

# Health, Hormones, Sex and Happiness

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# Purpose:

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- Understand the physiology of optimal/sexual health hormones
- Understand basic hormone replacement and strategies.
- Understand current pharmacology of supplemental bio-identical hormones
- Understand current medications used for sexual dysfunction
- Understand the new management approach in sexual health

# New Paradigm Approach

- O- Shot/P-shot
- Laser Vaginal Tightening
- Bio hormone Replacement therapy
- Vampire Breast Lift
- Scream Cream
- Vaginal Rejuvenation System



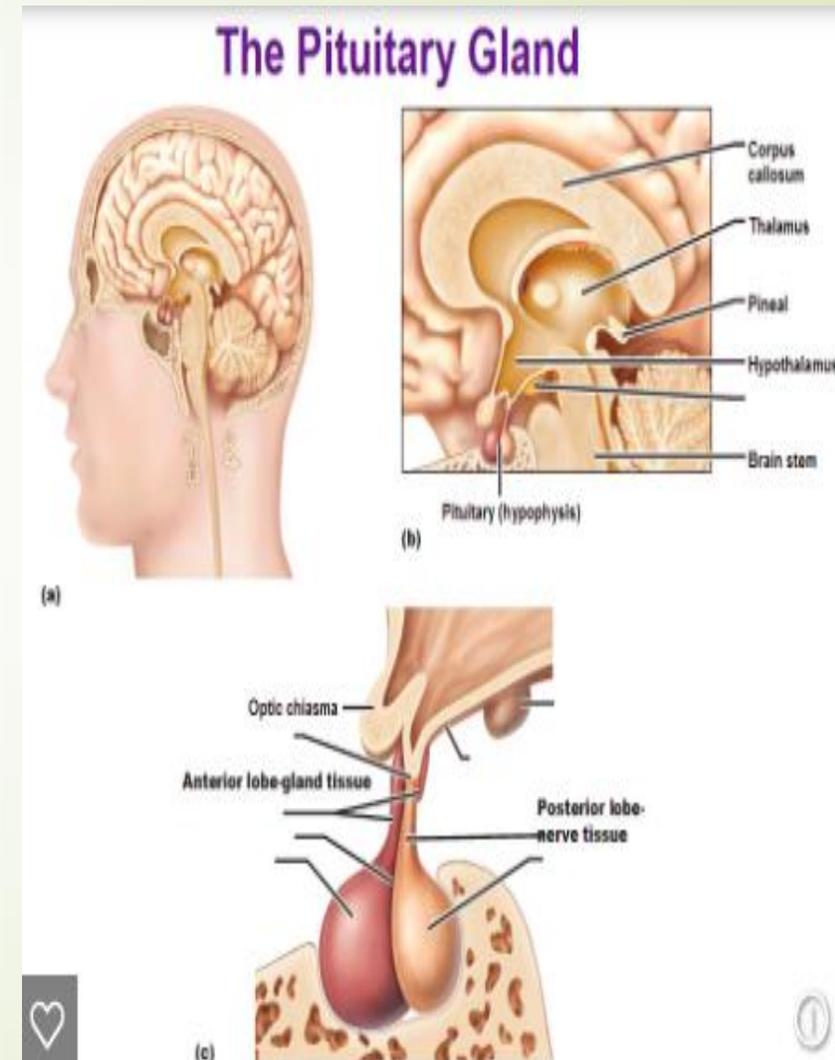
# Overview: Orgasm System Components

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## ➔ Sex Centers in the Physical Brain

- **CNS** controls arousal, orgasm, and various functions
  - **Brain**
    - **Hypothalamus**- Links the nervous and endocrine systems
      - **Medial Preoptic Area (MPOA), paraventricular nucleus**- cluster of neurons that play critical role in sexual function
    - **Pituitary Gland** conducts the other Endocrine Glands
      - If woman becomes upset or angry, sleep deprived, or afraid, all these emotions affect the pituitary gland.
      - Pituitary gland controls all of the other glands of the body including the ovaries, testes, and adrenal glands.

Frank, Mistretta & Will (2008)



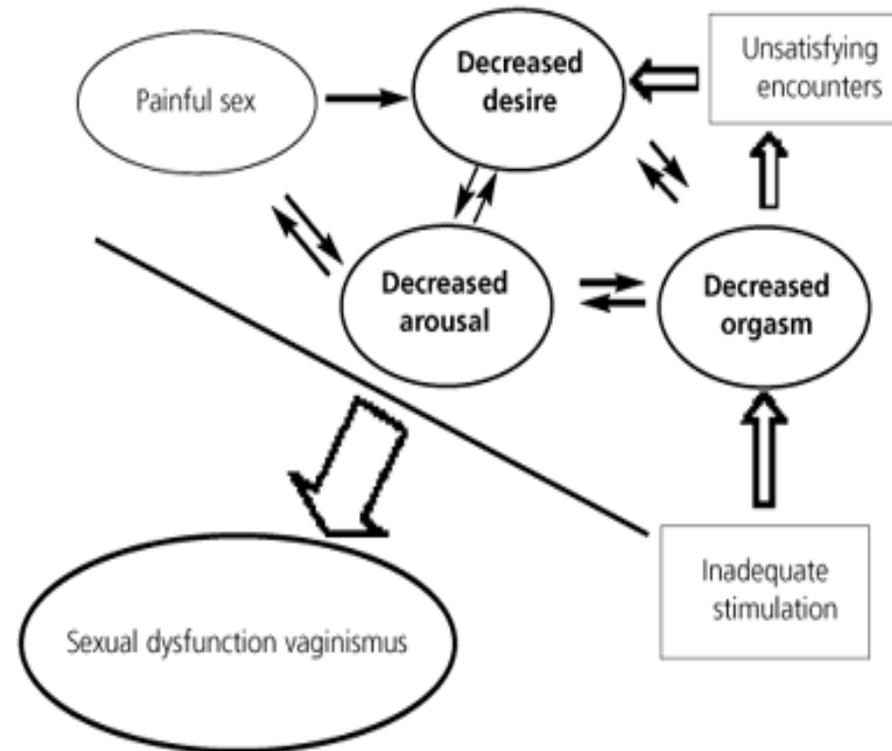
# Orgasm System Components:

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## ► Psychology: Emotions, Memory, and Feedback Loops

- Psychology of Sex: **Fear to arousal**
- Feedback Loops Set the Stage for Sex
  - **Positive and Negative feedback loop**
  - The effects on sexual function become even more complicated when considering the emotions of love, connection, hate, or resentment

Frank, Mistretta & Will (2008)



