

Progestogen-only pills

This article was reviewed in December 2023.

Historically, the progestogen-only pill (POP) or ‘the mini pill’ was considered as low-dose contraception suitable for mothers who wished to space their children, and who could be relied on to remember to take a pill within a 3h window. It was perhaps seen as an inferior but low-risk alternative to the combined pill.

The advent of Cerazette onto the market in 2003 reinvented the POP. It is now widely considered as an effective mainstream method of contraception for many women and has a 12h window – rendering it as easy to take as the combined pill. Moreover, women can now access the desogestrel-containing POPs over the counter, and a new drospirenone-based pill has come onto the market.

We summarise the FSRH guideline on the progestogen-only pill below (FSRH CEU Clinical Guidance on Progestogen-Only Pills, updated July 2023).

Mode of action

The POP works by:

- Increasing the viscosity of the cervical mucus, rendering it impenetrable to sperm.
- Suppressing ovulation in up to 60% of cycles for levonorgestrel and norethisterone POPs and up to 97% of cycles with desogestrel or drospirenone POPs.
- Inducing endometrial changes which are hostile to implantation.
- Impeding cilia function in the fallopian tubes which hinders passage of an egg.

Efficacy

The efficacy of POPs is not well established due to limited evidence. Theoretically, desogestrel and drospirenone pills may be more effective than levonorgestrel or norethisterone pills due to enhanced anti-ovulant effect and longer window period.

Being user-dependent, typical use failure rates are estimated to be around 9% in the first year of use. In practice, pregnancy rates are also influenced by the woman’s age, frequency of coitus, compliance, BMI and lactation.

The FSRH concludes that, if used correctly, the efficacy of the POP is >99%.

Types of progestogen-only pill

There are two main types: ‘traditional’ and ‘new generation’ pills.

Progestogen	Brand
‘Traditional’ Levonorgestrel 30mcg Norethisterone 35mcg	- Norgeston Noriday
‘New generation’ Desogestrel 75mcg	- Cerazette Cerelle Desomono Desorex Feanolla Zelleta
Drospirenone 4mg (24 active pills and 4 placebo pills)	Slynd

Slynd: the drospirenone progestogen-only pill

What is it?

- Slynd contains 4mg drospirenone, a 4th generation progestogen which is an analogue of spironolactone and is the progestogen used in combined pills such as Yasmin and Lucette.
- Unlike the other POPs, it is not taken continuously. It has a regime of 24 daily active pills followed by 4 days of placebo pills.
- The aim of this regime is to give a more regular bleeding pattern rather than the unpredictable bleeding which can occur with other POPs (although this is yet to be demonstrated in studies).
- Like desogestrel, its primary mode of action is to prevent ovulation. It also affects cervical mucus viscosity and endometrial receptivity.
- Evidence to date suggests its efficacy is similar to desogestrel.

What are the advantages and disadvantages?

Advantages

- On an individual basis, it may suit some women better than existing alternatives, and have a more favourable bleeding pattern due to its regime and pharmacological properties.
- Theoretically, the anti-mineralocorticoid and anti-androgenic features of drospirenone mean it may have a favourable effect on blood pressure and acne.
- It also has a 24-hour window period, making it more flexible to take in terms of timing.

Disadvantages

- It takes 7d to become effective. Furthermore, its missed pill rules are similar to those of combined pills and are therefore more complicated than with other POPs.
- It is more expensive than existing preparations: Slynd is £14.70 for 3m supply, compared with £4.30 for Cerelle (MIMS 2023).

UKMEC for the POP

There is only one absolute contraindication: breast cancer.

