

How to Treat

Australian Doctor. Pull-out section

www.australiandoctor.com.au

EARN CPD POINTS Complete How to Treat quizzes online (www.australiandoctor.com.au/cpd) or in every issue – see page 34.



Erectile dysfunction

Epidemiology and pathophysiology

ERECTILE dysfunction (ED) is defined as the inability to achieve and maintain an erection sufficient to permit satisfactory sexual intercourse. ED is a systemic condition often associated with other potentially serious medical conditions.

The Massachusetts Male Aging Study conducted between 1987 and 1989 found ED occurred in 52% of men aged between 40 and 70 (figure 1). Erectile dysfunction has been shown to be more common as men grow older, affecting up to 67% by age 70. The most common pathological factor is vascular disease, such as that found in diabetes, hypertension, smoking and hyperlipidaemia.

The first Australian-based community study into ED was carried out by Chew et al from the Keogh Institute for Medical Research in Perth in 1997.³ In this study of 1240 Australian men aged 18 years and older, some degree of ED was found to be present

in almost 40%, with complete ED occurring in 18.6% of men. The prevalence of complete ED increased with age. Despite these statistics, only 11.6% of men with ED had received treatment.

The present worldwide prevalence of over 150 million men with ED is likely to double in the next 25 years, exceeding 300 million men by 2025.

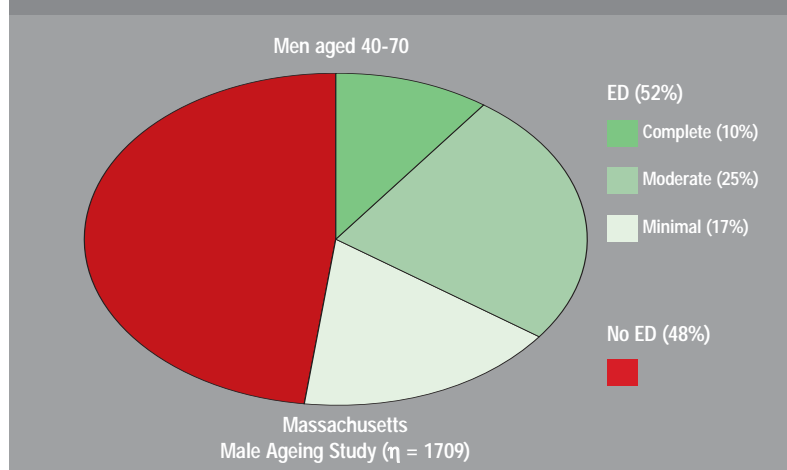
Pathophysiology

Until the late 1980s, ED was suspected to be mainly psychological in origin. We now know that erectile function is a complex process requiring a combination of neurological, endocrinological, psychological and vascular factors for satisfactory function.

The basic anatomy of the penis consists of vascular cavernosal tissue that responds to neurological impulses resulting in penile rigidity. Each corpus cavernosum contains blood-filled

cont'd page 29

Figure 1: The Massachusetts Male Aging Study was the first large population-based study of ED in the US.¹ The initial data were collected in 1987-1989 and established a cohort of 1709 men, of whom 1156 were re-interviewed in 1995-1997.² The baseline study included questions related to erectile function such as frequency and quality of erections. The follow-up questionnaire included items related to erectile function plus a single-question, subjective global self-assessment that classified ED as ranging from none to complete. The study found the combined prevalence of mild, moderate and severe ED was 52% among this cohort of men aged 40-70.



inside

Epidemiology and pathophysiology

Associated medical conditions

Aetiology

Assessment

Treatment

Managing the psychogenic component of ED

Cognitive behavioural therapy for ED

The authors



DR MICHAEL LOWY, sexual health physician, Sydney Men's Health, Bondi Junction, NSW.



DR MARTYN BAKER, medical sex therapist, Sydney Centre for Sexual and Relationship Therapy, Bondi Junction, NSW.

from page 27

compartments called sinusoids, or lacunar spaces, and is surrounded by a fibrous sheath called the tunica albuginea (figure 2).

The corpus spongiosum surrounds the urethra and distally forms the glans penis. The arterial inflow arises from the internal pudendal artery, which provides a cavernosal artery for each corpus.

Venous drainage occurs through emissary veins passing through the tunica albuginea. Turgidity during tumescence compresses these veins, causing veno-occlusion. When this mechanism functions poorly it is often described as 'venous leakage'.

Nerve supply controls sensation and blood flow. Parasympathetic nerves from the S2-4 nerve roots control erectile function, and sympathetic nerves from T11-L2 control detumescence, ejaculation and emission.

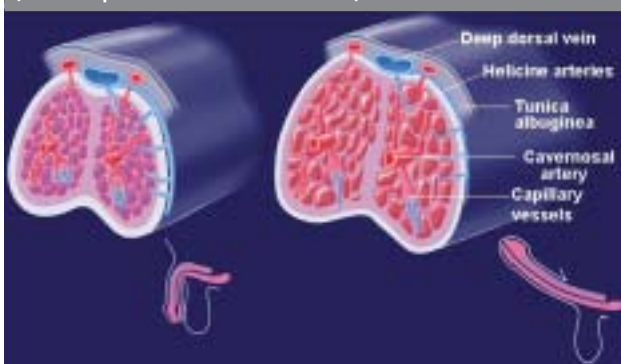
Penile erection is a neurovascular event. Sexual stimulation results in increased parasympathetic activity leading to release of neurotransmitters from the cavernous nerve terminals and relaxing factors from the endothelial cells in the penis. The neurotransmitters are acetylcholine, vaso-intestinal peptide and nitric oxide (figure 2b).

Cyclic guanosine monophosphate (cGMP) which arises from the precursor L-arginine by the action of nitric oxide synthase, controls nitric oxide function. Calcium efflux, mediated by cGMP, leads to smooth muscle cell relaxation in the arteries and arterioles supplying the erectile

Figure 2a: The arterial blood supply to the penis is predominantly via branches of the hypogastric artery. The venous drainage system of the penis can be subdivided into three levels: superficial, intermediate and deep. The superficial system primarily drains the penile skin while the intermediate system, which comprises the deep dorsal and circumflex veins, drains the trabeculae. The deep penile drainage system comprises the cavernosal and/or crural veins that drain the deeper cavernous tissues. (Adapted from Saenz de Tejada I, et al. Anatomy, physiology and pathophysiology of ED. *Erectile Dysfunction*. Health Publication Ltd, Plymouth, 1999: 65-102.)



Figure 2b: During an erection, the release of neurotransmitters such as nitric oxide and of relaxing factors from endothelial cells lead to the relaxation of smooth muscle in the arteries, arterioles and trabeculae of the penis, which allows rapid filling of the sinusoidal spaces and enlargement of the penis. The enlargement of the sinusoidal space also allows compression of the emissary veins between the trabeculae and the tunica albuginea, resulting in almost total occlusion of venous outflow (veno-corporo-occlusive mechanism).



tissue, increasing blood flow and causing erection. This action is ended by phosphodiesterase type 5 (PDE-5), which leads to detumescence (figure 4).

