



UNIT 2 Complications and comorbidities

Sexual health and dysfunction in men and women with diabetes

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Citation: Edwards D (2016) Sexual health and dysfunction in men and women with diabetes. *Diabetes & Primary Care* 18: 288–96

Learning objectives

After reading this article, the participant should be able to:

1. Describe the treatment of erectile dysfunction according to NICE guidelines and the options available if the individual does not respond to pharmacotherapy.
2. Outline the management of female sexual dysfunction and give appropriate pre-conception advice to women with diabetes.
3. Conduct a consultation and take a sexual history from an individual, with skill and respect.

Key words

- Contraception
- Sexual dysfunction
- Testosterone deficiency

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Sexual dysfunction is common in people with diabetes and, although much research has focused on erectile dysfunction, there is a lack of knowledge regarding sexual dysfunction in women. Maintaining sexual health is more challenging for those with diabetes, as there is an increased prevalence of fungal and bacterial infections. Taking a basic sexual history is therefore an important skill for a primary care clinician as an individual's sexual background will help to provide the appropriate treatment, be it pharmacological or psychological. This article discusses the identification and treatment of male and female sexual dysfunction in people with diabetes and explores how to take a sexual history.

Sexual dysfunction is common in people with diabetes. Much medical research has focused on male sexual dysfunction, particularly erectile dysfunction (ED). In general, male sexual dysfunction is more obvious and measurable than female – ED being a classic example. There is also more research into ED because effective treatments have been developed by the pharmaceutical industry. This gender imbalance is being addressed as more research on female sexual dysfunction is published. This article looks first at the identification and treatment of male and female sexual dysfunction and then at how best to conduct a consultation about sexual dysfunction, while taking into account the recommendations in the NICE guidelines on type 2 diabetes (NG28; 2015a) and menopause (NG23; 2015b).

Sexual health in men with diabetes

Erectile dysfunction

Over 150 million men worldwide have erection problems, and this figure is expected to increase to 320 million by 2025 (Ayta et al, 1999). ED can be defined as the persistent inability to attain

or maintain an erection that lasts long enough for satisfactory sexual activity (Hatzimouratidis et al, 2010). ED affects over half of men with diabetes, (Diabetes UK, 2013) and around 5% of men with ED have undiagnosed diabetes (Nieschlag et al, 2006). It is three times more common in men with diabetes than men without, and it occurs 10–15 years earlier in life in men with diabetes than those without (Feldman et al, 1994).

An erection is initiated by sexual stimulation and is a vascular process controlled by the autonomic nervous system. The blood vessels in the corpora cavernosa dilate and lead to increased arterial inflow and reduced venous outflow. Smooth muscle relaxation is crucial, and nitric oxide (NO) has been identified as the agent largely responsible for smooth muscle relaxation in the corpora cavernosum. NO stimulates guanylate cyclase, which leads to increased production of cyclic guanosine monophosphate, and it is thought that this induces smooth muscle relaxation through the opening of calcium channels (Price, 2010). In men with diabetes, evidence suggests that autonomic neuropathy and endothelial dysfunction contribute to the failure of NO-induced

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smooth muscle relaxation, resulting in ED (Sáenz de Tejada et al, 1989; 2004).

Assessment, management and treatment of ED

The MALES (Men's Attitudes to Life Events and Sexuality) study demonstrated that 64% of men with ED reported at least one comorbidity (Rosen et al, 2004). ED in men with diabetes is often multifactorial in aetiology (*Box 1*) and is more severe and resistant to treatment than in men without diabetes. ED is a marker for diabetes, depression, lower urinary tract symptoms and cardiovascular disease among others. From my clinical experience, 30% of the people with ED who I see have a raised fasting blood glucose of between 5.6 and 6.9 mmol/L. It is vital that when individuals attend for an appointment related to their diabetes, every consideration and opportunity is given by the primary care team to optimise their lifestyle, including smoking cessation and encouraging exercise. Smoking can increase the risk of ED (Feldman et al, 1994), although it is not proven that smoking cessation will improve existing ED.

