# Microfocused Ultrasound In Vulvar Rejuvenation: The Evolution Of Aesthetics In Intimate Harmonization With The Femme Lift Protocol

Moleiro, D; Oliveira, AC; Sobral JL; C; Neto, JP; Silva-Lima, K; Ruiz-Silva, C

(Department, College/ Faculdade CTA, Msc, PT, Biomedicine Brasil).
(Department, College/ Faculdade CTA, Biomedicine Brasil). Brasil)
(Department, College/ Faculdade CTA, Brasil).
(Department, College/ Faculdade CTA, Dentistry Surgery, Brasil).
(Aesthetics And Cosmetology, Biomedicine Student, Brasil).
(Department, College/ Faculdade CTA, Phd, Msc, PT, Brasil).

# Abstract:

Aging in the intimate region, especially the vulva, is a natural process that involves hormonal, structural and functional changes in the skin and tissues of the region. Associated with extrinsic factors such as tight clothing, hair removal techniques and medications that cause very abrupt weight loss or intrinsic factors that occur progressively, this indicates an increase in the demand for treatment in clinics and beauty centers. With the growing demand for non-invasive aesthetic procedures, microfocused ultrasound (HIFU - High Intense Focused Ultrasound) emerges as an effective alternative for vulvar rejuvenation, promoting improvement in sagging, collagen stimulation and restoration of tissue firmness. This article aims to present the mechanisms of action, scientific basis and clinical results of the Femme Lift protocol, which uses HIFU for the treatment of female intimate aesthetics. Anatomical, histological and physiological aspects are discussed, as well as clinical data on the safety and efficacy of the treatment. Aging in the intimate region, especially the vulva, is a natural process that involves hormonal, structural and functional changes in the skin and tissues of the region. Associated with extrinsic factors such as tight clothing, hair removal techniques and medications that cause very abrupt weight loss or intrinsic factors that occur progressively, this indicates an increase in the demand for treatment in clinics and beauty centers. With the growing demand for non-invasive aesthetic procedures, microfocused ultrasound (HIFU - High Intense Focus Ultrasound) emerges as an effective alternative for rejuvenating the vulva, promoting improvement in sagging, stimulating collagen and restoring tissue firmness. This article aims to present the mechanisms of action, scientific basis and clinical results of the Femme Lift protocol, which uses HIFU for the treatment of female intimate aesthetics. Anatomical, histological and physiological aspects are discussed, as well as clinical data on the safety and efficacy of the treatment.

*Key words:* microfocused ultrasound, vulvar rejuvenation, intimate aesthetics, collagen, Femme Lift, HIFU, intimate harmonization, gynecology, vulva sagging, skin sagging

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# I. Introduction

The aging of female vulvar tissue is related to hormonal, genetic and environmental factors, which directly influence skin thickness, tone, vascularization and the quality of the extracellular matrix of the intimate region. In particular, the drop in estrogen levels during menopause leads to mucosal atrophy, reduced elasticity, loss of volume of the labia majora and decreased tissue hydration, affecting not only aesthetics, but also the woman's quality of life.

With the advancement of intimate aesthetics, new treatments have been developed to meet this growing demand, especially among women seeking non-surgical alternatives to restore the youthful and healthy appearance of the vulva. Among these technologies, high-intensity microfocused ultrasound (HIFU) stands out for its ability to reach deep layers of the skin and connective tissue, promoting thermal contraction and remodeling of collagen, without damaging the skin's surface.

The Femme Lift protocol consists of the specific application of HIFU in the vulvar region, using adapted tips and depths to stimulate fibroblasts and regenerate tissue. This procedure is effective in improving vulvar sagging, external skin texture and overall firmness, and is indicated for women at all stages of life, including the post-menopausal period. (Moleiro; Ruiz-Silva et al, 2025)

Anatomical and Physiological Aging of the Vulva

The aging process of the vulva involves progressive structural changes that affect female aesthetics, function, and well-being. The main factors involved include decreased estrogen levels, especially during and after menopause, and the decline in cell renewal and collagen and elastin production, leading to atrophy of the skin and mucosa, loss of volume, dryness, and sagging in the region (Goldstein, 2020).

The most affected structures include the labia majora, which suffer loss of fat and collagen, becoming thinner and less supported, and the skin of the vulva, which acquires a thinner, flaccid texture with reduced vascularization. In addition, there is a compromise in hydration, mucosal protection, and sensitivity, which impacts female self-esteem and sexuality (Palacios, 2018).

