Evaluation of male sexual dysfunction

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INTRODUCTION

Male sexual dysfunction has long been known to be common. Of late, knowledge of normal male sexual function and the causes of sexual dysfunction have become better understood, and more effective treatments are available. Male sexual dysfunction includes erectile dysfunction (ED), diminished libido, and abnormal ejaculation.

This topic will review the evaluation of male sexual dysfunction. An overview of male sexual dysfunction, treatment of men with sexual dysfunction, and sexual dysfunction associated with selective serotonin reuptake inhibitors (SSRIs) are discussed separately. (See "Epidemiology and etiologies of male sexual dysfunction" and "Treatment of male sexual dysfunction" and "Sexual dysfunction caused by selective serotonin reuptake inhibitors (SSRIs): Management".)

CAUSES

The following include some of the mechanisms that may be responsible for sexual dysfunction in men:

- Libido declines with testosterone deficiency [1], stress, relationship issues, depression [2], systemic illness, and in association with the use of a number of prescription and recreational drugs. (See "Epidemiology and etiologies of male sexual dysfunction".)
- There are many causes of erectile dysfunction (ED): vascular, neurologic, local penile factors, hormonal, drug induced, and psychogenic (table 1).

- Ejaculatory disorders are common problems that many men face. Ejaculatory disorders include premature ejaculation (PE), delayed ejaculation, and retrograde ejaculation.

  - PE is a male sexual dysfunction characterized by ejaculation that almost always occurs within approximately one minute of vaginal penetration and that results in distress for the male [3]. (See "Epidemiology and etiologies of male sexual dysfunction", section on 'Premature ejaculation'.)

  - Retrograde ejaculation can occur if the bladder neck sphincter is damaged during prostate surgery. It may also occur if alpha-adrenergic impulses responsible for clamping down the bladder neck sphincter fail, resulting in retrograde rather than antegrade ejaculation. Patients with longstanding diabetes can also develop retrograde ejaculation due to failure of the bladder neck to close during ejaculation. Men with retrograde ejaculation can present with infertility due to azoospermia. (See 'Ejaculatory disorders' below.)

  - Failure to ejaculate in men with adequate erectile function is a common side effect of antidepressant medication and some alpha-adrenergic antagonists such as tamsulosin [4] and silodosin [5], but it can also occur with patient/partner conflict. (See "Epidemiology and etiologies of male sexual dysfunction", section on 'Ejaculatory disorders' and "Sexual dysfunction caused by selective serotonin reuptake inhibitors (SSRIs): Management".)

EVALUATION

The evaluation of male sexual dysfunction begins with a sexual history and physical examination. The history and physical examination have been reported to have a 95 percent sensitivity but only a 50 percent specificity in determining the cause of erectile dysfunction (ED); therefore, additional diagnostic tests are needed to maximize specificity (figure 1) [6,7].

History — Important information in the history includes assessment of libido, evaluation of erectile function, determination of the rapidity of onset of ED, and assessment of risk factors for and causes of ED. It is also important to determine any reversible causes of ED. This information plus nocturnal penile tumescence (NPT) testing often points toward the cause of the sexual dysfunction (table 1 and table 2).

Sexual history — The American Urologic Association offers guidelines offer an algorithm for evaluating men with ED (figure 1) [8].

- Sexual desire or libido can be evaluated with the International Index of Erectile Function (IIEF), Sexual Health Inventory for Men (SHIM, or IIEF-5) (table 3), and Sexual Arousal, Interest, and Drive Scale (SAID) [9].

- ED can be evaluated using validated instruments, such as the IIEF (table 4) [10]. The IIEF is comprised of 15 questions. An abridged version of IIEF, the IIEF-5 (five questions and also known as the SHIM), or the IIEF-EF (six questions) have also been widely used (table 3) [11]. Another validated questionnaire that has been widely used to diagnose ED is the Erectile Dysfunction Inventory of Treatment Satisfaction (EDITS), an 11-item validated questionnaire assessing treatment satisfaction used in clinical trials for patients with ED [12]. (See 'Validated instruments to assess sexual function' below.)

- Other sexual problems, such as premature ejaculation (PE) and a history of Peyronie's disease, should be identified during the sexual history. It is important to also identify other common causes of ED and reversible risk factors for ED (see "Epidemiology and etiologies of male sexual dysfunction"). Finally, a psychosocial history should be assessed (table 5).