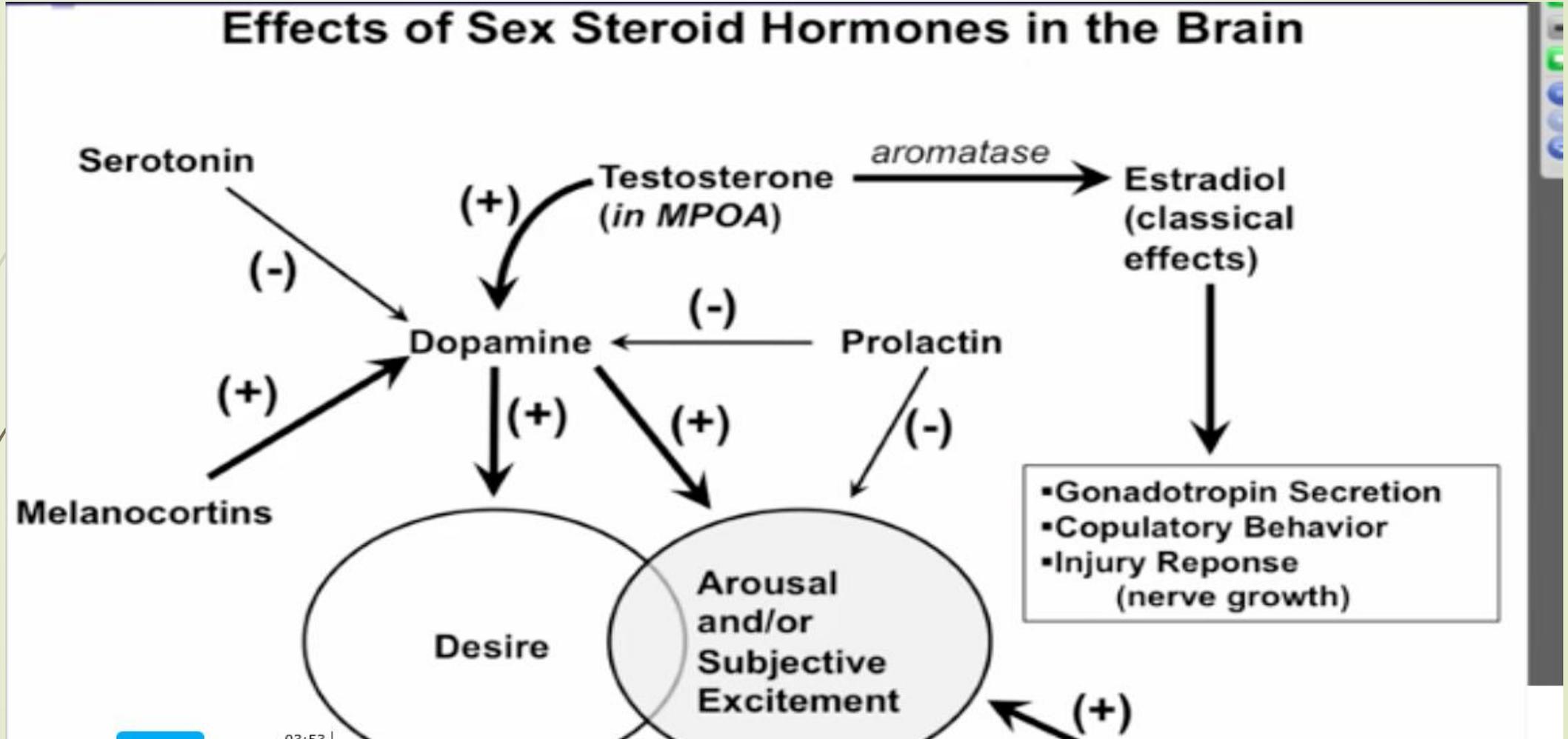
**FIGURE 1.**

Cycle of sexual dysfunction. Example showing how a patient can enter the cycle of sexual dysfunction in one area (i.e., decreased orgasm) and proceed to another area (i.e., decreased desire) so that the presenting complaint may not represent the problem that actually requires evaluation and treatment.

*Adapted with permission from Phillips NA. The clinical evaluation of dyspareunia. Int J Impot Res 1998;10(suppl 2):S117-20.*

# Sex Hormones

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# Sex Hormones and Neurotransmitters:

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## Dopamine

Desire, arousal, promotes willingness to continue sexual activity after it is initiated

## Estrogen

Arousal, desire

Estrogen deficiency- vaginal atrophy, decreased lubrication, vasocongestion, & sensation

## Nitric oxide

Vasocongestion of clitoral tissue

Adequate levels of estrogen and testosterone is needed for nitric oxide to initiate vasocongestion

## Norepinephrine

Arousal

## Oxytocin

Receptivity, orgasm, increased perineal contractions with orgasm

# Published Article

## **Menopause Symptoms in a Transsexual Man**

Dolinta, C., Mancuso, P., Stevens, J., & Glaze, J. (2015). Menopause Symptoms in a Transsexual Man. *Advance Healthcare Network for NPs & PAs*. Retrieved April 4, 2016, from <http://nurse-practitioners-and-physician-assistants.advanceweb.com/Columns/Case-Files/Menopause-Symptoms-in-a-Transsexual-Man.aspx>

# Sex Hormones and Neurotransmitters:

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## Progesterone

Receptivity

## Prolactin

Arousal

Maintain Low dose

## Serotonin

Arousal, desire

Inhibits norepinephrine and dopamine;

Facilitates uterine contractions during orgasm,

## Testosterone

Desire, initiation of sexual activity, improves both arousal and orgasm

## Vasoactive intestinal peptide

Vasocongestion of clitoral tissue

Frank, Mistretta & Will (2008)

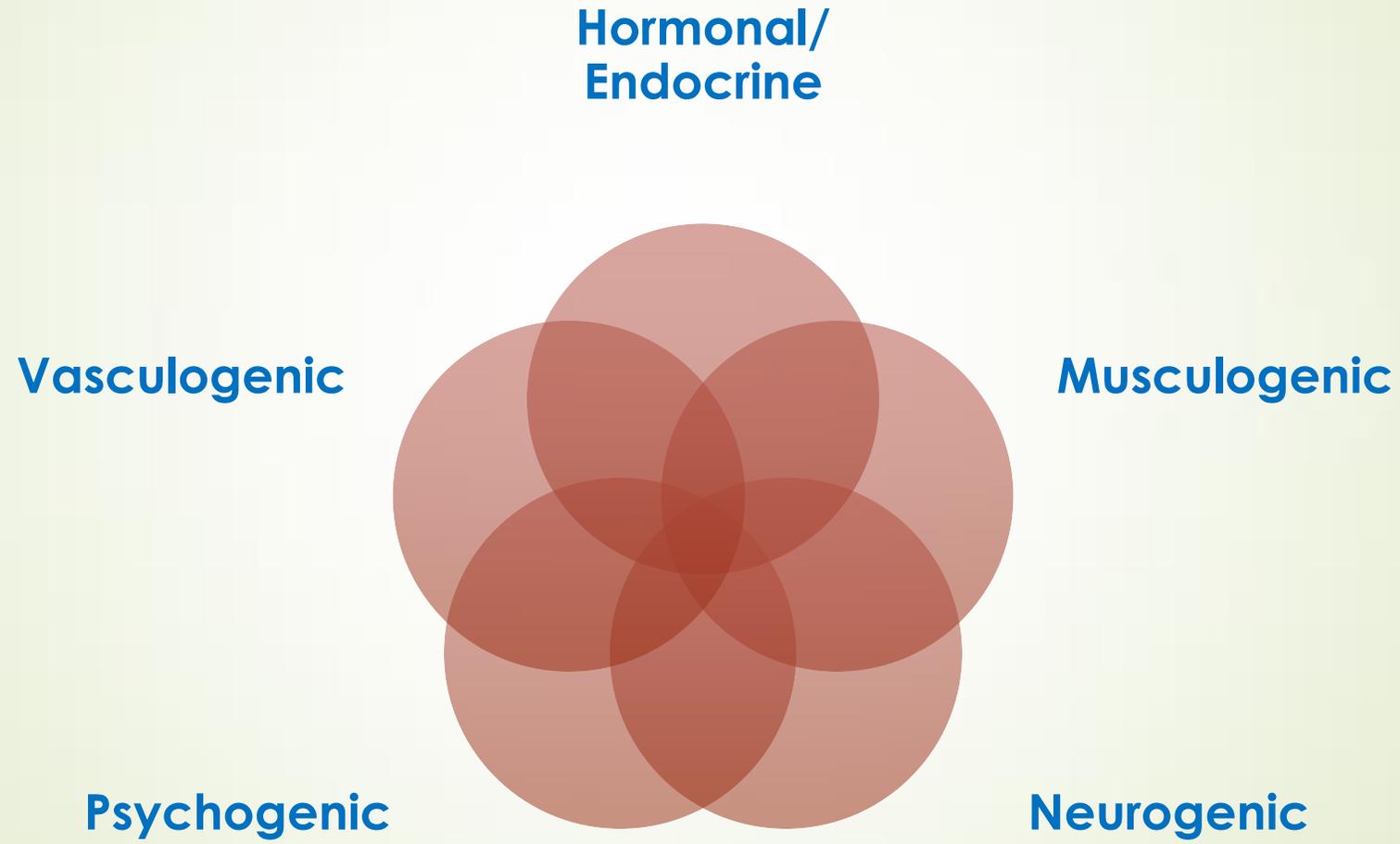
# Diagnosis: Female Sexual Dysfunction

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|   |  |  |
|---|--|--|
| <b>Sexual desire/interest disorder</b>                  | <b>Subjective sexual arousal disorder</b>  | <b>Genital sexual arousal disorder</b> |
| <b>Combined genital and subjective arousal disorder</b> | <b>Persistent genital arousal disorder</b> | <b>Women's orgasmic disorder</b>       |
| <b>Dyspareunia</b>                                      | <b>Vaginismus</b>                          | <b>Sexual aversion disorder</b>        |

# Causes of Female Sexual Dysfunction

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Frank, Mistretta & Will (2008)

# Causes of FSD: Medications

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## Disorder of Desire

Psychoactive Medications-  
antipsychotics,  
Barbiturates,  
Benzodiazepines,  
SSRI,  
Lithium,  
tricyclic antidepressants