More recent evidence has suggested that ED is an early marker for endothelial dysfunction (Pegge et al, 2006), and that cardiovascular health should be assessed in men presenting with ED. Furthermore, the risk of developing coronary heart disease is doubled for men with ED and type 2 diabetes compared with men without ED (Ma et al, 2008). With this in mind, "getting fit for sex" can be the gateway to improving overall health.

It is important that the individual presenting with ED (whether or not he has diabetes) is medically assessed. Assessment involves a sexual, medical, psychosocial and cultural evaluation. Initial blood tests that should be considered when assessing a man with ED are lipids, glucose, HbA_{1c} and 9.00 am testosterone. Full blood count, liver function and thyroid function tests can be useful additional measures. Clinicians should adopt a "treat to target" approach to issues such as hypertension and hypercholesterolaemia. Testing for prostate-specific antigen, creatinine and electrolytes should also be considered.

Drug therapy

Sildenafil, the first phosphodiesterase-5 (PDE-5) inhibitor approved for the treatment of ED, became

Box 1. Factors involved in erectile dysfunction in diabetes.

- Autonomic neuropathy
- Peripheral neuropathy
- Hypertension
- Peripheral vascular disease
- Hyperlipidaemia
- Drug-related side effects
- Hypogonadism with reduced sexual desire (double risk)
- Psychological factors including depression
- Ejaculatory disorders
- Retrograde ejaculation or anejaculation
- Reduced sensation (e.g. Peyronie's disease, balanitis, phimosis, fibrosis)

available in 1998, followed soon after by tadalafil and vardenafil, and, in 2013, avanafil. A rapidly dissolving form of vardenafil, which melts on the tongue (eMC, 2013e), and a once-daily form of tadalafil (eMC, 2013a), in my clinical experience, have both been useful additional treatment options. The treatment success rate with sildenafil in men with diabetes has been reported as 56–59% (Price et al, 1998; Rendell et al, 1999). Generic forms of sildenafil have reduced the acquisition costs considerably; and the patent of tadalafil and vardenafil are due to expire in 2017 and 2018 respectively, which will lower the acquisition costs further.

The duration of action of tadalafil, however, is longer than that of the other two PDE-5 inhibitors, with a "window of opportunity" lasting up to 36 hours (electronic Medicines Compendium [eMC], 2013a) compared with at least 4–5 hours for sildenafil and vardenafil (eMC, 2013b; 2013c; Price, 2010). The choice between these treatments usually depends on the preference of the individual. Many men with diabetes require the maximum dose of PDE-5 inhibitor and it should also be made clear that the drugs are only effective in combination with sexual stimulation.

It has been suggested that men who have not responded to treatment with a PDE-5 inhibitor may be successful with further education and attempts at intercourse. One study reported that intercourse success rates in men treated with sildenafil reached a plateau after eight attempts. It can be concluded

Page points

1. The risk of developing coronary heart disease is doubled for men with erectile dysfunction (ED) and type 2 diabetes compared with men without ED.
2. ED in men with diabetes is often multifactorial in aetiology and is more severe and resistant to treatment than ED in men without diabetes.
3. The first phosphodiesterase-5 inhibitor approved for the treatment of ED was sildenafil in 1998. It was followed soon after by tadalafil and vardenafil, and, in 2013, avanafil.

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1. Men with diabetes are commonly prescribed medications that may include erectile dysfunction (ED) as a side effect, and some people will consider stopping taking these medications as a result, often without telling their doctor.
2. It may be possible to change or modify individual treatment to drugs that are less likely to impact ED.
3. Hypogonadism, or testosterone deficiency syndrome, is not uncommon, with an estimated incidence in the UK of one in 200 men.

that men should attempt intercourse eight times using the maximum recommended dose of PDE-5 inhibitor before being considered a non-responder (McCullough et al, 2002). It is my personal opinion and that of colleagues that men with a new diagnosis of type 2 diabetes should be prescribed low-dose PDE-5 inhibitors routinely on a daily basis (Hackett, 2015) if they are sexually active and have ED.

