

Erectile Dysfunction

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Contents

Contents	1
Background	2
About erectile dysfunction (ED)	2
Red flags	2
Assessment	2
High risk ED factors	2
Ask about erections	2
Premature ejaculation	3
Medications causing erectile dysfunction	3
Differential characteristics of psychogenic versus organic ED	3
Cardiovascular risk factors	4
Measure BMI	4
Neurological disease	4
Morning serum testosterone	5
Management	5
Phosphodiesterase 5 inhibitors	5
Caverject	6
Penile prosthesis	6
Premature ejaculation treatment	6
Referral	6
Information	7
For health professionals	7
For patients	7
Sources	7

Background

About erectile dysfunction (ED)

Erectile dysfunction (ED) is common:¹

- Approximately 50% of men aged ≥ 50 years have some degree of ED.
- Approximately 80% of men aged ≥ 80 years group have some degree of ED.
- The risk factors for ED can be thought of as the same risk factors for cardiovascular disease (CVD) e.g., diabetes, smoking, dyslipidaemia, hypertension, obesity.

While some generally younger, isolated ED cases are psychogenic (e.g., not with masturbation, nocturnal, etc), others may be symptomatic of generalised vascular disease. Furthermore, ED usually precedes coronary symptoms by 3 years, and might be considered an early marker of CVD.

Red flags

- Pharmacologically assisted erection lasting over 4 hours with no sign of subsiding
- Co-administration of phosphodiesterase 5 inhibitors (PDE5 inhibitor) and nitrates

Assessment

1. As erectile dysfunction may not be volunteered, approach history taking sensitively, especially in assessing men at **high risk**.

High risk ED factors

- Smoking
- Obesity
- Cardiovascular disease
- Hypertension
- Dyslipidaemia
- Diabetes
- Elderly

2. Ask about:

- **Erections**

Ask about erections

- Ability to achieve erection spontaneously or requiring mechanical stimulation.
- Presence of nocturnal or morning penile tumescence.
- Complete absence of erections versus intermittent failure.
- Short lived erections, quality of erection and circumstances.
- Ability to reach orgasm and achieve partner's orgasm.
- Frequency of intercourse is important to note – less frequent sexual encounters per week predispose to more ED.
- Change in who initiates sex in the relationship can be an indicator.
- Impact on relationship with partner should be assessed.

- general lifestyle, especially poor diet, regular exercise habits, and fitness. Ask directly about ability to climb stairs, and about physical exertion capacity.
- **premature ejaculation.**

Premature ejaculation

- *Persistent or recurring ejaculation with minimal stimulation before, on, or within 1 minute of penetration.*
- *3 essential components:*
 - *Short ejaculatory latency*
 - *Lack of control*
 - *Sexual dissatisfaction*

- history of sexually transmitted disease, previous urological surgery, and genital trauma.
- **medications.**

Medications causing erectile dysfunction

- *Patients using nitrites must not be prescribed phosphodiesterase inhibitors due to risk of profound hypotension or precipitation of myocardial infarction.*
- *Antihypertensive medication:*
 - *Thiazide diuretics are most likely to adversely affect erections.*
 - *Alpha blockers and angiotensin blockers are least likely to adversely affect erections.*
 - *Spironolactone, methyldopa, and clonidine can contribute.*
 - *The association with beta blockers has little supporting evidence.*
- *Antipsychotic and antidepressant drugs.*

- tobacco (nicotine causes vasoconstriction) and alcohol which in large amounts causes central sedation and decreased libido.

- 3 Consider **psychogenic causes.** Enquire about stress, sexual relationships, anxiety or depression. Consider asking about libido and effect on self-esteem.

Differential characteristics of psychogenic versus organic ED

<i>Characteristic</i>	<i>Predominantly psychogenic ED</i>	<i>Predominantly organic ED</i>
<i>Onset</i>	<i>Acute</i>	<i>Gradual</i>
<i>Circumstances</i>	<i>Situational</i>	<i>Global</i>
<i>Course</i>	<i>Intermittent</i>	<i>Constant</i>
<i>Noncoital erection</i>	<i>Rigid</i>	<i>Poor</i>
<i>Nocturnal/morning erection</i>	<i>Normal</i>	<i>Inconsistent</i>
<i>Psychosexual problems</i>	<i>Long history</i>	<i>Secondary to ED</i>
<i>Partner problems</i>	<i>At onset</i>	<i>Secondary to ED</i>

4 Assess **cardiovascular risk factors** thoroughly

Cardiovascular risk factors

- Age
- Family history
- Smoking
- Hypertension
- Lipids
- Blood sugars
- Diet
- Exercise

5. Examine for arterial disease, cavernous disease, neurogenic, and psychogenic causes:

- Measure weight and **BMI**.

Measure BMI

- *Body Mass Index = kg/m² (weight divided by height squared)*
- *Check BMI range:*
 - *< 18.5 = Underweight*
 - *18.5 to 25 = Healthy, normal weight*
 - *25.1 to 29.9 = Overweight*
 - *> 30 = Obese*

See Heart Foundation – [BMI Calculator](#)

- Check blood pressure and pulse.
- Assess for carotid pulse and bruits, cardiac murmurs, renal and inguinal bruits, and lower limb arterial pulses.
- Examine the genitalia for palpable fibrous plaques in erectile tissue, testicular size and consistency.
- Examine for evidence of androgen deficiency changes in secondary sexual characteristics – beard, hair distribution, gynaecomastia, and muscular development.
- If indicated, examine for **neurological disease**.