Cardiovascular &  
Antihypertensive meds-  
Antilipids,  
Beta blockers,  
clonidine,  
digoxin,  
aldactone

Hormonal preparations-  
danazol  
GnRh agonist

Frank, Mistretta & Will (2

## Disorders of Arousal

Anticholinergics,  
antihistamines,  
antihypertensive,  
Psychoactive Med

## Orgasm Dysfunction

Aldomet,  
Amphetamines  
anorexic drugs,  
antipsychotics,  
Benzo,  
SSRI,  
narcotics,  
trazadone,  
tricyclic depressants



# Orgasm System Components:

Blood flow to the vagina increases arousal and orgasm

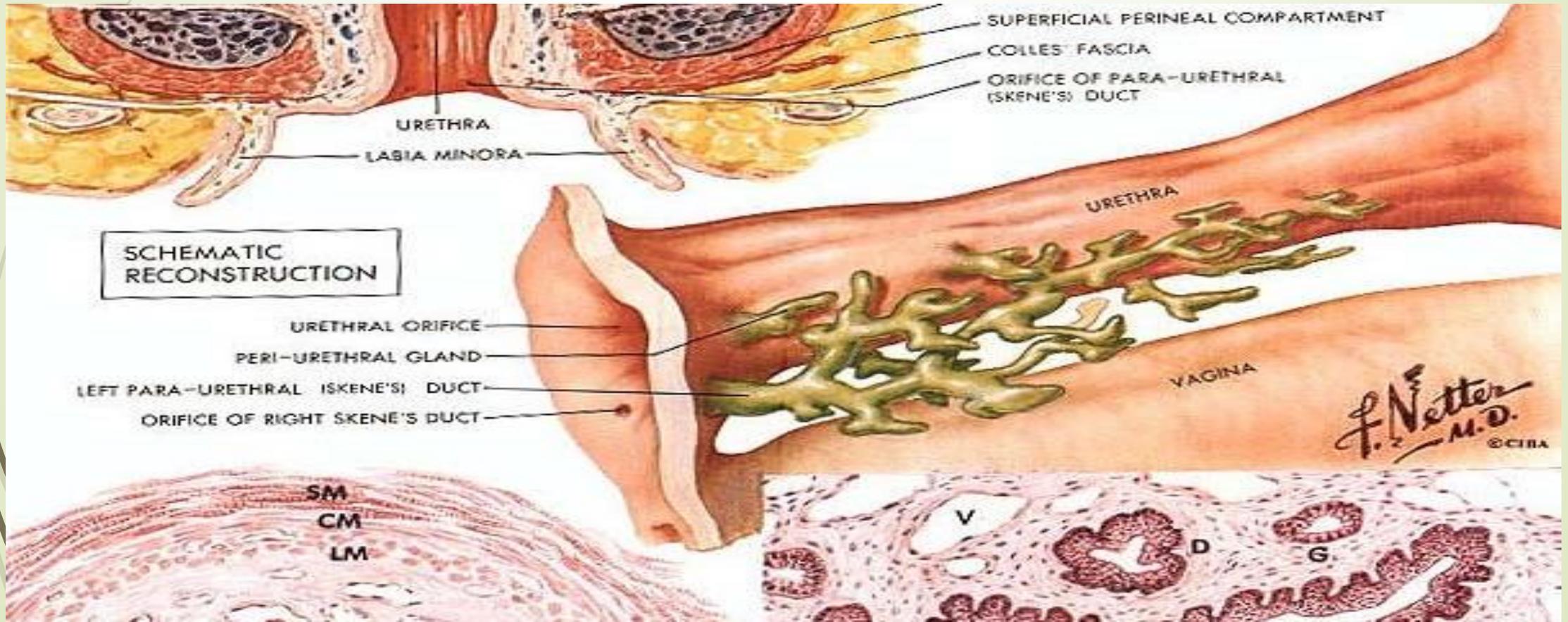
Skene's Glands

Urethra

Nerve tissue to support sex

Peripheral nerves

Every part of the body can be erotic and contribute to the orgasm system

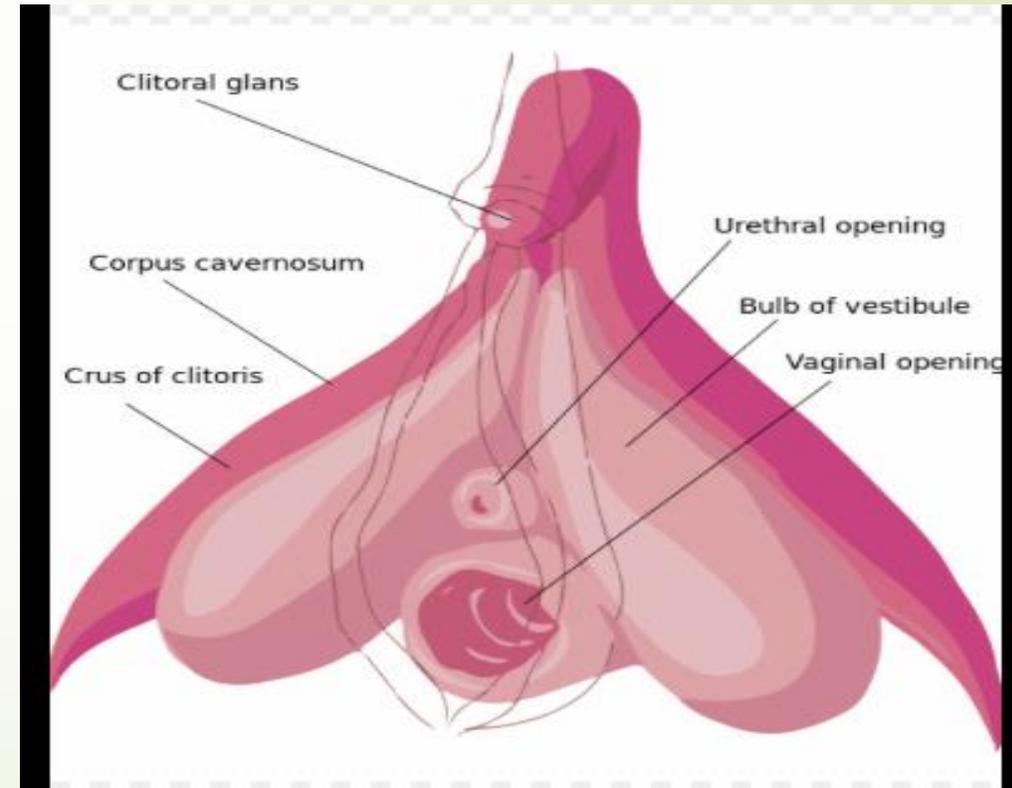
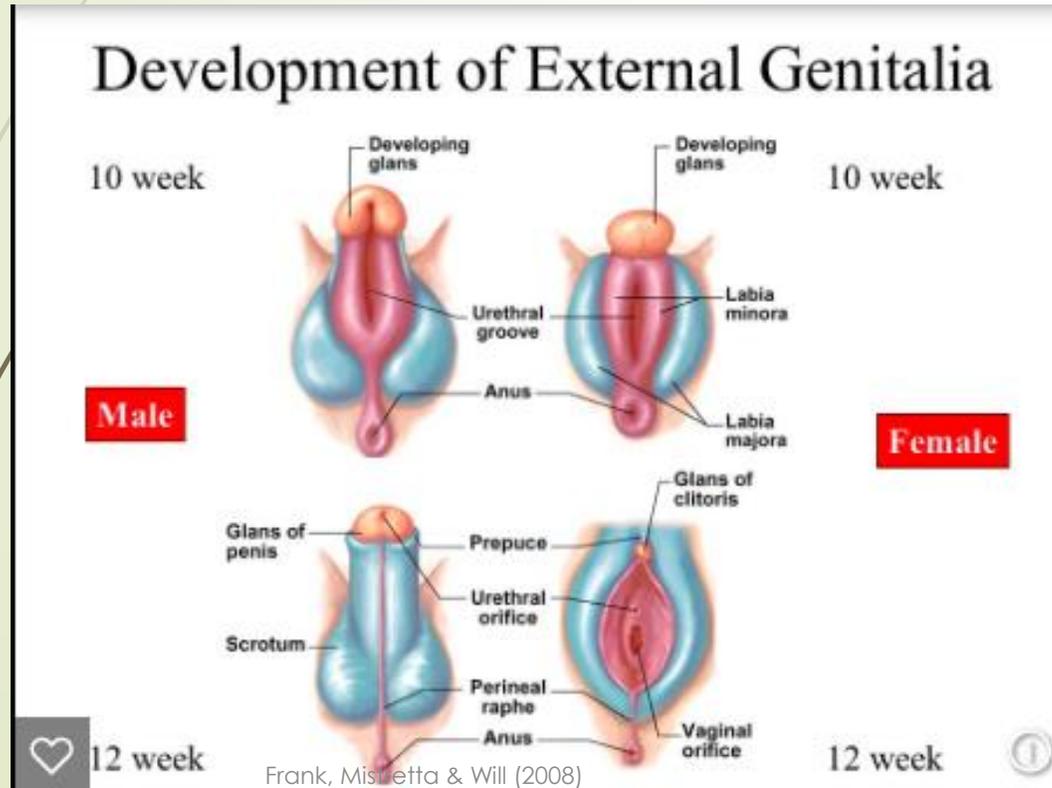


