



Assessment of Female Genital Surgery Education in Plastic Surgery Training: Report of an Expert Opinion Survey

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Abstract

Background Patient demand for aesthetic genital surgery has markedly increased. The International Society of Aesthetic Plastic Surgery reported 95,010 labiaplasties and 50,086 vaginal rejuvenation procedures in 2015.

Methods We performed an online anonymous survey to evaluate the teaching of female genital procedures in plastic surgery training programs worldwide.

Results A total of 1033 board certified plastic surgeons answered the survey. Most respondents were from the USA, Brazil, Mexico and Colombia. The majority of plastic surgeons performing these procedures were in private practice (77.62%) and (22.38%) in academic settings. Most plastic surgeons (75.63%) did not receive formal education in female genital rejuvenation procedures however 54.31% did receive education in reconstruction procedures. During their training, most were exposed to vaginal reconstruction (15.94%), labia minora reduction (11.9%), vulva reconstruction (11.53%), flaps for vaginal

agenesis (11.39%) and monsplasty (7.98%). Additional training for female genital procedures was mostly at meetings and shadowing experts. Sixty-two percent reported that patients seldom requested those procedures, and 63.73% reported these procedures comprised less than 5% of their practice. The most commonly performed procedures were labia minora reduction, labia majora augmentation or reduction and monsplasty. The materials used were mostly fat grafting, hyaluronic acid injections and lasers.

Conclusion Additional formal training during residency for aesthetic genital surgery would be beneficial. Additionally, courses at meetings would be useful for plastic surgeons who have had insufficient training. More studies need to be conducted on the different female genital rejuvenation procedures offered in order to evaluate patients' long-term outcomes and satisfaction.

Level of Evidence V This journal requires that authors assign a level of evidence to each article. For a full description of these Evidence-Based Medicine ratings, please refer to the Table of Contents or the online Instructions to Authors www.springer.com/00266.

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Keywords Female genital rejuvenation · Female genital surgery · Education · Plastic surgery training · Expert opinion survey

Background

Female genital rejuvenation has become one of the most popular procedures in plastic surgery in the recent years. According to the International Society of Aesthetic Plastic Surgery (ISAPS), labiaplasty has shown a 45% increase in number of procedures worldwide, from 2015 to 2016.

Vaginal rejuvenation procedures also increased 11% during the same period [1]. The American Society for Aesthetic Plastic Surgery (ASAPS) also reported a 23% raise in labiaplasties. More than 35% of all plastic surgeons surveyed offered labiaplasty in their practice [2].

With this rapid increase and popularity in the number of genital rejuvenation procedures, understanding the current milieu is paramount. We therefore surveyed board certified plastic surgeons worldwide to identify the female genital rejuvenation procedures that they are offering in their practice, evaluate their techniques and determine their training prior to performing these procedures.

Methods

We launched an anonymous survey on surveymonkey.com entitled: “Assessment of female genital surgery education in plastic surgery training” which consisted of 21 questions in English sent by email to board certified plastic surgeons. The survey was sent at three timelines from January to May 2017 (“Appendix 1”). A pre-test was performed ($n = 6$) to evaluate possible errors, inconsistencies, ambiguities, omissions and clarity of the questions asked.

Results

One thousand thirty-three (1033) board certified plastic surgeons (77.44% males) from 90 countries answered the survey (Fig. 1). The countries with the most respondents were the USA (15.47%), Brazil (14.38%), Mexico (9.95%),

Colombia (4.6%) and India (4.43%). The majority of plastic surgeons who offered female genital procedures worked in private practice (77.62%) and in academic settings (22.38%). Most plastic surgeons (75.63%) did not receive formal education in female genital rejuvenation procedures during their residency training. However, 54.31% of plastic surgeons learned how to perform female genital reconstruction procedures during their residency. The reconstructive procedures that most plastic surgeons were exposed to during their surgical training were vaginal reconstruction (15.94%), reconstruction of the vulva (11.53%), flaps for reconstruction of vaginal agenesis (11.39%) and dilatation for treatment of vaginal agenesis (Fig. 2). The aesthetic procedures that most plastic surgeons were exposed to during their training were labia minora reduction (11.9%), monsplasty (7.98%), labia majora augmentation (4.98%) and labia majora reduction (4.80%) (Fig. 2). The majority of plastic surgeons (43.09%) acquired additional training in female genital rejuvenation procedures at a course or a meeting or shadowing an expert (16.73%) (Fig. 3). Sixty-two percent of plastic surgeons reported that patients seldom requested female genital rejuvenation procedures, 29% reported that they were frequently asked for these procedures, and 9% denied any request for these procedures (Fig. 4). Female genital rejuvenation procedures represented less than 5% of the practice of the majority of plastic surgeons surveyed (63.73%) (Fig. 5). The most common procedures performed were labia minora reduction (76.24%), labia majora augmentation (36.95%), labia majora reduction (29%) and monsplasty (26.48%) (Fig. 6). The products and materials most commonly used were fat injections (53.56%),

