A practical guide on managing erectile dysfunction

Based on the 2017 British Society for Sexual Medicine (BSSM) guidelines on the management of erectile dysfunction in men[1]

What is erectile dysfunction (ED)?

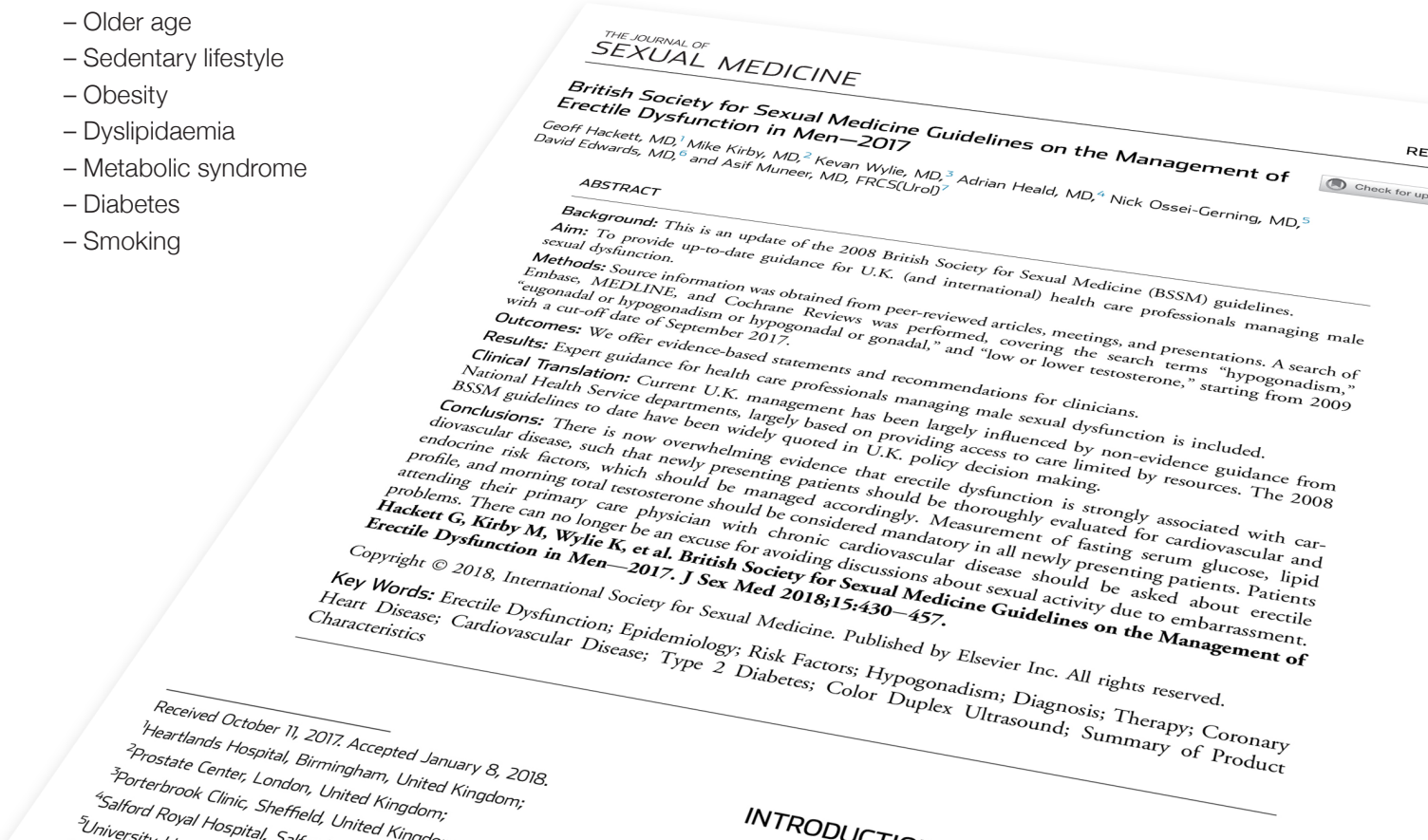
- ED is the persistent inability to attain and/or maintain an erection sufficient for satisfactory sexual performance
- ED is caused by various vascular, neuronal, hormonal and metabolic factors, mediated by endothelial and smooth-muscle dysfunction
- Although most causes of ED are physical, some are due to psychosexual issues; nevertheless, all patients with ED should have a history, examination and investigations performed, even if a psychological cause is suspected
- ED is a cardiovascular (CV) risk factor, posing a risk equivalent to that of current, moderate smoking
- ED is also an important marker for future CV events, with symptoms occurring some 3–5 years before an event[2,3]
- The physical and psychosocial effects of ED can significantly affect the quality of life of patients and their partners[4]

Who is at risk?