Rapidity of onset — Sexually competent men who had no sexual problems until "one night when they could not perform" and thereafter developed ED invariably have **psychogenic** ED (table 2). This problem may be caused by performance anxiety, issues with the current sexual partner, or some other emotional problem; psychological counseling is the preferred therapy in this setting. Radical prostatectomy or other overt genital tract trauma is a physical cause of a sudden loss of male sexual function [13]. Men who experience a traumatic pelvic fracture or genital trauma may also have psychological ED [14]. In comparison, men suffering from ED of any other cause complain that sexual function failed sporadically at first, then more consistently.

Erectile reserve — In men presenting with a complaint of inability to develop erections, the presence of **spontaneous** erections is an important clue to a psychological cause and makes a vascular or neurologic cause unlikely. Most men experience spontaneous erections during rapid eye movement (REM) sleep and often wake up with an erection, attesting to the integrity of neurologic reflexes and corpora cavernosal blood flow. Information regarding nocturnal or early morning erections can be elicited by history from patient and/or partner, but proof may require NPT testing. Complete loss of nocturnal erections is present in men with neurologic or vascular disease. (See 'Nocturnal penile tumescence testing' below.)

Nonsustained erection with detumescence after penetration is most commonly due to anxiety or venous leak from the subtunical veins. With anxiety, a conscious or subconscious concern about maintaining erectile rigidity activates an adrenergic hormone release, which is

detrimental to maintaining erectile turgor and rigidity. Sensate focus exercises may be effective in restoring erectile confidence and competence in this setting.

Assessment of interpersonal conflict — Interpersonal conflict is one of the more common, but rarely acknowledged, causes of male sexual dysfunction. Couples' counseling by someone skilled in this area can often be helpful [15-17].

Role of the partner interview — The partner is an invaluable resource to better understand the degree of ED and etiology of ED in patients. The partner can, at times, offer a perspective on the quality of the relationship as well as other sexual issues affecting the relationship. Furthermore, studies have shown that men with partners without sexual dysfunction were more likely to recover their erectile function [18]. Other studies have demonstrated that the presence of ED in a male partner has a negative impact on sexual function in women [19].

Validated instruments to assess sexual function — The most widely referenced ED instrument is the IIEF (table 4) [10], which consists of 15 items that address five domains: erectile function, orgasmic function, sexual desire, intercourse satisfaction, and overall satisfaction. An abridged five-item version of this instrument, the IIEF-5 (also known as the SHIM), has also been widely used (table 3) [11]. This instrument classifies ED severity into five categories: severe (5 to 7), moderate (8 to 11), mild to moderate (12 to 16), mild (17 to 21), and no ED (22 to 25).

Physical examination — In addition to the basic physical examination, the evaluation of the male with sexual dysfunction should include the following:

- A careful assessment of femoral and peripheral pulses as a clue to the presence of vascular ED. If pulses are normal, the presence of femoral bruits implies possible pelvic blood occlusion.
- A search for penile plaques indicative of Peyronie's disease. (See "Peyronie's disease: Diagnosis and medical management".)
- Examination of patient for lack or loss of normal male hair patterns, gynecomastia, and small testes. (See "Clinical features, diagnosis, and evaluation of gynecomastia in adults".)
- Evaluation of the cremasteric reflex, an index of the integrity of the thoracolumbar erection center. This is elicited by stroking the inner thighs and observing ipsilateral contraction of the scrotum. A normal response is cremasteric contraction with elevation of the testis.

- A search for visual field defects, present in hypogonadal men with pituitary tumors. (See "Causes of secondary hypogonadism in males".)

Laboratory studies and diagnostic tests — Appropriate laboratory tests for men with sexual dysfunction typically include fasting glucose or glycated hemoglobin (A1C) to examine for diabetes or level of glucose control, complete blood count, comprehensive metabolic profile to assess liver and kidney function, thyroid-stimulating hormone (TSH) to rule out thyroid disease, lipid profile to assess cardiac risk factors, and serum total testosterone to assess gonadal function. Men who reported ED in the 2001 to 2004 National Health and Nutrition Examination Survey (NHANES) had a twofold increased risk of having undiagnosed diabetes [20]. If serum testosterone is low, we suggest measuring serum prolactin as well. (See "Causes of secondary hypogonadism in males", section on 'Hyperprolactinemia' and "Clinical features and diagnosis of male hypogonadism", section on 'Pituitary function testing'.)

Hormonal testing — The prevalence of hypogonadism in men who present with ED varies widely across studies (from 4 to 35 percent), likely due to differences in populations (such as age and comorbidities), hormone measurement methods, and diagnostic criteria for hypogonadism [21-26]. (See "Clinical features and diagnosis of male hypogonadism".)

- In one series, 29 percent of 422 men with ED had hormonal disorders, including hypogonadism in 19 percent, hyperprolactinemia in 4 percent, and either hypothyroidism or hyperthyroidism in 6 percent [21].

