

Adult Sexual Dysfunction

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ESSENTIALS OF DIAGNOSIS

- ▶ Disturbance in one or more aspects of the sexual response cycle.
- ▶ Cause is often multifactorial, associated with medical conditions, therapies, and lifestyle.

▶ General Considerations

Sexual dysfunction is a disturbance in one or more of the aspects of the sexual response cycle. It is a common problem that can result from communication difficulties, misunderstandings, and side effects of medical or surgical treatment, as well as underlying health problems. Because sexual difficulties often occur as a response to stress, fatigue, or interpersonal difficulties, addressing sexual health requires an expanded view of sexuality that emphasizes the importance of understanding individuals within the context of their lives and defining sexual health across physical, intellectual, emotional, interpersonal, environmental, cultural, and spiritual aspects of their lives and their sexual orientation. Family physicians are ideally situated to address the sexual health needs of both men and women, and it is likely that the therapeutic options for addressing these needs will continue to expand over the next decade.

Sexual dysfunction is extremely common. A survey of young to middle-aged adults found that 31% of men and 43% of women in the general population reported some type and degree of sexual dysfunction. The prevalence of sexual concerns and difficulties is even higher in clinical populations.

Recognition of sexual dysfunction is important whether specific treatment is available or desired. Sexual dysfunction may be the initial manifestation of significant underlying disease or provide a marker for disease progression and severity. It should be a consideration when managing a number of chronic medical conditions.

Sexual dysfunction is positively correlated with low physical and emotional relationship satisfaction, as well as low general happiness. Despite this, only 10% of men and 20% of women with sexual dysfunction seek medical care for their sexual difficulties. The key to the identification of sexual function disorders is for the provider to inquire about their presence. A discussion of sexual health can be initiated in a variety of ways. Educational material or self-administered screening forms, placed in the waiting area or the examination rooms, send the message that sexual health is an important topic that is discussed in the clinician's office. [Table 18-1](#) lists several questionnaires that can be incorporated into self-administered patient surveys for office practices.

Sexual history can be included as part of the social history, as part of the review of systems under genitourinary systems, or in whatever manner seems most appropriate to the clinician. There are many other opportunities to bring a discussion of sexual health into the clinical encounter, as outlined in [Table 18-2](#). Clinician anxiety may be reduced by asking the patient for permission prior to taking the sexual history.

Once the history confirms the existence of sexual difficulties, obtain as clear a description as possible of the following elements: the aspect of the sexual response cycle most involved, the onset, the progression, and any associated medical problems. Asking the patient what he or she believes to be the cause can help the clinician identify possible relationship, health, and iatrogenic etiologies. Asking the patient what he or she has tried to do to resolve the problems and clarifying the patient's expectations for resolution can help facilitate an appropriate therapeutic approach. Involving the partner in both identification and subsequent management can be very valuable.

Sexual dysfunction is associated with many factors, including medical conditions and therapies and lifestyle choices ([Table 18-3](#)). In some instances the underlying medical condition may be the cause of the sexual dysfunction (eg, arterial

Table 18-1. Sexual health screening questionnaires.

Sexual Health Inventory for Men (SHIM)
 International Index of Erectile Function (IIEF)
 World Health Organization (WHO) Intensity Score
 Androgen Deficiency in the Aging Male (ADAM)
 Female Sexual Function Index (FSFI)
 Sexual Energy Scale
 Brief Index of Sexual Function Inventory (BISF-W)
 Changes in Sexual Functioning Questionnaire (CSFQ)

vascular disease causing erectile dysfunction). In other instances the sexual dysfunction contributes to the associated condition (eg, erectile dysfunction leads to loss of self-esteem and depression). Sexual difficulties can begin with one aspect of the sexual response cycle and subsequently affect other aspects; for example, arousal difficulties can lead to depression, which can then negatively affect sexual interest.