- The risk factors for ED are similar to those for cardiovascular disease (CVD):[2,3]
  - Older age
  - Sedentary lifestyle
  - Obesity
  - Dyslipidaemia
  - Metabolic syndrome
  - Diabetes
  - Smoking

What are the other benefits of case-finding ED in practice?

- Increasing awareness regarding the availability of safe and effective oral drugs for ED,[5–7] has led to more men seeking help for this condition, which facilitates the early detection of:
  - Diabetes (ED may be the first symptom in up to 20% of men)[8,9]
  - Dyslipidaemia (may not require treatment according to primary prevention guidelines, but may be a major reversible component in ED)[9]
  - Occult cardiac disease (in an otherwise asymptomatic man, ED may be a marker for underlying coronary artery disease)[9]
  - Testosterone deficiency (TD; a reversible cause of ED that may not require specific ED treatment, and which also has other long-term health implications)[10]
  - Associated lower urinary tract symptoms (LUTS)/benign prostatic hyperplasia (BPH) (ED and LUTS severity are closely related, and treatments for one condition may beneficially or adversely affect the other)[8,11]



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British Society for Sexual Medicine Guidelines on the Management of Erectile Dysfunction in Men—2017

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ABSTRACT

Background: This is an update of the 2008 British Society for Sexual Medicine (BSSM) guidelines.
Aim: To provide up-to-date guidance for U.K. (and international) health care professionals managing male sexual dysfunction.
Methods: Source information was obtained from peer-reviewed articles, meetings, and presentations. A search of Embase, MEDLINE, and Cochrane Reviews was performed, covering the search terms "hypogonadism," "eugonadal or hypogonadism or hypogonadal or gonadal," and "low or lower testosterone," starting from 2009 with a cut-off date of September 2017.
Outcomes: We offer evidence-based statements and recommendations for clinicians.
Results: Expert guidance for health care professionals managing male sexual dysfunction is included.
Clinical Translation: Current U.K. management has been largely influenced by non-evidence guidance from National Health Service departments, largely based on providing access to care limited by resources. The 2008 BSSM guidelines to date have been widely quoted in U.K. policy decision making.
Conclusions: There is now overwhelming evidence that erectile dysfunction is strongly associated with cardiovascular disease, such that newly presenting patients should be thoroughly evaluated for cardiovascular and endocrine risk factors, which should be managed accordingly. Measurement of fasting serum glucose, lipid profile, and morning total testosterone should be considered mandatory in all newly presenting patients. Patients attending their primary care physician with chronic cardiovascular disease should be asked about erectile problems. There can no longer be an excuse for avoiding discussions about sexual activity due to embarrassment.

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Key Words: Erectile Dysfunction; Epidemiology; Risk Factors; Hypogonadism; Diagnosis; Therapy; Coronary Heart Disease; Cardiovascular Disease; Type 2 Diabetes; Color Duplex Ultrasound; Summary of Product Characteristics

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INTRODUCTION

History taking

- **Obtain** a detailed description of the problem, including:
  - Symptom duration
  - Predisposing, precipitating and maintaining factors (if identified)
  - Any subsequent investigations
  - Previous/current treatment interventions and response
  - Reported tumescence, rigidity and quality of morning, spontaneous, masturbatory and/or partner-related erections
  - Sexual desire
  - Ejaculatory timing, control and orgasmic dysfunction
  - Previous erectile capacity
  - Any personal issues regarding sexual aversion or pain
  - Any partner issues, such as low sexual desire, menopause or gynaecological pain
- **Record** concurrent medical, psychiatric and surgical history, current relationship status, history of sexual partners and relationships, alcohol intake, smoking status and recreational drug use
- **Consider** the use of validated questionnaires, (such as the IIEF, shorter version of the SHIM, IPSS or AMS scale) to assess sexual function domains and response to therapy
- **Note** any issues regarding sexual orientation and gender identity

AMS – Aging Males' Symptoms, IIEF – International Index of Erectile Function, IPSS – International Prostate Symptom Score, SHIM – Sexual Health Inventory for Men

Physical examination

- **Measure** heart rate, blood pressure, abdominal circumference, weight,[9] and height if body mass index required
- **Conduct** a DRE of the prostate if there are genitourinary or protracted secondary ejaculatory symptoms
- **Perform** a genital examination, particularly with pain of sudden onset, deviation of the penis during tumescence, symptoms of TD, or other urological symptoms (past or present)

