NHS
South West London
Clinical Commissioning Group

Erectile Dysfunction - management guidelines in primary care for adults over 18 years old

SOUTH WEST LONDON CCG

South West London guidance for managing erectile dysfunction (ED) in primary care in adults over 18 years old

Key messages:

- Lifestyle changes should be discussed, and psychosexual causes explored before pharmacological treatments are considered for erectile dysfunction (ED). Management of comorbidities should be optimised (e.g. diabetes, cardiovascular disease).
- Consider whether the patient may be suffering from medication induced ED (see page 4).
- Phosphodiesterase-5 (PDE-5) inhibitors have no effect in the treatment of ED in the absence of sexual stimulation.
- Prescribe **generic sildenafil** (when required frequency - PRN) as the first choice PDE-5 inhibitor for ED.
- Advise patients on the availability of Over the Counter (OTC) sildenafil products to purchase from pharmacies.
  - ED medications are amongst the most commonly counterfeited medicines in Europe.
  - Buying online should only be through legitimate sources e.g. pharmacies registered with the General Pharmaceutical Council (GPhC).
- Review the prescribing of PDE-5 inhibitors for the treatment of ED:
  - Arrange follow-up 6–8 weeks after initiation of treatment to assess the efficacy and safety of the treatment as well as patient satisfaction.
  - Patients prescribed other PDE-5 inhibitors should be reviewed to replace treatment with generic sildenafil where appropriate.
- **Generic tadalafil** (when required frequency - PRN) is the second line formulary choice and should only be prescribed at NHS expense for men who meet the medical conditions and circumstances specified by the Department of Health (SLS criteria).
- **Prescribing of tadalafil ONCE A DAY (specifically low dose) is not supported across SWL.** Splitting tablets is unlicensed use and is not advised.
- Review existing patients prescribed daily tadalafil/Cialis® and change to weekly/PRN tadalafil if clinically appropriate treating as per the usual ED guidance.
- Change existing patients prescribed Cialis® to generic tadalafil 10mg or 20mg on demand (PRN).
- All other PDE-5 inhibitors (avanafil and vardenafil) are **non-formulary** in SWL.
- For information on contraindications, cautions, dosing information and side effects please refer to the SPCs/BNF.
- A patient with ED should receive 6-8 doses of a PDE-5 inhibitor with sexual stimulation at a maximum dose before being classified as a non-responder/oral treatment deemed ineffective.

Prescribing PDE-5 inhibitors flow chart

Confirm diagnosis of Erectile Dysfunction in adults over 18 years old

Assess for causative factors, offer lifestyle advice & assess cardiac risk. Management of comorbidities should be optimised. https://cks.nice.org.uk/topics/erectile-dysfunction/diagnosis/assessment/

Prescribe 1st line generic sildenafil on FP10

- Usual starting dose is 50mg when required, increasing to 100mg if ineffective or decreasing to 25mg where clinically appropriate.
  Refer to SPC for full dosing information, contraindications, and drug interactions
- For advice on recommended quantity to supply, refer to page 4

Note
All treatments for ED (except generic sildenafil) require an SLS endorsement to be prescribed on the NHS

Follow up after 6-8 weeks

Is treatment effective* and tolerated?

*(*A patient should receive 6-8 doses of a PDE-5 inhibitor at a maximum tolerated dose with sexual stimulation before treatment is classified as non-effective)*

YES → **Maintain sildenafil treatment on FP10**

NO → **Does patient meet SLS criteria?** (See pg 3)

YES → If treatment is not tolerated/ ineffective/contraindicated

- **Prescribe 2nd line generic tadalafil on FP10**
  (A **secondary care specialist** may prescribe tadalafil 1st line if clinically appropriate)
- Usual starting dose is 10mg when required; increase to 20mg if ineffective. Refer to SPC for full dosing information contraindications, and drug interactions
- For advice on recommended quantity to supply, refer to page 4

NO → Offer private prescription for alternate ED treatments

Is treatment effective?

YES → **Maintain generic tadalafil treatment on FP10**.

(A private prescription is required if SLS **criteria not met**.)