Nusbaum MR, Hamilton CD: The proactive sexual health inquiry. *Am Fam Physician* 2002;66:1705. [PMID: 12449269]

DISORDERS OF DESIRE

► General Considerations

Difficulties with sexual desire are the most common sexual concern. Over 33% of women and 16% of men in the general population report experiencing an extended period of lack of

Table 18-2. Sexual health inquiry.

Review of systems or social history.
 What sexual concerns do you have?
 Has there been any change in your (or partner's) sexual desire or frequency of sexual activity?
 Are you satisfied with your (or partner's) present sexual functioning? Is there anything about your sexual activity (as individuals or as a couple) that you (or your partner) would like to change?
 Counseling about healthy life style (smoking or alcohol cessation, exercise program, weight reduction).
 Discussing effectiveness and side effects of medications.
 Inquire before and after medical event or procedures likely to impact sexual function (myocardial infarction, prostate surgery).
 Inquire when there is about to be or has been a life cycle change such as pregnancy, new baby, teenager, children leaving the home, retirement, menopause, "discovery" of past abuse.

Sources: Nusbaum MRH: *Sexual Health*. American Academy of Family Physicians, 2001; Nusbaum MR, Hamilton C: The proactive sexual health inquiry: key to effective sexual health care. *Am Fam Physician* 2002;66:1705; and Nusbaum M, Rosenfeld J: *Sexual Health Across the Lifecycle: A Practical Guide for Clinicians*. Cambridge University Press, 2004:20.

Table 18-3. Factors associated with sexual dysfunction.

Aging
 Chronic disease
 Diabetes mellitus
 Heart disease
 Hypertension
 Lipid disorders
 Renal failure
 Vascular disease
 Endocrine abnormalities
 Hypogonadism
 Hyperprolactinemia
 Hypo/hyperthyroidism
 Life style
 Cigarette smoking
 Chronic alcohol abuse
 Neurogenic causes
 Spinal cord injury
 Multiple sclerosis
 Herniated disc
 Penile injury/disease
 Peyronie plaques
 Priapism
 Pharmacologic agents
 Psychological issues
 Depression
 Anxiety
 Social stresses
 Trauma/injury
 Pelvic trauma/surgery
 Pelvic radiation

sexual interest. Other investigators have reported prevalence rates as high as 87% in specific populations. Women who were younger, separated, black, less educated, and of lower socioeconomic status reported the highest rates. Among men, the same demographics as well as increasing age were associated with the highest rates.

► Classification

Decrease in sexual desire can be related to decrease or loss of interest in or an aversion to sexual interaction with self or others, or both. It can be lifelong (primary) or acquired (secondary), generalized or situational in occurrence. Sexual aversion is characterized by persistent or extreme aversion to, and avoidance of, sexual activity. Separating these difficulties can be difficult or impossible. For example, a patient who has experienced sexual trauma may have difficulties with subsequent partners and ultimately develop an aversion to sexual activity.

A common situation in clinical practice is discrepancy in sexual desire within a partnership, in which partners differ in their level of sexual desire. Although most couples negotiate a workable solution, in some instances it may be significant enough to cause relationship dissatisfaction.

It can also be a marker for extrarelationship affairs or domestic violence.

► Pathogenesis

Changes in or a loss of sexual desire can be the result of biological, psychological, or social and interpersonal factors. Numerous medical conditions directly or indirectly affect sexual desire (Table 18-4). Illnesses and medications that decrease relative androgen levels, increase the level of sex hormone-binding globulin, or interfere with endocrine and neurotransmitter functioning can negatively affect desire. Examples include exogenous hormones (eg, estrogens and progestones), diabetes, and depression, as well as erectile difficulties due to arterial vascular disease or dyspareunia due to estrogen deficiency-induced atrophic vaginitis. In both men and women, sexual desire is linked to levels of androgens, testosterone, and dehydroepiandrosterone (DHEA). In men, testosterone levels begin to decline in the fifth decade and continue to do so steadily throughout later life. For both genders, DHEA levels begin to decline in the thirties, decrease steadily thereafter, and are quite low by age 60.