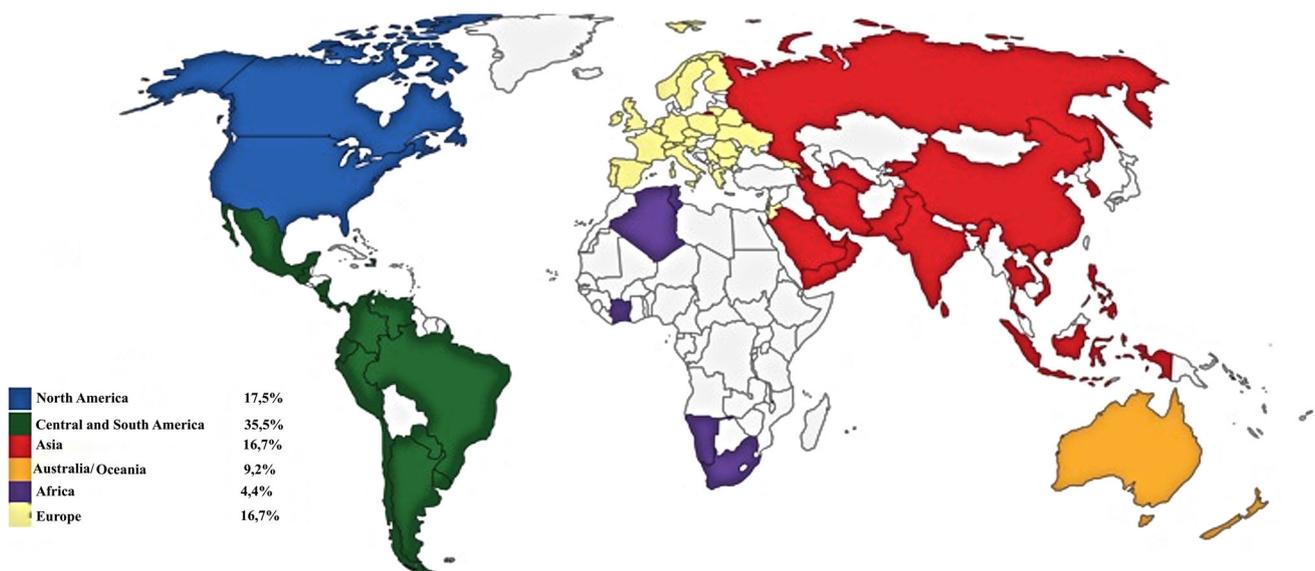
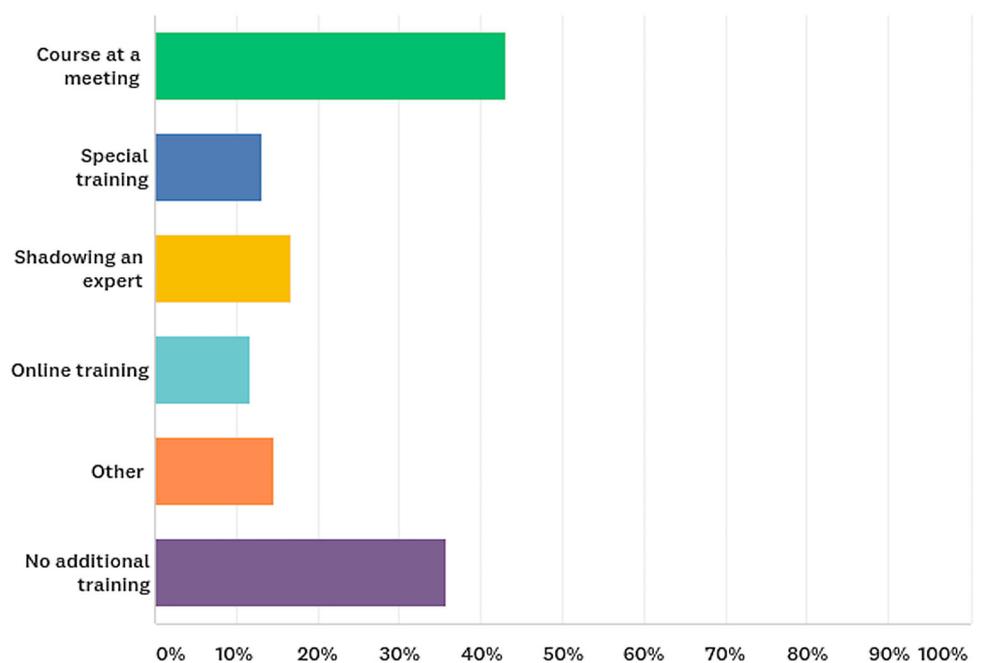