See below for other important UKMECs:

UKMEC 2 (benefits usually outweigh risks)
HISTORY of: <ul style="list-style-type: none">• Current or past VTE.• Ectopic pregnancy.• Migraine with aura.• IHD or CVA.
UKMEC 3 (relative contraindication)
<ul style="list-style-type: none">• A new diagnosis while on the POP of: IHD, CVA or migraine with aura.• Active gestational trophoblastic neoplasia (abnormal hCG).• History of breast cancer >5y ago.• Active viral hepatitis.• Severe cirrhosis.• Liver tumours.
UKMEC 4 (absolute contraindication)
<ul style="list-style-type: none">• Current breast cancer.

Additional cautions and precautions for drospirenone-containing pills

Drospirenone is an aldosterone antagonist; it therefore increases sodium and water excretion, and reduces potassium reabsorption in the kidney. Hyperkalaemia has been observed in a few individuals using the drospirenone pill. On the basis of this, the FSRH advises the following:

AVOID using the drospirenone pill in individuals:

- With severe renal insufficiency or acute renal failure.
- With known hyperkalaemia or untreated hypoaldosteronism (e.g. in Addison's disease).
- On potassium-sparing diuretics, aldosterone antagonists or potassium supplements.

Use WITH CAUTION in individuals with:

- Mild/moderate renal impairment.
- Treated hypoaldosteronism (e.g. treated Addison's disease).

PRIOR to prescribing the drospirenone pill to any individual with significant risk factors for chronic kidney disease: check renal function and blood pressure (especially if >50y).

Pros and cons of the POP

Advantages		
Easy to use		
<ul style="list-style-type: none"> • A fixed, simple pill-taking regime with no gaps. If vomiting occurs within 2h of taking, take another pill as soon as possible. 		
Medically safe		
<ul style="list-style-type: none"> • Limited evidence suggests there is no association between POP and CVD, VTE or breast, endometrial or ovarian cancer. • Can be used when breastfeeding with no adverse effects on infant or lactation. • There is no delay in resumption of fertility after stopping the POP. 		
Low side-effect profile		
<ul style="list-style-type: none"> • There is no evidence of a causal relationship for weight gain, depression, loss of libido, acne or headache. • <i>BUT, as with all hormonal contraception, women may still experience hormonal symptoms which they attribute to the method.</i> 		
May help gynaecological symptoms		
<ul style="list-style-type: none"> • The desogestrel POP (single or double dose) may reduce heavy menstrual bleeding. • The desogestrel and drospirenone pills may help dysmenorrhoea. • Due to its thinning effect on the endometrium, the FSRH states that women with PCOS who are amenorrhoeic on the POP do not need additional progestogen to protect the endometrium. 		
Disadvantages		
Failure rate		
<ul style="list-style-type: none"> • Being user-dependent means that it is not as effective as LARC methods. • Note: previous ectopic pregnancy is not a contraindication to use – compared with not using contraception, the POP reduces risk of ectopic pregnancy. 		
Irregular bleeding		
<ul style="list-style-type: none"> • This is common, differs with different formulations, and may improve with continued usage (or by switching to a different pill). • Problematic bleeding should be assessed for other potential causes. • The FSRH comments that some clinicians suggest doubling the dose of desogestrel to 150mcg to reduce unscheduled bleeding, although this is not evidence-based or licensed. 150mcg desogestrel is used in combined pill formulations so it is likely to be medically safe. 		
Approximate bleeding patterns for different formulations		
Levonorgestrel/norethisterone pill users:	Desogestrel pill users:	Drospirenone pill users:
<ul style="list-style-type: none"> • 1/10 will be amenorrhoeic/have infrequent bleeds. • 8/10 will have normal frequency bleeding. • 1/10 will have frequent or prolonged bleeding. 	<ul style="list-style-type: none"> • 2–3/10 will be amenorrhoeic. • 3/10 will have infrequent bleeds. • 4/10 will have normal frequency bleeding. • 1/10 will have frequent or prolonged bleeding. 	<ul style="list-style-type: none"> • May experience 'scheduled' bleeding in pill-free interval or may have 'unscheduled' bleeding at other times. • Number of bleeding episodes may be similar to the desogestrel POP. • 2–3/10 may be amenorrhoeic. • <1/10 should experience frequent or prolonged bleeding.
Interactions with enzyme-inducers		
<ul style="list-style-type: none"> • Drugs which induce the cytochrome P450 enzymes have the potential to decrease the efficacy of POPs by increasing progestogen metabolism. • For short-term use of these drugs, and if a woman wishes to continue using the POP, advise additional barrier contraception for treatment duration and 28d after stopping enzyme-inducer. • For long-term use, advise switching to an IUD or progestogen-only injectable. 		