Decreased sexual desire is a common manifestation of some psychiatric conditions, particularly affective disorders. Several medications can negatively affect desire and the sexual response cycle (Table 18-5). The agents most commonly associated with these changes are psychoactive drugs, particularly antidepressants, and medications with antiandrogen effects. Many psychosocial issues affect sexual desire. Factors as widely varied as religious beliefs, primary sexual interest in

Table 18-4. Common medical conditions that may affect sexual desire.

Pituitary/hypothalamic
Infiltrative diseases/tumors
Endocrine
Testosterone deficiency
Castration, adrenal disease, age-related bilateral salpingo-oophorectomy, adrenal disease
Thyroid deficiency
Endocrine-secreting tumors
Cushing syndrome
Adrenal insufficiency
Psychiatric
Depression and stress
Substance abuse
Neurologic
Degenerative diseases/trauma of the central nervous system
Urologic/gynecologic (indirect cause)
Peyronie plaques, phimosis
Gynecologic pain syndromes
Renal
End-stage renal disease, renal dialysis
Conditions that cause chronic pain, fatigue, malaise
Arthritis, cancer, chronic pulmonary or hepatic disease

Table 18-5. Drugs most commonly associated with sexual dysfunction.

Drug Class	Negative Effect on Sexual Response Cycle
Antihypertensives	Arousal difficulties
Diuretics	Arousal and desire
Thiazides	
Spironolactone	
Sympatholytics	
Central agents (methyldopa, clonidine)	Arousal and desire
Peripheral agents (reserpine)	Arousal and desire
α-Blockers	Arousal and orgasm
β-Blockers (particularly nonselective agents)	Arousal and desire
Psychiatric medications	
Antipsychotics	Multiple phases of sexual function
Antidepressants	
Tricyclic antidepressants	Arousal and desire
MAO inhibitors	Multiple phases of sexual function
SSRIs	Arousal and orgasm
Anxiolytics	
Benzodiazepines	Arousal difficulties
Antiandrogenic agents	
Digoxin	Arousal and desire
H ₂ receptor blockers	Arousal and desire
Others	
Alcohol (long-term, heavy use)	Arousal and desire
Ketoconazole	Arousal and desire
Niacin	Arousal and desire
Phenobarbital	Arousal and desire
Phenytoin	Arousal and desire

MAO, monoamine oxidase; SSRI, selective serotonin reuptake inhibitor.

individuals outside of the main relationship, specific sexual phobias or aversions, fear of pregnancy, lack of attraction to partner, and poor sexual skills in the partner can all diminish sexual desire.

► Clinical Findings

A. Symptoms and Signs

The evaluation of decreased sexual desire should include a detailed sexual problem history, which may clarify difficulties with sexual desire, identify predisposing conditions, and help establish a therapeutic plan. In addition to loss of desire, a diminished sense of well being, depression, lethargy, osteoporosis, loss of muscle mass, and erectile dysfunction are other manifestations of androgen deficiency.

The physical examination in patients with an acquired generalized loss of desire should be directed toward the

identification of unrecognized conditions such as endocrine abnormalities (eg, hypogonadism, hypothyroidism).

B. Laboratory Findings

An assessment of hormone status may be helpful. In men, an assessment of androgen status is indicated. In women, an assessment of both androgens and estrogens is indicated.

Assessment of the total plasma testosterone level, obtained in the morning, is the most readily available study. In most men, levels below 300 ng/dL are symptomatic of hypogonadism; however, 200 ng/dL might be a more appropriate cutoff for diagnosis in older men. Free testosterone more accurately reflects bioavailable androgens. Levels less than 50 pg/mL suggest hypogonadism.

Measurement of other androgenic agents formed earlier in the steroid hormone synthesis pathway are advocated by some authorities. If low testosterone is confirmed, further endocrine assessment and imaging is indicated to determine the specific underlying etiology.