Additional smooth muscle relaxation via cAMP path-

Figure 3: The contraction of penile smooth muscle and the resulting detumescence that occurs depends on a rise in intracellular calcium concentrations. Other compounds also play a role in the maintenance of penile flaccidity, such as endothelin and some of the eicosanoids, eg, PGF₂ alpha and thromboxane A2. (Adapted from Saenz de Tejada I, et al. Anatomy, physiology and pathophysiology of ED. *Erectile Dysfunction*. Health Publication Ltd, Plymouth, 1999: 65-102.)

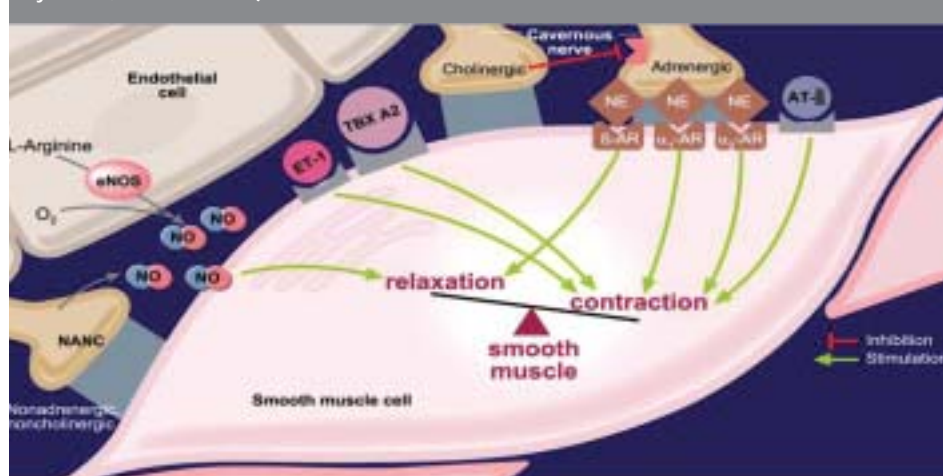
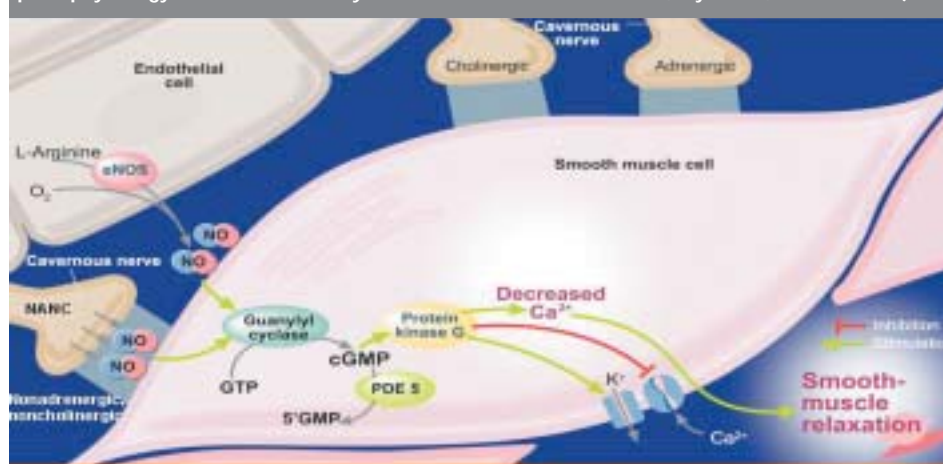


Figure 4: Nitric oxide, which is a gas, does not have a specific receptor on the cellular membrane but targets the enzyme guanylate cyclase. When activated, this enzyme catalyses the conversion of guanosine triphosphate (GTP) to cyclic guanosine monophosphate (cGMP) and plays a keynote in the regulation of penile erection (Adapted from Saenz de Tejada I, et al. Anatomy, physiology and pathophysiology of ED. In: *Erectile Dysfunction*. Health Publication Ltd, Plymouth, 1999: 65-102.)



way is mediated by prostaglandin E₁ (PGE₁) and vaso-intestinal peptide.

There is a decreased availability of nitric oxide in the endothelium with age. Endothelial dysfunction occurs in both coronary

artery disease and ED when the action of nitric oxide is affected. Impaired nitric oxide synthesis reduces the capacity for vasodilation and increases the risk of platelet aggregation.

Atherosclerosis has a

greater effect on ED than the ageing process. Diabetes is associated with both vascular and neurological effects that interfere with the interaction between the endothelium and the smooth muscle cells.

Associated medical conditions

ERECTILE dysfunction is now seen as a symptom not a diagnosis. Asking proactively about ED may expose unknown hypertension, diabetes, ischaemic heart disease, benign prostatic hypertrophy, prostate cancer or depression.

A study of healthy men complaining of ED showed 60% had abnormal cholesterol levels and more than 90% showed evidence of penile arterial disease on duplex Doppler ultrasound.⁴ ED may arise from both narrowed arterial inflow and small-vessel disease in the penis (figure 5).

Between 39% and 64% of men with cardiovascular disease experience ED. The Massachusetts Male Aging Study found that men with heart disease, diabetes and hypertension were up to four times more likely to develop some degree of ED, compared with men who did not experience these disorders.

Men with diabetes experience onset of ED 10-15 years earlier than those without diabetes. More than 50% of these will have ED at some time and 39% suffer from the condition all the time. The study also showed a 28% probability of complete ED among men with diabetes, compared with a 9% probability in those without diabetes.

The risk appears to depend on the duration of the diabetic state and the impact of poor glycaemic control on erectile function through mechanisms involving neural and

endothelial cells. This results in reduced vascular flow to the penile tissues.