- A meta-analysis of 14 trials in 2298 patients assessed the effects of testosterone replacement therapy on sexual function [27]. Testosterone therapy was associated with an improvement in erectile function (as measured by IIEF) when compared with placebo. Men with more severe hypogonadism (serum testosterone level less than 8 nmol/L [231 ng/dL]) experienced the greatest improvement in erectile function.

- In a population-based study of men aged 30 to 79 years, the prevalence of a total testosterone concentration <300 ng/dL was 35 and 22.7 percent in men with and without ED, respectively [25].

- In contrast, in a study of 1022 men with ED, persistently low serum testosterone (less than 300 ng/mL [10.4 nmol/L]) was found in only 4 percent of men under age 50 years and 9 percent of those over age 50 years [23]. However, if testing had been restricted to those men with symptoms of low sexual desire or signs of hypoandrogenism, 40 percent of cases would have been missed, including 37 percent of who responded to treatment with testosterone. One percent had hyperprolactinemia. Similar results were seen in a study of 1455 men [24].

Nocturnal penile tumescence testing — NPT testing, once a tedious, laborious, and expensive process performed only in a hospital sleep laboratory, has been simplified. Monitoring devices are now available that provide accurate, reproducible information quantifying the number, tumescence, and rigidity of erectile episodes a man experiences as he sleeps in the comfort of his own bed [28]. The data generated can be downloaded to provide a graphic index quantifying erectile activity as either normal or impaired.

NPT testing is generally performed when the clinician is trying to assess between psychogenic and organic ED. Typically, men with psychogenic ED will have normal NPT results. Patients who are being considered for NPT should be referred to a specialized center that performs these procedures.

Men with ED and normal NPT are considered to have psychogenic ED, whereas those with impaired NPT are considered to have "organic" ED usually due to vascular or neurologic disease. In comparison, testosterone-deficient hypogonadal men are still capable of exhibiting some erectile activity during NPT studies [29,30]. However, the penile swelling in hypogonadal men may not be of sufficient rigidity to permit vaginal penetration. The testosterone level associated with ED is uncertain, but one study suggested that serum testosterone levels <225 ng/dL were associated with an increased frequency of ED. The mechanisms by which testosterone deficiency produces ED are discussed elsewhere. (See "Epidemiology and etiologies of male sexual dysfunction".)

Duplex Doppler imaging — Additional studies, such as duplex Doppler ultrasonography, or occasionally angiography of the penile deep arteries, are performed to identify areas of arterial obstruction or venous leak [31]. Typically, an artificial erection is induced using a vasodilating injectable agent, such as prostaglandin. The peak systolic velocity and the end diastolic velocity are measured to assess for arterial insufficiency and venous leak, respectively. Understanding the etiology of the ED allows for better targeted treatment options.

Penile ultrasounds are performed primarily in tertiary medical centers. The penile duplex (ultrasound and Doppler flow) allows the clinician to better understand the etiology of the ED (eg, arterial insufficiency or venous leak) [31] . Other indications for a penile ultrasound are penile trauma, priapism, Peyronie's disease, or lack of response to phosphodiesterase-5 (PDE5) inhibitors and other medications.

It is best to refer a patient to a specialist who is experienced in performing a penile ultrasounds, as the procedure can be technically challenging.

There are several ways to manage venous leak; these are discussed separately. (See "Treatment of male sexual dysfunction", section on 'Penile revascularization'.)

Ejaculatory disorders

- **Premature ejaculation** – Ejaculatory latency of approximately one minute or less may qualify a man for the diagnosis of PE, which should also include consistent inability to delay or control ejaculation and marked distress about the condition. All three components should be present to qualify for the diagnosis [3]. Subtypes of the disorder are symptom based, including lifelong versus acquired, global versus situational PE, and the co-occurrence of other sexual problems, particularly ED [32,33].

  When evaluating PE, one must keep in mind the difference between lifelong PE and PE that was acquired later on in life. Acquired PE is more likely to be associated with psychological factors, while lifelong PE is more likely to be associated with genetic factors (although data are limited). Management depends upon the etiology, but the mainstays of therapy include selective serotonin reuptake inhibitors (SSRIs), topical anesthetics, and psychotherapy when psychogenic and/or relationship factors are present. (See "Epidemiology and etiologies of male sexual dysfunction", section on 'Premature ejaculation'.)

- **Retrograde ejaculation** – Some men with retrograde ejaculation present during an evaluation for infertility. In men with low semen volume azoospermia (<1.5 mL), if serum concentrations of follicle-stimulating hormone (FSH), luteinizing hormone (LH), and testosterone are normal, the presence of sperm in a postejaculatory urine sample provides evidence for retrograde ejaculation. If spermatozoa are not present in the postejaculatory urine, the man has obstructive azoospermia or impaired spermatogenesis. (See "Approach to the male with infertility", section on 'Scrotal and transrectal ultrasound'.)