► Treatment

Treatment is directed at the underlying etiology and consists of both nonspecific and specific therapy. Asking sex partners about each other's sexual function can be useful.

Educating couples about the impact of extraneous influences—fatigue, preoccupation with child rearing, work stress, and interpersonal conflict—can improve awareness of these issues. Encouraging couples to set time aside for themselves, to schedule “dates,” can be very effective. Educating partners about gender generalities and encouraging communication about sexual needs and desires can be helpful. The quality of the relationship appears to be a critical component in women's sexual response cycle.

Although largely unstudied, the quality of the relationship is likely of equal import in men's sexual interaction. An emotionally and physically satisfying relationship enhances sexual desire and arousal and has a positive feedback on the quality of the relationship. The importance of allowing time for sexual relations, incorporating the senses, understanding what is pleasing to one's partner, and incorporating seduction cannot be overemphasized.

The impact of potentially reversible medical conditions or medications on sexual desire should be addressed. Treating organic etiologies such as depression, hypothyroidism, hyperprolactinemia, and androgen deficiency can often restore sexual interest.

Options available when decreased sexual desire is attributed to medical therapy can be challenging. Treatment approaches can include lowering the dosage, suggesting drug holidays, discontinuing potentially offensive medications, or switching to a different agent. Where continuation of therapy is indicated, adding specific agents to address the sexual manifestations can be useful.

In men and women with acquired decreased sexual interest, hormone supplementation may be considered.

A. Androgen Replacement

The goal of replacement therapy is to raise the level to the lowest physiologic range that promotes satisfactory response (Table 18-6). For both genders, oral testosterone is not recommended due to the prominent first-pass phenomenon and the potential for significant liver toxicity. Intramuscular injections result in dramatic fluctuations in blood levels. Topical preparations offer the advantage of consistent levels in the normal range. Local skin reactions are common with patches. Topical gels tend to have fewer skin side effects.

A diagnosis of androgen insufficiency should only be made in women who are adequately estrogenized, whose free testosterone is at or below the lowest quartile of the normal range for the reproductive age (20-40 years), and who present with clinical symptoms.

Androgen supplementation can be helpful for desire and arousal difficulties in both men and women. Dehydroepiandrosterone sulfate (DHEAS) is available over the counter and is dosed 25-75 mg/d based on response. Transdermal testosterone can be compounded as 1%-2% cream, gel, or lotion that can be applied to the labial and clitoral area. Oral methyltestosterone, available as Estratest for women, has been used safely for years. Oral administration of methyltestosterone is a less preferred route given erratic absorption and concerns about liver effects.

Exogenous estrogens and progestins, in the form of hormone replacement therapy, lower physiologically available androgens and can contribute to decreased sexual interest. Addition of androgens, methyltestosterone, or DHEAS can offset this negative impact. If no benefit occurs from this change, the physician should reassess the quality of the sexual relationship and also consider discontinuing the exogenous hormones. All oral contraceptive agents lower bioavailable androgen levels as a result of high sex hormone-binding globulin levels. Changing to oral contraceptive pills with greater androgen activity, such as those containing norgestrel, levonorgestrel, and norethindrone acetate, may be an effective change (Table 18-7).

B. Contraindications and Risk of Testosterone Therapy

Because testosterone treatment may stimulate tumor growth in androgen-, estrogen-, or progesterone-dependent cancers, it is contraindicated in men with prostate cancer and in men and women with a history of breast cancer. Although it is known that testosterone accelerates the clinical course of prostate cancer and may stimulate the growth of previously undiagnosed prostate tumors, there is no conclusive evidence in short-term studies that testosterone therapy increases the incidence of prostate cancer.

Certain patient populations such as the elderly and patients who have a first-degree relative with prostate cancer may be at increased risk. Preexisting sleep apnea and hyperviscosity, including deep venous thrombosis or pulmonary

Table 18-6. Androgen therapy: agents, routes, and dosages.