DRE – digital rectal examination

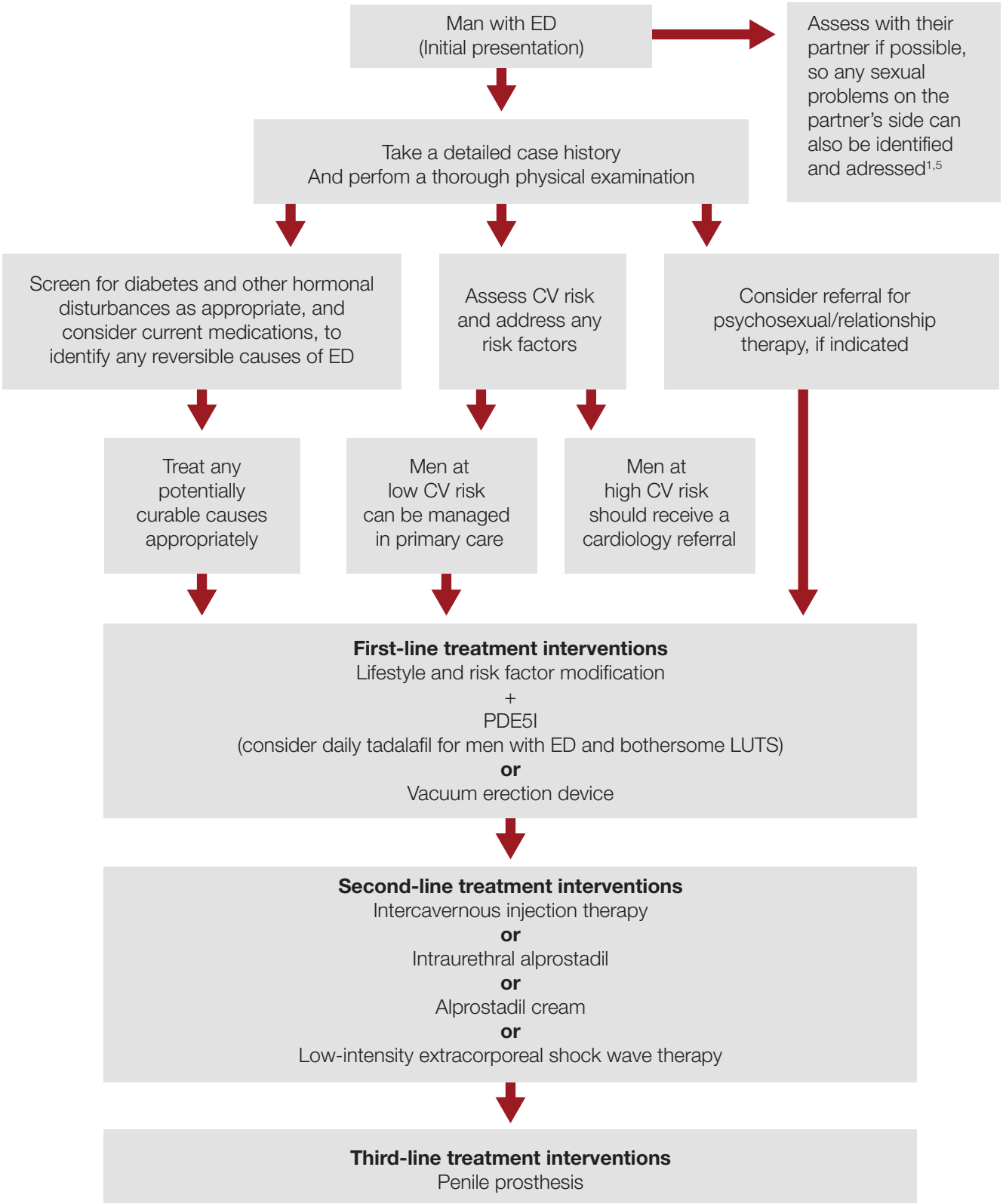
Investigations

- **Check** serum lipids, fasting plasma glucose and/or glycated haemoglobin
- **Measure** serum TT in the morning (before 11 am), in the fasting state. If low (TT <8 nmol/L) or borderline (TT 8–12 nmol/L), repeat with serum LH and prolactin.[12] FT has a greater correlation with clinical symptoms of TD[13] (FT and bioavailable testosterone can be calculated from TT, SHBG and albumin; an online FT calculator and downloadable app, sponsored by the Primary Care Testosterone Advisory Group (PCTAG), can be found at http://www.pctag.uk/testosterone-calculator/). If levels are abnormal, consider specialist referral
- **Consider** specialist investigations in men who:
  - Wish to know the aetiology of their ED
  - Have an arterial abnormality on Doppler ultrasound
  - Have a history of trauma
  - Are young and:
    - Have always had trouble obtaining/maintaining an erection
    - Have a primary CV abnormality
    - Have suspected primary venous leakage
    - Are being considered for surgical intervention
  - Have an abnormality of the penis or testes
  - Have not responded to medical therapy and may want surgical treatment
- **Consider** measuring PSA if clinically indicated, and certainly before commencing testosterone therapy and at 3, 6, and 12 months afterwards[14]
- **Consider** thyroid function tests