Fig. 1 World map representing the countries of the plastic surgeons who responded to the survey

	NONE	MINIMAL	EXTENSIVE	TOTAL
Labia minora reduction	46.57% 462	41.53% 412	11.90% 118	992
Labia majora reduction	66.19% 648	29.01% 284	4.80% 47	979
Labia majora augmentation	70.02% 675	25.00% 241	4.98% 48	964
Hymenoplasty	82.63% 799	14.37% 139	3.00% 29	967
Perineoplasty	70.98% 685	22.49% 217	6.53% 63	965
Monsplasty	61.76% 588	30.25% 288	7.98% 76	952
Clitoral Hoodectomy	85.65% 824	12.16% 117	2.18% 21	962
G Spot enhancement	93.37% 887	5.68% 54	0.95% 9	950
Vaginal reconstruction	37.94% 376	46.12% 457	15.94% 158	991
Vulva reconstruction	42.04% 412	46.43% 455	11.53% 113	980
Vaginal agenesis treated with flaps	52.49% 516	36.11% 355	11.39% 112	983
Vaginal agenesis treated with dilation	60.62% 588	33.30% 323	6.08% 59	970

Fig. 2 Female genital procedures to which plastic surgeons were exposed to during their training

Fig. 3 Additional types of training in female genital procedures



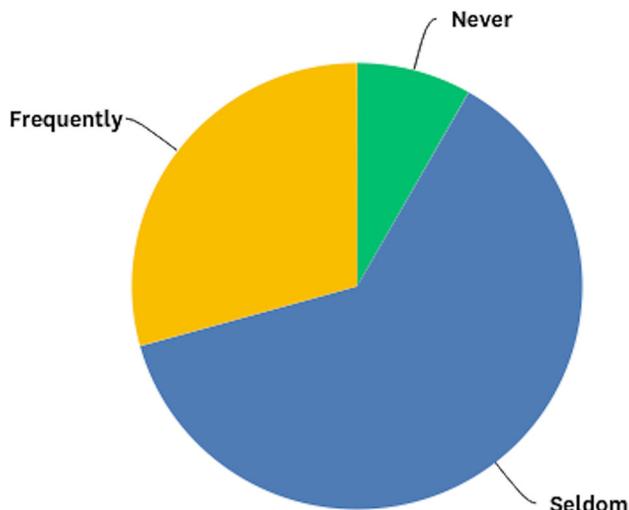


Fig. 4 Reports of patients requesting female genital rejuvenation procedures

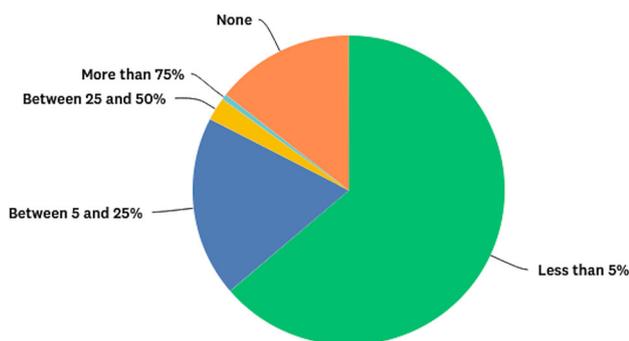


Fig. 5 Representation of female genital rejuvenation procedures in plastic surgery practices

hyaluronic acid injections (17.15%), and lasers (11.23%) (Fig. 7).