ERECTILE DYSFUNCTION AND CARDIOVASCULAR DISEASE

Erectile dysfunction (ED) and cardiovascular disease share many risk factors. Their pathophysiology can be caused by endothelial dysfunction, and underlying vascular disease is the cause of ED in many men. In addition, men who present with ED are at higher risk for subsequent development of cardiovascular events [34-36].

Patients with ED without an obvious cause (eg, pelvic trauma), and who have no symptoms of coronary or other vascular disease, should be screened for cardiovascular disease prior to initiating therapy for their sexual dysfunction, as there are potential cardiac risks associated with sexual activity in patients with heart disease [37]. We suggest that men with ED undergo a medical evaluation with stratification of cardiovascular risk as low, medium, or high

(algorithm 1 and table 6) [38-40]. High-risk patients should have a cardiology evaluation prior to initiating ED therapy. Men with intermediate cardiac risk should be evaluated further with an exercise stress test [39]. A positive stress test in these patients warrants further cardiac evaluation prior to initiating ED therapy. (See "Sexual activity in patients with cardiovascular disease".)

Sexual activity in men with known cardiovascular disease is reviewed separately. (See "Sexual activity in patients with cardiovascular disease".)

SOCIETY GUIDELINE LINKS

Links to society and government-sponsored guidelines from selected countries and regions around the world are provided separately. (See "Society guideline links: Male sexual dysfunction".)

INFORMATION FOR PATIENTS

UpToDate offers two types of patient education materials, "The Basics" and "Beyond the Basics." The Basics patient education pieces are written in plain language, at the 5th to 6th grade reading level, and they answer the four or five key questions a patient might have about a given condition. These articles are best for patients who want a general overview and who prefer short, easy-to-read materials. Beyond the Basics patient education pieces are longer, more sophisticated, and more detailed. These articles are written at the 10th to 12th grade reading level and are best for patients who want in-depth information and are comfortable with some medical jargon.

Here are the patient education articles that are relevant to this topic. We encourage you to print or e-mail these topics to your patients. (You can also locate patient education articles on a variety of subjects by searching on "patient info" and the keyword(s) of interest.)

- Basics topics (see "Patient education: Sex problems in men (The Basics)")
- Beyond the Basics topics (see "Patient education: Sexual problems in men (Beyond the Basics)")

SUMMARY AND RECOMMENDATIONS

- Male sexual dysfunction includes diminished libido, erectile dysfunction (ED), and abnormal ejaculation.

- Important information in the patient's history of ED includes determination of the rapidity of onset, evaluation of erectile reserve, and assessment of risk factors for ED (table 2). (See 'History' above.)

- ED that develops suddenly is typically due to performance anxiety. Aside from this psychogenic cause, only radical prostatectomy or other overt genital tract trauma causes a sudden loss of male sexual function. In comparison, men suffering from ED of any other cause describe erectile function that failed sporadically at first, then more consistently. (See 'Rapidity of onset' above.)

- In men presenting with a complaint of inability to develop erections, the presence or absence of **spontaneous** erections is an important clue to diagnosis. Most men experience spontaneous erections during rapid eye movement (REM) sleep and often wake up with an erection. Complete loss of nocturnal erections is present in men with neurologic or vascular disease. (See 'Erectile reserve' above.)

- In addition to the basic physical exam, there should be an assessment of secondary sexual characteristics (body hair, facial hair, body habitus), examination of femoral and peripheral pulses as a clue to the presence of vascular impotence, a breast exam to look for evidence of gynecomastia, and measurement of testicular volume (figure 1). (See 'Physical examination' above.)

- Appropriate laboratory tests for men with sexual dysfunction include fasting glucose or glycated hemoglobin (A1C), complete blood count, comprehensive metabolic profile to assess liver and kidney function, lipid profile, serum thyroid-stimulating hormone (TSH), and serum total testosterone (figure 1). (See 'Hormonal testing' above.)

- ED and cardiovascular disease share many risk factors, and their pathophysiology can be caused by endothelial dysfunction. Underlying vascular disease is the cause of ED in many men. In addition, men who present with ED are at higher risk for subsequent development of cardiovascular events. (See 'Erectile dysfunction and cardiovascular disease' above.)

- Patients with ED without an obvious cause (eg, pelvic trauma) and who have no symptoms of coronary or other vascular disease should be screened for cardiovascular disease prior to initiating therapy for sexual dysfunction (algorithm 1 and table 6). (See 'Erectile dysfunction and cardiovascular disease' above.)

