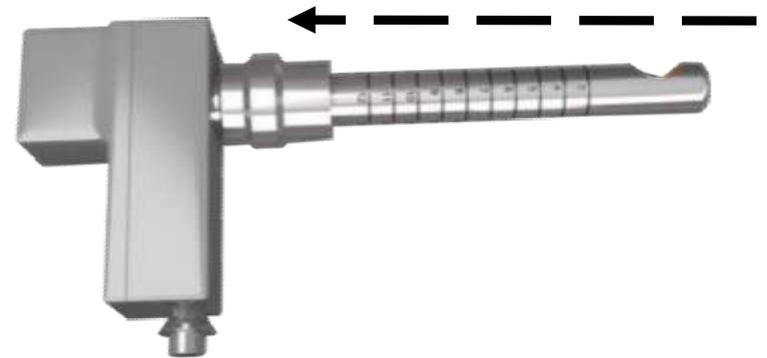
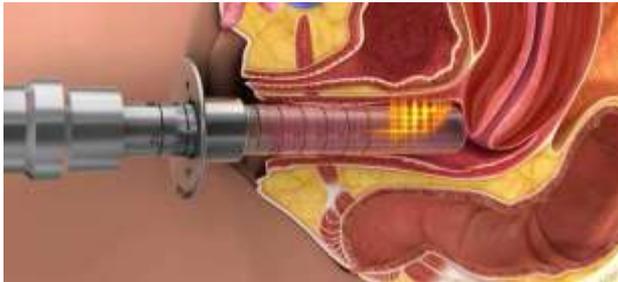


Step 1: Irradiation from distal to proximal, with final cover of the 360°

Vaginal Rejuvenation

Procedure

1° Step: Lasering



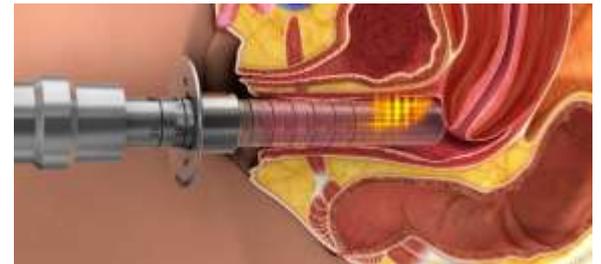
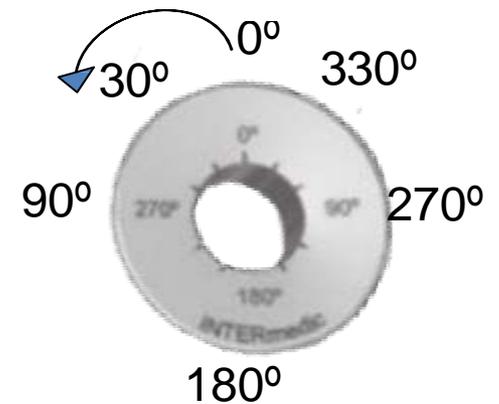
- Introduction of the laser inside the vagina.
- Start the laser shots when the handpiece is fully inserted. Deliver laser shots from distal to proximal.
- The pulses emitted are automatic with the push of the pedal.

Vaginal Rejuvenation

Procedure

2^o Step

- After a complete pass, rotate the speculum 30° in a counter clockwise.
- Upon rotation of the laser speculum, place the handpiece in the starting position (fully inserted into the vagina.)

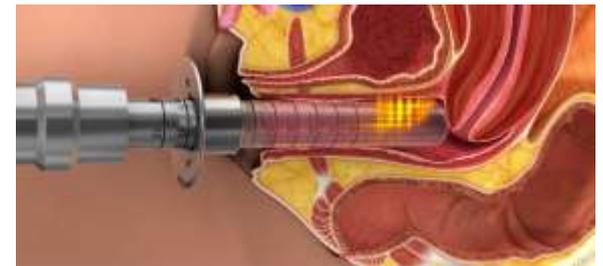
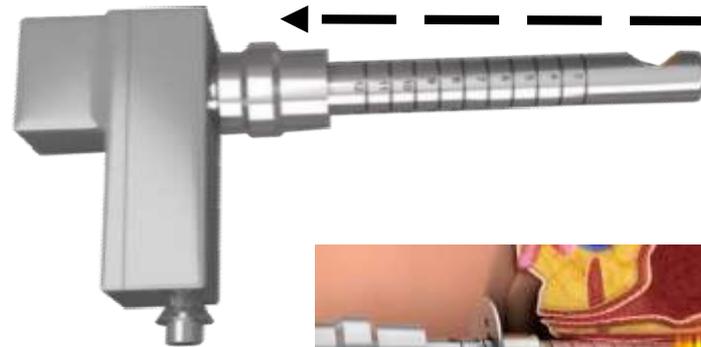


Vaginal Rejuvenation

Procedure

1° Step: Lasering. Removing the handpiece

- Repeat the procedure performed in the first step.
- Move the laser beam from distal to proximal according to the adjustment of the rod.
- Start the laser shots.