Route/Agent	Dosage for Women	Dosage for Men
Oral^a Methyltestosterone Fluoxymesterone Estratest and Estratest HS Dehydroepiandrosterone	10 mg: ¼-½ tablet daily or 10 mg Monday, Wednesday, Friday 2 mg: ½ tablet daily or 1 tablet every other day Either 1.25 or 0.625 mg 25-75 mg 3 times weekly to daily ^a	10-50 mg/d 5-20 mg/d
Buccal Methyltestosterone ^c	5-25 mg daily USP tablet, 0.25 mg ^b	5-25 mg/d
Sublingual Methyltestosterone Testosterone micronized USP tablet	0.25 mg ^b	
Transdermal Testosterone patch Topical testosterone Testosterone micronized	2.5-5.0 mg applied every day or every other day 1% vaginal cream daily to clitoris and labia 1-2% gel daily to clitoris and labia ^b	4-6 mg/d 5-10 mg/d (Androderm)
Intramuscular Testosterone enanthate Testosterone propionate	200 mg/mL: 0.25-0.5 mL every 3-5 wk 100 mg/mL: ¼-½ mL every 3-4 weeks	50-400 mg every 2-4 wk 25-50 mg 2-3 times weekly

^aOral methyltestosterone, aside from the combination estratest, should be used only short term due to the risk of hepatotoxicity.

^bMust be compounded by a pharmacist.

^cGuay A: Advances in the management of androgen deficiency in women. *Med Aspects Hum Sexuality*, 2001.

Adapted from Nusbaum M, Rosenfeld J: *Sexual Health Across the Lifecycle: A Practical Guide for Clinicians*. Cambridge University Press, 2004:Chaps 6 and 7.

embolism, are relative contraindications to testosterone use. Serious hepatic and lipid changes have been associated with the use of oral preparations available in the United States. Benign prostatic hypertrophy, lipid changes, gynecomastia,

sleep apnea, and increased oiliness of skin or acne are other reported side effects.

If androgen therapy is initiated for both men and women, close follow-up is recommended to assess androgen levels, lipid profile, hematocrit levels, and liver function. Periodic assessment of the prostate-specific antigen level may be considered. Until more data regarding long-term use are available, it is probably most prudent to check androgen, hematocrit, liver, and lipid levels every 3-6 months.

Table 18-7. Relative androgenicity of progestational components of oral contraceptive agents.

Least Norethindrone (0.4-0.5 mg) ^a Norgestimate (0.18-0.25 mg) Desogestrel (0.15 mg) Ethinodiol diacetate (1.0 mg)
Medium/neutral Norethindrone (0.5-1.0 mg) ^a
Greatest Levonorgestrel (0.1-0.15 mg) Norgestrel (0.075-0.5 mg) Norethindrone acetate (1.0-1.5 mg)

^aNorethindrone (0.35 mg) without estrogen, in progestin-only oral contraceptive pills, has medium relative androgenicity.

Sources: Nusbaum MRH: *Sexual Health*. American Academy of Family physicians, 2001; and Burham T, Short R (eds): *Drug Facts and Comparisons*. Mosby, 2001.

Basson R et al: Report of the international consensus development conference on female sexual dysfunction: Definitions and classifications. *J Urol* 2000;163:888. [PMID: 10688001]

Snyder PJ: Hypogonadism in elderly men—what to do until the evidence comes. *N Eng J Med* 2004;350:440. [PMID: 14749451]

DISORDERS OF EXCITEMENT & AROUSAL

► General Considerations

Arousal disorders appear to affect 18.8% of women and 5% of men in the general population. The prevalence of arousal difficulties for both men and women is much higher in patient populations with coexisting illnesses such as depression,

diabetes, and heart disease. Abuse also has a negative effect on arousal and sexual health.

