



Contraception: which option for which patient?

Prescribing contraception is a core part of primary care practice. A patient's co-morbidities and concurrent medicines can influence the balance of risks and benefits and therefore the choice of contraceptive. Key changes in guidelines in recent years include recommending long-acting contraceptive methods, such as the levonorgestrel implant or intrauterine contraceptive devices (IUDs; also known as levonorgestrel intrauterine systems or LIUS) for use in all ages, and using "the pill" in a continuous regimen.

KEY PRACTICE POINTS:

- Appropriate contraceptive options vary depending on the specific needs, preferences and co-morbidities of each patient. A subsidised option is available for everyone.
- Long-acting reversible contraceptives (LARC) may be recommended as a first-line choice for people of all ages, including adolescents
- Combined oral contraceptive regimens can be tailored: advise patients that withdrawal bleeds are not necessary and extended use is safe and effective
- Clinicians should ensure that people of all ages recognise the need for condoms to protect against STIs, even when other forms of contraception are used
- Contraception is needed until patients reach menopause or age 55 years

This article is the first in a series on prescribing contraceptives in primary care. For further information on specific contraceptive methods, see the accompanying articles in this series:

- "Condoms: advising on the options"
- "Oral contraceptives: selecting a pill"
- "Depot medroxyprogesterone acetate injections: an intermediate option"
- "Long-acting contraceptives: implants and IUDs"

Counselling patients on contraception: it's better out in the open

Patients may find discussing contraception and the prevention of sexually transmitted infections (STIs) a sensitive or awkward topic, as it touches on issues such as their sexuality and sexual practices, as well as relationship issues and their future plans

for children. In addition, their views and behaviours can be influenced by social, family, religious or cultural factors. However, there is much to be gained and little to be lost when patients and healthcare providers have open discussions about contraception and prevention of STIs. The goal of counselling patients about contraception is to ensure they are using a safe, effective option which is the most appropriate for their clinical needs and preferences. Clinicians should be aware that transgender patients may still require contraception even when using gender affirming hormone treatment (see: "Contraception in transgender patients").



For further information on discussing sex and contraception with younger people, see:

- "Contraception in early adolescence": www.bpac.org.nz/bpj/2011/april/contraception.aspx
- "Let's talk about sex": www.bpac.org.nz/bpj/2009/april/sexhealth.aspx

Evidence suggests people are interested in hearing more

The most commonly used form of contraception in New Zealand is the oral contraceptive pill.¹ However, data from international surveys and focus groups in New Zealand show that people are eager to know more about the contraceptive options available to them, and that many would be interested in trying other options, such as long-acting contraceptives, if they had information about them.^{2,3}

A variety of contraceptive options are available

Methods of contraception available* in New Zealand include:

- Condoms; external and internal varieties – ensure that patients of all ages recognise the need for condoms to protect against STIs, even when other forms of contraception are used⁴
- Oral contraceptives; combined and progestogen-only formulations
- Long-acting reversible contraceptives (LARC); progestogen implants, copper and levonorgestrel (progestogen) intrauterine devices (IUDs)
- Depot medroxyprogesterone acetate (DMPA) injections[†]
- Sterilisation options; vasectomy or tubal ligation
- Emergency contraception
- Natural family planning

* Diaphragms and vaginal rings are no longer available on prescription in New Zealand

† Depot medroxyprogesterone acetate injections are no longer classified as a long-acting contraceptive as they are less effective than IUDs or implants and require patients to return for an injection every 12 weeks⁵

Depending on co-morbidities, other prescribed medicines or recent pregnancy, some options may be inappropriate due to a high risk of adverse effects (Table 1).

Patients may base their preference for a contraceptive method on factors such as effectiveness (Table 2), adverse effects and risks, ease of use, future pregnancy plans, cost, or particular symptoms they wish to manage. For example, some people may want greater cycle control, relief from menstrual pain or heavy menstrual bleeding, while others may be concerned about age-related adverse effects, such as venous thromboembolism.