FT – free testosterone, LH – luteinising hormone, PSA – prostate-specific antigen, SHBG – sex hormone-binding globulin, TT – total testosterone

Diagnosing and managing ED in primary care

- The primary objective in the management of ED is to enable the man or couple to enjoy a satisfactory sexual experience
- When managing ED, consider not only the efficacy and safety of the different treatments, but also patient and partner preference, and all the factors that may influence this
- It is of paramount importance to use the opportunity to manage any previously undiagnosed comorbidities that present following the patient assessment, and to treat to target any existing conditions and make lifestyle modifications, where necessary



LUTS – lower urinary tract symptoms, PDE5I – phosphodiesterase type 5 inhibitor

ED therapies

PDE5I

- ~25–50% of men fail to respond within 12 months[16]
  - Rates are higher in men with T2DM or post-RP[16]
- Inadequate prescribing/instruction is the main cause of treatment failure
- Daily/frequent dosing regimens may salvage men who've failed with on-demand therapy
- Correction of testosterone levels <10.4 nmol/L may salvage non-responders
- Nitrates may be safely discontinued (with a cardiologist's approval), to aid therapy[17]
- Co-administration with antihypertensives may increase the drop in blood pressure[18]

Contraindications include:*[19–22]

- Use of nitrates in any form, guanylate cyclase stimulators, potent CYP3A4 inhibitors
- Loss of vision in one eye due to NAION
- Severe renal/hepatic impairment
- Hypotension

Dose adjustments may be required in:*[19–22]

- Renal or hepatic impairment
- Concomitant use of CYP3A4 inhibitors

Apply caution in:*[19–22]

- Patients receiving alpha-blockers and those with anatomical penile deformities or a predisposition to priapism

Possible adverse effects include:*[19–22]

- Headache
- Dizziness
- Flushing
- Dyspepsia
- Nasal congestion

Intra-urethral alprostadil

- Less invasive than injection therapy but works for only ~30–60% of patients[35,36]
- Higher doses of MUSE (500/1000 µg) are usually required[35]

Contraindications include:[37]

- Anatomical deformity of the penis
- Predisposition to priapism

Apply caution in:[37]

- Men whose partners could be pregnant (a condom must be used)

Possible adverse effects include:[37]

- Penile pain
- Haematoma
- Headache
- Dizziness
- Hypotension
- Muscle spasm

Vacuum erection devices

- Highly effective, regardless of ED aetiology[23–25]
- Reported satisfaction rates vary between 35%[26] to 84%[27]
- Can be a useful adjunct to PDE5I/injection therapy post-RP, and to salvage treatment failures[28]
- Work best if the man and his partner receive sufficient instruction, and have positive attitudes towards their use

Contraindications include:

- Bleeding disorders
- Concurrent anticoagulant therapy

Possible adverse effects include:[29]

- Bruising
- Local pain
- Failure to ejaculate
- Coldness of the penis

Intracavernous injections

- Include alprostadil and aviptadil+phentolamine (A/P)
- Alprostadil is effective in >70% of men,[30] but compliance rates may be low[31]
- A/P has similar efficacy to alprostadil, with less painful injections[32]
- Unlike alprostadil, A/P injections need to be accompanied by some form of sexual stimulation for an optimal erection

Apply caution in:*[33,34]

- Men at increased risk of bleeding (anticoagulants are contraindicated with A/P)

Contraindications include:*[33,34]

- Predisposition to priapism
- Penile implants

Possible adverse effects include:*[33,34]

- Bruising and haematoma at injection site
- Penile pain (alprostadil)
- Flushing of face/trunk (A/P)

Alprostadil cream

- Store alprostadil cream (Vitaros) in the refrigerator
- Apply 300 µg in 100 mg (3 mg/g) into the urethral meatus at room temperature
- Improved tumescence of the glans may be useful in men post-penile prosthesis[16]
- Has been shown to produce a 2.5-point increase in IIEF and a 15% relative increase in successful intercourse attempts[38]

Contraindications include:[39]

- Anatomical deformity of the penis
- Predisposition to priapism

Apply caution in:[39]

- Men whose partners could be pregnant (a condom must be used)

Possible adverse effects include:[39]

- Penile/genital pain/erythema
- Urethral pain

*See the individual Summary of Product Characteristics for full details, because these vary between products. CYP3A4 – cytochrome P450 3A4, NAION – non-arteritic anterior ischaemic optic neuropathy, RP – radical prostatectomy, T2DM – type 2 diabetes mellitus

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