► Pathogenesis

Arousal difficulties most likely result from a mix of organic and psychogenic etiologies. Organic causes include vascular, neurogenic, and hormonal etiologies. Vascular arterial or inflow problems are by far the most common. Regardless of the primary etiology, a psychological component frequently coexists. Although influenced by other systems, arousal is primarily a neurovascular process. Optimal function requires an intact nervous system and responsive arterial vasculature. Sexual stimulation results in nitric oxide release, which initiates a cascade of events leading to a dramatic increase in blood flow to the penis in men and the vagina and clitoris in women. Nitric oxide enters into vascular smooth muscle cells causing an increase in the production of cyclic guanosine monophosphate (cGMP). As cGMP concentrations rise, vascular smooth muscle relaxes, allowing increased arterial blood flow. The cGMP buildup is countered by the enzyme phosphodiesterase type 5 (PDE-5).

Inhibiting the action of PDE-5 results in higher levels of cGMP, causing increased and sustained vasodilation. Arousal disorders appear to increase with age, but it is more likely that increase in chronic illnesses and their therapeutic intervention are the root cause. Life style factors such as tobacco, alcohol, exercise, and diet also contribute.

► Clinical Findings

A. Symptoms and Signs

The first step in assessment is to ensure that arousal problems are the primary problem. Some men may complain of erectile difficulties but on detailed questioning may not be experiencing erections due to lack of desire or may not be able to sustain the erection due to premature ejaculation. Detailed information about onset, duration, progression, severity, and association with medical conditions, medications, and psychosocial factors will enable the provider to identify if the patient's problem has a primarily organic or psychogenic etiology.

Physical examination should be focused and directed by the history. The clinician should assess overall health, including life style topics such as exercise, tobacco use, and alcohol use. Additionally, screening for manifestations of affective, cardiovascular, neurologic, or hormonal etiology should be performed.

B. Laboratory Findings

If not previously done, basic laboratory studies such as lipid profile and fasting blood glucose should be considered to identify unrecognized systemic disease that may predispose to vascular disease. Measurement of androgen levels

(including DHEA) should be performed if androgen supplementation is being considered.

► Treatment

Chronic medical conditions should be treated or controlled to reverse or slow the progression of associated conditions. Medications contributing to arousal problems (eg, antihypertensive agents) should be replaced with other agents, if possible, or reduced in dosage. Potentially reversible causes should be addressed.

Maximizing glucose control in diabetic patients, moderating alcohol consumption, encouraging exercise, and smoking cessation are important life style changes necessary to maintain healthy sexual response. Nitric oxide appears to be androgen sensitive, so correction of androgen levels may be necessary before PDE-5 inhibitors will be successful. Sexual lubricants such as Astro-glide, Replens, and K-Y jelly can add lubrication and enhance sensuality.

A. Oral Agents

Sildenafil, vardenafil, and tadalafil are PDE-5 inhibitors approved for the treatment of male erectile dysfunction. Inhibitors do not result in spontaneous erection and require erotic or physical stimulation, or both, to be effective. PDE-5 inhibitors are contraindicated in patients who take organic nitrates of any type. Nitrates are nitric oxide donors. The concomitant use of a PDE-5 inhibitor and a nitrate can result in profound hypotension. PDE-5 inhibitors are also contraindicated in patients with recent cardiovascular events or who are clinically hypotensive.

The side effects of PDE-5 inhibitors are related to the presence of PDE-5 in other parts of the body and cross-reactivity with other PDE enzyme subtypes. A transient disturbance in color vision, characterized typically by a greenish-blue hue, is due to a slight cross-reactivity with PDE-5 isoenzyme in the retina. Because of this cross-reactivity, PDE-5 inhibitors should not be used in patients with retinitis pigmentosa. Side effects tend to be mild and transient, and include headache, flushing, dyspepsia, and rhinitis.

Although PDE-5 inhibitors are not approved by the Food and Drug Administration for use in women, it is likely that these agents will have a role in treating female arousal difficulties. One study reported significant effectiveness in improving arousal and orgasm in a group of young premenopausal women with arousal difficulties. Additionally, the frequency of sexual fantasies, sexual intercourse, and enjoyment improved. Studies of genital stimulation devices and topical warming gels have shown these adjuncts to be beneficial to sexual functioning.