Starting and continuing the POP

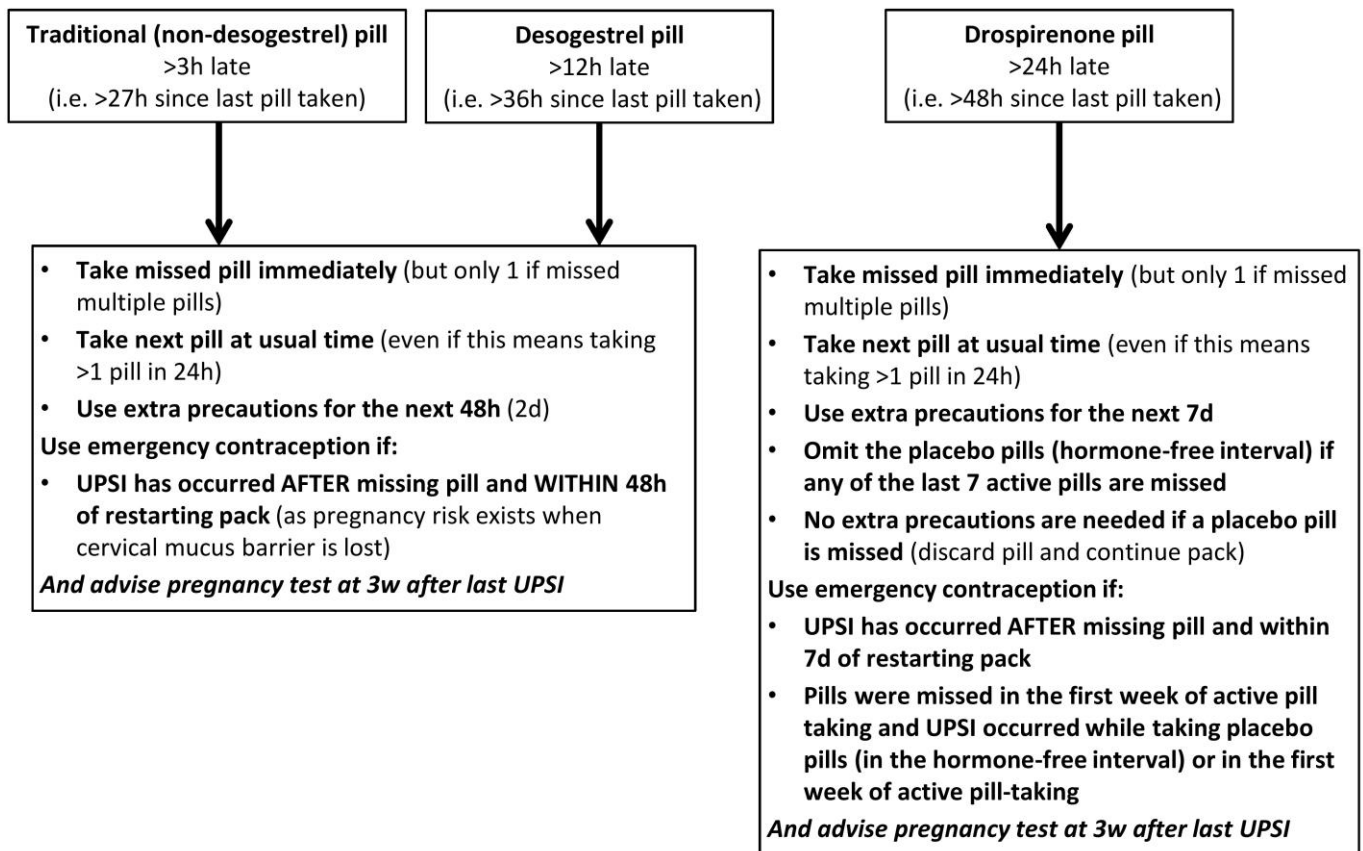
A woman can start the POP at any time in the menstrual cycle, provided she is not pregnant (do a pregnancy test if any doubt!). We can give 12m supply at first and subsequent visits.

