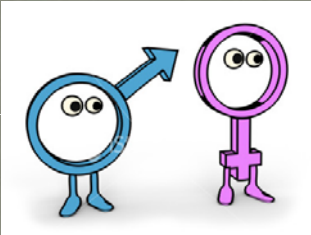
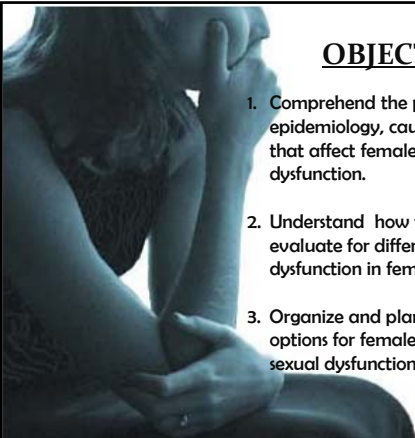


# Female Sexual Dysfunction (FSD)

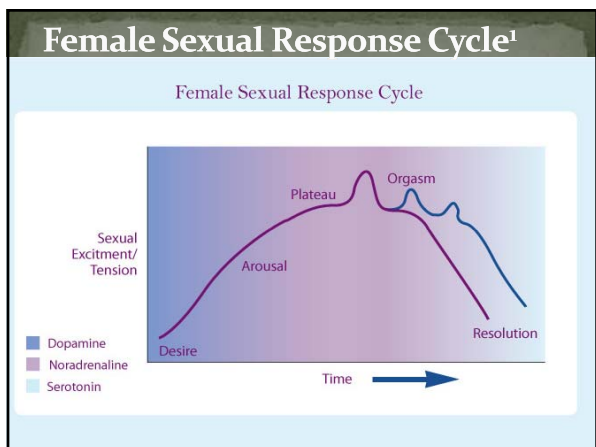


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## OBJECTIVES

1. Comprehend the prevalence, epidemiology, causes, and factors that affect female sexual dysfunction.
2. Understand how to diagnostically evaluate for different types of sexual dysfunction in females.
3. Organize and plan treatment options for females affected with sexual dysfunction.



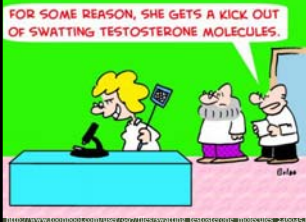
## Endocrinology

- Role of Estrogens<sup>2</sup>
  - Estradiol
  - Estrone
  - Estril



- Role of Androgens<sup>3-11</sup>

FOR SOME REASON, SHE GETS A KICK OUT OF SWATTING TESTOSTERONE MOLECULES.



## Sex Hormones/Neurotransmitters<sup>12</sup>

Sex Hormone/Neurotransmitter	Affected Function	Effect	Comments
Dopamine (DA)	Desire, Arousal	(+)	Promote willingness to continue sexual activity after initiation
Estrogen	Arousal, Desire	(+)	Deficiency= vaginal atrophy, ↓ lubrication, vasocongestion, sensation
Nitric oxide	Vasocongestion of clitoral tissue	(+)	Adequate levels of estrogen and testosterone may be needed
Norepinephrine (NE)	Arousal	(+)	
Oxytocin	Receptivity, orgasm	(+)	↑ perineal contractions with orgasm
Progesterone	Receptivity	(+)	Antiestrogenic
Prolactin	Arousal	(-)	
Serotonin	Arousal, Desire	(+/-)	Inhibits NE and DA; facilitate uterine contractions during orgasm
Testosterone	Desire, Initiation	(+)	Low levels not clearly associated
Vasoactive intestinal peptide	Vasocongestion	(+)	

## Epidemiology<sup>13</sup>

- Female sexual concerns: 40%
- Female distressing sexual issues: 12-25%
- Most common complaint: Decreased desire (although the cause is rarely just one aspect of sexuality)
- Female > Males complain about sexual dysfunction even in healthy marital relationships
- Prevalence of Female Sexual Problems Associated with Distress and Determinants of Treatment Seeking (PRESIDE)