Contraception is needed until age 55 years or menopause

Patients can cease using contraceptives at age 55 years, as pregnancy is very rare beyond this age even if they continue menstruating.⁶ Some patients may discontinue contraceptives earlier if menopause has occurred.⁶ A clinical diagnosis of menopause can be made after one year of amenorrhoea; contraception can be ceased at this time for patients aged over 50 years, but is recommended for an additional year in patients aged 40–50 years, i.e. for two years after the onset of amenorrhoea.⁶

What's new?

- Long-acting contraceptive methods, including the levonorgestrel implant and IUDs*, are the most effective form of contraception and are increasingly recommended as a first-line option for many patients; IUDs are not just for use after pregnancy
- The ideal method for using combined oral contraceptives is to take pills continuously, without a hormone-free interval. A withdrawal bleed is not medically necessary, and a continuous regimen reduces the chance of contraceptive failure (e.g. if pills are missed) and avoids the adverse effects associated with the hormone-free interval.
- Combined oral contraceptives can be started from six weeks post-partum even if breastfeeding; previous advice was to wait until six months post-partum

* From 1 November, 2019, changes to the access criteria for levonorgestrel intrauterine devices/systems (LIUS) mean they can now be prescribed fully funded for appropriate indications without Special Authority restrictions

Table 1: Recommendations regarding the likely benefits and risks of different contraceptive options. Adapted from the World Health Organization, Centers for Disease Control and Prevention and Faculty of Sexual and Reproductive Healthcare^{4, 14, 15}

Patient characteristics	Oral contraceptives			Depot		IUDs	
	Combined oral contraceptives (COCs)	Progestogen-only oral contraceptives (POPs)	medroxyprogesterone acetate injections (DMPA)	Levonorgestrel implant	Levonorgestrel	Copper	
Younger (e.g. < 18 years) or nulliparous			a				
Aged ≥ 50 years or over ⁶	b		b				
Taking hepatic-enzyme inducing medicines, e.g. some anticonvulsants							
At increased risk of venous thromboembolism (VTE)	c						
With, or at increased risk of, cerebro- or cardiovascular diseases							
Hypertension			d				
Smoking in patients aged over 35 years	e						
Valvular heart disease or atrial fibrillation							
Stroke or ischaemic heart disease							
Vascular disease							
With multiple cardiovascular risk factors							
With diabetes and complications, or diabetes for > 20 years							
Migraine with aura							
Post-partum							
Immediately							
< 4 weeks	g				f	f	
4 - 6 weeks	g						
> 6 weeks							
Following termination of pregnancy or spontaneous abortion							
Current or previous breast cancer		i	i	i	i	i	

Benefits are likely to outweigh risks (orange) Risks may outweigh benefits for some patients, see footnotes for details (red) Not recommended, risks are likely to outweigh benefits (green)

a Medroxyprogesterone acetate injections are associated with a decrease in bone mineral density; other contraceptive options should be considered first in patients aged < 18 years
 b Use in patients aged 50 years and over is not recommended due to an increased risk of venous thromboembolism (COC) or a decrease in bone mineral density (DMPA)
 c For example, personal history of VTE, or prolonged immobility due to surgery or disability
 d Risks are likely to outweigh benefits for patients with poorly controlled hypertension, i.e. systolic blood pressure ≥ 160 mmHg or diastolic ≥ 100 mmHg
 e Risks increase with age. Use is generally not recommended in people aged over 35 years who smoke, however, clinicians should consider the patient's overall level of risk when considering the use of COCs in a patient who smokes, rather than relying on a strict age criterion
 f IUDs can be safely inserted within 48 hours of delivery, otherwise insertion should be delayed until after four weeks post-partum
 g COC may be considered from three weeks post-partum if not breastfeeding and no additional risk factors for VTE (e.g. caesarean section delivery, pre-eclampsia, haemorrhage, transfusion at delivery, immobility, BMI ≥ 30 kg/m² or smoking)
 h IUDs can be inserted after a first or second trimester termination, but should not be inserted immediately after an abortion where sepsis has occurred
 i Should not be used in patients with current breast cancer, but may be considered if cancer has been in remission for more than five years and non-hormonal contraceptive options are inappropriate