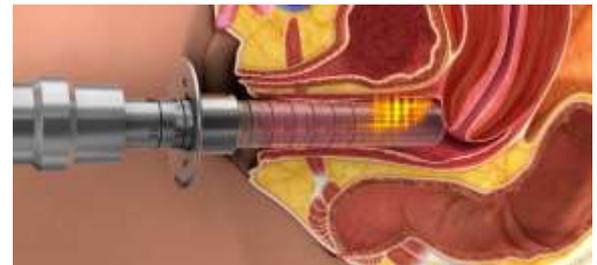
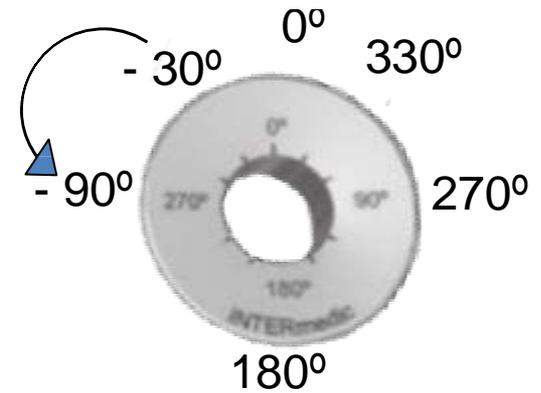


Vaginal Rejuvenation

Procedure

2^o Step: Rotation of the handpiece

- Turn the laser speculum counter clockwise to clockwise.
- Upon rotation, place the handpiece in the starting position and insert it into the vagina at full depth.
- Make the shots and continue until completing the 360°.



Vaginal Rejuvenation

Procedure

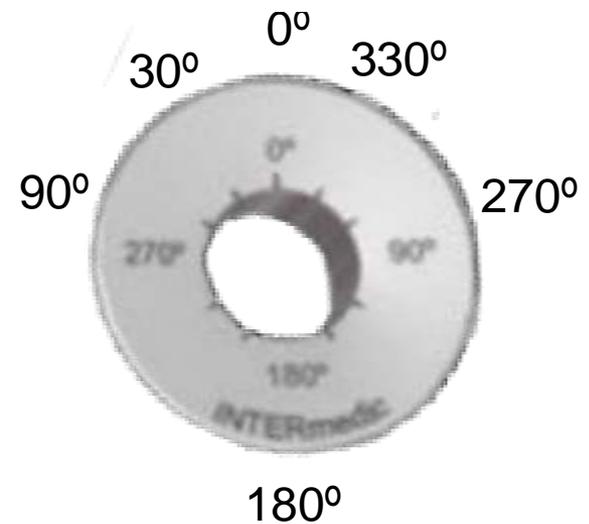
End of the treatment:

- Remove the handpiece from the laser speculum
- Remove the laser speculum

Vaginal Rejuvenation

Operative technique

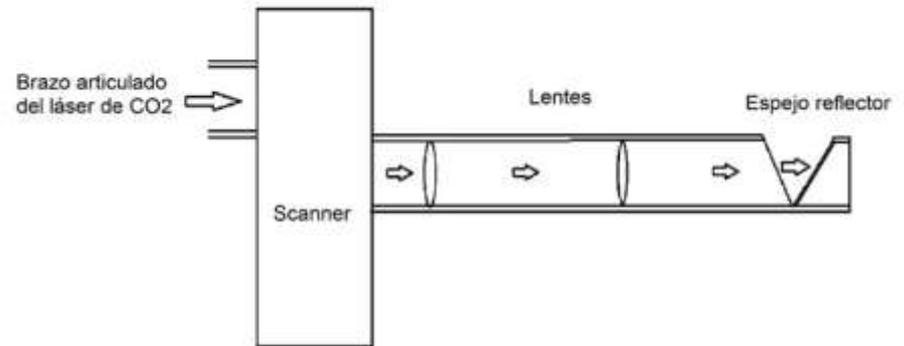
- The patient is placed in gynaecological position
- It is not necessary to establish strict anesthesia criteria
- Introduction of the front colposcope or marker into the vaginal introitus



Vaginal Rejuvenation

Operatory technique

- Introduction of the optical reflector device into the vagina (intravaginal)
- Connect the scanner
- Connect the articulated laser arm