### Risk Factors<sup>2</sup>

Age/Menopause	Endocrine/Other
Psychiatric/Neurologic	<b>Diabetes</b>
Depression: 17-26% <sup>14</sup>	Hyperprolactinemia
Antipsychotics <sup>15,16</sup>	Renal Failure/Dialysis
SSRI's: 30-50% <sup>17</sup>	<b>Hypertension</b>
Gynecologic	Medications/Substances
<b>Childbirth</b>	β-blockers
80-93%: 3 months postpartum <sup>18</sup>	Hormonal contraceptives
Pelvic/Bladder dysfunction	<b>Nicotine</b>
11-45%: Urinary Incontinence <sup>5</sup>	Alcohol
Endometriosis	
Uterine fibroids	

### Diagnostic Evaluation<sup>1, 19</sup>:

Hypoactive Sexual Desire Disorder	Genital Sexual Arousal disorder
Female Sexual Arousal Disorder	Combined Subjective/Genital
Female Orgasmic Disorder	Persistent Genital Arousal Disorder
Dyspareunia	Sexual Aversion Disorder
Vaginismus	

### Sexual History

- Patient must feel comfortable and safe
  - Non-judgmental, accepting attitude with empathy
- Barriers:
  - Embarrassment
  - Environment
  - Terminology
- The Brief Sexual Symptom Checklist<sup>20</sup>

### Initiating Discussion

- **ALLOW<sup>20</sup>**
  - Ask
  - Legitimize
  - Limitations
  - Open
  - Work
- **PLISSIT<sup>20</sup>**
  - Permission
  - Limited Information
  - Specific Suggestions
  - Intensive Therapy

### Physical Examination<sup>21</sup>

Finding	Potential Causes	Sexual Symptoms
<b>Genitourinary</b>		
Cystocele, Rectocele, Uterine prolapse		↓ desire (from embarrassment), dyspareunia
Retroverted uterus	Endometriosis	Deep dyspareunia
Hypertonicity of pelvic muscle	Vaginismus, Vestibulities	Dypareunia
Sparse pubic hair	Low androgen level	↓ desire
Tender points along vestibule	Vestibulities	Dyspareunia
Vaginal discharge	Infection	Dyspareunia
Vaginal/Labial atrophy	Low estrogen level	Dyspareunia, ↓ arousal
Vulvar skin abnormalities	Lichen sclerosus	Dyspareunia
<b>Other</b>		
Abnormal blood pressure	Atherosclerotic PVD	↓ arousal
Galactorrhea	Prolactinoma	↓ desire
Musculoskeletal abnormal	Osteoarthritis	↓ desire; ↓ arousal
Neuropathy	Neurologic, Diabetes	↓ desire or arousal, anorgasm
Pallor	Anemia	↓ desire or arousal
Thyroid enlargement	Hypothyroidism	↓ desire or arousal

### Treatment: Medication Induced<sup>22</sup>

- Dose reduction
- Drug holidays
- Switching medication
  - Bupropion 100 to 450 mg (immediate release)
  - Mirtazapine 15 to 45 mg
- Await tolerance development
- Antidotes
  - Cyproheptadine 2 to 16 mg
  - Buspirone 15 to 60 mg
  - Nefazodone and mianserin
  - Amantadine
  - Methylphenidate
  - Yohimbine
  - Bethanechol
  - Gingko biloba

### A Randomized, Placebo-Controlled, Crossover Study of Ephedrine for SSRI-Induced Female Sexual Dysfunction

Questionnaire item	Baseline 1 (weeks 1-2)	Placebo (weeks 3-5)	Ephedrine (weeks 6-8)
1. Sexual desire	1.49 (0.16)	1.95 (0.18)	<b>1.79 (0.18)</b> ←
2. Sexual arousability	0.99 (0.15)	1.37 (0.18)	1.21 (0.18)
3. Lack of vaginal lubrication	1.34 (0.29)	1.44 (0.34)	1.36 (0.29)
4. Orgasm ability	1.09 (0.14)	1.39 (0.14)	1.29 (0.19)
5. Orgasm intensity/pleasure	0.89 (0.18)	1.39 (0.17)	<b>1.25 (0.19)</b> ←
6. Sexual dissatisfaction	2.18 (0.17)	1.86 (0.2)	1.91 (0.19)