Table 2: Effectiveness of different contraceptive methods and rates of continuation after one year. Adapted from the Faculty of Sexual and Reproductive Healthcare, United Kingdom^{16, 17}

	Number of pregnancies per 1,000 females of reproductive age after one year		Subsidy	For further information, see:
	Perfect Use*	Typical Use*		
No contraception	850			
Barrier and short-term options:				
Male condoms	20	130–180	●	<i>“Condoms: advising on the options”</i>
Female condoms	50	210		
Diaphragm†	60	120		
Spermicide†	180	280		
Oral contraceptives:				
Combined oral contraceptive (COC)	3	90	●	<i>“Oral contraceptives: selecting a pill”</i>
Progestogen-only contraceptive (POP)	2	90	●	
Injectable options:				
Depot medroxyprogesterone acetate injections (DMPA)	2–6	60	●	<i>“Depot medroxyprogesterone acetate injections: an intermediate option”</i>
Long-acting reversible contraceptives:				
Levonorgestrel implants	< 1		●	<i>“Long-acting contraceptives: implants and IUDs”</i>
Levonorgestrel IUDs	2–6		●	
Copper IUD	6–8		●	
Non-pharmacological options				
Fertility awareness methods	50	240		<i>“Natural family planning” below</i>
Permanent contraceptive methods:				
Tubal occlusion/ligation		5	**	<i>“Sterilisation methods” below</i>
Vasectomy		1–2	**	

● Fully subsidised options available SA = Special Authority approval required

* Perfect use refers to using the contraceptive exactly as recommended. Typical use is when contraception is not always used consistently or correctly, e.g. forgetting to take a dose of medicine, condom applied incorrectly.

† Diaphragms and spermicide have not been available on prescription in New Zealand for some time. Diaphragms may be available unsubsidised at some pharmacies. If patients already have a diaphragm they wish to keep using, support is available from Family Planning: www.familyplanning.org.nz/advice/contraception/diaphragms

‡ A levonorgestrel IUD is fully subsidised with Special Authority approval for patients with heavy menstrual bleeding; use as a contraceptive alone is unsubsidised

** Some patients may qualify for a tubal ligation or vasectomy performed in the public health system, depending on local eligibility criteria.


Increased use of long-acting contraceptives could help reduce disparities

Conventionally, IUDs were most commonly used by women who had completed their families and wished to have a long-term form of contraception. There was some resistance to the idea that an IUD could be an appropriate contraceptive option for younger women and those who had not yet given birth, due to concerns such as ease of insertion. However, there is no clinical basis for this concern, and an IUD should be considered as an appropriate option for almost anyone.⁵ The levonorgestrel implant (inserted in the arm) has been funded in New Zealand since 2010, and is the most effective method of reversible contraception available (Table 2). Some clinicians may be less familiar with this method as they do not have experience in placing the implants, but the procedure can be easily learned.

Use of a long-acting reversible contraceptive (LARC) is associated with a much lower rate of unintended pregnancy, compared to shorter-acting methods such as oral contraceptives or DMPA injections.⁷ In New Zealand, rates of abortion have been declining since the mid-2000s and research suggests that this is due in part to an increased use of LARC.^{8,9} Reductions have been particularly pronounced in females aged 15–19 years, however, rates of abortion are still highest amongst people of Māori ethnicity and females aged 20–29 years.⁹

The additional appointment time and repeat visits, or visits to another provider, required for initiating a LARC can be a barrier to patients in terms of convenience and cost.^{10,11} Consider whether there are ways your practice could simplify the process for patients, e.g. by having a clinical staff member trained in insertion and removal techniques, and having a supply of LARC at the practice (implants available on PSO). If offering these services at your practice is not possible, patients can be referred to Family Planning or Sexual Health Clinics, if locally available; these services may offer contraception services at a lower cost or free*. Some PHOs may also offer funding for sexual health or contraception-related consultations; enquire with your PHO.