Discussion

Patient demand for aesthetic female genital surgery has increased markedly over the last decade. This trend is strongly supported by health and fashion publications, the launch of new machines, lasers and products (fillers, peeling) aimed to rejuvenate the female genital region in a non-invasive manner. Physicians in other specialties as well as other health care professionals have access to these machines and products and are able to offer these procedures to patients at lower cost. In the early 1980s, a few gynecologists and especially some plastic surgeons began to focus on this region of the body and describe different techniques to obtain better and more aesthetic results [3–5]. A new section on female genital rejuvenation is offered in some journals such as the *Aesthetic Surgery Journal* [6]

and most recently the *Aesthetic Plastic Surgery* journal. Our survey evaluated the training in female genital rejuvenation procedures among plastic surgeons, their overall interest in these procedures and their patient population's interest. The study showed that even though most plastic surgeons were not trained specifically in female genital rejuvenation procedures, those who were interested in performing these procedures took the steps to learn these procedures and subsequently offered them in their practice. The majority of plastic surgeons who did offer these procedures stated that they represented less than 5% of their practice. This percentage reflects more the clinical volume that they are doing and not necessarily the lack of comfort with this type of procedure. However, the majority of plastic surgeons expressed that they would like to learn these procedures during their residency, and would appreciate having more sessions and courses dedicated to this area of expertise at our scientific meetings. Many studies have shown the safety and high patient satisfaction with labiaplasty [7, 8]; however, there are still insufficient long-term outcome studies on the functional and aesthetic aspects of the female external genital organs after procedures like hoodectomy and G spot enhancement that would support the interest of plastic surgeons to offer them widely in their practice. Despite the important marketing of equipment and lasers for vulvar and vaginal rejuvenation, few surgeons had invested in new equipment to this effect in the last 5 years. This might be due to the fact that half of plastic surgeons stated that there was a gynecologist in their area offering these non-surgical procedures. Also, there was a lack of objective scientific studies in our journals assessing the impact of these machines on the functional and aesthetic aspect of female genital organs. Plastic surgeons were mostly performing surgical procedures as opposed to non-invasive procedures in this area. Expert opinion surveys constitute a well-established tool for obtaining information involving medical conduct, providing insight into individual's perspectives and experiences that can be collected on a large population-based sample [9, 10]. Although there were some limitations to our survey, we were able to identify how well the plastic surgeons who responded were trained in female genital rejuvenation procedures, their interest level in offering these procedures to a population of patients that is increasing.

Conclusion

Plastic surgeons may probably benefit from an eventual addition of female genital rejuvenation procedures during their training, as well as supplementary sessions at our scientific meetings. More clinical studies on the quality of

Fig. 6 Types of female genital rejuvenation procedures performed by plastic surgeons