B. Vacuum Constriction Devices

These devices are effective for most causes of erectile dysfunction, are noninvasive, and are a relatively inexpensive treatment option. The device consists of a cylinder, vacuum

pump, and constriction band. The flaccid penis is placed in the cylinder. Pressing the cylinder against the skin of the perineum forms an airtight seal. Negative pressure from the pump draws blood into the penis, resulting in increased firmness. When sufficient blood has entered the erectile bodies, a constriction band is placed around the base of the penis preventing the escape of blood. Following intercourse the band is removed. Side effects include penile pain, bruising, numbness, and impaired ejaculation.

C. Intracavernosal Injection

With this method, synthetic formulations of prostaglandin E₁ (alprostadil alone or in combination with other vasoactive agents) is injected directly into the corpus cavernosum. This results in spontaneous erection. Intracavernosal injection is effective in producing erection in most patients with erectile dysfunction, including some who failed to respond to oral therapy.

D. Penile Prosthesis

In patients not responding to other therapies, a permanent penile prosthesis has proven to be safe and effective in many patients. Current models have a 7- to 10-year life expectancy or longer. Overall patient satisfaction is excellent.

Caruso S et al: Premenopausal women affected by sexual arousal disorder treated with sildenafil: a double-blind, cross-over, placebo-controlled study. *BJOG* 2001;108:623. [PMID: 11426898]

Sexual Pain Syndromes

Sexual pain syndromes can negatively affect arousal for both men and women. Sexual pain syndromes occur in 14% of women and 3% of men in the general population, and over 70% of samples of female patients. Peyronie plaques or other penile deformity, priapism, and lower urinary tract symptoms can be etiologic in male sexual pain syndrome. For women, vaginitis, vestibulitis, pelvic pathology, vaginismus, and inadequate vaginal lubrication are among the etiologies of sexual pain syndromes for women. Sexual pain syndromes negatively affect desire, arousal, and thus orgasm.

Nusbaum MR, Gamble G: The prevalence and importance of sexuality concerns among female military beneficiaries. *Mil Med* 2001;166:208. [PMID: 11263020]

Nusbaum MRH et al: The high prevalence of sexual concerns among women seeking routine gynecological care. *J Fam Pract* 2000;49:229 [PMID: 1073548]

DISORDERS OF EJACULATION & ORGASM

Premature ejaculation affects 29% of men in the general population, and orgasm difficulties affect 8% of men and 24% of women. Over 80% of women in patient populations report difficulties with orgasm.

Premature ejaculation results from a shortened plateau phase. In addition to heightened sensitivity to erotic stimulation and, often, learned behavior from rushed sexual encounters, organic etiology is also likely. The ejaculatory reflex involves a complex interplay between central serotonergic and other neurons. From studies of rodents, premature ejaculation is speculated to be a dysfunction of serotonergic receptors.

Although premature ejaculation tends to improve with age by the natural lengthening of the plateau phase, it persists well into aging for many men. Like erectile dysfunction, premature ejaculation is often associated with shame and depression. Orgasmic difficulties can feed back negatively on arousal and then desire. A man with premature ejaculation can develop erectile dysfunction and ultimately have decreased sexual desire because of the emotional effects.

Difficulty or inability to achieve orgasm affects a greater number of women than men and typically results from a prolonged arousal phase caused by inadequate stimulation. Medications can also interfere. Selective serotonin reuptake inhibitors (SSRIs) raise the threshold for orgasm, which makes them highly effective treatment options for men with premature ejaculation, but highly problematic for both genders who have difficulty achieving orgasm. Medications that lower the threshold for orgasm can be very problematic for men with premature ejaculation but can be very effective for treating problems with orgasm. These include cyproheptadine, bupropion, and possibly PDE-5 inhibitors. These agents can be helpful for men with delayed ejaculation. Psychotropic agents and alcohol often cause delayed ejaculation. Medications used as rescue agents for treating sexual side effects of psychotropic agents or to lower the threshold for orgasm for women having difficulty with orgasm are also useful for treating delayed ejaculation (Table 18-8).