Other treatments

It may be helpful to prescribe a vacuum erection device (VED) for use on a daily basis as a penile trainer to encourage blood flow into the penis and as a confidence builder, as many people with ED have been without erections for several years. A consensus statement that draws together recommendations for post-surgical ED has confirmed that using a VED either alone or in combination with other treatments can be helpful (Kirby et al, 2013). It is not unusual for men to require more than one therapy for their ED, which may include testosterone replacement.

Other forms of ED treatment include urethral pellets, injections into the corpora cavernosum, or penile implant surgery. In men with neuropathy, alprostadil injection therapy has been shown to be an effective treatment for ED (Porst, 1996).

A topical form of alprostadil, applied to the glans tip, is also available. This topical preparation benefits from a “skin-permeation-enhancing drug delivery platform”. This allows rapid transdermal penetration of alprostadil, with efficacy observed within 5–30 minutes of application (Padma-Nathan and Yeager, 2006). In a multi-centre, open-label, long-term US study ($n=1161$), it was found to be effective by 74% of participants and considered safe by most patients and their partners (Rooney et al, 2009). This could well prove to be an attractive form of administering the drug, as “high anxiety” was reported by 65% of men using intracavernosal injections for the first time. This had reduced to 42% after using these injections for 4 months (Nelson et al, 2013).

Other novel treatments for ED include low-intensity extracorporeal shock wave therapy (Vardi et al, 2012). This procedure has been demonstrated to work on humans and may add another dimension to treating ED. Stem-cell therapy when related to “restoration of normal penile vasculature and neuronal homeostasis” is also of interest (Albersen et

al, 2013). Similarly, NO-releasing microspheres have been shown to improve ED in diabetic rats (Soni et al, 2013). Time will tell whether these studies become part of routine ED management.

Guidelines for the management of ED can be accessed on British Society for Sexual Medicine website (www.bssm.org.uk [accessed 16.06.16]).

Therapies that may cause or worsen ED

Men with diabetes are commonly prescribed medications that may include ED as a side effect, and some people will stop taking these medications as a result, often without telling their doctor. Such drugs include statins and antihypertensive medications (e.g. non-selective beta-blockers and diuretics). However, withdrawal of a drug could compromise the treatment of another important condition and it is important to remember that the problem being treated, as well as the drugs prescribed to treat it, can be associated with ED. It may be possible to change or modify individual treatment to drugs that are less likely to impact ED, such as choosing angiotensin-2 receptor blockers for the treatment of hypertension (Khan et al, 2002), although further research is required in this area.

Testosterone deficiency syndrome

Hypogonadism (or testosterone deficiency syndrome) is not uncommon, with an estimated incidence in the UK of one in 200 men, and can present with symptoms of reduced libido or ED (Nieschlag et al, 2004). In a study by Kapoor et al (2007), 20% of men with diabetes had a total testosterone level of <8 nmol/L and 31% had a testosterone level between 8 and 12 nmol/L. Most sexual dysfunction specialists would agree that if both features are present then testosterone replacement therapy (TRT) should be considered unless contraindicated (Handelsman, 2002).

It is vital that healthcare professionals screen people for hypogonadism as there is a strong association between low testosterone and mortality and morbidity. The 10-year mortality is almost twice as high in men with low testosterone when compared with men in the highest percentile (Shores et al, 2006). Men with type 2 diabetes have double the rate of hypogonadism (Mulligan et al, 2006).

The total testosterone blood test should be taken at 09.00 am (or 2 hours either side) as there is diurnal

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variation. In general, TRT should not be used when the total testosterone is above 12 nmol/L, whereas men with levels below 8 nmol/L will usually benefit from TRT. In individuals with a testosterone level of between 8 and 12 nmol/L, a trial of TRT may be useful. It is important not to initiate treatment having obtained just one total testosterone level: further tests (including prolactin, sex hormone-binding globulin, luteinising hormone/follicle stimulating hormone, liver function test [LFT] and prostate-specific antigen test) should be performed prior to TRT.