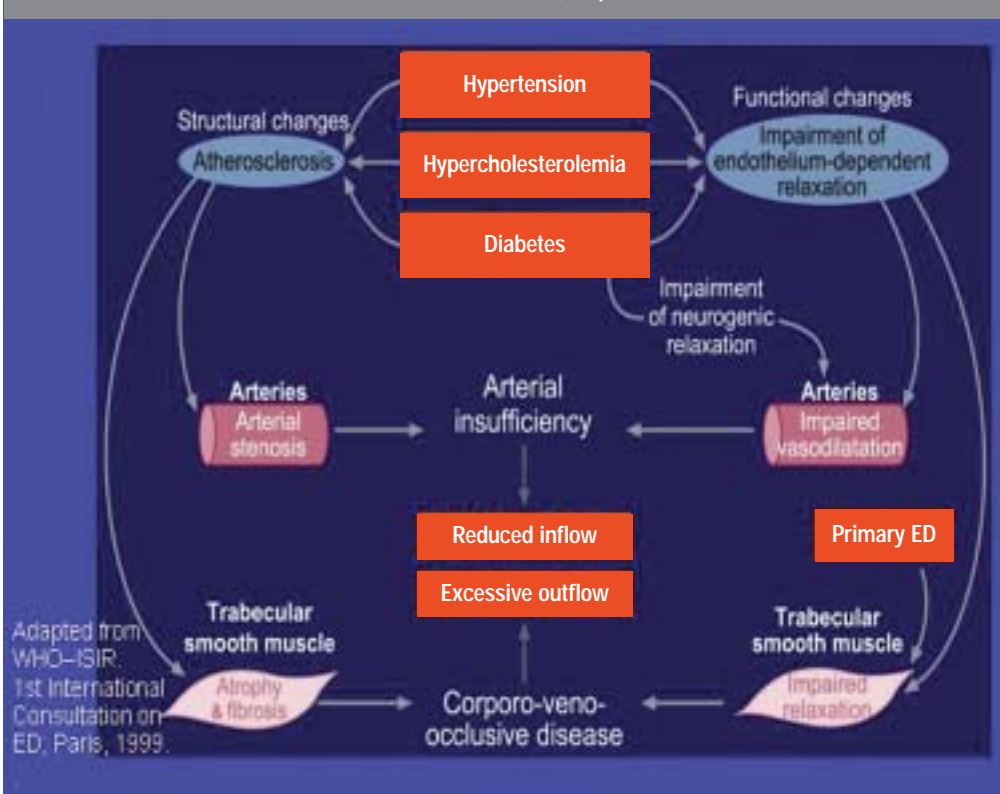
Men with hypertension and ED often blame their medication, which appears to cause the onset of their symptoms. However, medication may just precipitate the onset of ED when the lowered blood pressure shows up the penile tissue morphological damage, secondary to poor tissue perfusion. A very careful history and clinical acumen may be needed to determine whether underlying pathology or medication is likely to be the cause of ED.

The likelihood of ED occurring with hyperlipidaemia depends on the severity and type of lipid abnormality. It occurs particularly in patients with high LDL and low HDL cholesterol levels.

There is a small risk of a cardiac event for the patient with cardiac disease during and immediately after sexual activity. ED is increased in all patients with a previous history of MI, but psychological factors may also occur because of the fear that sexual activity may precipitate further MI. However, sexual intercourse is said to be no more strenuous than other daily activities such as lifting, carrying objects or playing golf.

Smoking is thought to affect the production of microthrombi within penile vasculature, leading to reduced penile blood flow and ED.

Figure 5: Disruption of the primary haemodynamic events leading to an erection is a major cause of ED. These include alterations in cavernosal arterial inflow (CAI) and corporal veno-occlusive dysfunction (CVOD). In essence the ED patient is unable to achieve and maintain a rigid erection because of either a reduced inflow of blood, an excessive outflow, or both. Documented causes of CAI and CVOD include hypertension, cardiovascular disease, cerebrovascular accidents, peripheral vascular disease and perineal or penile trauma. Other vascular aetiologies include hypercholesterolaemia, whereby the reduction in inflow is the result of atherosclerotic structural changes in the penile large arteries extending into the cavernosal arteries themselves. There may also be endothelial changes associated with hypercholesterolaemia, leading to the disruption of the NO/cGMP pathway. Vascular problems and ED are very common in men with diabetes, but diabetes involves other mechanisms, discussed elsewhere. (Adapted from Feldman HA, 1994¹.)



Aetiology

MANY factors may be involved in the aetiology of ED, including social, lifestyle, medication and medical factors (table 1).

Obesity

Obesity is associated with an increased risk of ED. In this setting it is often seen as part of the metabolic syndrome (syndrome X), where a combination of obesity, glucose intolerance, hypertension and hyperlipidaemia exists. The risk of ED may continue even if weight is lost, but physical activity at any age has been shown to benefit ED.

Hypogonadism

Androgen deficiency in the ageing male remains a controversial topic. Proponents of this condition call it the male menopause, or andropause, but a newer term is ADAM (androgen deficiency in the ageing male).

Testosterone production falls by 1% a year from age 40. As men age, higher levels of sex-hormone-binding globulin reduce the amount of bioavailable testosterone. The clinical symptoms of the deficiency syndrome are said to be decreased libido, ED, depression, fatigue, decreased muscle mass, decreased bone density and increased visceral fat.

However, other medical

Table 1: Factors and conditions that may be involved in causing ED

Factors

- Social factors — age, education, occupation, socioeconomics, family of origin, relationships
- Lifestyle factors — alcohol, smoking, obesity, substance abuse, sedentary lifestyle
- Medical factors — medication, acute surgery and trauma, chronic medical conditions, psychological health

Medical conditions

- Penile disorders — direct trauma, congenital disorders and Peyronie's disease (see below)
- Neurological diseases — spinal cord injury or tumour, multiple sclerosis, stroke, peripheral neuropathy, pelvic surgery/radiotherapy (bowel, prostate)
- Psychological disorders — anxiety, stress and depression, psychosis, relationship issues, libido disorders, performance anxiety, sexual abuse
- Cardiovascular disease — hypertension, coronary artery disease, peripheral vascular disease, stroke, hyperlipidaemia
- Endocrine disorders — diabetes, hyperprolactinaemia, thyroid disease, hypogonadism
- Miscellaneous — any acute or chronic illness, major surgery, chronic renal failure

Even with intact neurovascular bundles after radical prostatectomy, the return of erectile function may take from 3-24 months (if ever).

and psychological conditions can produce the same symptoms. It is believed the contribution of testosterone to sexual function is in libido, the presence of nocturnal erections and a minor role in quality of erection.

Supplementing with testosterone suppresses the body's own production and may aggravate prostate disorders, raise haematocrit and aggravate symptoms of sleep apnoea. Thus, care is required when diagnosing hypogonadism as a cause of ED.

Treatment with testosterone does not benefit ED

directly, but rather indirectly through an improved sense of wellbeing. A study by Earle and Stuckey from the Keogh Institute for Medical Research found that replacement therapy will only have a benefit on ED if the untreated total testosterone is below 7nmol/L.⁵

On its web site, Andrology Australia advises there is no agreement among medical experts on the exact level of androgen deficiency at which testosterone replacement should be considered.

After radical prostatectomy

Surgery for treatment of prostate cancer is a common procedure nowadays. If the neurovascular bundle on each side of the gland cannot be preserved, ED will inevitably follow. Treatment with oral PDE-5 inhibitors does not work without intact nerves, because of the absence of neurotransmitters.

Even with intact neurovascular bundles, the return of erectile function may take from 3-24 months (if ever). The recovery of damaged nerves is variable and full return of function is not guaranteed. The quality of erections also depends on the pre-surgery erectile function.

Initial treatment for all groups is by PGE₁ injection therapy or provision of a

vacuum erection device, although some men respond early to oral medication. It is important to keep testing with oral medication from time to time, beginning about six weeks after surgery. As soon as oral medication becomes effective, injections may be stopped.

There is some evidence of benefit from being on continuous oral medication in the absence of neurally induced erections, because of the positive effect of PDE-5 inhibitors on the endothelium of the penile blood vessels.