The increased demand for treatments that promote non-invasive vulvar rejuvenation reflects women's desire for resources that improve intimate aesthetics, while respecting their health and functionality, with rapid recovery and safety.

Several therapeutic approaches have been studied for vulvar rejuvenation, including energy-based technologies, such as fractional  $CO_2$  lasers, radiofrequency and microfocused ultrasound, which promote neocollagenesis, improved hydration and tissue revitalization (Moleiro, 2025).

These technologies stimulate the production of new collagen and improve the quality of the vulvar skin and mucosa, resulting in greater epithelial thickness, increased vascularization and restoration of the barrier function, contributing to the improvement of symptoms of dryness, pain and decreased sensitivity.

In addition to technologies, topical strategies such as the use of vaginal estrogens, hyaluronic acid, and antioxidants have shown important benefits in the regeneration of vulvar tissues, acting on hydration, elasticity, and cell renewal (Sokol & Karram, 2016). The integration of combined treatments, associating physical and pharmacological resources, has been advocated as an effective approach for more lasting results, respecting the individual needs of each patient and promoting not only aesthetics, but also functional restoration and female quality of life.

Anatomy of the Vulva



Photo 1. Anatomy of the Vulva - (Moleiro, 2025)

Photodocumentation for Vulva Procedures



Photo 2: Photodocumentation for Vulva Procedures

Fundamentals of Microfocused Ultrasound in Intimate Aesthetics

High-Intensity Focused Ultrasound (HIFU) is a technology that promotes deep focal heating in tissues, generating thermal coagulation points between 60°C and 70°C at pre-defined levels of the skin and subcutaneous tissue, especially in the reticular dermis and superficial muscular fascia (SMAS).

This heating induces a controlled inflammatory process, with denaturation of existing collagen and activation of fibroblasts, which initiate the production of new collagen (neocollagenesis) and elastin — promoting firmness, retraction and thickening of the treated tissue (Alinsod, 2016).

In the intimate region, HIFU has been studied for its ability to treat sagging labia majora, improve vulvar skin tone, restore volume and visually rejuvenate the external genital area. In addition, there are reports of improvements in natural lubrication and vascularization, also contributing to functional benefits.

According to Gaspar and Maestri (2018), HIFU applied to the external genitalia demonstrated significant improvement in skin firmness and appearance, with high patient satisfaction and the absence of relevant adverse effects.

#### Clinical Application of the Femme Lift Protocol

Femme Lift is a clinical protocol developed to apply microfocused ultrasound to the vulvar region safely, effectively and in a personalized manner. It uses specific tips that reach depths of between 1.5 mm and 3.0 mm with energy adjustments and number of lines according to the patient's needs.

Main indications:

Sagging of the outer labia (labia majora)

Reduction of tissue atrophy

Thin or rough skin texture on the vulva with unsightly characteristics.

Postpartum, post-menopause or post-weight loss rejuvenation

#### Common parameters used:

Depth	Energy per point	Indication
1,5 mm	0,1–0,2 J	Epidermis/superficial dermis
3,0 mm	0,2–0,3 J	Deep dermis and subcutaneous tissue

The number of lines per session varies according to the area treated, and can reach 200–300 lines per region, with 1 to 3 sessions in the 90-day interval. The results are gradual, with an improvement observed in immediate tissue retraction and peak collagen levels 30 days after application, and are optimized with the use of topical active ingredients and complementary technologies.

#### HIFU Marking

Preliminary marking of the region to be treated with microfocused ultrasound is a fundamental step in planning the procedure. It allows the anatomical areas where the energy will be applied to be precisely delimited, respecting safety limits and ensuring effective and homogeneous results.

## Main reasons for marking:

It avoids overlapping shots, which can cause pain, edema or the risk of tissue damage;

It ensures uniform coverage of the treated areas, maximizing the collagen response;

It respects areas of anatomical risk, such as the clitoris, urethral meatus and sensitive structures;

It allows the treatment to be personalized according to the individual anatomy of each patient;

It facilitates clinical documentation and control of subsequent sessions.

The marking is usually done with a non-toxic dermographic pencil, under precise anatomical guidance, after the professional's assessment and the appropriate positioning of the patient in a comfortable manner.