* Appointments at Family Planning are free for people aged under 22 years. Appointments cost \$5 for Community Services Card holders.

 **Best Practice Tip:** Funding for insertions may be available for some women through their local DHB or PHO. Information will be updated as more details emerge or check the Ministry of Health website.

Withdrawal bleeds with combined oral contraceptives are not necessary

Combined oral contraceptive (COC) pills were first introduced in New Zealand in the 1960s. They were formulated to mimic the natural menstrual cycle, with three weeks of active hormone tablets followed by one week of placebo tablets at

which time a withdrawal bleed usually occurs. However, there is no medical basis for this withdrawal bleed and COC users can be reassured that skipping the hormone-free interval is safe, and is in fact now recommended.¹² Continuous use of hormone pills, rather than stopping and starting, may improve contraceptive effectiveness by reducing the likelihood of missing pills, as well as lessening the consequences of missed pills, e.g. compared with missing pills in the first week of a conventional regimen, thereby extending the hormone-free interval. In addition, bleeding-related adverse effects, such as headache, bloating and abdominal pain, can be avoided, which is likely to improve satisfaction and adherence with this method of contraception.

Any contraceptive can be started six weeks post-partum

If contraception is required after childbirth, any of the available options can be given from six weeks post-partum, including COCs;¹² progestogen-only pills, injections or implants can be used prior to six weeks and IUDs can either be inserted immediately post-partum or after four weeks (Table 1).

It was previously recommended that COCs be avoided for the first six months post-partum if breastfeeding due to potential suppressive effects of ethinylestradiol on milk supply. While the data on COC use and breastfeeding are limited and conflicting, better quality studies investigating breastfeeding performance, i.e. duration, exclusivity and initiation of supplemental feeding, and infant growth, health and development have shown no adverse effects when COCs are started from six weeks post-partum, provided breastfeeding is well established and there are no concerns with the infant's growth.¹³

The lactational amenorrhoea method is an effective form of contraception if less than six months post-partum, amenorrhoeic and fully breastfeeding. This method should not be relied on if the frequency of breastfeeding decreases, e.g. night feeds stopped, supplemental foods started, if menstruation returns or if the patient is more than six months post-partum.¹³

Selecting a contraceptive option

Tables 1 and 2 can be used to decide, together with the patient, which types of contraception may be the most appropriate for them; detailed information on each option is available in the accompanying articles in this series:

- “Condoms: advising on the options”:
www.bpac.org.nz/2019/contraception/condoms.aspx
- “Oral contraceptives: selecting a pill”:
www.bpac.org.nz/2019/contraception/oral-contraceptives.aspx

- “Depot medroxyprogesterone acetate injections: an intermediate option”:
www.bpac.org.nz/2019/contraception/depot.aspx
- “Long-acting contraceptives: implants and IUDs”:
www.bpac.org.nz/2019/contraception/long-acting.aspx


Natural family planning

The use of fertility awareness or withdrawal methods to prevent conception may be preferred by people who wish to avoid other methods of contraception for religious or personal reasons.¹⁹ When adhered to strictly these methods can have good efficacy rates. However, with typical use approximately one-quarter of people relying on these methods become pregnant within one year.^{14, 16}

Fertility awareness methods rely on monitoring markers of fertility daily, including body temperature, changes in cervical secretions, changes in the cervix and timing of menstruation. Combining multiple markers is more effective than relying on a single marker.²⁰ Monitoring needs to occur for a number of cycles before relying on the results. Learning the technique can be difficult and is more complicated if patients have irregular cycles.²⁰