Peyronie's disease

Peyronie's disease is a fibrotic condition of the corpora cavernosa that produces penile shortening and pain, curvature on erection, and ED. The disease is seen most often in men in their late 40s and early 50s. It usually begins as painful erections, with subsequent penile curvature lasting 3-12 months, followed by a period of stable plaque formation and a variable degree of ED.

The most widely accepted theory of pathogenesis is tunical mechanical stress and microvascular trauma during sexual activity. There is a genetic predisposition in men with Dupuytren's contracture and HLA-B7 antigens.

In this group, ED can be multifactorial, arising from anxiety due to the presence of

an obvious penile deformity and from vascular changes (distal flaccidity and hourglass deformity). PGE₁ injections are contraindicated because they may worsen fibrosis.

About one-third of patients spontaneously improve over 24 months, one-third are unchanged, and one-third deteriorate. There is no universal consensus on treatment. Oral medications including colchicine, Vitamin E and tamoxifen have been tried as well as injectable treatments such as verapamil and interferon. Surgery includes the Nesbitt procedure (which involves straightening the penis but with a possible shortened erection), excision and grafting or insertion of an implant.

Gay men

Gay men tend to have a larger diversity of relationship styles that may create more pressure on sexual performance, thus increasing performance anxiety.

Condom use is encouraged in gay men to protect against the spread of HIV infection. However, the use of condoms, particularly in older men, may affect the quality of the erection, leading to the use of medication to enhance erections.

Men with HIV infection may complain of low libido, ED and delayed ejaculation.

Taking the history

MOST doctors are skilled at taking a general medical history but have a level of discomfort in discussing sexual matters. Patients with a sexual problem may have the same discomfort in discussing the problem. Sexuality can remain important in men and women despite the onset of ill-health and the changes of ageing.

Taking a general history may provide clues to the presence of risk factors. For example, a patient's medical history will reveal vascular risk factors. Other important factors are use of medications, tobacco, alcohol and other recreational drugs, and psychological and relationship issues (table 2).

A sexual history obtains more detailed information that may lead to an early diagnosis. It is important to ascertain if the problem is one of desire, erection or ejaculation, and if it has a physical, psychological or combined basis (table 3).

Examples of appropriate questions regarding the history of ED include:

- How long has the current problem been present?
- Were the changes sudden or gradual?
- Does the problem occur in all situations or does it vary?
- Do nocturnal and morning erections occur?
- Is the problem the same with masturbation?
- Has an abnormal curvature of the erect penis developed?
- Has the problem ever been present before?
- What is the state of the patient's relationship(s)?

Table 2: General history for erectile dysfunction

- Vascular risk factors
- Medical history — diabetes, cardiovascular disease
- Medications
- Use of tobacco, alcohol, recreational drugs
- Stress factors — relationship, financial, family

Table 3: Organic versus psychological causes of erectile dysfunction

Organic	Psychological
Gradual onset	Sudden onset
Older man	Younger man
Consistent, persistent	Variable, intermittent
Global problem	Situational problem
Morning erections poor	Morning erections OK
Masturbatory erections poor	Masturbatory erections OK
Orgasm/ejaculation intact	Orgasm/ejaculation varies
Presence of risk factors	Health good

- Has sexual abuse occurred? Remember to take religious and cultural factors into account. Older men may require reassurance that changes in their erectile function is a natural process and does not necessarily require treatment other than adjustment to sexual technique. Changes of

ageing require more stimulation to achieve an erection, less intense orgasm and reduced ejaculatory volume.

Use of condoms can be a problem if there is difficulty maintaining the erection. Repeating the sexual act (refractory period) may require days rather than hours.

Assessment

Examination

PHYSICAL examination of men with ED should include a general physical examination, with special attention to the genitals, secondary sexual characteristics, peripheral pulses and prostate.

Examination of the penis may reveal Peyronie's disease or fibrosis.

The testes, if soft and small, may indicate hypogonadism or Klinefelter's syndrome.

The character of limb pulses indicates peripheral vascular status.

Digital rectal examination reveals the presence of anal tone, the bulbo-cavernosus reflex and the state

of the prostate.

Investigations

Baseline blood testing should include fasting lipids and glucose, creatinine and morning total testosterone. Further testing, if warranted, may include free testosterone, sex-hormone-binding globulin, prolactin, LH,

FSH, TSH, PSA and LFTs.

Further investigations

Men usually experience 4-5 spontaneous erections during REM sleep. These nocturnal erections decrease in frequency and degree with age, hypogonadism and depression. A RigiScan device, available at specialised centres, can

measure these erections in cases in which differentiation between psychogenic and organic ED is difficult to ascertain.

Further information on the state of the cavernosal tissues and vasculature can be obtained by ultrasonography with a duplex Doppler ultrasound. Caver-

nosometry and cavernosography can determine the site of venous leakage when venous ligation surgery is being considered in younger men who may have congenital excessive venous drainage of blood from the erect penis. Selective pudendal arteriography displays arterial lesions in trauma cases.

Treatment

INITIAL treatment should focus on lifestyle changes and management of current medications. Optimising treatment for conditions like diabetes and hypertension may improve ED, and exercise has a beneficial effect at all ages.

If depression or relationship problems are evident, counselling is the preferred management (figure 6).

First-line therapy

The introduction of sildenafil (Viagra) in 1998 heralded a revolution as the first oral medication for ED. Tadalafil (Cialis) and vardenafil (Levitra) have since followed. These medications belong to the class of selective PDE-5 inhibitors that facilitate cGMP activity and subsequent corpus cavernosal smooth muscle relaxation. They have proved safe and effective for most causes of ED except severe vasculogenic and neurogenic ED.

PDE-5 inhibitors should not be taken by men using nitrate medication or the recreational drug amyl nitrate, because of the risk of severe hypotension. These drugs work well in most cardiac patients (when not on nitrate medication) but, as with any treatment for ED, the patient must be fit enough to engage in sexual activity before any treatment can be contemplated.

PDE-5 inhibitors also have a role in the treatment of psychogenic ED by reducing performance anxiety.

Each of the three medications has the potential for side effects, including headache, facial flushing, blocked nose and gastric reflux. In some instances, combining these medications with alcohol or fatty food has the potential to delay absorption and the onset of action (table 4).

Other oral agents include the anti-depressant trazodone and yohimbine (only available in the US), and apomorphine (Uprima), which is a non-opiate dopamine agonist, currently available in Europe and New Zealand. It is not as effective as the PDE-5 inhibitors but can be taken concurrently with nitrate medication.