Advise the following:

Levonorgestrel, norethisterone and desogestrel pills	Drospirenone pills
<i>Pills should be taken every day</i>	
<ul style="list-style-type: none"> Traditional pills have a 3h window period. Desogestrel pills have a 12h window period. 	<ul style="list-style-type: none"> Drospirenone pills have a 24h window period.
<i>No extra precautions are needed if starting...</i>	
<ul style="list-style-type: none"> Day 1–5 of the menstrual cycle. Up to day 21 postpartum. Up to day 5 post-abortion. 	<ul style="list-style-type: none"> Day 1 of the menstrual cycle. Up to day 21 postpartum. Day 1 post-abortion.
<i>Otherwise, we can quick start and advise...</i>	
<ul style="list-style-type: none"> Use extra precautions for 2d. Do a follow-up pregnancy test at 3w if required. 	<ul style="list-style-type: none"> Use extra precautions for 7d. Do a follow-up pregnancy test at 3w if required.
See article on <i>Quick starting contraception</i> for more information	
<i>Arrange review...</i>	
<ul style="list-style-type: none"> Annually. This doesn't need to be in person. The POP may be continued in medically eligible individuals until aged 55y when contraception is no longer required. 	

Missed pill rules

- The missed pill rules for levonorgestrel, norethisterone and desogestrel pills are different from the drospirenone pill rules.
- The rules for the drospirenone pill are more complicated and more like the combined pill.
- The flowchart below shows the basic differences but, if in doubt, check the original FSRH guideline.



POP and BMI

Because of its 'low-dose' status, there have been concerns about the efficacy of the POP in larger women, and this has led to the 'off-licence' practice of prescribing two POPs per day in obese women. There is no direct evidence to support this.





The FSRH recommends one POP is taken daily (preferably at the same time!) irrespective of BMI.

Note: there is insufficient evidence to guide efficacy of oral contraception after bariatric surgery so the FSRH suggests non-oral contraception may be more effective.

Over-the-counter preparations

In July 2021, the MHRA announced that the 75mcg desogestrel pill would be available over the counter (and hence, over the internet!). This decision was praised by the FSRH and RCOG as a means of reducing barriers to contraception access and giving women control over their fertility.

The over-the-counter preparations are known as Lovima and Hana (see useful resources, below, for more details), and a consultation with a pharmacist is still required to ensure suitability. Cost is from around £7.32/month ([gov.uk - first progestogen-only contraceptive pills to be available to purchase from pharmacies](#))

	<p>Progestogen-only pills</p> <ul style="list-style-type: none">• The POP is a medically safe, fairly effective method of contraception with few contraindications.• It is an everyday preparation.• There are currently two types available on the UK market: traditional (levonorgestrel and norethisterone POPs) and new generation (desogestrel and drospirenone POPs).• Traditional pills have a 3h window, desogestrel preparations have a 12h window and drospirenone POPs have a 24h window.• Bleeding patterns on any POP can be unpredictable.• It is possible to buy desogestrel POPs over the counter.
	<p>Do you do an annual review on all your patients on the POP?</p>
	<p>Useful resources: <u>Websites</u> (all resources are hyperlinked for ease of use in Red Whale Knowledge)</p> <ul style="list-style-type: none">• Hana• Lovima
	

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