Anatomical dissection is a fundamental step in the validation of innovative procedures, serving as an essential guide for professionals in the field. In the present study, the anatomical analysis was performed in two complementary stages.



Photo 3: demonstration of the Femme Lift methodology planning including lips, perineum region and upper vulva.

## Equipment Images



Photo 4 And 5: Equipment Images Used

## Studies and Clinical Evidence

Several scientific studies have demonstrated the efficacy and safety of microfocused ultrasound (HIFU) in aesthetic gynecology, especially in protocols aimed at revitalizing the female intimate region. Recent research indicates benefits such as increased tissue firmness, improved lubrication and sexual function, and reduced vaginal laxity. (Smith, 2021)

When applied in the Femme Lift protocol, HIFU shows promise as a non-invasive tool for intimate rejuvenation. Case studies conducted in specialized clinics show significant improvements in patient satisfaction, with positive physical and emotional impacts.

## Recent Scientific Evidence

Recent research has expanded our understanding of the effects of high-intensity microfocused ultrasound (HIFU) on the female intimate region, not only in the aesthetic field, but also in the functional field.

In a retrospective analysis involving 950 patients with benign epithelial changes in the vulva, we observed that 42.2% achieved complete cure after HIFU treatment. The overall efficacy of the method was 56.1%, with rare cases of recurrence and the absence of significant side effects, demonstrating its safety (LIU et al., 2015).

Another study evaluated the impact of HIFU in women with mild to moderate urinary incontinence. After six months of follow-up, 43% reported complete resolution of the symptom, in addition to substantial improvements in quality of life and sexual well-being (ZHOU et al., 2024).

Furthermore, a recent study showed positive changes in the vaginal microbiota in women who underwent uterine fibroid ablation with HIFU. The results indicated a reduction in pathogenic microorganisms and rebalancing of the vaginal flora, bringing benefits beyond the initial objective of the procedure (LI et al., 2023).

These findings reinforce the use of HIFU as a safe and versatile strategy for women's intimate health, expanding the scientific support of the Femme Lift Protocol.

Ethical considerations and care

The Femme Lift protocol, although minimally invasive, requires specific care and a rigorous ethical approach. Informed consent is an essential step to ensure that the patient understands the objectives, benefits, risks and alternatives of the procedure.

Prior gynecological evaluation:

Before applying microfocused ultrasound, it is essential to perform a clinical gynecological evaluation, ensuring that there are no contraindications and that the treatment is indicated safely.

Post-procedure care:

Patients should be advised on post-procedure recommendations, such as avoiding sexual intercourse and the use of tampons for a certain period, in addition to keeping the area clean as prescribed by the doctor.

Contraindications:

The protocol should not be performed in cases of: Pregnancy or breastfeeding In systemic pathological processes Vaccination less than 15 days old Active infections or STIs Active autoimmune or immunosuppressive diseases Suspicious lesions or changes not evaluated by a specialist Active autoimmune diseases (such as systemic lupus erythematosus, scleroderma) Active local or systemic infections Presence of metal implants in the area to be treated Coagulation disorders or use of anticoagulants Skin lesions, open wounds, inflammations or neoplasms in the treated region History of epilepsy (due to the energy released) Relative contraindications (evaluate with caution): Decompensated diabetes Extreme sensitivity to pain Patients with pacemakers or implanted electronic devices Active dermatological diseases (dermatitis, psoriasis) in the treated area Recent use of isotretinoin (in the last 6 months)

# II. Clinical Results



Photo 6: Patient A.M.J, 33 years old - underwent the Femme Lift protocol with Dr. D. Moleiro with progress in 30 days.



Photo 7: Patient A.I., 42 years old - underwent the Femme Lift protocol with Dr. D. Moleiro with progress in 22

days.



Photo 8: Patient B.S 54 years old-Performed the Femme Lift protocol with Dr. D. Moleiro with progress in 10 days.

## III. Conclusion

The use of microfocused ultrasound in the Femme Lift protocol represents a significant advance in intimate functional aesthetics, bringing together technology and science to promote effective and minimally invasive results. The clinical results observed demonstrate the transformative potential of this protocol, contributing to improvements not only in aesthetics but also in function, with positive impacts on patients' quality of life.

In addition to the objective benefits, this study invites reflection on the importance of intimate health as a fundamental part of a woman's overall well-being. By integrating care, technology and clinical listening, Femme Lift reaffirms the role of intimate aesthetics as a legitimate tool for empowerment and health.

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