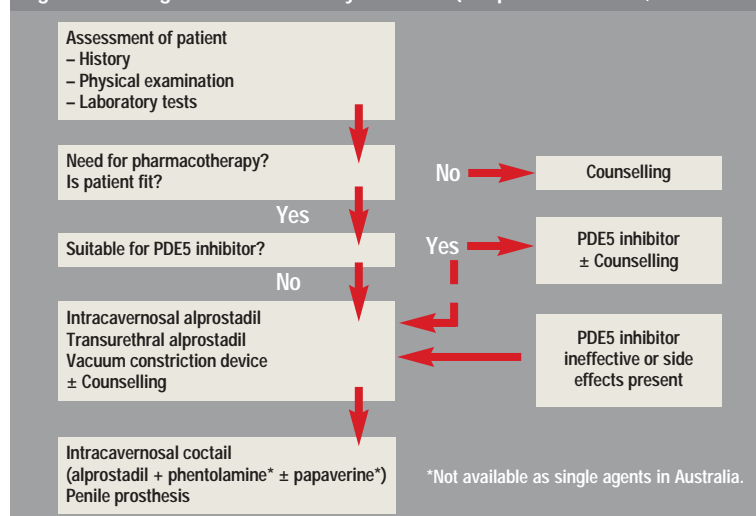
Second-line therapy

Intracavernosal injection therapy was the main treatment for ED from the late 1980s until the introduction of modern oral medication. Penile injections result in cavernosal smooth muscle dilation via the cAMP pathway. They may work in more diffi-

	Sildenafil (Viagra)	Vardenafil (Levitra)	Tadalafil (Cialis)
Doses (mg)	25, 50, 100	5, 10, 20	10, 20
Onset of action	1/2-1 hour	1/2-1 hour	1-2 hours
Duration	4-5 hours	4-5 hours	24-36 hours
Alcohol effect	Yes	Possibly	Possibly
Fatty food effect	Yes	Possibly	Possibly
Stimulation required	Yes	Yes	Yes
Nitrate contraindication	Yes	Yes	Yes
Side effects	Facial flushing, headache, blocked nose, gastric reflux Viagra: blue vision; Cialis: back pain		

	Initiator (stimulator)	Conditioner (facilitator)
Central	Dopamine agonists (apomorphine)	Testosterone, dihydroepiandrosterone (DHEA)
Peripheral	Injection (PGE ₁ : papaverine, phentolamine)	PDE-5 inhibitors (Viagra, Cialis, Levitra)
Devices	Penile implants, vacuum devices	

Figure 6: Management of erectile dysfunction. (Adapted from Chew, 2001⁷).



cult cases of vasculogenic ED when oral medication is ineffective.

Men taking nitrates can use injections if they are fit enough to have sexual intercourse. Some men who were using injections before oral treatment became available prefer the rapid response to injections and choose not to change.

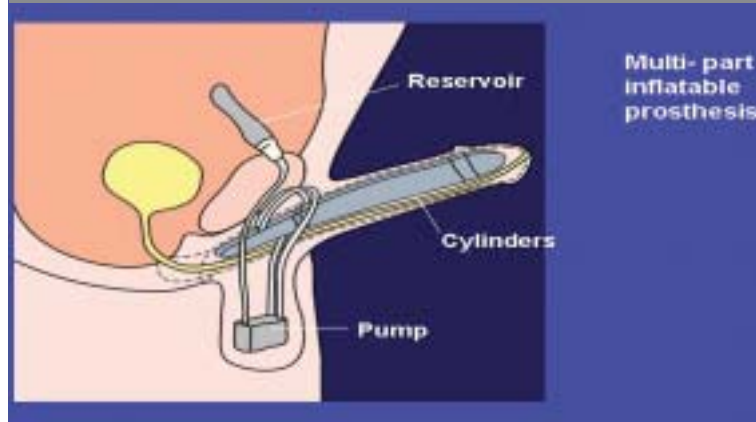
PGE₁, also known as alprostadil (Caverject, Prostin VR) is the medication with the least risk of fibrosis or priapism. About half of the men using these medications long term develop some level of fibrosis, but priapism is rare when treatment is

properly monitored. Those with diabetes are at greater risk of these complications. Papaverine use is associated with a higher risk of scarring.

Sometimes PGE₁ results in excessive pain or is not effective in severe vasculogenic ED. Combination mixes can then be prescribed using PGE₁ plus phentolamine ('bimix') or PGE₁, phentolamine and papaverine ('trimix').

Because of government recommendations, these mixtures should be prepared in approved compounding pharmacies, but not all compounding pharmacies prepare these mix-

Figure 7: Two types of prosthesis are available: semi-rigid malleable rods and inflatable devices. Semi-rigid malleable rods are used widely in many parts of the world because they are much less expensive. Inflatable devices tend to be more acceptable to patients than semi-rigid prostheses because they are more cosmetic and physiological. The most commonly used inflatable device has three parts: a pump located in the scrotum, a reservoir inside the body cavity beneath the rectus muscles of the abdomen, and two cylinders inside the corpora cavernosa. The advantage of this device is that the large reservoir allows all the liquid to be removed from the cylinders to afford a completely flaccid state. Sexual intercourse after surgery for a penile implant can usually be resumed at 4 weeks. Infection rates of 1-3% have been reported. (Adapted from Jardin A et al, [editors]. *Erectile Dysfunction*. Health Publication Ltd, Plymouth, 2000.)



tures. Your local pharmacy may be able to direct you to an appropriate compounding pharmacy.

These mixes may carry a higher risk of fibrosis and priapism. The treatment of priapism initially involves taking two 60mg pseudoephedrine tablets if the erection remains after two hours. If this is not successful, aspiration may be required through the local A&E.

Patients with risk factors for cardiac disease should be monitored for adverse effects.

Intra-urethral therapy was briefly available in Australia as alprostadil pellets known as MUSE (medicated urethral system for erection). MUSE is not as effective as injection therapy and post-treatment penile pain can occur. MUSE is marketed in the US and New Zealand.

Vacuum erection devices create an erection by extraction of air from a cylinder placed over the penis. The vacuum created causes increased blood flow into the penis which is retained by a rubber constriction ring. The technique requires practice and preferably the assistance of a partner.

The resulting erection may be cooler from the presence of venous blood and may pivot at the ring. Ejaculation (but not orgasm) is restricted by the ring. These devices work well for mature couples. Care should be

taken if the patient is taking an anti-coagulant.

Third-line therapy

Penile implants — surgically implantable penile prostheses — have been in use for 30 years. These days implants tend to be inserted as a last resort because of the effectiveness of other treatments.

A three-piece inflatable device (figure 7) gives the best cosmetic and functional result and there are low rates of mechanical failure and infection. Men who are appropriately selected and counselled for this type of treatment express much satisfaction with the result.

Vascular surgery

Surgery for veno-occlusive incompetence should only be considered in young men aged between 20 and 40 who have healthy cavernosal tissue and do not respond well to penile injection therapy or oral medication.

The surgery is either venous ligation surgery or dorsal vein arterialisation. The long-term prognosis is limited, with benefit lasting five years on average. Young non-smoking men with traumatic arterial lesions but no evidence of atherosclerosis may respond to arterial revascularisation surgery.