# Orgasm System Component

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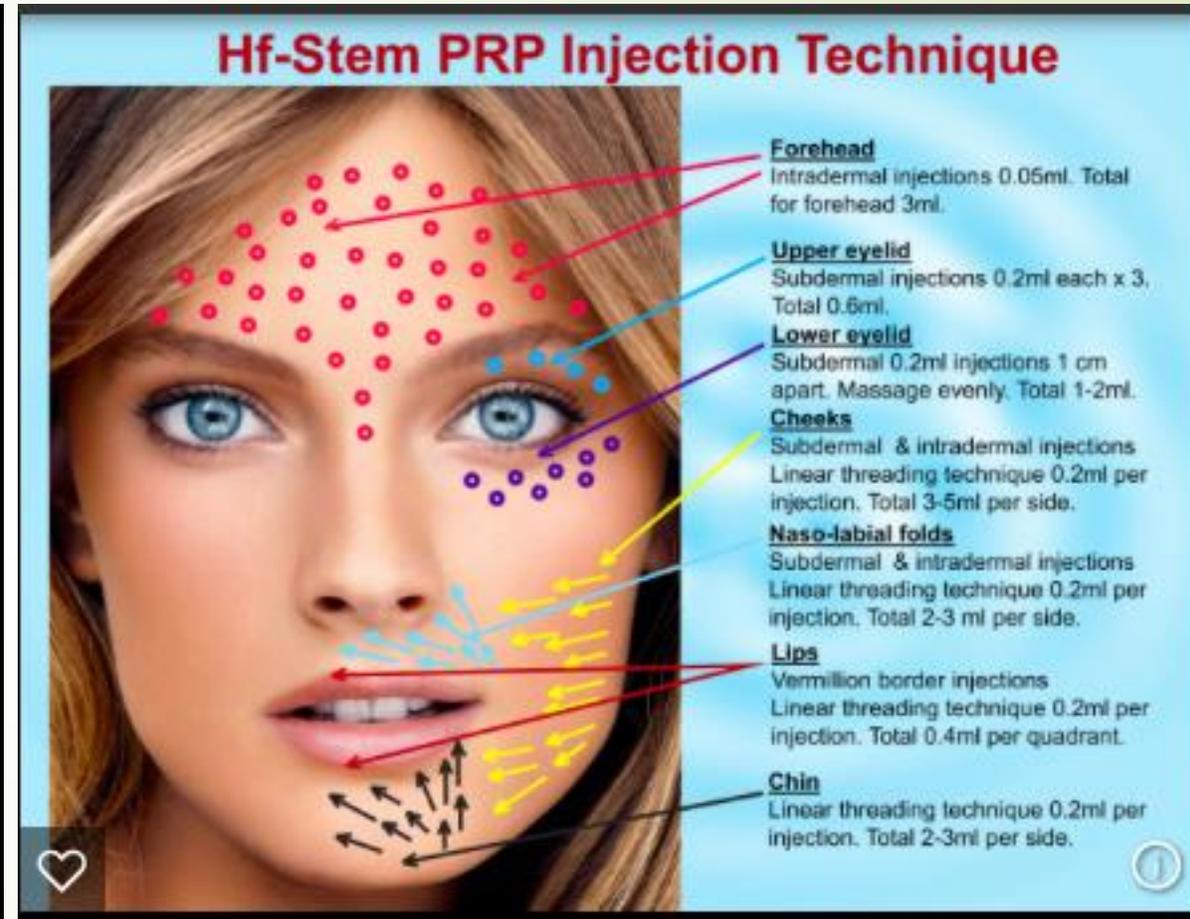
- **Vagina**- the least sensitive part

- The hidden part of **Clitoris**



# Platelet Rich Plasma (PRP)

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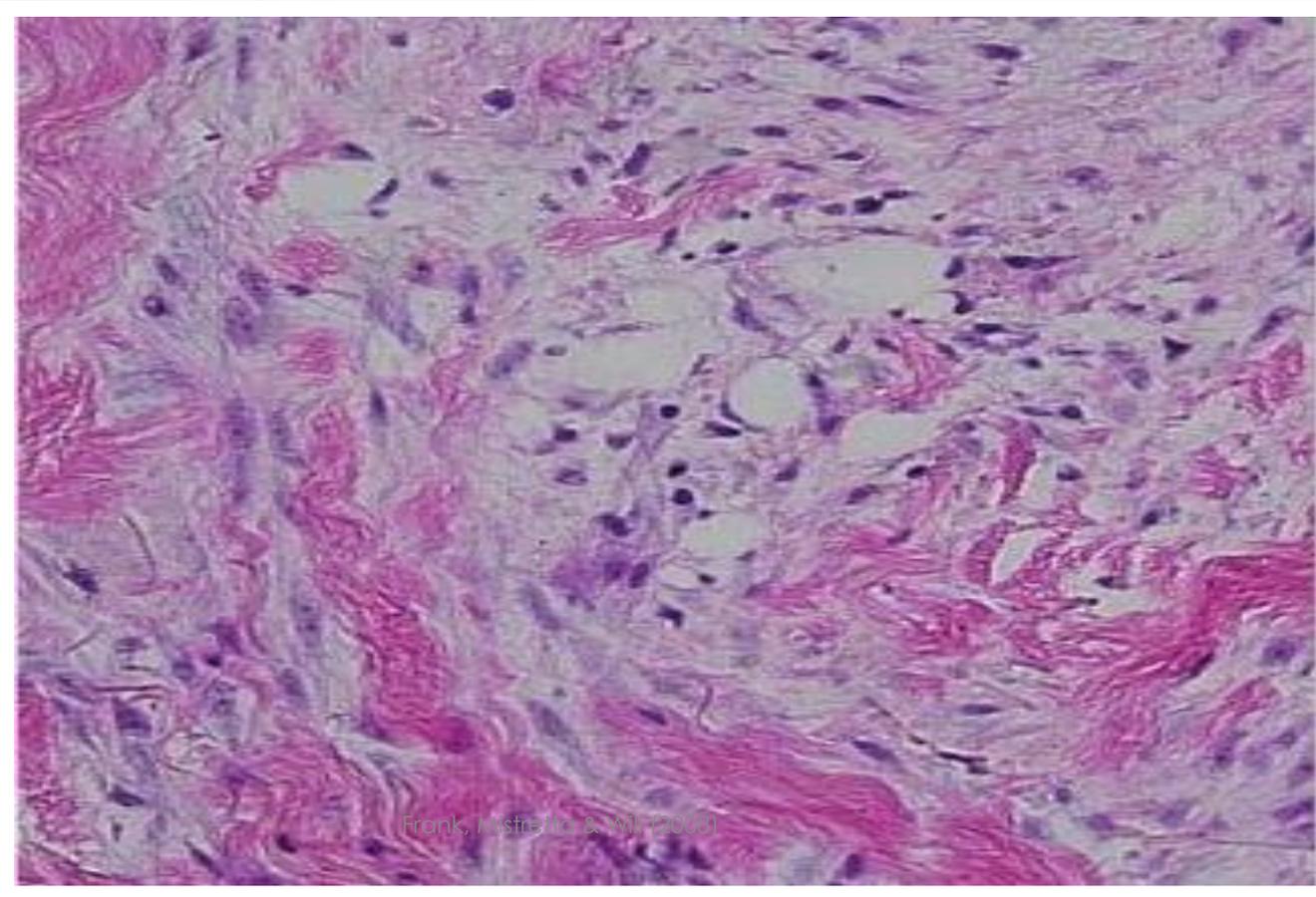
Platelet-rich plasma (PRP) is a fraction of plasma, in which platelet-derived growth factor (PDGF) and transforming growth factor-beta (TGF-beta) are thought to be concentrated