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GRAPHICS

Etiologies of erectile dysfunction[1-3]

Vascular	Cardiovascular disease, hypertension, diabetes mellitus, hyperlipidemia, smoking, major surgery (radical prostatectomy) or radiotherapy (pelvis or retroperitoneum)
Neurologic	Spinal cord and brain injuries, Parkinson disease, Alzheimer disease, multiple sclerosis, stroke, major surgery (radical prostatectomy) or radiotherapy of the prostate
Local penile (cavernous) factors	Peyronie's disease, cavernous fibrosis, penile fracture
Hormonal	Hypogonadism, hyperprolactinemia, hyper- and hypothyroidism, hyper- and hypocortisolism
Drug induced	Antihypertensives, antidepressants, antipsychotics, antiandrogens, recreational drugs, alcohol
Psychogenic	Performance-related anxiety, traumatic past experiences, relationship problems, anxiety, depression, stress

ED is classified as organic (ie, vasculogenic, neurogenic, local penile [cavernous] factors, hormonal, drug-induced), psychogenic, or mixed psychogenic and organic. ED usually develops from a mix of psychogenic and organic factors[1,2]. Psychological factors are involved in the development of ED and include performance-related issues (eg, performance anxiety), traumatic past experiences, relationship problems, anxiety, depression, and stress[1-3]. Taking a comprehensive medical history may reveal one of the many common disorders associated with ED[1].

ED: erectile dysfunction.

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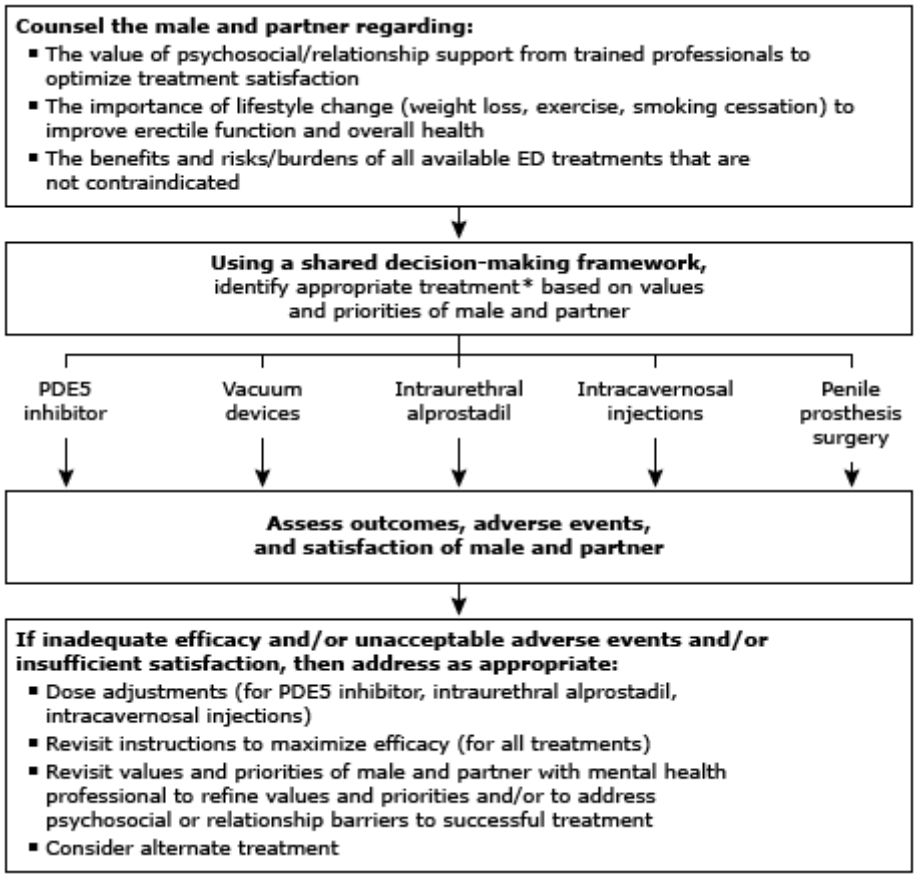
Graphic 97650 Version 4.0

Approach to the management of the patient with erectile dysfunction



ED: erectile dysfunction; PDE5: phosphodiesterase type 5.

* For males with testosterone deficiency, defined as the presence of symptoms and signs and a total testosterone <300 ng/dL, counseling should emphasize that restoration of testosterone levels to therapeutic levels is likely to increase efficacy of ED treatments other than prosthesis surgery.