There are various preparations that are available for TRT, including topical gels and 3-monthly injections. Although oral capsules are available, they are not recommended as testosterone blood levels may be unreliable. The individual needs to be monitored at 3–6 months, at 12 months and at least annually thereafter. This includes digital rectal examination and blood tests, total testosterone, full blood count and LFT. Guidelines for advice concerning blood tests and management issues are available (see Wylie et al, 2010). TRT in obese hypogonadal men, most of whom had diabetes, has been shown to lower HbA_{1c} and glucose levels progressively over 8 years. There was also a reduction in blood pressure, BMI and abdominal circumference (Saad et al, 2016).

Other common diabetes-related sexual problems in men

There is a range of other conditions that occur more commonly in men with diabetes, such as premature ejaculation (PE), balanitis and phimosis, which can make sexual activity uncomfortable or painful. It is therefore important that full enquiry is made regarding these conditions.

PE is common in men with diabetes. One study reported a prevalence of 32.4% in men with type 2 diabetes aged under 50 years and 67.6% in such individuals above 50 years. Men with poor metabolic control were 9.6 times more likely to report PE compared with those who had good metabolic control (El-Sakka, 2003). Dapoxetine is available for prescribing to men aged between 18 and 64 years who experience PE and meet specified criteria (eMC, 2013f). It is a short-acting, quick-onset selective serotonin reuptake inhibitor (SSRI). It is taken orally and can be used as needed (approximately 1–3 hours prior to sexual activity).

It is the only SSRI medication that is currently licensed for PE, although some clinicians have utilised long-acting SSRIs, taken on a daily basis, which are unlicensed for use in PE.

Balanitis (inflammation of the glans penis) can have both physical and psychological effects on ED and intercourse owing to irritation, pain, discharge and anxiety associated with transmitting a fungal infection to a partner. The prevalence of balanitis in men with diabetes was 16% compared with 5.8% in men without (Fakjian et al, 1990). Furthermore, Drivsholm et al (2005) found that 12% of men have suffered from balanitis in the 2 years prior to them being diagnosed with diabetes.

Phimosis (a condition where the foreskin cannot be retracted) and Peyronie's disease (growth of connective scar tissue in the penis) can also affect the ability to have intercourse, and both are more common in men with diabetes. The prevalence of Peyronie's disease in men with diabetes and ED has been estimated as 20.3% (Arafa et al, 2007). Data on the natural history of Peyronie's disease suggest that 13% of cases will gradually resolve, 47% will remain stable and 40% will worsen (Gelbard et al, 1990). There are various treatments available, directed at those in whom the condition is getting worse, including surgery and verapamil injection.

Phimosis is common in men with diabetes. One study showed that 32% of men presenting at a urology clinic had diabetes and phimosis (Bromage et al, 2008), reinforcing the need to perform fasting blood glucose levels when these conditions are discovered. Physiological phimosis may just require an improvement in hygiene and observation, whereas pathological phimosis will require referral to a urologist.

Diabetes can also cause penile fibrosis due to loss of endothelium and smooth muscle cells from the corpus cavernosum (Burchardt et al, 2000).

Sexual health in women with diabetes

The paucity of knowledge regarding female diabetes and sexual health is only gradually being addressed.

Research has been difficult to design and there are many methodological problems (De Veciana, 1998). Nowosielski et al (2010) conducted an analysis of 544 Polish women, as well as reviewing a number of studies on women with diabetes. The authors found that the prevalence of female sexual dysfunction in

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1. The paucity of knowledge regarding female diabetes and sexual health is only gradually being addressed.
2. Simple but effective treatments for female sexual dysfunction include topical hormone replacement therapy using topical oestrogens (tablets, pessaries, rings or creams), vaginal lubricants or a combination of the two.

women with diabetes was between 14% and 71% (17–71% with type 1 and 14–51% with type 2 diabetes), but they accepted it could be either under- or overestimated. Low desire (17–85%) and reduced lubrication (14–76%) were the most frequently reported female sexual dysfunction; orgasmic and pain disorders were less common (1–66% and 3–61%, respectively). The authors describe possible explanations as to the causes of this, including decreased receptivity to sexual stimulation and endothelial deregulation due to diabetic neuropathy (Nowosielski et al, 2010).