Frank, Mistretta & Will (2008)

# Histological effects of PDGF injection on skin in humans

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- Fibroblast and adipocyte proliferation, angiogenesis, and collagen deposition



Frank, Mistrangelo & Will (2003)

- Stimulates local, uni-potent stem cells
- Stimulates proliferation of fibroblasts
- Stimulates collagen production
- Stimulates neo-angiogenesis

Sclafani & McCormick, 2011

# Orgasm Shot (O-shot)

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## Women's Health Care

Runels et al., J Women's Health Care 2014, 3:4  
<http://dx.doi.org/10.4172/2167-0420.1000169>

### Research Article

### Open Access

## A Pilot Study of the Effect of Localized Injections of Autologous Platelet Rich Plasma (PRP) for the Treatment of Female Sexual Dysfunction

Charles Runels\*, Hugh Melnick, Ernest Debourbon and Lisbeth Roy

*Medical School, Birmingham, Alabama, USA*

### Abstract

Currently, accepted treatments for Female Sexual Dysfunction (FSD) are limited to psychological, behavioral, hormonal and psychopharmacologic interventions. Because of the complex and multifactorial nature of FSD, current therapeutic options may leave a subset of women suffering with sexual dysfunction without clinical improvement. As a simple, safe, and natural alternative therapeutic option for treating female sexual dysfunction, a pilot study was undertaken to test the effect, if any, of vaginal and clitoral injections of autologous Platelet Rich Plasma (PRP) on women desiring treatment for painful intercourse or anorgasmia. Two standardized sexuality tests, the Female Sexual Function Index and the Female Sexual Distress Scale, were administered before and after treatment and were used to measure the response to this therapeutic intervention. Our data indicated some degree of improvement in FSD, including positive changes in isolated sexual difficulties and in the reduction of levels of sexual distress. However, the limited number of participants in this pilot study restricts conclusions. Our initial observations do suggest that further investigation of PRP therapy for the treatment of female sexual dysfunction is indicated.

# PRP Research

18

Michelle King MSc, Hillary Tolson, Charles Runels MD, Meghan Gloth MD, Richard Pfau MD, Andrew T Goldstein MD (lead investigator). [Autologous Platelet Rich Plasma \(PRP\) Intradermal Injections for the Treatment of Vulvar Lichen Sclerosus](#)

Cervelli, Valerio MD; Lucarini, Lucilla MD. [Use of Platelet-Rich Plasma and Hyaluronic Acid in the Loss of Substance with Bone Exposure. Advances in Skin & Wound Care: April 2011 - Volume 24 - Issue 4 - pp 176-181](#)

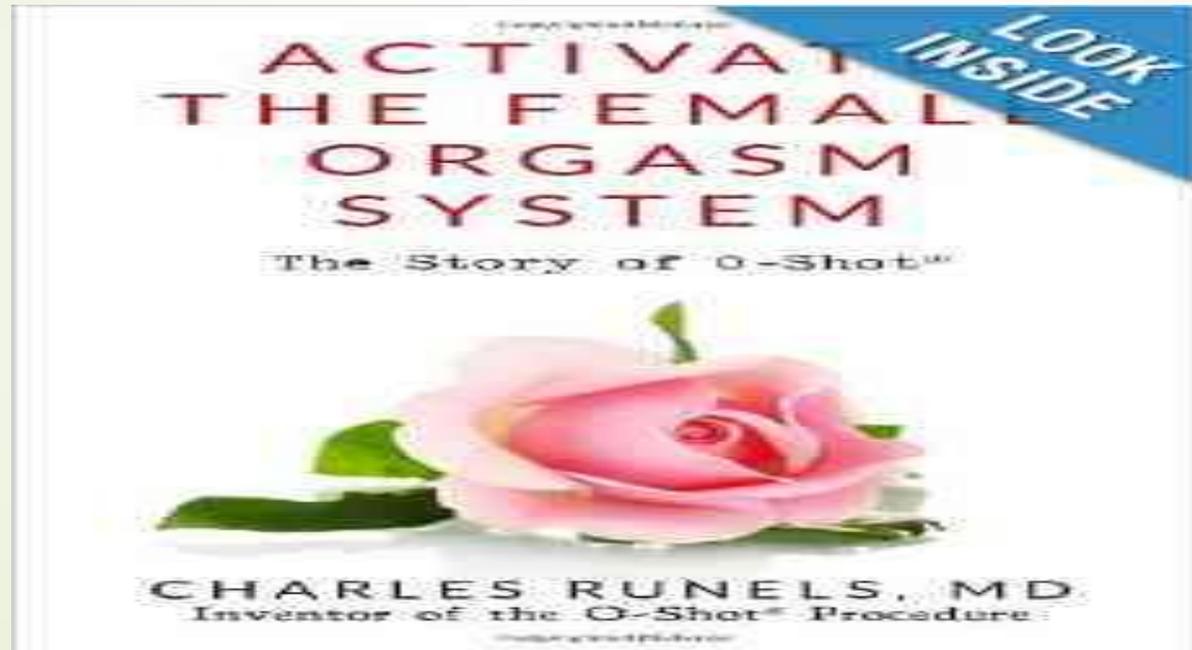
Redaelli, Alessio. [Face and neck revitalization with Platelet-rich plasma \(PRP\): clinical-outcome in a series of 23 consecutively treated patients. Journal of Drugs in Dermatology - May 1, 2010](#)

Anthony P. Sclafani, MD; Steven A. McCormick, MD. [Induction of Dermal Collagenesis, Angiogenesis, and Adipogenesis in Human Skin by Injection of Platelet-Rich Fibrin Matrix. Arch Facial Plast Surg. Published online October 17, 2011. \[Biopsy-proven new blood vessel growth and new collagen using platelet-derived growth factors \(using a single-spin centrifuge\)\]](#)

# O shot video

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- ▶ <https://youtube/hYZ1AbkbY4U>
- ▶ <https://www.youtube.com/watch?v=XPIjyUYI6PE>
- ▶ <https://youtube/nqlftBG4kgQ> Dr. Runels



# Vampire Breast Lift

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## **Vampire Research**

### ***How the Vampire Breast Lift® procedure can***

- 1. Improve sensation.***
- 2. Correct irregularities & asymmetry***
- 3. Work more safely than implants.***
- 4. Reconstruct post surgery or mastectomy.***

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### ***1. Research about how the Vampire Breast Lift® Procedure Improves Sensation of the Nipples...***

#### **\*\*Effects of platelet-rich plasma on nerve regeneration in a rat model.**

Küçük L, Günay H, Erbaş O, Küçük Ü, Atamaz F, Coşkunol E.

Acta Orthop Traumatol Turc. 2014;48(4):449-54. doi: 10.3944/AOTT.2014.13.0029.

PMID: 25230270

#### **\*\*Nerve regeneration: is there an alternative to nervous graft?**

Sabongi RG, De Rizzo LA, Fernandes M, Valente SG, Gomes dos Santos JB, Faloppa F,

Leite VM. fJ Reconstr Microsurg. 2014 Nov;30(9):607-16. doi: 10.1055/s-0034-1372477.

Epub 2014 Aug 4.

PMID: 25089566

# Er:YAG Laser: IntimaLase

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## What is IntimaLase®?

IntimaLase® is a unique, patent-pending Er:YAG laser therapy for incisionless, non-invasive photothermal tightening of the vaginal canal. Clinical studies have shown that IntimaLase is an efficient, easy-to-perform, and safe procedure.

The indication for IntimaLase is vaginal relaxation syndrome, which is the loss of the optimum structural form of the vagina. This condition is generally associated with overstretching of the vaginal canal during childbirth as well as with natural aging.

### How does IntimaLase® work?

- Fotona's 2940 nm Er:YAG non-ablative laser with proprietary "Smooth-mode" technology thermally affects the vaginal tissue, stimulating collagen remodeling and the synthesis of new collagen fibers in the vaginal mucosa tissue and collagen-rich endopelvic fascia.
- The final result of collagen neogenesis and remodeling is tightening of the vaginal canal.

### Unique advantages of IntimaLase® for your patients

As a non-ablative, minimally invasive procedure with Er:YAG, IntimaLase™ also represents a safer, faster and more patient-friendly solution that avoids the undesirable complications present with other vaginal tightening methods.