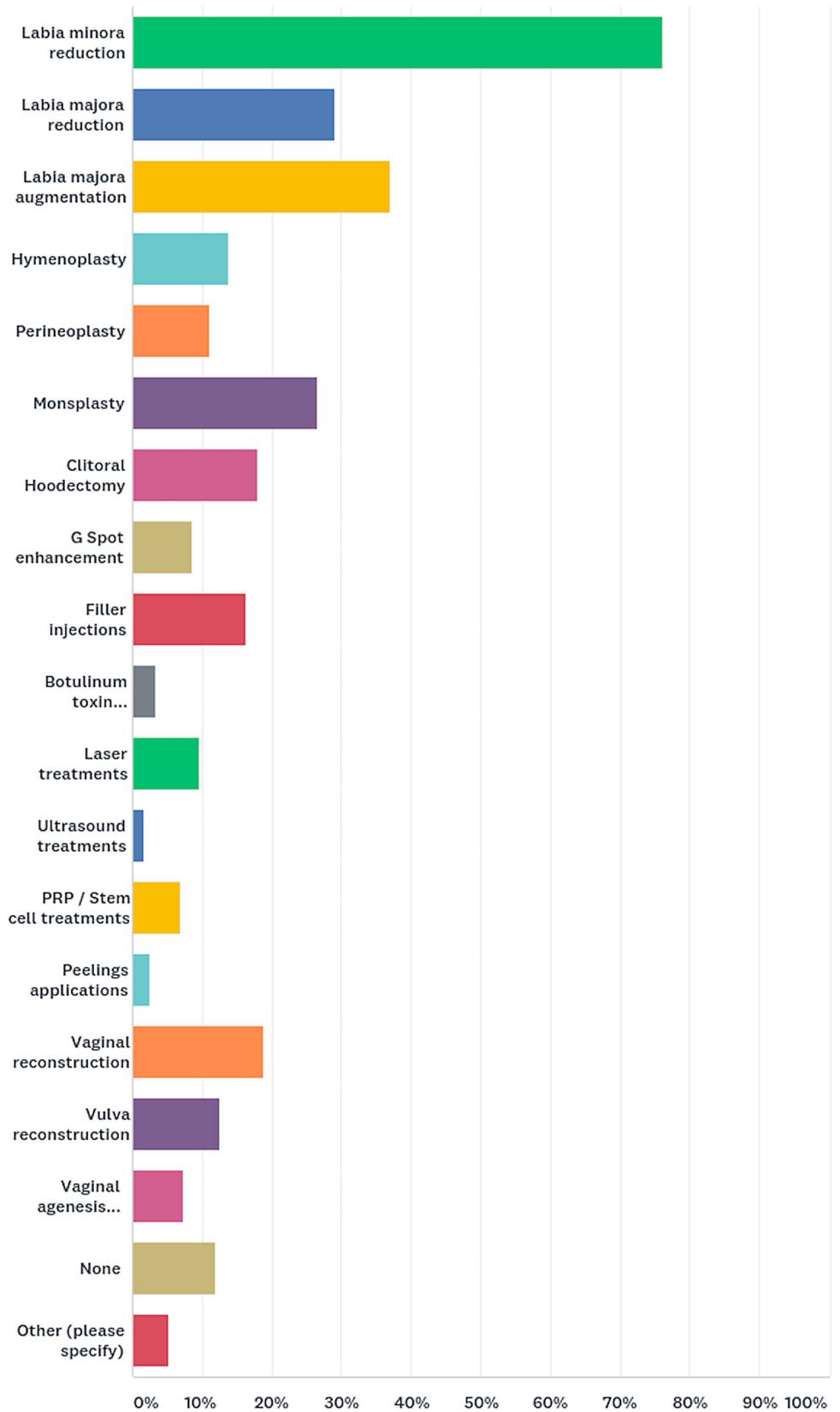
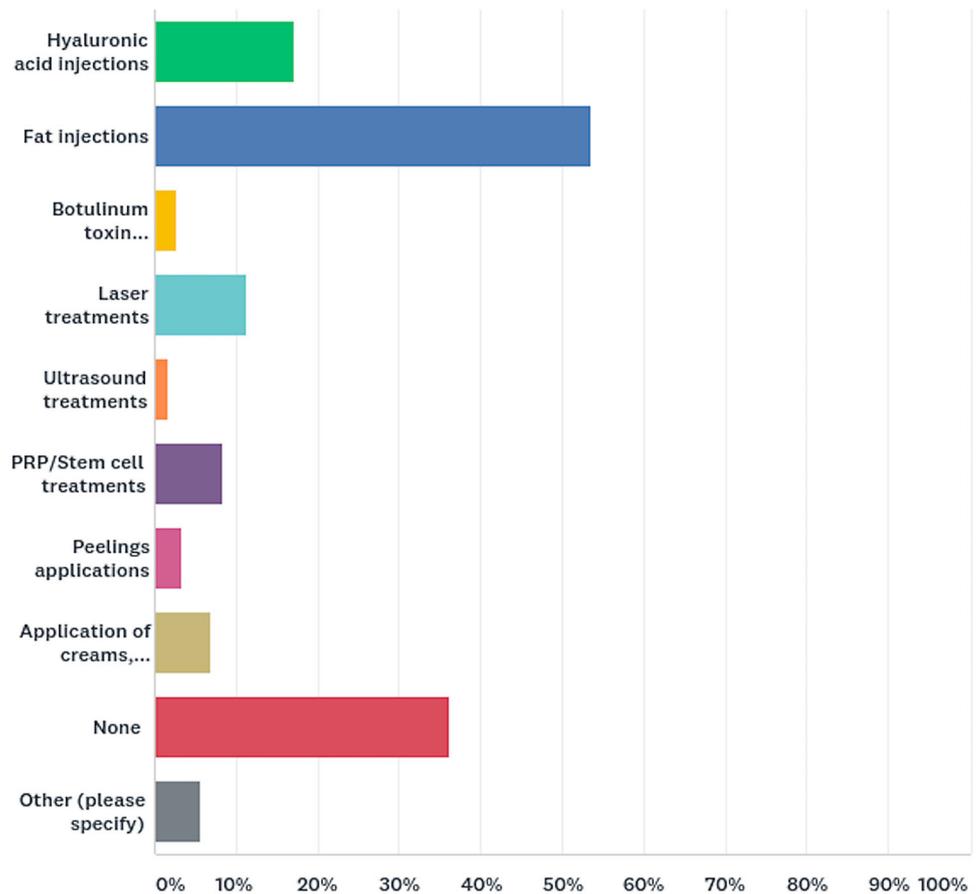


Fig. 7 Products and materials used for female genital rejuvenation



life, long-term outcomes and patient satisfaction after these procedures are necessary. It would allow us to assess if this recent increase in female genital rejuvenation procedures is temporary or will continue to rise with more plastic surgeons offering them in their practice.