Caruso et al (2006) found that reduced sexual satisfaction and sexual activity were a result of decreased clitoral blood flow. Some authors comment that factors such as age, BMI, duration of diabetes, glycaemic control, HbA_{1c} level, menopausal status, the use of hormonal and oral contraceptives, or even the presence of diabetes complications could be relevant, whereas others found contradictory results. An association has been found in women with type 1 diabetes between retinopathy and reduced vaginal blood flow, and in the same study women with neuropathy were also found to have reduced clitoral sensitivity (Both et al, 2012).

Simple but effective treatments for female sexual dysfunction include topical hormone replacement therapy (Rees, 2009) using topical oestrogens (tablets, pessaries, rings or creams), vaginal lubricants or a combination of the two. At present, two lubricants are available on prescription: ReplensMD® (Anglian Pharma, Overton, Hampshire) and Sylk® (Sylk, Kingston Upon Thames, London). Care is required when advising or prescribing vaginal moisturisers and lubricants (Edwards and Panay, 2016). Many women with type 2 diabetes are post-menopausal and the symptoms of menopause can include vaginal dryness and a lack of libido, among others. NICE has recently released guidelines on menopause and recommends advising women with vaginal dryness that moisturisers and lubricants can be used alone or in addition to vaginal oestrogen (NICE, 2015b).

Pre-conception care

The NICE (2015c) guideline for diabetes in pregnancy recommends that women with diabetes should be informed about the benefits of pre-conception glycaemic control at each contact

with healthcare professionals from adolescence. In a study by Pearson et al (2007), women who planned for pregnancy and waited until their glycaemia was under control before stopping contraception had lower rates of adverse outcomes.

Contraception

Women of childbearing age should be informed about the need for effective contraception. Women with diabetes (type 1 and type 2) with no vascular disease can generally use any form of contraception. However, women with nephropathy, neuropathy, retinopathy or other vascular disease should not use progestogen-only injectable contraception because side effects can aggravate these complications. These include a tendency to gain weight; a potential increase in coagulation factors for prothrombin (II), VII, VIII, IX and X; a risk of retinal thrombosis; potential glucose intolerance; and, rarely, abscess formation at the injection site (eMC, 2013d). Likewise, the combined oral contraceptives, the combined contraceptive patch and the combined contraceptive vaginal ring should only be used with consideration of the above risk factors. Sterilisation is an option but must be performed in a setting with healthcare professionals experienced in managing diabetes, as well as backup medical support. The UK Medical Eligibility Criteria for Contraceptive Use (UKMEC, 2016) offers further guidance to providers of contraception regarding who can use contraceptive methods safely.

Other diabetes-related sexual problems

Fungal and bacterial infections are also very common in women with diabetes, and it has been found that vulvovaginal candidiasis occurs more often in this group of women (Bohannon, 1998). Vulvovaginal candidiasis that is chronically recurring can be a marker for diabetes (Sobel, 1997) and may occur as a side effect of SGLT-2 inhibitor therapy in both men and women. An improvement in glycaemic control can reduce the risk of reinfection.

Polycystic ovary syndrome (PCOS) is a common problem, affecting 5–10% of all women of childbearing age. The most common facets are hyperandrogenism and chronic anovulation, which can lead to infertility and sexual dysfunction (Eftekhar et al, 2014). There is a high prevalence of

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diabetes (16%) and hypertension (40%) in women with PCOS (Carmina and Lobo, 1999). Metformin can help improve insulin sensitivity sufficiently to induce ovulation and facilitate conception. Clomiphene citrate is the drug of choice in inducing ovulation (Balen and Rutherford, 2007a), but where there is a lack of ovarian response, other more complicated and expensive treatment regimens may need to be used (Carmina and Lobo, 1999). Once pregnancy is achieved there is an increased risk of spontaneous abortion because of abnormal hormonal levels, abnormal embryos due to atretic oocytes, and an abnormal endometrium (Carmina and Lobo, 1999). In the established pregnancy, there are increased rates of complications such as pre-eclampsia, diabetes, premature labour and stillbirth. In a study by Legro et al (1999), almost a third of women with PCOS of reproductive age had impaired glucose tolerance and 7.5% had diabetes.