Clinical results show a tightened vaginal canal, greater sexual satisfaction and significant improvement in a patient's quality of life.

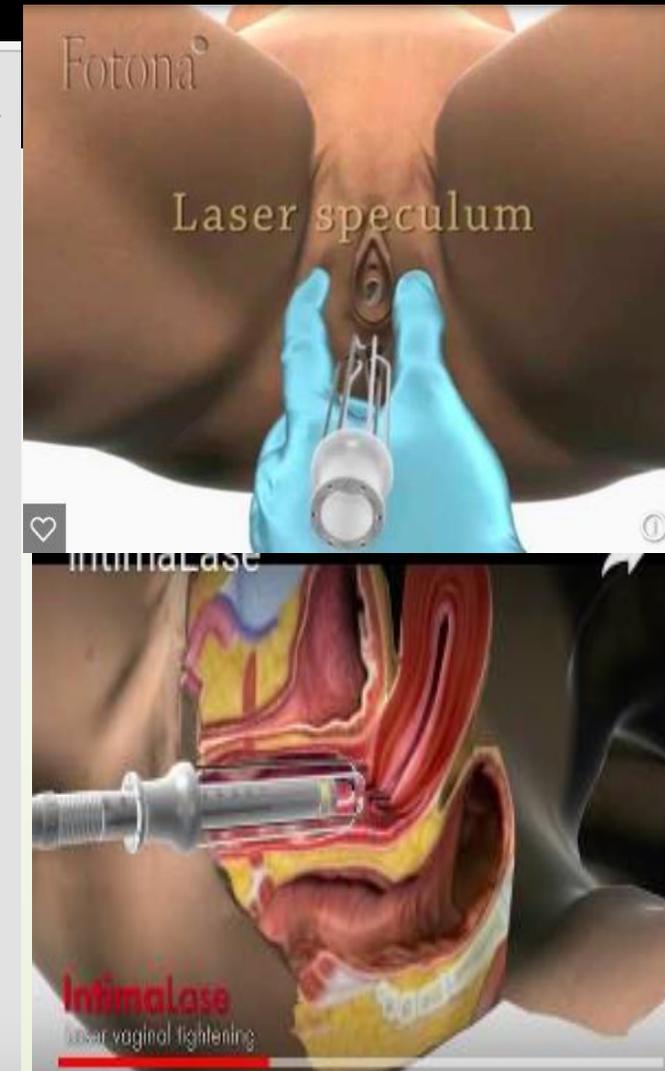
Usually two sessions are recommended. No special pre-op preparation or post-op precautions are necessary. Patients can immediately return to their normal everyday activities.

### Exceptional clinical results

The latest scientific results (see the Library tab) clearly show great improvements in vaginal tightness and sexual gratification.

- 95% assessed the change of their vaginal tightness as strongly or moderately improved after IntimaLase treatment.
- Average shrinkage of vaginal canal after IntimaLase treatment was 17%.
- High level of patient satisfaction (97%).

Clinical results prove that the fast and easy-to-perform IntimaLase treatment is an effective, non-invasive procedure with no undesired side effects or contraindications.



[www.youtube.com/watch?v=rkmNg0zk\\_I0](http://www.youtube.com/watch?v=rkmNg0zk_I0) Video

<http://www.fotona.com/en/treatments/1807/renovalase/> fotona

## Scientific & Clinical Research:

**Laser Treatment of Vaginal Atrophy in Post-menopause and Post-gynecological Cancer Patients - [Read full Text.](#)**

Juan F. Bojanini B., Alexandra M. Mejía C. Journal of LA&HA, Vol. 2014, No.1; pp.65-71.

**Vaginal erbium laser: the second-generation thermotherapy for the genitourinary syndrome of menopause - [Read full Text.](#)**

Gambacciani M, Levancini M, Cervigni M. Climacteric 2015 Oct;18(5):757-63

**Short-term effect of vaginal erbium laser on the genitourinary syndrome of menopause - [Read Abstract.](#)**

Gambacciani M, Levancini M. Minerva Ginecol. 2015 Apr;67(2):97-102. 4.

**Comparison of new minimally invasive Er:YAG laser treatment and hormonal replacement therapy in the treatment of vaginal atrophy - [Read full Text.](#)**

Gaspar A. Climacteric 2014; 17(Suppl 1) : 48 – 108 , P 124 (Abstr)

**Laser Treatment of Vaginal Atrophy in Post-menopause and Post-gynecological Cancer Patients. - [Read Full Text](#)**

Juan F. Bojanini B., Alexandra M. Mejía C. Journal of LA&HA, Vol. 2014, No.1; pp.65-71.

Vizintin Z, Rivera M, Fistonić I, Saraçoglu F, Guimares P, Gaviria J, García V, Lukac M, Perhavec T, Marini L. Journal of the Laser and Health Academy, Vol. 2012, No. 1, P. 46-58.

**Laser Vaginal Tightening (LVT) – evaluation of a novel noninvasive laser treatment for vaginal relaxation syndrome - [Read Full Text.](#)**

Jorge E. Gaviria P, Jose A. Lanz L. Journal of the Laser and Health Academy, Vol. 2012, No. 1, P. 59-66.

**Additional Resources:** visit the [Laser and Health Academy\\*](#) website for further information about medical laser treatments that can be performed with Fotona laser systems.

**Novel Minimally Invasive VSP Er:YAG Laser Treatments in Gynecology - [Read Full Text.](#)**

Vizintin Z, Rivera M, Fistonić I, Saraçoglu F, Guimares P, Gaviria J, García V, Lukac M, Perhavec T, Marini L. Journal of the Laser and Health Academy, Vol. 2012, No. 1, P. 46-58.

**Minimally invasive laser procedure for early stages of stress urinary incontinence (SUI) - [Read Full Text.](#)**

Fistonić I, Findri-Guštek Š, Fistonić N. Journal of the Laser and Health Academy, Vol. 2012, No. 1, P. 67-74.

**Additional Resources:** visit the [Laser and Health Academy\\*](#) website for further information about medical laser treatments that can be performed with Fotona laser systems.

# Vaginal Cream (Off Label)

- ▶ **Scream Cream** contains a combination of prescription and non-prescription components described as blood flow enhancers and vasodilators.
  - Each 1/2 gram dose contains Aminophylline 15-mg., Isosorbid dinitrate 1.25-mg, Ergoloid mesylate 0.25-mg, Pentoxifylline 25-mg. and L-Arginine 30-mg.
- ▶ Use:  
Scream Cream should be applied directly to the clitoris at least 30 minutes prior to anticipated sexual relations and gently massaged in. Duration of effect ranges from 30 minutes to 2 hours and heightens both ease of stimulation and intensity of orgasm.
- ▶ Contraindications:
  - Patients with a history of sensitivity to any of the listed ingredients should not use this product. Patients with a history of genital herpes should use this product with caution as L-Arginine may facilitate reproduction of the herpes virus. Scream Cream is available without L-Arginine upon request. Onset is identical to the complete product but duration may be reduced.
- ▶ How supplied: Scream Cream is packaged in 30 dose multi-dose tubes.