Compliance with Ethical Standards

Conflict of interest The authors declare that they have no conflicts of interest to disclose.

Human and Animal Rights This article does not contain any studies with human participants or animals performed by any of the authors.

Informed Consent For this type of study, informed consent is not required.

Appendix 1: Assessment of Female Genital Surgery Education in Plastic Surgery Training

This is an ISAPS sponsored survey—Your participation will take less than 5 min.

Description Patient demand for aesthetic genital surgery has increased markedly over the last decade. There has been a significant increase in female genitalia procedures in the recent years. The aim of this survey is to evaluate the female genital procedures teaching in residency, fellowship and post-graduate programs in Plastic surgery worldwide.

1- In what country do you practice?

2- Your gender?

Male Female

3- Are you a

Plastic surgeon in an academic setting
 Plastic surgeon in a private setting

4- In your residency program did you receive education on female genital rejuvenation techniques?

Yes No

5- In your residency program did you receive education on female genital reconstruction techniques?

Yes No

6- Which of the following procedures were you exposed to during your residency?

	None	Minimal	Extensive
Labia minora reduction	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Labia majora reduction	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Labia majora augmentation	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Hymenoplasty	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Perineoplasty	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Monsplasty	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Clitoral Hoodectomy	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
G Spot enhancement	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Vaginal reconstruction	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Vulva reconstruction	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Vaginal agenesis treated with flaps	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Vaginal agenesis treated with dilation	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

7- Did you receive any additional training for female genital rejuvenation? Check all that apply:

Course at a meeting
 Special training
 Shadowing an expert
 Online training
 Other, please specify

No additional training

8- Did you receive any additional training for female genital reconstruction? Check all that apply:

Course at a meeting
 Special training
 Shadowing an expert
 Online training
 Other, please specify

No additional training

9- How often have you been asked by patients if you perform female genitalia rejuvenation procedures?

Never Seldom Frequently

10- What is the percentage of female genitalia rejuvenation procedures in your practice?

Less than 5%
 Between 5 and 25%
 Between 25 and 50%
 More than 75%
 None

11- What are the most common female genital procedures you perform in your current practice? Check all that apply:

- Labia minora reduction
 Labia majora reduction
 Labia majora augmentation
 Hymenoplasty
 Perineoplasty
 Monsplasty
 Clitoral Hoodectomy
 G Spot enhancement
 Filler injections
 Botulinum toxin injections
 Laser treatments
 Ultrasound treatments
 Radiofrequency treatments
 PRP / Stem cell treatments
 Peelings applications
 Vaginal reconstruction
 Vulva reconstruction
 Vaginal agenesis treatment
 None
 Other (please specify)
-
-

12- Which materials do you commonly use for female genital procedures? Check all that apply:

- Hyaluronic acid injections
 Fat injections
 Botulinum toxin injections
 Laser treatments
 Ultrasound treatments
 PRP/Stem cell treatments
 Peelings applications
 Application of creams, ointments (Topical by the patient)
 None
 Other, please specify
-
-

13- Did you buy a machine in the last 5 years for female rejuvenation purposes?

- No
 Yes, Which one?
-
-

14- Do you think that you have to perform reconstructive surgery procedures in female genitalia to be able to perform rejuvenation procedures?

- Yes
 No
 Unsure

15- Do you think that an OBGYN training or fellowship is necessary to perform female genitalia rejuvenation procedures?

- Yes
 No
 Unsure

16- Have you noticed an increase in the demand for vaginal rejuvenation procedures in recent years?

- Yes No

17- Do you know any gynecologist in your community who advertises female genitalia rejuvenation procedures?

Yes No

18- How important do you think it is for plastic surgery residents to receive training in female genitalia reconstructive procedures?

Very important
 Neutral
 Not important

19- How important do you think plastic surgery residents should receive training in female genitalia rejuvenation procedures?

Very Important
 Neutral
 Not important

20- Do you think there should be more female genital rejuvenation sessions in our plastic surgery meetings?

Yes
 No
 Unsure

21- Do you think there should be more female genital reconstruction sessions in our plastic surgery meetings?

Yes
 No
 Unsure

Thank you for your collaboration.

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