Graphic 107342 Version 3.0

Clinical clues to causes of erectile dysfunction

Finding	Cause
Rapid onset	Psychogenic
	Genitourinary trauma (eg, radical prostatectomy)
Nonsustained erection	Anxiety
	Venous leak
Depression or use of certain drugs	Depression
	Drug induced
Complete loss of nocturnal erections	Vascular disease
	Neurologic disease

Graphic 61756 Version 5.0

The IIEF-5 questionnaire

Over the past six months:					
1. How do you rate your confidence that you could get and keep an erection?	**Very low**	**Low**	**Moderate**	**High**	**Very high**
	1	2	3	4	5
2. When you had erections with sexual stimulation, how often were your erections hard enough for penetration?	**Almost never or never**	**A few times** (much less than half the time)	**Sometimes** (about half the time)	**Most times** (much more than half the time)	**Almost always or always**
	1	2	3	4	5
3. During sexual intercourse, how often were you able to maintain your erection after you had penetrated your partner?	**Almost never or never**	**A few times** (much less than half the time)	**Sometimes** (about half the time)	**Most times** (much more than half the time)	**Almost always or always**
	1	2	3	4	5
4. During sexual intercourse, how difficult was it to maintain your erection to completion of intercourse?	**Extremely difficult**	**Very difficult**	**Difficult**	**Slightly difficult**	**Not difficult**
	1	2	3	4	5
5. When you attempted sexual intercourse, how often was it satisfactory for you?	**Almost never or never**	**A few times** (much less than half the time)	**Sometimes** (about half the time)	**Most times** (much more than half the time)	**Almost always or always**
	1	2	3	4	5
	Total score:				
	1 to 7: Severe ED	8 to 11: Moderate ED	12 to 16: Mild-moderate ED	17 to 21: Mild ED	22 to 25: No ED

IIEF: International index of erectile dysfunction; ED: erectile dysfunction.

Graphic 97456 Version 3.0

International index of erectile dysfunction (IIEF)

INSTRUCTIONS: These questions ask about your sex life **over the past four weeks**. Please answer the following questions as honestly and clearly as possible. In answering these questions, the following definitions apply:

- **Sexual activity** includes intercourse, caressing, foreplay, and masturbation
- **Sexual intercourse** is defined as vaginal penetration of the partner (you entered your partner)
- **Sexual stimulation** includes situations like foreplay with a partner, looking at erotic pictures, etc
- **Ejaculate** is defined as the ejection of semen from the penis (or the feeling of this)

Check ONLY one box per question.

1. **Over the past four weeks**, how often were you able to get an erection during sexual activity?

- ☐ 0 = No sexual activity
- ☐ 1 = Almost never or never
- ☐ 2 = A few times (much less than half the time)
- ☐ 3 = Sometimes (about half the time)
- ☐ 4 = Most times (much more than half the time)
- ☐ 5 = Almost always or always

2. **Over the past four weeks**, when you had erections with sexual stimulation, how often were your erections hard enough for penetration?

- ☐ 0 = No sexual activity
- ☐ 1 = Almost never or never
- ☐ 2 = A few times (much less than half the time)
- ☐ 3 = Sometimes (about half the time)
- ☐ 4 = Most times (much more than half the time)
- ☐ 5 = Almost always or always

The next eight questions will ask about the erections you may have had during sexual intercourse.

3. **Over the past four weeks**, when you attempted sexual intercourse, how often were you able to penetrate (enter) your partner?

- ☐ 0 = Did not attempt intercourse
- ☐ 1 = Almost never or never
- ☐ 2 = A few times (much less than half the time)
- ☐ 3 = Sometimes (about half the time)

- ☐ 4 = Most times (much more than half the time)
- ☐ 5 = Almost always or always

4. **Over the past four weeks**, during sexual intercourse, **how often** were you able to maintain your erection after you had penetrated (entered) your partner?

- ☐ 0 = Did not attempt intercourse
- ☐ 1 = Almost never or never
- ☐ 2 = A few times (much less than half the time)
- ☐ 3 = Sometimes (about half the time)
- ☐ 4 = Most times (much more than half the time)
- ☐ 5 = Almost always or always

5. **Over the past four weeks**, during sexual intercourse, **how difficult** was it to maintain your erection to completion of intercourse?

- ☐ 0 = Did not attempt intercourse
- ☐ 1 = Extremely difficult
- ☐ 2 = Very difficult
- ☐ 3 = Difficult
- ☐ 4 = Slightly difficult
- ☐ 5 = Not difficult

6. **Over the past four weeks**, how many times have you attempted sexual intercourse?