# Vaginal Rejuvenation System



**VRS: Vaginal Rejuvenation System**

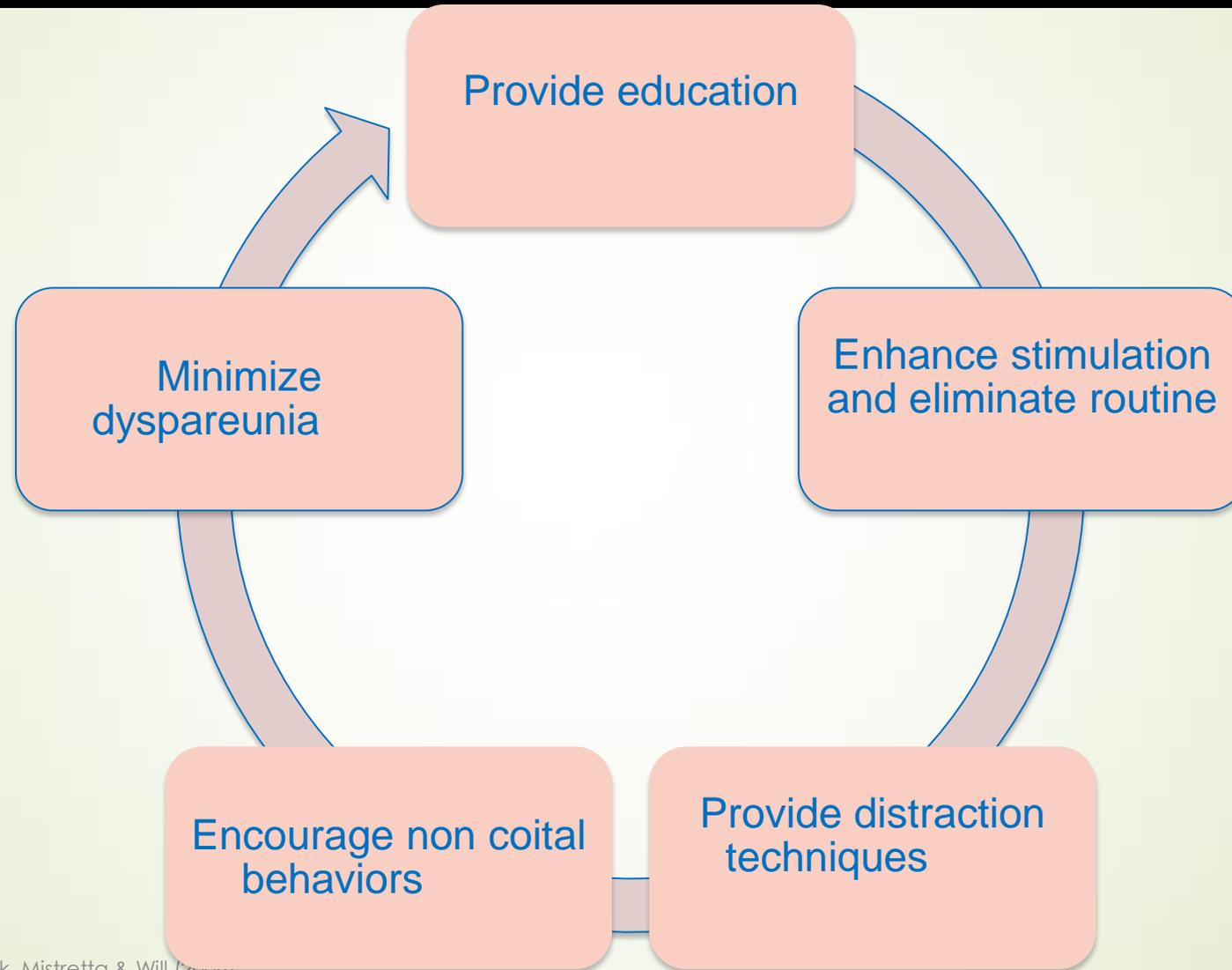
- Relieve vaginal dryness and soothe irritation
- Improve elasticity, tighten and firm the vaginal walls
- Enhance female sexual arousal and intercourse
- Rejuvenate vaginal function
- Re-establish a healthy pH
- Hormone free and non-systemic
- Natural product with no harsh chemicals

**Ingredients:** Human Fibroblast Conditioned Media, Water (Aqua), Glycerin, Simmondsia Chinensis (Jojoba) Seed Oil, Xantham Gum, Hydroxyethyl Acrylate/Sodium Acryloyldimethyl Taurate Copolymer, Squalane, Polysorbate 60, Rosemarinus Officinalis (Rosemary) Leaf Oil, Lactic Acid, Chlorphenesin

Harris, Mistrangelo & Hill (2008)

# General Treatment Guidelines:

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# Models for Initiating Discussion and Treatment of FSD

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## ALLOW:

Ask, Legitimize, Limitations, Open up,  
Work together

- Ask the patient about sexual function and activity
- Legitimize problems, and acknowledge that dysfunction is a clinical issue
- Identify limitations to the evaluation of sexual dysfunction
- Open up the discussion, including potential referral
- Work with the patient to develop goals and a management plan

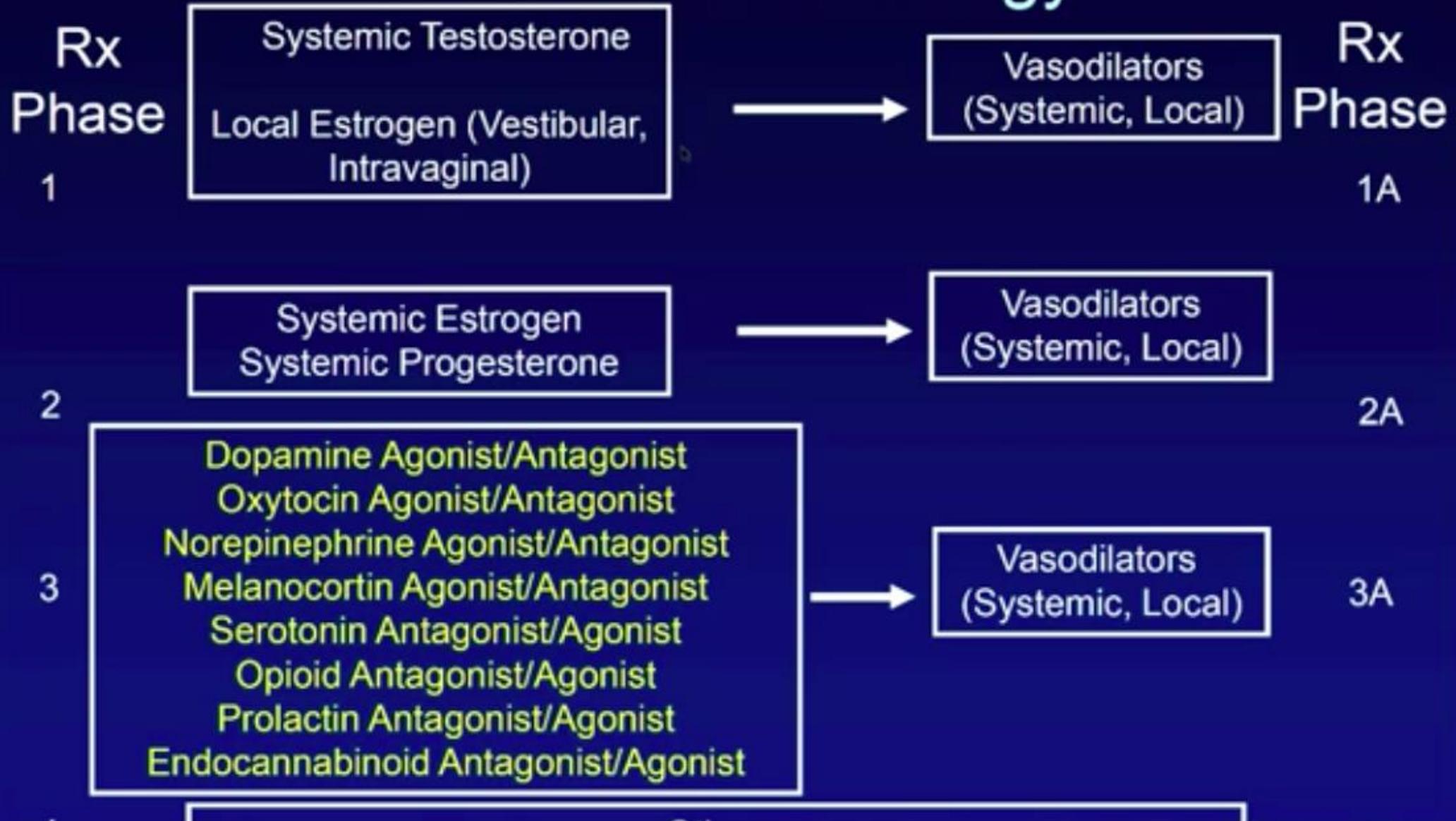
## PLISSIT

Permission, Limited Information, Specific  
Suggestions, Intensive Therapy

- Obtain permission from the patient to discuss sexuality
  - e.g., “I ask all my patients about their sexuality, is that okay to do with you now?”
- Give limited information
  - e.g., inform the patient about normal sexual functioning
- Give specific suggestions about the patient's particular complaint
  - e.g., advise the patient to practice self-massage to discover what feels good to her
- Consider intensive therapy with a sexual health subspecialist

*Sadovsky R. The role of the primary care clinician in the management of erectile dysfunction. Rev Urol. 2002;4(suppl 3):S54-S63.*

# Sexual Pharmacology



# High Inhibition, Low Excitation Sexual Dysfunction

## Dopamine Agonists

Bupropion 75 – 150 mg/day  
 Cabergoline 0.5 mg Q M/Th  
 Ropinirole 0.25 mg QD – TID  
 Rotigotine Transdermal System 1mg/day