Basson et al (2010) noted that overweight but not lean women with PCOS have an increased incidence of sexual dysfunctions, noting that further research in such women with PCOS was needed. The authors also commented that an “optimal balance of hormonal milieu is critical to normal sexual functioning” but that hormones were only one component.

Diabetes-related infertility in men and women

The link between diabetes and ED has already been discussed and needs to be assessed when couples present with fertility issues. Diabetes is also strongly associated with PE (as described earlier) and reduced libido. Integrity of the central and peripheral neurotransmitters and autonomic nervous system are of paramount importance for erection and ejaculation (Sáenz de Tejada and Goldstein, 1988).

The main link between women with diabetes and fertility problems appears to be obesity. Weight loss improves not only the endocrine profile but also the reproductive outcome, and 5–10% weight loss can reduce central fat by as much as 30% (Norman et al, 2004). Insulin resistance is an important pathophysiological abnormality (Balen and Rutherford, 2007b) and the greater the degree of insulin resistance, the longer the time interval between menstrual bleeds (Balen et al, 1995).

Updated NICE guidelines

The 2015 NICE update on type 2 diabetes management (NICE, 2015a) stresses the importance of continuing education, advice and patient-centred care. Stepwise drug treatment and managing complications (including ED) are also highlighted, and revisions were made to the section on managing ED:

- Offer men with type 2 diabetes the opportunity to discuss ED as part of their annual review.
- Assess, educate and support men with type 2 diabetes who have problematic ED, addressing contributing factors such as cardiovascular disease as well as possible treatment options.
- Consider a PDE-5 inhibitor to treat problematic ED. In men with type 2 diabetes, initially choose the drug with the lowest acquisition cost and take into account any contraindications.
- Following discussion, refer men with type 2 diabetes to a service offering other medical, surgical or psychological management of ED if treatment (including a PDE-5 inhibitor as appropriate) has been unsuccessful.

These revisions to the recommendations promote holistic care of the man and do not focus solely on the erection, but instead enthuses the patient, his partner, and healthcare professional to fine-tune lifestyle and comorbidity management (Edwards, 2016).

Effect of diabetes on psychological, physical and social wellbeing

The pathophysiological changes of sexual dysfunction that are associated with diabetes are mainly due to a variable combination of neuropathy, vasculopathy, hypogonadism and locally occurring pathological factors. Although the physical effects of diabetes are well established, it should be remembered that social and psychological aspects can also play a part in sexual dysfunction. This is illustrated by the case example in *Box 2*.

The chronic nature of diabetes and its complications can lead to relationship problems, including arousal difficulties and sexual inhibition. Men with diabetes may need more physical stimulation, which may not be appreciated by the partner, who might feel unloved and less attractive.

Page points

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Box 2. Case example.

Mr G, aged 28 years, presented to his GP with erectile dysfunction (ED). He has type 1 diabetes and is treated with a basal-bolus insulin regimen. He has read about the effect that diabetes can have on erections. He has been married for 2 years and has had ED for the past 6 months but still has early morning erections.

After taking a fuller history it transpired that his mother-in-law is dying from cancer and there is family pressure to conceive a first grandchild before she dies. This social pressure had put psychological strain on him to perform sexually to fit in with his wife's ovulation. An explanation of the effect of psychological stress on performance, fertility education and a phosphodiesterase-5 inhibitor enabled a grandson to be conceived and born prior to his mother-in-law's death.

Box 3. Taking a basic sexual history.

Below are a range of areas that should be covered to take a full sexual history.