NO (seek specialist advice) → **If treatment failure on 2 oral PDE-5 inhibitors, consider alternate therapy options** (specialist recommendation only)

PRIMARY CARE INITIATION (following specialist recommendation)
Alprostadil transurethral application-Amber 1*;
- **MUSE®** urethral sticks
- **Vitaros®** cream

SECONDARY CARE INITIATION (or via specialist primary care services where available)

Alprostadil intracavernosal injection-Amber 2*;
Caverject® Dual Chamber & Viridal Duo® are to be initiated and supplied in secondary care. GPs can continue prescribing in primary care if treatment is deemed effective. Initial sharps bin to be provided by secondary care, ongoing sharps bins can be provided in community.
- **Caverject® Dual Chamber:** 10 & 20 microgram (mcg) injections
- **Viridal Duo®:** 10, 20 & 40 microgram (mcg) injections-
  If a patient requires a replacement applicator, they should contact the manufacturer (Advanz Pharma) direct to obtain this free of charge on 0208 588 9441.

Vacuum erectile dysfunction pump (on specialist recommendation)

***Key:**

AMBER 1. Recommendation by a specialist but is considered non urgent and therefore could be started in primary care.

AMBER 2: Initiation by a specialist, stabilisation for a specified time, then continuation in primary care under an individual management plan.

Prescribing:

South West London Clinical Commissioning Group supports the prescribing of the following oral PDE-5 inhibitors for ED **only**:

- 1st line **Generic sildenafil 50mg** when required (based on efficacy and tolerability, the dose may be increased to 100mg or decreased to 25mg).
- 2nd line **Generic tadalafil 10mg** when required (based on efficacy and tolerability, this can be increased to the maximum dose of 20mg).

Refer to a specialist if treatment failure on 2 different oral PDE-5 inhibitors for consideration of alternative treatment options (a patient should receive 6-8 doses of a PDE-5 inhibitor at a maximum dose with sexual stimulation before being classified as experiencing treatment failure)

Selected List Scheme (SLS):
Prescribing of drugs for ED is restricted nationally under the Selected List Scheme (SLS) on the grounds of cost to the NHS. If a patient has any of the following conditions, they meet SLS criteria and can be treated for ED on an NHS prescription:

- Diabetes, multiple sclerosis, Parkinson's disease, poliomyelitis, prostate cancer, severe pelvic injury, single gene neurological disorder, spina bifida, spinal cord injury, receiving treatment for renal failure by dialysis, a man who has had the following surgery - prostatectomy radical pelvic surgery renal failure treated by transplant.

PDE-5 inhibitor	Brand name	SLS endorsement required
Sildenafil	Generic	✗
	Viagra® (non-formulary)	✓*
Tadalafil	Generic	✓*
	Cialis® (non-formulary)	✓*

*Offer a private prescription if the patient does not meet SLS criteria for Viagra® or Cialis®.

All other PDE-5 inhibitors for ED (including branded PDE-5 inhibitors) remain on the SLS list and are non-formulary. For further information on SLS, refer to Part XVIIIB of the Drug Tariff

Private prescriptions

- Generic sildenafil cannot be prescribed privately for any NHS patients using it for ED.
- Other ED medication cannot be prescribed privately for NHS patients with ED that meet SLS criteria.
- PDE-5 inhibitors can be prescribed privately for patients that do not meet the SLS criteria.

Contraindications: Do **not** prescribe a PDE-5 inhibitor to a patient with any of the following co-morbidities:

Hypotension (systolic BP<90/50 mmHg)	Loss of vision in 1 eye due to non-arteritic anterior ischaemic optic neuropathy (NAION)	Recent MI (within past 90days)
Recent stroke (within past 6months)	Severe/unstable heart disease (vasodilation/sexual activity not recommended)	Taking nitrate medications
Unstable angina/angina during sexual intercourse	Hereditary degenerative retinal disorders	Severe hepatic impairment
New York Heart Association (NYHA) class II or greater heart failure (within the last 6 months)	Uncontrolled arrhythmias	Uncontrolled hypertension

COLOUR KEY	Both PDE-5 Inhibitors	Sildenafil only	Tadalafil only

Cautions: Prescribe a PDE-5 inhibitor **with caution** to a patient with any of the following co-morbidities:

- Cardiovascular disease. Consider the potential cardiac risk of sexual activity in men with pre-existing cardiovascular disease before prescribing a PDE-5 inhibitor. Refer to NICE CKS Cardiac risk stratification section for further information.
- Left ventricular outflow obstruction (for example aortic stenosis and idiopathic hypertrophic subaortic stenosis).
- Anatomical deformation of the penis (for example angulation, cavernosal fibrosis, or Peyronie's disease).
- A predisposition to priapism (for example in sickle-cell disease, multiple myeloma, or leukaemia).
- Prescribe sildenafil with caution to men with active peptic ulceration or bleeding disorders.