Vaginal Rejuvenation

Operatory technique

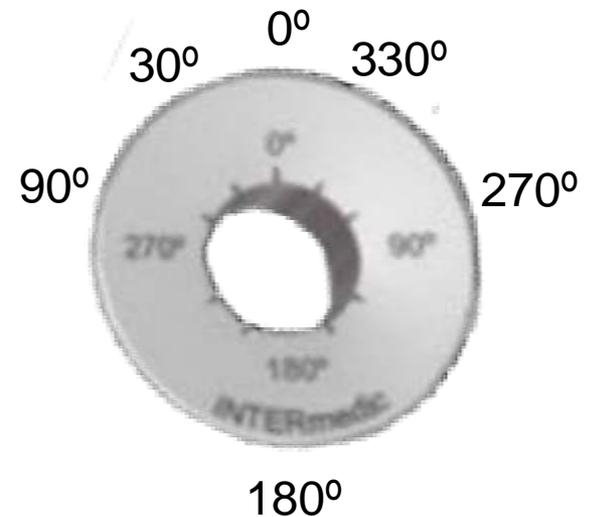
- Selection of parameters of the laser and scanner



Vaginal Rejuvenation

Operatory technique

- Laser emission following the rotation pattern of the intravaginal accessory as indicated sequence on the front colposcope ring.
- In vaginal rejuvenation the entire vaginal surface is perimetrically treated, while in incontinence only the anterior wall of the vagina is treated.
- The intravaginal device has markings to be used as reference depth at which laser shots are delivered



Vaginal Rejuvenation

Other accessories for complementary treatments

- Handpieces for HPV
- Surgery handpiece
- Handpieces for cervix



Vaginal Rejuvenation

Other CO₂ laser applications in urology and gynaecology

- Perineal postpartum scars
- Episiotomy and tearing of tissue
- Congenital disorders
- Hypertrophied clitoris correction
- Labia, vulva and hymen trauma correction
- Others

Vaginal Rejuvenation

Rejuvenation of external genitalia

- Labia majora and / or labia minora labiaplasty
- Mons pubis
- Perineum
- Vaginal introitus
- Hymen

Vaginal Rejuvenation

Rejuvenation of external genitalia

- **Labia majora and / or labia minora labiaplasty**
 - Laser Reduction Labiaplasty. Procedure to model labia minora which are too large or have unequal lengths. Most women do not want internal labia minora to be longer than the labia majora. With laser reduction labiaplasty we can fulfill the wishes of women. Labiaplasty techniques also solve anomalies due to aging, birth trauma or other injuries.

Vaginal Rejuvenation

Rejuvenation of external genitalia

- **Laser perineoplasty**

It can rejuvenate the loose or aged perineum and also improve the lax labia majora and labia minora. This procedure can provide a more youthful look to the vulvar area.

Vaginal Rejuvenation

Rejuvenation of external genitalia

- **Combination of personalized laser vaginoplasty with vaginal laser rejuvenation.**

These procedures can be performed together and may also be performed in combination with other surgical procedures

Vaginal Rejuvenation

Rejuvenation of external genitalia

- Labia majora and/or labia minora labiaplasty



Courtesy of Dr. Jack Pardo Schanz (Chile) Gynaecologist

Vaginal Rejuvenation

Rejuvenation of external genitalia:

- Mons pubis (augmentation or reduction)
- Perineum (condilomatosis)



Vaginal Rejuvenation

Rejuvenation of external genitalia

- Perineum (melanosis)



Vaginal Rejuvenation

Technical specifications of GYNELASE™

Type of laser: CO₂

Tube power in CW: 50W (limited 30W)

Peak power: >200W

Beam structure: TEM00

Wavelength: 10.600 nm

Guide beam: Red, adjustable brightness

Beam delivery: 7-joint articulated arm

Control panel: 8,5" colour LCD touch screen

Dimensions: 114x30x45mm (Height x Width x Depth)

Vaginal Tightening mode

Emission mode: FinePulse (share free)

Sub-ablative dose

GyneScan™ (patent pending)

Incontinence mode

Emission mode: FinePulse (share free).Sub-ablative dose

GyneScan™ (patent pending)

Speculum marked longitudinally every 10mm (size of the figure)

Full control of all parameters: % of treated area, pulse width, energy density per point, *stacking*

VPH mode

Ablative mode

Adjustable ablation depth

Surgical and vaporisation mode

Modes: CW, SuperPulse, FinePulse

Dermatological mode (wrinkles, skin lesions, etc.) Optional

Modes: Chopped CW, SuperPulse, FinePulse