Managing the psychogenic component of ED

IT is interesting to note that historically men have tended to seek out medical rather than psychological intervention for any sexual difficulty. For generations sexual difficulties were ignored by the medical profession, until Masters and Johnson in the 1960s popularised the concept of sex therapy with behavioural options for managing sex problems. The subsequent use of papaverine and other penile injectables has effectively brought ED 'out of the closet,' with the emergence of so-called men's clinics.

After more than 10 years experience in a multidisciplinary clinic it is interesting to

note that the vast majority of men choose the apparent short-term benefit of penile self-injection in preference to seeking counselling, even in cases of obvious psychogenic ED.

This says something about society's desire for instant solutions to problems, but it also speaks volumes for men's reluctance to open up and expose themselves emotionally about anything as personal as sex. Jokes about preferring trips to the dentist are not misplaced.

The comments in this article are directed towards men in heterosexual relationships. Gay men can experience simi-

lar difficulties, although the sexual context and dynamic may differ. I work successfully with many gay couples but, to avoid confusion, do not refer to them specifically here.

Although many men seeking help for ED have a vasculogenic component to their problem, there is always a psychogenic component as well. A man's relationship with his penis underlies the very essence of male ego and the need to be at least sexually competent.

Unfortunately that relationship is prone to unpredictability, as highlighted in Greg Jolliffe and Peter Mayle's cartoon books on *Wicked Willy*,

Man's Best Friend. The humour in their books reflects the great male sexual fear — that of failure to perform.

We live in a competitive world and most men are competitive sexually, at least with themselves. Men have to deal with the mythology of the perfect male with the perfect penis. Size and performance matter.

I have never met anyone who did not admit to having experienced sexual anxiety at some point in their lives. For men anxiety centres largely on sexual performance. For women it is often more about their bodies and their partner's reaction to them.

What influences performance anxiety?

Most men learn what I call their 'sexual script' through masturbation. Their sexual pleasure is focused on the penis, with sexual conditioning from visual stimuli or from imaginative fantasies. By the time they become sexually interactive with others their sexual script has become selfishly well established.

When faced with the prospect of making love to another, that sexual script suffers dramatic modification. Social conditioning now requires that the man focus on his partner's needs and not let

the side down. This redirects his priorities to the desire to please as well as the fear of failure and often results in a loss of focus on his own selfish pleasure.

In simple terms, he is switching from the right side of his brain which gets him 'into the zone' sexually, to the cognitively aware left side. This can effectively reduce his level of arousal, with negative physiological consequences.

Optimal sexual enjoyment is often achieved by sexual excitement in a relaxed environment. Anxiety in an unfavourable or unfamiliar

cont'd page 33

from page 31
situation has a contrary effect. Combining sexual excitement with relaxation is a skill that many men need to learn.

All men are probably at risk. The ability to adapt the sexual script is the key to ongoing sexual confidence, and several key variables affect the outcome.

The individual

Sexually selfish men rarely consult because of ED. For obvious reasons their sexual script needs little adaptation. However, they have problems forming successful relationships.

Sensitive men who are more attractive as partners may have more problems. The flip side of sensitivity is vulnerability and these men often use their partner's pleasure as a conduit for their own. Unfortunately their erectile difficulty may in turn frustrate their goal, namely to give their partner full satisfaction.

Highly analytical men are also at risk. They can have difficulties 'switching off' their cognitive mind and getting into enjoying the physical pleasure of sex.

The partner

Young women are increasingly confident in their own sexuality. The perception of many young men is that this increases the sexual demands on them, and patients often voice fear of an initial sexual contact.

Ironically there is a silent collusion in the sexual expectations that young people place on each other. It is often 'cool' to be sexually up front, and social conditioning often pushes a couple into having sexual intercourse before either is emotionally ready.

In one sense women are the losers in this. Adapting to a more male approach to sex denies them their emotional conditioning to needing to be



emotionally intimate before agreeing to sex. Men have always tended to seek intimacy through the act of sex.

The situational environment

Contrary to mythology, men too have conditions for good sex. Put a sexually confident man into an inappropriate sexual situation and he risks failure. Some men suffer from the illusion that condi-

tions don't matter and blame themselves for failure when the situation wasn't right.

Women have always retained the right to refuse sex, and men should too. An invitation to sex should not necessarily evoke the 'don't look a gift horse in the mouth' response. Not all men are cut out for casual sex. That may frustrate them, but they need to recognise what works for

them sexually, then be honest with themselves.

Interaction between ED and other sexual difficulties in men

ED may be concomitant with premature ejaculation or inhibited sexual desire.

Premature ejaculation is an extremely common sexual problem. All men are not made equal and it is evident that men with premature ejaculation probably have a physiological predisposition to rapid ejaculation, further compounded by sexual anxiety.

In many instances a long-term process of trying to control premature ejaculation by reducing arousal can actively lead to concomitant ED. A full sexual history should usually reveal such relevant additional difficulties.

Not all men are highly sexual. This fact also flies in the face of male sexual mythology. Clinical experience shows that women in long-

term committed relationships are often more sexual than their partners.

After the initial honeymoon period in a relationship, many men have difficulty moving to the next phase sexually, which requires some emotional integration into their sexual desire. At this point they may start to withdraw sexually.

The anticipation of, or desire for, sex is a critical component of a man's sexual script. If he isn't in the right head space he would rather avoid sex than put himself at risk at being found wanting sexually. Again, the fear of erectile failure will underpin his behaviour. Resultant sexual withdrawal or an apparent lack of sexual desire is a frequent clinical presentation.

Women learn to be sexually responsive. Most men do not. They see themselves as only sexually proactive — anything else does not conform to their well-established sexual script.

Cognitive behavioural therapy for ED

The initial consultation

THE initial consultation is vital in establishing a rapport. Men like to avoid doctors. An initial appointment on the most personal of issues, often after a long period of procrastination, is a moment of great personal anxiety and vulnerability.

I see my initial consultation as an ice-breaking exercise. To establish an empathic and safe environment and to emphasise absolute confidentiality. The patient's situation needs to be normalised by emphasising that all men suffer from sexual anxiety and offering realistic hope that he can indeed be helped.

If he has a partner, it is important to establish her support and the importance of her participation. I like to see both partners separately before seeing them together to implement a relevant CBT program. The process of CBT is inevitably a practical subject and just talking about the problem is not going to solve it.

If the man does not have a partner, much can be done over time to build his sexual self-esteem and lower his sexual anxiety, particularly making him aware of his own conditions for good sex before exposing himself to any further sexual opportunities.

For example, one young man developed ED soon after he and his new wife moved in with her parents while their home was being renovated. Having his mother-in-law on the other side of a thin bedroom wall did not provide him with good conditions for sex.

After initial periods of counselling, the single patient may stop attending then come for further advice when a suitable partner is found. Most men with established ED are advised not to try to solve their problems through casual sex — it rarely works.

Taking the personal history

Useful lines of enquiry to establish the individual history include:

- What makes this person unique?
- What 'emotional training' has he received in his life?

- How does he deal with stress in his life and how much pressure has he tended to put on himself?