For a full list of cautions and contraindications please refer to individual SPCs.

Most Common Drug Interactions:

- **Nitrates** — GTN, isosorbide mononitrate, or isosorbide dinitrate, nicorandil, or amyl nitrate ('poppers' used for recreation) are absolutely contraindicated.
- **Alpha-blockers** — can increase the risk of postural hypotension as both are vasodilators.
- **Cytochrome P450 (CYP) 3A4 and 2C9 inhibitors** (e.g. ritonavir, ketoconazole, itraconazole, erythromycin, cimetidine, and grapefruit juice) - co-administration should be avoided if possible.
- **CYP3A4 inducers** (e.g. rifampicin, phenobarbital, phenytoin, and carbamazepine) - co-administration should be avoided if possible.

For a full list of drug interactions, refer to individual SPCs.

Common Adverse effects:

- Back pain, dizziness, dyspepsia, flushing, migraine, myalgia, nasal congestion, nausea, and vomiting.

For a full list of adverse effects, refer to individual SPCs.

Drugs which can cause ED:

- **Diuretics**: Thiazides (for example Bendroflumethiazide), spironolactone
- **Antihypertensives**: Methyldopa, clonidine, beta-blockers (for example propranolol), verapamil
- **Fibrates**: Clofibrate, gemfibrozil
- **Antipsychotics**: phenothiazines (for example chlorpromazine), butyrophenones (for example haloperidol)
- **Antidepressants**: TCAs (e.g. amitriptyline), MAOIs (e.g. phenelzine), SSRIs(e.g. fluoxetine), lithium
- **Hormones**: Oestrogens, progesterone, corticosteroids, cyproterone acetate, 5-alpha reductase inhibitors (e.g. finasteride)
- **Cytotoxics:** cyclophosphamide, methotrexate
- **Recreational drugs**: alcohol, tobacco, cannabis
- **Histamine antagonists**: cimetidine, ranitidine
- **Anti-arrhythmics & anticonvulsants**: Disopyramide, carbamazepine

Quantity:

Generally, for most patients it is recommended that the quantity prescribed is 4 tablets per month for ED (Department of Health [DoH] recommendation).

- All patients should be offered a trial of 4 doses of a PDE5 inhibitor unless contraindicated.
- 4 tablets a month is deemed to provide an equitable quantity with respect to the population needs.
- This advice is based on research by the DoH on impotence about the frequency of sexual intercourse which showed that for the average 40-60 age range this is once a week.
- Prescribers should be aware of the risks of excessive prescribing which can lead to unlicensed, unauthorised, diversion of supply (PDE-5 inhibitors have “street value”) and/or possible dangerous use.
- However, if the GP in exercising their clinical judgement considers that more than one treatment a week is appropriate, then the GP can prescribe that amount on the NHS.

Daily Tadalafil:

Prescribing of daily tadalafil is not supported across SWL. Daily tadalafil tablets (2.5mg and 5mg) are non-formulary and should not be prescribed.

- Daily tadalafil is included in the NHS England list of Items which should not routinely be prescribed in primary care. This is due to a limited evidence base to support its use.
- Evidence shows that daily tadalafil does not give better results compared with when required treatment in the general ED population.
- Cialis® (tadalafil) once daily is approximately 25 times more expensive than when required generic tadalafil.
- Daily tadalafil provides a dose roughly equivalent to taking when required tadalafil twice weekly on a regular basis.

Patient advice:

30 - 35% of men fail to respond to initial treatment with PDE-5 inhibitors largely due to inadequate counselling and unrealistic expectations. Therefore, advise patients of the following:

- ED usually responds well to a combination of lifestyle changes and drug treatment.
- Lifestyle changes include (where applicable) losing weight, reducing stress, stopping smoking, reducing alcohol consumption, stopping illicit drug use and increasing exercise.
- Advise patients that there is a delay in onset of action (see table below) with PDE-5 inhibitors and sexual stimulation is required.