Retrograde ejaculation occurs when the seminal fluid is ejaculated from the posterior urethra into the bladder. This is caused by abnormal function of the internal sphincter of the urethra and can result from anatomic disruption (eg, transurethral prostatectomy), sympathetic nervous system disruptions (eg, damage from surgery), lymph node invasion, or diabetes. Retrograde ejaculation can result from interference with the sphincter function from medications such as antipsychotics, antidepressants, and antihypertensive agents as well as alcohol use. Dextroamphetamine, ephedrine, phenylpropanolamine, and pseudoephedrine are potentially effective in treating retrograde ejaculation.

Evaluation should include a history of sexual problems, medications, and quality of the relationship. Treatment approaches include discontinuing, decreasing the dosage of, or drug holidays from offending medications. Small studies have shown a benefit from rescue agents that can be added as standing (or as needed) medications (see Table 18-8). SSRIs are the treatment of choice for premature ejaculation. It is helpful if women become familiar with the type of stimulation they require for orgasm and communicate that to their partners. An excellent reference for patients is the book *Becoming Orgasmic*.

Table 18-8. Antidotes for psychotropic-induced sexual dysfunction.

Drug	Dosage
Yohimbine	5.4-16.2 mg, 2-4 h prior to sexual activity
Bupropion	100 mg as needed or 75 mg three times daily
Amantadine	100-400 mg as needed or daily
Cyproheptadine	2-16 mg a few hours before sexual activity
Methylphenidate	5-25 mg as needed
Dextroamphetamine	5 mg sublingually 1 h prior to sex
Nefazodone	150 mg 1 h prior to sex
Sildenafil	50-100 mg as needed

Sources: Nusbaum MRH: *Sexual Health*. American Academy of Family Physicians, 2001; and Maurice W: Ejaculation/orgasm disorders. In: *Sexual Medicine in Primary Care*. Mosby, 1999:192.

The resolution phase is typically not problematic for either gender, but misunderstandings of age-related changes can occur. Men, and their partners, need to understand that with increasing age the refractory period to sexual stimulation lengthens, sometimes up to 24 hours. Men may require more direct penile stimulation for sexual response as they age.

Heiman JR, LoPiccolo J: *Becoming Orgasmic: A Sexual & Personal Growth Program for Women*. Prentice Hall, 1988.

Waldinger MD: The neurobiological approach to early ejaculation. *J Urol* 2002;168:2359. [PMID: 12441918]

SEXUAL ACTIVITY & CARDIOVASCULAR RISK

Sexual activity and intercourse are associated with physiologic changes in heart rate and blood pressure. A patient's ability to meet the physiologic demands related to sexual activity should be assessed, particularly if the patient is not accustomed to the level of activity associated with sex or may be at increased risk of a cardiovascular event. Typical sexual intercourse is associated with an oxygen expenditure of 3-4 metabolic equivalents (METS), whereas vigorous sexual intercourse can expend 5-6 METS. Patients unaccustomed to the level of exercise associated with sexual activity and who have risk factors for cardiovascular events present a clinical challenge. An algorithm based on expert opinion can assist clinicians in determining which patients can be safely advised that sexual activity and treatment can be undertaken without further risk stratification and which should have further evaluation. In this algorithm patients are classified as low risk if they have fewer than three risk factors (age, hypertension, diabetes, obesity, cigarette smoking, dyslipidemias, and sedentary life style). Patients in the intermediate risk group should undergo risk stratification into either the low-risk or high-risk group. This assessment may include cardiac stress testing.

Debusk R et al: Management of sexual dysfunction in patients with cardiovascular disease: recommendations of the Princeton Consensus Panel. *Am J Cardiol* 2000;86:175. [PMID: 10913479]