- What is his sexual history — what are his relevant sexual milestones, from initial patterns of masturbation, through early dating and petting, to early intercourse experiences and subsequent significant relationships?

The history is best taken chronologically, starting with family of origin, the parents' relationship, and the influence of the family on emotional development. The genetic and environmental influence of the family is usually very significant in influencing a person's capacity for close intimate relationships and hence their comfort in sexual situations.

For example, a young Irishman who was an only child had a history of difficulty forming and keeping close relationships. He had a strong tendency to jealousy and was very emotionally needy. When he was 13 his mother suddenly left home during an affair and virtually severed contact with him.

His father, with whom he then lived, quickly remarried and focused all his attention on his new relationship. The young man spent several years feeling very emotionally isolated and spent long periods alone in his room. This emotional legacy remained with him, influencing his ability to form a close relationship.

Peer-group experiences through school and the development of social skills are also very relevant. An educational history and detailed record of work and career experiences is also relevant. Men usually define themselves in terms of their status and their sense of 'what they do', rather than who they are. Men whose self-esteem is advantaged by career success are often less anxious sexually. The man who is unemployed or recently made redundant is often vulnerable to sexual difficulty.

A detailed history of sexual milestones is obviously relevant. Early sexual experiences are often informative.

All human behaviour is conditioned

and sexual behaviour is usually highly conditioned. A young man who gains his early sexual experience in what for him is a comfortable environment sets a precedent for sexual confidence that carries with it the predictors of future success.

By contrast, early sexual failure or difficulty leads to a cycle of increasing anxiety and lowered sexual self-esteem, which tends to lead to further failure.

The partner

A man's current partner is important in the management of the situation. Assuming her support, it is important that she is seen separately and that their sexual situation is seen from her point of view.

Most caring partners of men with ED will not discuss their shared secret with anybody else. This confidentiality respects loyalty to the partner and the relationship. While she may be outwardly supportive and understanding, she is still trying to come to terms with her own sexual disappointment and frustration. She needs to vent these feelings, which she possibly cannot share with her partner, with a counsellor in complete confidentiality.

However many men are surprised at how genuinely supportive women are. Most women committed to a sexual relationship have also made a significant emotional commitment. Solving the sexual difficulty together binds the couple even closer and is seen by women as a significant emotional investment. A man who is indebted to his partner in regaining his sexual confidence is unlikely to stray.

The CBT program

The CBT program for ED is relatively straightforward. The aim is to set short-term achievable goals and lay the ground rules of the process that will allow the goals to be achieved.

The vehicle for this process is interactive exercises based on the sensate focus routines originally formulated by Masters and Johnson. These exercises are divided into a non-genital pleasuring exercise and a genital pleasuring

exercise. A detailed written script is given to partners to guide them.

The goals focus very much on the mindset of the male partner. Above all he needs to focus on his own pleasure. He needs to be given permission to focus on his own selfish pleasure, both sensually and sexually.

As the partners take turns to pleasure one another, the female partner will get her share of pleasure. The man needs to relieve himself of the responsibility of giving his partner pleasure and allow himself to focus purely on his own.

This self-focus is often the key to the patient rediscovering his unique sexual script in the presence of his partner. The necessary selfish focus of sexual pleasure for him is re-established and he can start having fun again. No longer is his partner's sexual satisfaction his only conduit for his own sense of sexual achievement.

In essence, the CBT program is aimed at re-establishing the fundamental principles of why people have sex: it reinforces the desirability of enjoying physical intimacy at different levels and emphasises that sex should be fun.

To reduce the performance pressure on the man I often impose an initial ban on intercourse. The achievement of the erection for intercourse has become a type of examination for him. Examinations are not fun, and instead the couple are encouraged in joint forms of sexual expression that are not performance based.

In due course most men learn to relax, to redefine their sexual script with a partner and to enjoy sex again. Therein lies the key to success.

The infinite challenge of sexual counselling is that there are so many variables. Individuals, their unique relationships and many other factors will influence the course of therapy. However, the principles are relatively constant and a happy outcome is often achieved.

Future directions

IMPROVED topical, oral and injectable agents are currently under research. Gene therapy is an exciting concept involving reconstruction of cavernosal tissue but is still some time away.

Closer in time will be novel potassium-channel injection treatments, topical applications of PGE₁ and improved PDE-5 inhibitors and centrally acting agents.

The development of selective androgens may play a bigger role in the treatment of ED in hypogonadal men.

Practice points

- ED may be a presenting sign of undiagnosed vascular disease elsewhere in the body (coronary arteries, cerebral circulation).
- Vascular causes of ED predominate, but psychological issues are inevitably present and both should be addressed.
- Patients often have misguided fears of the risks of oral ED medication.
- A man must be fit enough to engage in sexual intercourse to be considered suitable for any ED treatment.
- Low testosterone level is rarely a cause of ED but can be associated with low libido. In cases of low libido, first exclude depression and relationship issues.
- The increasing incidence of ED together with the ageing population will result in increasing requests for treatment because of the expectations of maintaining good quality of life into the senior years.
- Counselling can be an effective treatment on its own and can improve the effectiveness of medical treatment.

Authors' case study

JOE, 35, presents with a six-month history of loss of libido, difficulty maintaining his erections after penetration and the onset of premature ejaculation.

While there is no history of previous sexual dysfunction, Joe does have a history of brief relationships that always ended when the issue of long-term commitment arose.

Joe has many married friends with children and he felt it was time to settle down when he met Mary, now aged 30. They had a brief courtship, fell very

much in love, and married two years ago. The marriage had become strained because of the dramatic deterioration in the sexual relationship.

Mary urged Joe to come to counselling. In a private moment with the counsellor, Joe revealed he still had a libido but was no longer aroused by Mary. He preferred to stimulate himself and continued to regularly wake with firm morning erections.

Joe persisted with counselling on his own and together with Mary. He

learned that the changes he was experiencing were a reaction to his past habit of short-term relationships and good sex but with lack of intimacy. He had lost confidence in his ability to maintain an ongoing relationship and had thus developed a performance anxiety and found it easier to avoid sexual union.

Counselling helped Joe address these issues and hopefully in time he will be able to commit himself to his marriage.

Joe's sexual difficulties could have easily been treated with ED medica-

tion. However, by taking the effort to establish the background to his problem, which encompasses all aspects of male sexual function, appropriate counselling treatment offers a good chance of saving the relationship.

There may still be a role for brief medical treatment, particularly in the early stages of counselling. In contrast, men with vasculogenic ED will mostly require ongoing medical treatment. In those situations, counselling may assist secondary psychological issues.

References available on request

Online resources

Andrology Australia:
www.andrologyaustralia.org

Impotence Australia:
www.impotenceaustralia.com.au

Sydney Men's Health:
www.sydneymenthealth.com.au

Relationships Australia:
www.relationships.com.au

GP's contribution



DR ALAN WRIGHT
South Lake, WA

Case study

FRANK, 56, has been attending the practice for about 10 years. He has been in a relationship for several months and complains of a lack of interest in sex, which started about four years ago, before his first marriage broke up.