- ☐ 0 = No attempts
- ☐ 1 = One to two attempts
- ☐ 2 = Three to four attempts
- ☐ 3 = Five to six attempts
- ☐ 4 = 7 to 10 attempts
- ☐ 5 = 11 or more attempts

7. **Over the past four weeks**, when you attempted sexual intercourse, how often was it satisfactory for you?

- ☐ 0 = Did not attempt intercourse
- ☐ 1 = Almost never or never
- ☐ 2 = A few times (much less than half the time)
- ☐ 3 = Sometimes (about half the time)
- ☐ 4 = Most times (much more than half the time)
- ☐ 5 = Almost always or always

8. **Over the past four weeks**, when you attempted sexual intercourse, how much have you enjoyed sexual intercourse?

- ☐ 0 = No intercourse
- ☐ 1 = No enjoyment
- ☐ 2 = Not very enjoyable
- ☐ 3 = Fairly enjoyable
- ☐ 4 = Highly enjoyable
- ☐ 5 = Very highly enjoyable

9. **Over the past four weeks**, when you had sexual stimulation or intercourse, how often did you ejaculate?

- ☐ 0 = No sexual stimulation/intercourse
- ☐ 1 = Almost never or never
- ☐ 2 = A few times (much less than half the time)
- ☐ 3 = Sometimes (about half the time)
- ☐ 4 = Most times (much more than half the time)
- ☐ 5 = Almost always or always

10. **Over the past four weeks**, when you had sexual stimulation or intercourse, how often did you have the feeling of orgasm or climax?

- ☐ 0 = No sexual stimulation/intercourse
- ☐ 1 = Almost never or never
- ☐ 2 = A few times (much less than half the time)
- ☐ 3 = Sometimes (about half the time)
- ☐ 4 = Most times (much more than half the time)
- ☐ 5 = Almost always or always

The next five questions ask about sexual desire. Let's define sexual desire as a feeling that may include wanting to have a sexual experience (for example, masturbation or intercourse), thinking about having sex, or feeling frustrated due to lack of sex.

11. **Over the past four weeks**, how often have you felt **sexual desire**?

- ☐ 1 = Almost never or never
- ☐ 2 = A few times (much less than half the time)
- ☐ 3 = Sometimes (about half the time)
- ☐ 4 = Most times (much more than half the time)
- ☐ 5 = Almost always or always

12. **Over the past four weeks**, how would you rate your level of **sexual desire**?
☐ 1 = Very low or not at all
☐ 2 = Low
☐ 3 = Moderate
☐ 4 = High
☐ 5 = Very high
13. **Over the past four weeks**, how satisfied have you been with your overall **sex life**?
☐ 1 = Very dissatisfied
☐ 2 = Moderately dissatisfied
☐ 3 = About equally satisfied and dissatisfied
☐ 4 = Moderately satisfied
☐ 5 = Very satisfied
14. **Over the past four weeks**, how satisfied have you been with your **sexual relationship** with your partner?
☐ 1 = Very dissatisfied
☐ 2 = Moderately dissatisfied
☐ 3 = About equally satisfied and dissatisfied
☐ 4 = Moderately satisfied
☐ 5 = Very satisfied
15. **Over the past four weeks**, how do you rate your **confidence** that you can get and keep an erection?
☐ 1 = Very low
☐ 2 = Low
☐ 3 = Moderate
☐ 4 = High
☐ 5 = Very high

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PHQ-9 depression questionnaire

Name:	**Date:**			
Over the last 2 weeks, how often have you been bothered by any of the following problems?	**Not at all**	**Several days**	**More than half the days**	**Nearly every day**
Little interest or pleasure in doing things	0	1	2	3
Feeling down, depressed, or hopeless	0	1	2	3
Trouble falling or staying asleep, or sleeping too much	0	1	2	3
Feeling tired or having little energy	0	1	2	3
Poor appetite or overeating	0	1	2	3
Feeling bad about yourself, or that you are a failure, or that you have let yourself or your family down	0	1	2	3
Trouble concentrating on things, such as reading the newspaper or watching television	0	1	2	3
Moving or speaking so slowly that other people could have noticed? Or the opposite, being so fidgety or restless that you have been moving around a lot more than usual.	0	1	2	3
Thoughts that you would be better off dead, or of hurting yourself in some way	0	1	2	3
Total ___ =	___	**+** ___	**+** ___	**+** ___
PHQ-9 score ≥10: Likely major depression				
Depression score ranges:				
5 to 9: mild				
10 to 14: moderate				
15 to 19: moderately severe				
≥20: severe				
If you checked off any problems, how difficult have these problems made it for you to do your work, take care of things at home, or get along with other people?	Not difficult at all ___	Somewhat difficult ___	Very difficult ___	Extremely difficult ___

PHQ: Patient Health Questionnaire.