### Sildenafil Treatment of Women With Antidepressant-Associated Sexual Dysfunction

A Randomized Controlled Trial

Outcome	Mean (SD)				Change from baseline	
	Placebo (n=49)		Sildenafil (n=49)		Mean	p value
CGIS	Baseline	Study End	Baseline	Study End	0.8	0.001
	4.7 (0.9)	3.6 (0.9)	4.8 (0.7)	2.8 (1.1)		
ITT-BCF	Baseline	Study End	Baseline	Study End	0.6	0.03
	4.7 (0.9)	3.8 (1.2)	4.8 (0.7)	3.2 (1.4)		
SFQ	Baseline	Study End	Baseline	Study End	2.1	0.01
	7.9 (2.9)	8.6 (3.9)	5.9 (3.4)	8.6 (3.9)		
ASEX	Baseline	Study End	Baseline	Study End	0.5	0.01
	4.8 (0.8)	4.5 (1)	5.2 (0.8)	4.3 (1.2)		
UNM-SFI	Baseline	Study End	Baseline	Study End	0.7	0.01
	5.6 (1.2)	5 (1.4)	5.9 (1.1)	4.6 (1.6)		

### Treatment: Hypoactive Sexual Desire Disorder<sup>5</sup>

- Nonpharmacologic
  - Patient education
  - Therapy
  - Contributing Factors
- Pharmacologic
  - Testosterone (non-FDA)
    - 300 mcg daily transdermally
  - Estrogen
    - Topical/systemic

### Treatment: Sexual Arousal Disorder<sup>5</sup>

- Education
- Eros Clitoral Therapy Device (Urometric)

### Treatment: Orgasmic Disorder<sup>5</sup>

- Cognitive behavior therapy
- Sensate focus
- Directed masturbation
- Bupropion 100-450 mg

### Treatment: Sexual Pain Disorder<sup>5</sup>

- Address underlying cause
  - Infection
  - Vaginal Atrophy
  - Endometriosis
- Physiotherapy
- Psychotherapy
- Cognitive Behavior
- Pharmacologic Treatment
  - Antibiotics (for underlying infections)
  - Lidocaine ointment
  - Neuropathic pain treatments (i.e. TCA, gabapentin)
  - Intravaginal cromolyn

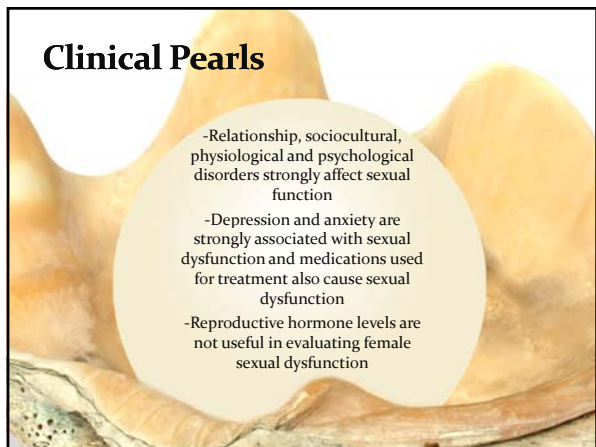
### Other Pharmacological Treatments<sup>22</sup>

- Estrogen 0.3 mg - 0.625 mg PO/Vag/IM/Transdermal
  - Reduce dryness and irritation
  - Increased risk of endometrial cancer (dose related)
  - Increased risk of gallbladder disease and VTE
- Testosterone 150 mcg – 300 mcg Transdermally
  - Increased desire
  - Increased breast cancer
  - Long term: serious hepatic complications
- Combination
  - Increased libido; decreased hypoactive sexual desire disorder

### Other Pharmacological Treatments<sup>22</sup>

- PDE-5 Inhibitors
  - Increased blood flow to clitoral tissue; enhancing sexual function
  - Flushing, headache, rhinitis, nausea
- Prostaglandins
  - Alprostadil gel/cream/liquid applied topically (not intraurethral) to vulva and clitoris
    - Vasodilatation, vaginal lubrication, sexual arousal
- Dopamine
  - Bupropion (dopamine agonist)
    - Increased sexual desire
- Melanocortin agonists
  - Bremelanotide (alpha-MESH analogue)
    - Increased sexual arousal and orgasms
    - Blood pressure concerns have suspended any further studies

### Clinical Pearls



- Relationship, sociocultural, physiological and psychological disorders strongly affect sexual function
- Depression and anxiety are strongly associated with sexual dysfunction and medications used for treatment also cause sexual dysfunction
- Reproductive hormone levels are not useful in evaluating female sexual dysfunction

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### True/False



1. In a healthy marital relationship, the percentage of males that complained about sexual dysfunction was higher than the percentage of females.
2. Nicotine stimulates sexual arousal in females.
3. Sexual dysfunction in females is typically affected by one aspect of sexuality (i.e. desire or arousal).