## PDE 5 Inhibitors

Sildenafil 25 – 100 mg  
 Tadalafil 5 – 20 mg  
 Vardenafil 5 – 20 mg  
 Stendra 50 – 200 mg

## Oxytocin (Pitocin)

Oxytocin Lozenge 250 U – one hour before sexual activity – may increase up to 3 at one time



## Serotonin Antagonists

Buspirone 10 - 15 mg BID

## Opioid Antagonists

Naltrexone 50 mg/day

## Amphetamine

Phentermine has some similarity with amphetamine and stimulates release of norepinephrine and to much lesser extent dopamine

Phentermine 30 mg – 30 min prior to sexual activity

## Amphetamine

Amphetamines are thought to block the reuptake of norepinephrine and dopamine into the presynaptic neuron and increase the release of these monoamines into the extraneuronal space

Amphetamine, dextroamphetamine mixed salts: 10 mg (2.5 mg – 20 mg) – take 30 min prior to sexual activity. If taken after 2:00 PM, difficulty with sleep should be

## Progesterone

Progesterone can activate synthesis of allopregnanalone – may have antidepressant, anxiolytic, stress-reducing, rewarding, prosocial, antiaggressive, **prosexual**, sedative, pro-sleep, cognitive and memory-impairing, analgesic, anesthetic, anticonvulsant, neuroprotective, and neurogenic effects

Micronized progesterone 200 - 1000 mg – 2 hours prior to

## Screening

- Baseline testosterone levels (free and total)
- Baseline lipid profile, baseline liver enzyme levels
- Mammography, Papsmear

## Initiate Therapy

- Combination product (Estratest or Estratest hs)
- Methyltestosterone (Android), 1.25 to 2.5 mg daily
- Micronized oral testosterone, 5 mg twice daily
- Testosterone propionate 2 percent in petroleum applied daily to every other day
- Testosterone injectables/pellets

## Reevaluation

- Repeat testosterone levels, lipid profile, liver enzyme levels 12 weeks
- Monitor symptoms, side effects

## Continued Therapy

- Taper to lowest effective dosage¶
- Monitor lipid levels, liver enzyme levels once or twice yearly
- Routine Pap smear and mammography schedules

# Clinical Recommendations

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VIEW FULL TABLE

## **SORT: KEY RECOMMENDATIONS FOR PRACTICE**

| <i>CLINICAL RECOMMENDATIONS</i>   | <i>EVIDENCE RATING</i> | <i>REFERENCES</i> |
|---|------------------------|-------------------|
| Local estrogen therapy is recommended for the treatment of dyspareunia associated with vulvovaginal atrophy.                                  | C                      | 8                 |
| Testosterone added to hormone therapy improves sexual function in surgically or naturally menopausal women.                                   | B                      | 25–29             |
| Sexual pain disorders should be treated with a multidimensional and multidisciplinary approach if the cause is unknown or not easily treated. | C                      | 9                 |

*A = consistent, good-quality patient-oriented evidence; B = inconsistent or limited-quality patient-oriented evidence; C = consensus, disease-oriented evidence, usual practice, expert opinion, or case series. For information about the SORT evidence rating system, see page 579 or <http://www.aafp.org/afpsort.xml>.*

# Testosterone Replacement Therapy (TRT) in Women

32

## ► Research Studies:

- Turna B et al. Women with low libido: correlation of decreased androgen levels with female sexual function index. *Int J Import Res.* 2004 Dec 09
- Padero MC et al. Androgen supplementation in older women: too much hype, not enough data. *J Am Geriatr Soc* 2002 Jun; 50(6):1131-40
- Dimitrakakis C et al. Breast cancer incidence in women using testosterone in addition to usual hormone therapy. *Menopause* 11 (5) 2004.

# Published Article

## **Menopause Symptoms in a Transsexual Man**

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# AROUSAL DISORDERS

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Limited to the use of commercial lubricants, vitamin E and mineral oils

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Encouraging adequate foreplay or the use of vibrators to increase stimulation.

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Taking a warm bath before intercourse

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Alleviate anxiety by employing distraction techniques

---

Hormone (Testosterone, estrogen, progesterone, Thyroid hormone optimization. Urogenital atrophy is the most common cause of arousal disorders in postmenopausal women.

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Investigators recognize that small-vessel atherosclerotic disease of the vagina and clitoris may contribute to arousal disorders and are exploring vasoactive medications as treatment.

# ORGASMIC DISORDERS

35

Causes: sexual  
inexperience,  
insufficient  
stimulation,  
chronic  
disease

Treatment:  
maximize  
stimulation

Kegel  
Exercises

Therapy  
referral

# SEX PAIN DISORDERS

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## Approach

- Pain control strategies
- Therapy and counseling
- Muscle relaxation and vaginal dilatation

## Refer

- Longstanding dysfunction
- Multiple dysfunctions
- Current or past abuse
- Psychologic disorder or acute psychologic event Unknown etiology
- No response to therapy

# CONCLUSION

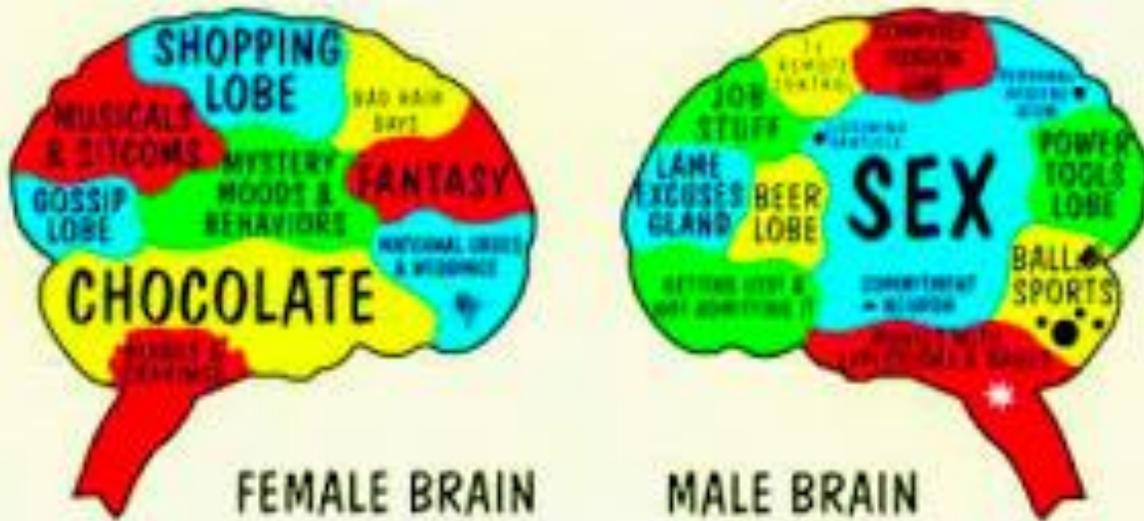
Health providers should  
continuously  
seek appropriate evidence-based  
strategies  
to meet the sexual health needs  
of our clients..



# Questions

38

**So that explains it.**



# References

39

Dimitrakakis C et al. Breast cancer incidence in women using testosterone in addition to usual hormone therapy. *Menopause* 11 (5) 2004.

Frank, J., Mistretta, P., & Will, J. (2008). Diagnosis and treatment of female sexual dysfunction. *American Family Physician*, 77(5), 635-642. Retrieved March 7, 2016, from <http://www.aafp.org/afp/2008/0301/p635.html>

Padero MC et al. Androgen supplementation in older women: too much hype, not enough data. *J Am Geriatr Soc* 2002 Jun; 50(6):1131-40

Phillips, N. (2000). Female sexual dysfunction: Evaluation and treatment. *American Family Physician*, 1(62), 1st ser., 127-136. Retrieved March 7, 2016, from <http://www.aafp.org/afp/2000/0701/p127.html>

Runels, C. (2014). Activate the female orgasm system.

Sadovsky R. The role of the primary care clinician in the management of erectile dysfunction. *Rev Urol.* 2002;4(suppl 3):S54-S63.

Turna B et al. Women with low libido: correlation of decreased androgen levels with female sexual function index. *Int J Import Res.* 2004 Dec 09

Vaginal Rejuvenation System. (n.d.). Retrieved March 07, 2016, from [http://www.celapure.com/?page\\_id=34](http://www.celapure.com/?page_id=34)