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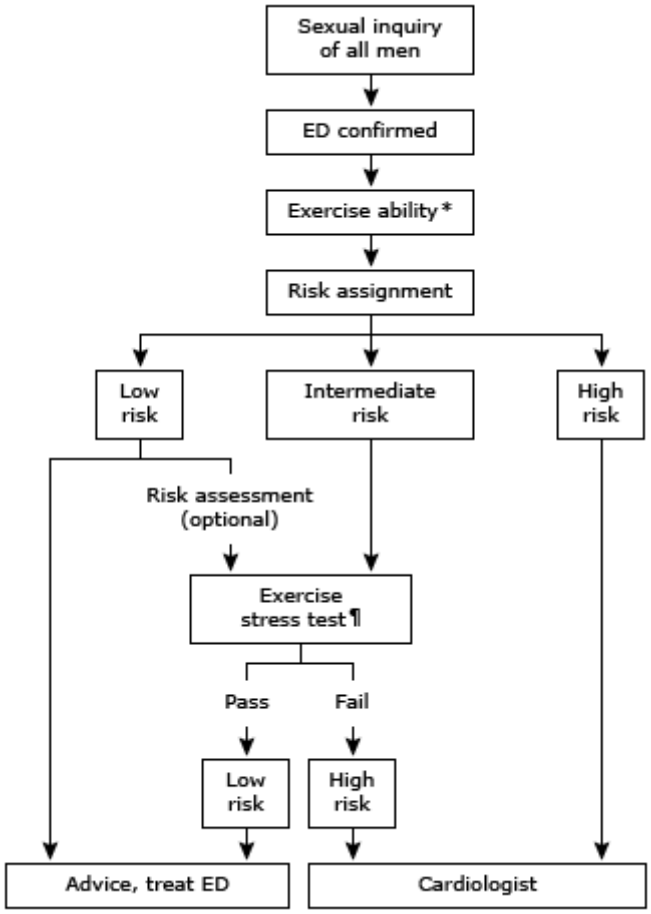
Estimate of CV risk with sexual activity: Princeton III Consensus recommendations



Algorithm from the Princeton III Consensus recommendations used to estimate the CV risk associated with sexual activity in patients with ED and known CVD.

CV: cardiovascular; ED: erectile dysfunction; CVD: cardiovascular disease; CIMT: carotid intima media thickness; ABI: ankle-brachial index.

* Sexual activity is equivalent to walking 1 mile on the flat in 20 minutes or briskly climbing two flights of stairs in 10 seconds.

¶ Sexual activity is equivalent to four minutes of the Bruce treadmill protocol. The option of CIMT and ABI instead is also given.

Graphic 97648 Version 2.0

Cardiovascular risk stratification in males with erectile dysfunction[1,2]

Low-risk category	Intermediate-risk category	High-risk category
Asymptomatic, <3 risk factors for CAD (excluding sex)	≥3 risk factors for CAD (excluding sex)	High-risk arrhythmias
	Mild or moderate, stable angina	Unstable or refractory angina
	Previous (>6 to 8 week) or recent (2 to 6 week) MI	Recent (<2 week) MI
LVD/CHF (NYHA class I or II)	LVD/CHF (NYHA class III)	LVD/CHF (NYHA class IV)
Post-successful coronary revascularization	Noncardiac sequelae of atherosclerotic disease (eg, stroke, peripheral vascular disease)	Hypertrophic obstructive and other cardiomyopathies
Controlled hypertension		Uncontrolled hypertension
Mild valvular disease		Moderate-to-severe valvular disease

The Princeton Consensus (Expert Panel) Conference is dedicated to optimizing sexual function and preserving cardiovascular health[1]. Patients with ED can be stratified into three cardiovascular risk categories as summarized in this table, which can be used as the basis for a treatment algorithm for initiating or resuming sexual activity[1,2].

CAD: coronary artery disease; MI: myocardial infarction; LVD: left ventricular dysfunction; CHF: congestive heart failure; NYHA: New York Heart Association; ED: erectile dysfunction.

References:

1. *Wespes E, Eardley I, Guiliano F, et al. European Association of Urology Guidelines on Male Sexual Dysfunction: erectile dysfunction and premature ejaculation. 2013. Available at: www.uroweb.org/gls/pdf/14_Male%20Sexual%20Dysfunction_LR.pdf (Accessed on November 24, 2013).*
2. *Nehra A, Jackson G, Miner M, et al. The Princeton III Consensus recommendations for the management of erectile dysfunction and cardiovascular disease. Mayo Clin Proc 2012; 87:766.*

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Contributor Disclosures

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