Neurological disease

- *Higher centre disease:*
 - *Dementia*
 - *Stroke*
 - *Parkinson's disease*
 - *Depression*
- *Peripheral causes:*
 - *Spinal cord lesions*
 - *Trauma*
 - *Multiple sclerosis*
 - *Peripheral neuropathy*

6. Arrange investigations:

- FBE – as screening for concurrent illness.
- Electrolytes, urea, and creatinine for renal disease.
- Fasting blood glucose and lipids.
- **Morning serum testosterone** may be indicated, especially if libido is reduced.

Morning serum testosterone

- Taken 8.00 am to 10.00 am.
- If level is close to or below 6 nanomoles, repeat and add serum FSH, LH, prolactin, TSH, and iron studies (haemochromatosis is associated with pituitary or testicular failure).
- If low testosterone and low FSH and LH, consider MRI of pituitary fossa.
- B12 (profoundly low levels are associated with ED).
- Thyroid function tests.
- If Doppler ultrasound of penile arteries is indicated e.g., diagnosis is unclear, young patient with global ED, Peyronie's disease, arrange [routine urology referral](#).

Management

1. If ED does not bother the patient, no treatment is necessary.
2. Correct lifestyle and [cardiovascular disease risk factors](#). Consider Lifestyle and Preventive Care modifications.
3. Consider prescribing **phosphodiesterase 5 inhibitors** to men in whom no contraindications exist. Give advice about how to manage the rare side-effect of priapism:

Phosphodiesterase 5 inhibitors

- Phosphodiesterase 5 inhibitors (PDEIs) are only available on private script or on RPBS for DVA Gold card holders
- Note that phosphodiesterase 5 inhibitors are contraindicated if patient is on nitrates, regardless of whether sublingual, transdermal, spray or other delivery form.
- Low-dose phosphodiesterase inhibitors are very effective in psychogenic erectile failure and are often only needed short term.
- **Medication options**
 - Contraindicated in men who are unfit for sex due to cardiovascular risk factors and those who take nitrates.
 - Sildenafil, Avanafil, and Vardenafil are short acting (peak activity 1 to 2 hours after ingestion). Tadalafil is longer acting (peaks 2 to 4 hours after ingestion and some activity the next day).
 - Usually taken 1 to 3 hours before sexual activity.
 - Sildenafil: 25 mg, 50 mg, 100 mg orally on demand
 - Vardenafil: 5 mg, 10 mg, 20 mg orally on demand
 - Avanafil: 50 mg, 100 mg, 200 mg orally on demand
 - Tardenafil: 10 mg and 20 mg orally on demand
 - Alternatively, Tadalafil may be taken in a smaller 5 mg daily dose for men who prefer spontaneity.
 - Sexual stimulation required.
 - About 70 to 80% of patients have a worthwhile improvement in erection quality. Men with more severe ED tend to respond poorly.
 - Side-effects are usually mild and include headache, facial flushing, and indigestion. Blue vision can occur rarely with Sildenafil, and back or muscle aches with Tadalafil.
- If pharmacologically induced priapism lasts > 1 hour, advise trial of a warm shower, then going for a walk, and taking a pseudoephedrine.
- Firm priapism after 4 hours requires urgent emergency treatment (see Referral).

4. If general practitioner is a proceduralist, consider instructing patients to inject vasodilator Prostaglandin E1 e.g., **Caverject**.

Caverject

- *Caverject is not available on PBS. Costs approximately \$15 to \$20 per injection.*
 - *There is an increased risk of priapism with Caverject. Inject initially under medical supervision and discharge only once erection subsides.*
 - *Test dose is 2.5 to 5 micrograms, and ampoule used must be discarded.*
5. If considering vacuum devices, counsel patients that response is variable and can be unpredictable.
 6. Consider **penile prosthesis**.

Penile prosthesis

- *Surgical implant that provides good results in carefully selected patients.*
 - *Consider only if simpler options have been ineffective.*
 - *Ideal patient has irreversible organic ED, has failed other less invasive treatment modalities, and has realistic expectations of surgery results.*
 - *Complications are uncommon with experienced surgeons but can include prosthesis infection (<5 %) and mechanical malfunction (10% by 10 years).*
7. Treat **premature ejaculation** as a separate issue. In patients with both erectile dysfunction and premature ejaculation, treat the ED first.

Premature ejaculation treatment

Pharmacological treatment:

- *Dapoxetine (short-acting SSRI): 30 to 60 mg orally taken on demand, 1 to 2 hours before sex*
- *Paroxetine: 10 to 40 mg orally daily, and 20 mg orally 3 to 4 hours before sex*
- *Sertraline: 50 to 200 mg orally daily, and 50 mg orally 4 to 8 hours before sex*
- *Fluoxetine: 20 to 40 mg orally daily, no additional dose before sex required*
- *Topical local anaesthesia (lignocaine gel or cream)*

Referral

- If pharmacologically induced priapism lasts > 4 hours, or co-administration of nitrites with a phosphodiesterase inhibitor, refer urgently to [Emergency Department](#).
- Consider referral to a [urologist](#) for:
 - consideration of prostheses.
 - procedural expertise with intracavernous injections.
 - complex medical considerations.
- Consider psychological therapies and counselling from a psychiatrist, counsellor, or social worker specialising in sex therapy.

Information

For health professionals

- Australian Family Physician:
 - [Much More Than Prescribing a Pill: Assessment and Treatment of Erectile Dysfunction by the General Practitioner](#)
 - [Premature Ejaculation: A Clinical Review for the General Physician](#)
- Healthy Male – [Erectile Dysfunction](#) [Clinical Summary Guide]

For patients

- Better Health Channel – [Erectile Dysfunction](#)

Sources

References

1. Weber MF, Smith DP, O'Connell DL, Patel MI, de Souza PL, Sitas F, et al. [Risk factors for erectile dysfunction in a cohort of 108 477 Australian men](#). Med. J. Aust. 2013 Jul 22;199(2):107-11.

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