	Sildenafil	Tadalafil
Time taken before sexual activity	1 hour	At least 30 minutes
Time to reach maximum plasma concentration	30-120 minutes (median 60 minutes)	2 hours (median)
Time to erection	25 minutes (range 12-37 minutes)	16 minutes-36 hours
Time still able to produce erection post dose	4-5 hours	Up to 36 hours
Effect of food intake	Rate of absorption reduced by mean 60 mins when consumed with food	Not affected

- Counsel patients on possible side effects including headache, flushing (common), visual disturbance, and priapism (very rare).
- Advise patients to not stop taking prescribed medication unless instructed to by a healthcare professional.
- Advise patients not to take unlicensed herbal remedies for ED. They could contain prescription-only medicines which may be contraindicated or interact with prescribed medication.

Cycling

- If cycling >3hours/week, advise patients to try a period of time without cycling.
- If it is not possible for them to stop cycling, preventative measures, such as the use of a properly fitted, well-padded bicycle seat and riding with the seat in a suitable position, may help prevent impairment of erectile function.

Alternative treatment options if failed response to 2 oral PDE-5 inhibitors (specialist recommendation only)

Alprostadil preparations and Vacuum pumps are alternatives to PDE-5 inhibitors for the treatment of ED. Patients should be assessed for suitability for these devices by a specialist. Patients and their partners must be counselled appropriately to ensure they can use the treatment effectively to maximise concordance, efficacy of treatment and patient satisfaction with treatment.

Alprostadil:

- The combination of alprostadil with other ED agents is not approved nor recommended.
- Alprostadil can be provided on the NHS **ONLY** for patients who meet NHS SLS criteria.

Alprostadil Formulation	Brand name	Efficacy*	SLS endorsement	Formulary	Can be initiated in primary care	Points to consider
Intracavernous injection	**Viridal Duo®**	70-80%	✓	✓	✗ (Continuation only)	Caution should be advised in patients receiving concomitant medications, which could increase the risk of bleeding, such as anticoagulants or platelet aggregation inhibitors.
	Caverject® Dual chamber		✓	✓	✗ (Continuation only)	
	Caverject® powder for solution for injection vials		✓	✗ Existing patients only. No new initiations	✗ (Continuation only)	
Intraurethral application	**MUSE®**	30-60%	✓	✓	✓ (On advice of specialist)	A better option for patients on medications which may increase bleeding risk. Seek specialist advice.
Topical cream	**Vitaros®**	31-40%	✓	✓	✓ (On advice of specialist)	

* Refer to individual SPC for more information.

- Alprostadil injections: Viridal® Duo is preferable over Caverject® Dual Chamber (DC) for patients requiring a 40mcg dose as it is more user friendly. The patient can inject 1x40mcg Viridal® Duo injection compared to having to inject 2x20mcg Caverject® DC as Caverject® DC is not available in a 40mcg strength. Prescribing 1x40 mcg Viridal® Duo is also more cost effective than 2x20mcg Caverject® DC.

Vacuum erectile dysfunction (VED) pump:

- VED pumps are only to be prescribed by a specialist following patient assessment.
- VEDs are contraindicated in men with bleeding disorders or those taking anti-coagulant therapy.
- These should only be prescribed for patients meeting SLS criteria.

References:

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9. Adapted from: South East London guidance for managing erectile dysfunction (ED) in primary and secondary care, SEL IMOC, December 2020 https://selondonccg.nhs.uk/wp-content/uploads/dlm_uploads/2021/09/Erectile-dysfunction-treatment-guidance-Dec-2020-FINAL.pdf?UNLID=155947607202110151057 55

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11. Adapted from: Guideline for the management of Erectile Dysfunction in adults >18 years, Sunderland Clinical Commissioning Group April 2019 https://www.sunderlandccg.nhs.uk/wp-content/uploads/2019/06/Guideline-for-the-management-of-Erectile-Dysfunction-in-Adults_April-2019.pdf

12. The British Association of Urological Surgeons (BAUS): https://www.baus.org.uk/patients/conditions/3/erectile_dysfunction_impotence

13. European Association of Urology (EAU) https://uroweb.org/wp-content/uploads/EAU-Guidelines-Male-Sexual-Dysfunction-2016-3.pdf

14. National Institute for Health and Care Excellence (NICE): https://cks.nice.org.uk/erectile-dysfunction

Document History

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Updates

Version: 1.1 (31st July 2022)
Update: Correction of bullet point placement for vacuum pumps in the 'specialist care initiation box' on page 2.