- "So, what appears to be the problem?" – Ideally, try to obtain both the patient's and partner's perspective.
- "How long has it been going on?" – Establish the duration of the problem.
- "What actually happens?"
- Confirm the duration of relationship, and the partner's age and gender.
- If there are multiple partners, past or present, establish if the problem has occurred with all of them.
- Establish if the partner has a problem. Is it sexual (e.g. atrophic vaginitis), general medical (e.g. arthritis in the knees) or psychological (e.g. depression)?
- Determine if intercourse is possible and, if so, what sort (vaginal, oral or anal)?
- Establish if there is the same problem with masturbation.
- Enquire about sexually transmitted infections past or present (in the patient or partner) and protective measures taken.
- Ask about the need for contraception or if conception is being attempted.
- Explore the general medical and social history (past and present).
- Consider the potential impact of other medical conditions such as cardiovascular disease, depression and cancer (in the patient and partner).
- Establish if there have been any hospital admissions or surgery (especially genital), past or present, not forgetting obstetric or infertility aspects.
- Consider who else is at home (children, elderly relatives, flatmates or animals)?
- Determine if there is any work or family stress, and if there have been any changes in the patient's situation or level of stress?
- Explore if there any cultural or religious factors regarding the patient and partner.
- Obtain a drug history and ask about whether drugs used were prescribed or recreational and when they were initiated or discontinued with regard to a sexual problem.

This can then lead to poor self-esteem, anxiety and depression (Bancroft and Gutierrez, 1996).

Consultation and referral

Discussing sex with an individual

A number of barriers that stop healthcare professionals raising the subject of sex have been

identified (Athanasiadis et al, 2006):

- Lack of relevant training.
- Embarrassment.
- Time constraints.
- Conservative sexual beliefs.
- Insufficient knowledge on sexual health.
- Insufficient acceptance of the individual's sexual profile.

Respecting confidentiality at all times can be especially important in this area. Furthermore, cultural and religious attitudes need to be considered. It is also important to enquire about the partner's sexual and general health. It is always helpful to encourage the partner to attend or offer for him or her to come to the follow-up appointment to obtain this person's perspective.

Adolescents with diabetes are not excluded from having anxieties concerning sexual matters, and particular attention needs to be paid to this group; they may be having difficulty enough just coming to terms with their diagnosis of diabetes.

Finally, it is worth being aware that people may present with a "calling card" (e.g. athlete's foot) to test the clinician out. It is important to ask about sexual function so that the individual has the opportunity to voice any concerns.

Taking a basic sexual history

Every interaction between patient and clinician will be subtly different, but in broad terms the "art" of taking a sexual history is to listen, look interested, maintain good eye contact and be encouraging with both non-verbal and verbal cues (Box 3). It is particularly important in such conversations that the clinician adopts a non-judgemental, caring and professional consulting style to minimise embarrassment.

As part of the consultation, it is vital to ascertain what actually happens (and what does not) during sexual activity. Also, one needs to be prepared that consultations covering this topic may run into other areas. For instance, ED may be an expression of underlying psychosexual issues, and this may need to be discussed with a trained counsellor.

When to refer

Unlike many topics in general practice, sexual dysfunction seems to have a wide range of referral

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patterns. Some clinicians refer early to a specialist while others will manage the majority of their patients, carrying out investigations and treating where necessary. Typical reasons to refer include:

- Pronounced psychosexual therapy needs.
- A desire to initiate therapies for ED such as intracavernosal injections, intraurethral pellets and surgery options.
- Non-response to PDE-5 inhibitors.
- Consideration of testosterone replacement therapy.
- A requirement for specialist investigations for comorbidities, such as exercise tolerance testing.
- Referrals for comorbidities found during assessment, such as prostate cancer.
- The sexual dysfunction being of a nature that is outside the competence of the clinician.

Conclusion

Sexual problems are common in both men and women with diabetes. Healthcare professionals need to be comfortable asking individuals about such problems and, where necessary, refer on to sexual dysfunction specialists. A Contract of Sexual Health (COSH; Edwards, 2010) can provide an ongoing programme for the individual and his or her partner, as well as the clinician and wider healthcare team. By using the individual skills of healthcare professionals, both the person's sexual difficulties and any medical or lifestyle issues can be progressively addressed, so that he or she is empowered and encouraged to holistically improve not only sexual issues but also general health. ■

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“Healthcare professionals need to be comfortable asking individuals about such problems and, where necessary, refer on to sexual dysfunction specialists.”