His wife rejected his overtures for about 12 months

before she moved in with a woman she had been seeing for 18 months. Frank was devastated by this.

Frank had some difficulty forming long-term relationships and when the subject of sex was broached he would find an excuse to end the relationship. His current relationship was different in that he had decided that he should no longer avoid intimacy.

However, ED in this situation was almost complete. When questioned he advised that he often woke with an erection and was able to masturbate successfully.

Examination was normal and, apart from occasional asthma, his health was very

good. Investigations showed he was not dyslipidaemic and his fasting BSL was normal. He was euthyroid and his early morning testosterone level was 16nmol/L.

We discussed his relationship with his wife during their marriage and the effects of the separation on him, and also the use of Viagra with his new partner. He agreed to referral to a medical sex therapist and attended for several sessions, with and without his partner.

Frank continued to use Viagra for about six months after the counselling was completed. It is now two years down the track and he is in the same relationship. He no

longer uses Viagra and has only occasional erectile failure. He prefers not to use medication to deal with this.

Questions for the authors

Frank was able to afford to attend counselling, but what approach should be used for men who cannot?

Counselling with a sympathetic GP or the psychological services of the local mental health team.

How long can I expect Frank to be Viagra free?

This depends on Frank's stress and confidence levels. He is also approaching the age where men may develop ED as a result of physical reasons.

I think the length of the relationship between myself and Frank assisted with his management. How important is the doctor-patient relationship in the management of ED?

Very important if the GP feels comfortable dealing with sexual and psychological matters

General questions for the authors

What are your views on the routine use of PDE-5 inhibitors in men after radical prostatectomy?

PDE-5 inhibitors are useful only when nerve-sparing surgery has been performed. If they do not work initially, they should be retried every

three months or so up to 24 months after surgery.

Do you think it is important to determine whose idea it was to seek help for ED?

Partners often initiate referrals. What is important is the state of the relationship, and that may have a bearing on who initiates the consultation.

Can people with low-income access sex therapists?

The new Medicare arrangements for psychological services should provide access for psychologists trained in sex therapy. Medical practitioners who are trained sex therapists are already available to patients through Medicare.



How To Treat Quiz

Erectile dysfunction — 11 February 2005

INSTRUCTIONS

Complete this quiz to earn 2 CPD points and/or 2 PDP points by marking the correct answer(s) with an X on this form. Fill in your contact details and return to us by fax or free post.

FAX BACK

Photocopy form and fax to (02) 9422 2844

FREE POST

Australian Doctor Education Reply Paid 60416 Chatswood DC NSW 2067

ONLINE

www.australiandoctor.au/cpd for immediate feedback

1. Which TWO statements about erectile dysfunction (ED) are correct?

- a) Up to 50% of men will have ED by age 70
- b) The onset of ED occurs 10-15 years earlier in diabetic men than in men without diabetes
- c) Most men with ED receive treatment
- d) Diabetic men are three times as likely as non-diabetic men to have complete ED

2. Garry, 48, presents with ED. He has heard about 'male menopause' and requests a testosterone test. ED is not a symptom of which disease (choose ONE)?

- a) Cardiovascular disease
- b) Spinal cord tumour
- c) Depression
- d) Prostate cancer

3. Garry's BP is 160/110 and his remaining examination is normal. He has been using pseudoephedrine for rhinorrhoea. Fasting glucose, creatinine, triglycerides and a morning total testosterone are within normal limits. Cholesterol is 6.2mmol/L and LDL is 4.8mmol/L. What management would you most likely advise initially (choose ONE)?

- a) A trial of a PDE-5 inhibitor
- b) A testosterone implant

- c) Low fat, salt-reduced diet, regular exercise, cessation of pseudoephedrine and review of BP
- d) Intracavernosal injections of prostaglandin E1 (PGE₁)

4. Garry's BP is normal on two successive occasions and he decides to try a PDE-5 inhibitor. Which information about PDE-5 inhibitors is correct (choose TWO)?

- a) Fatty food may decrease the response to PDE-5 inhibitors
- b) If an erection sufficient for intercourse is not achieved on first use, the dose should be increased
- c) Alcohol decreases the response to PDE-5 inhibitors
- d) The onset of action of PDE-5 inhibitors is less than ten minutes

5. In which patients are PDE-5 inhibitors contraindicated (choose TWO)?

- a) Patients who use the recreational drug amyl nitrate
- b) All patients with a history of ischaemic heart disease
- c) Patients with controlled hypertension treated with calcium channel blockers
- d) Patients who use nitrate medications

6. Paul, 55, has had a radical prostatectomy during which the neurovascular bundles were preserved. What information should he be given about his erectile function following surgery (choose TWO)?

- a) Erectile function should return within three months of surgery
- b) PDE-5 inhibitors are always effective by six weeks post-operatively
- c) PGE₁ injection therapy can be used initially
- d) Vacuum erection devices can be used initially

7. Glenn, 45, has type 2 diabetes, hypertension, IHD and ED. He is overweight (BMI 34), uses long-acting nitrates and exercises very little. He is worried that his wife is unhappy with their marriage. Which management option is least likely to improve his erectile function (choose ONE)?

- a) Counselling
- b) PGE₁ injections
- c) Exercise
- d) Weight loss

8. In which ONE situation can PGE₁ injections be safely used?

- a) Illnesses that cause hyperviscosity
- b) Men with penile implants
- c) Vasculogenic ED where oral medication has failed or is contraindicated
- d) Men with pre-existing penile fibrosis

9. Claude, 35, has recently experienced ED. He has been stressed in his work but is not depressed. He has a good relationship with his wife and no cause for his ED is found on physical examination or in baseline pathology. Which alternative is least likely to help resolve the ED (choose ONE)?

- a) Cognitive behaviour therapy
- b) Casual sex
- c) PDE-5 inhibitors
- d) Support from his wife

10. Three years later Claude returns, complaining of painful erections, curvature of the penis and some ED. Peyronie's disease is diagnosed. Which ONE statement about this condition is correct?

- a) PGE₁ injections will be helpful
- b) It always resolves spontaneously
- c) Verapamil is the universally accepted treatment of choice
- d) There is a genetic predisposition

CONTACT DETAILS

Dr: Phone: E-mail:

RACGP QA & CPD No: and/or ACRRM membership No:

Address: Postcode:

The mark required to obtain points is 80%. Please note that some questions have more than one correct answer. Your CPD activity will be updated on your RACGP records every January, April, July and October.

NEXT WEEK The next How To Treat reviews the management options for psoriasis. The author, Dr Pam Brown, is director of the phototherapy unit, Skin and Cancer Foundation Australia, Darlinghurst, NSW, a dermatologist at Mona Vale, and VMO at Mona Vale Hospital, NSW.

Australian Doctor
Education

HOW TO TREAT Editor: Dr Lynn Buglar
Co-ordinator: Julian McAllan Quiz: Dr Marg Tait