Supported by an educational grant from Janssen, part of the Johnson & Johnson Family of Diabetes Companies. These modules were conceived and are delivered by the Primary Care Diabetes Society in association with Diabetes & Primary Care. The sponsor had no input into the module and is not responsible for its content.

Online CPD activity

Visit www.diabetesonthenet.com/cpd to record your answers and gain a certificate of participation

Participants should read the preceding article before answering the multiple choice questions below. There is ONE correct answer to each question. After submitting your answers online, you will be immediately notified of your score. A pass mark of 70% is required to obtain a certificate of successful participation; however, it is possible to take the test a maximum of three times. A short explanation of the correct answer is provided. Before accessing your certificate, you will be given the opportunity to evaluate the activity and reflect on the module, stating how you will use what you have learnt in practice. The CPD centre keeps a record of your CPD activities and provides the option to add items to an action plan, which will help you to collate evidence for your annual appraisal.

- According to Nieschlag et al (2006), what approximate percentage of men with erectile dysfunction have UNDIAGNOSED diabetes? **Select ONE option only.**
 - 1%
 - 5%
 - 10%
 - 15%
 - 20%
- According to Diabetes UK figures (2013), what approximate percentage of men with diabetes have erectile dysfunction? **Select ONE option only.**
 - 10%
 - 25%
 - 33%
 - 50%
 - 66%
- A 57-year-old man with well-controlled type 2 diabetes has gradually developed erectile dysfunction over the past year. His mood and libido are good and he has no other symptoms. FBC, U&E, TFT, LFT and lipid profile are all normal. Which is the **SINGLE MOST** appropriate ADDITIONAL investigation? **Select ONE option only.**
 - C-reactive protein
 - Ferritin
 - PSA
 - Testosterone
 - Vitamin B12
- What is the estimated “treatment success rate” with sildenafil for men with diabetes and erectile dysfunction? **Select ONE option only.**
 - 10%
 - 20%
 - 40%
 - 60%
 - 80%
- Which phosphodiesterase inhibitor has the **LONGEST** duration of action? **Select ONE option only.**
 - Avanafil
 - Sildenafil
 - Tadalafil
 - Vardenafil
- A 69-year-old man has type 2 diabetes and erectile dysfunction. Initial doses of sildenafil have been ineffective, so he will now try maximal strength (100 mg). According to McCullough et al (2002), HOW MANY times should sexual intercourse be attempted using the maximum recommended dose before he is considered a “non-responder”? **Select ONE option only.**
 - 1
 - 2
 - 4
 - 8
 - 16
- A 54-year-old man with type 2 diabetes is distressed by his long-term problem of premature ejaculation. This is now having a significant effect on his marriage and he would like to try medication. Which is the **SINGLE MOST** appropriate drug? **Select ONE option only.**
 - Citalopram
 - Dapoxetine
 - Doxazosin
 - Sildenafil
 - Testosterone
- A 21-year-old man with type 1 diabetes has developed low libido, anergia and mild depression. His glycaemic control, BMI and lifestyle are good. Examination and blood screening are normal apart from a low 09.00 am testosterone of 6 nmol/L. Which is the **SINGLE MOST** appropriate NEXT management step? **Select ONE option only.**
 - Measure 09.00 am cortisol
 - Measure 09.00 am testosterone
 - Refer to endocrinology
 - Refer to urology
 - Start a phosphodiesterase inhibitor
 - Start testosterone replacement
- According to Nowosielski et al (2010), what is the **MOST FREQUENT** sexual dysfunction symptom reported by women with diabetes? **Select ONE option only.**
 - Anorgasmia
 - Deep dyspareunia
 - Increased physiological discharge
 - Low libido
 - Reduced sensation
- A 44-year-old woman with type 2 diabetes requests contraception. Her BMI is 39 kg/m². She has poor glycaemic control, hypertension, peripheral neuropathy and background retinopathy. According to UKMEC (2016), which of the following is the **SINGLE MOST** appropriate contraceptive method to initially recommend? **Select ONE option only.**
 - Combined contraceptive pill
 - Copper-bearing intrauterine device
 - Levonorgestrel-releasing intrauterine system
 - Progestogen-only injectable
 - Progestogen-only pill