Key practice points for the use of fertility awareness methods include:²⁰

- They should not be used in patients who are taking potentially teratogenic medicines
- They require a high level of patient engagement and in typical use have high failure rates
- Menstrual irregularities or recent use of hormonal contraception may make determining the fertile window difficult
- All patients wanting to use a fertility awareness method should be instructed in this method by an expert, such as an educator from Natural Fertility New Zealand:
www.naturalfertility.co.nz
- Caution patients that smartphone apps which aim to assist users with fertility awareness may be unreliable and should not replace education from an expert

 Further information for patients about using fertility awareness methods is available from: www.familyplanning.org.nz/media/106149/pamphlet-fertility-awareness-sept-2010.pdf

Emergency contraception

Emergency contraception should be considered for patients who have had unprotected sex:²¹

- If no contraceptive method is being used
- If contraceptive failure occurs, e.g. condom breakage
- If two or more active combined oral contraceptive pills have been missed in the first week following the hormone-free interval,* or more than eight pills have been missed at other times or in a continuous cycle²²
- If a progestogen-only pill is missed and intercourse occurs <48 hours after restarting*
- If more than 14 weeks have passed since a DMPA injection
- In the seven-day period prior to expulsion of an IUD or discovering the threads of an IUD are missing

* Emergency contraception may also be required if patients have vomiting or diarrhoea lasting > 24 hours and have unprotected sex in the next two days for patients using POPs, or next seven days for patients using COCs: see “Oral contraceptives: selecting a pill” for more detail.

Two forms of fully subsidised emergency contraception are available in New Zealand (Table 3). The levonorgestrel tablet is slightly less effective than the copper IUD, however, it does not require an insertion procedure and may be more convenient for patients as it is available at pharmacies without a prescription.

The copper IUD should be considered as an option whenever emergency contraception is needed, as it is the most effective method of emergency contraception and effectiveness is not altered by BMI or the use of enzyme-inducing medicines.²¹ A copper IUD can be inserted either up to five days following unprotected intercourse or up to five days after the expected date of ovulation. The copper IUD can be left in place for ongoing contraception, or removed once pregnancy is excluded, e.g. at the next menstrual period.²¹

Table 3: Fully subsidised emergency contraceptives^{21, 23, 24}

Emergency contraceptive	Pregnancy rate with correct use	To be used within
Levonorgestrel 1.5 mg tablet	1–3%	72 hours (3 days)*
Copper IUD	Less than 1%	120 hours (5 days) OR Up to 5 days after expected date of ovulation

* Evidence suggests that oral emergency contraceptives are not effective if taken after ovulation has occurred or if taken more than 96 hours after unprotected intercourse

Contraception in transgender patients

Female to male transgender or gender diverse patients may require contraception, unless they have undergone surgical procedures which result in infertility. Gender affirming hormone treatment should not be relied on as a method of contraception as pregnancies can still occur in female to male transgender patients using testosterone; discussion with an endocrinologist involved in the patients care is recommended.²⁹

DMPA injections, progestogen implant, or copper or progestogen IUDs may be preferred options as they do not interfere with the process of masculinisation, however, IUD insertion may be more difficult than in other patients due to cervical atrophy associated with testosterone treatment.^{26,30} Contraceptive options more likely to result in amenorrhoea, such as DMPA or a progestogen IUD, may be preferred by some patients.³¹

For further information on contraception in transgender patients, see:

- The Faculty of Sexual and Reproductive Healthcare, UK: www.fsrh.org/standards-and-guidance/documents/fsrh-ceu-statement-contraceptive-choices-and-sexual-health-for/
- The NZF: www.nzf.org.nz/nzf_70819

Levonorgestrel emergency contraception may be less effective in patients weighing over 70 kg or with a BMI greater than 26 kg/m², with rates of pregnancy of up to 5% observed in some, but not all, studies.²⁵ For these patients, clinicians may consider prescribing two 1.5 mg tablets, however, this is an unapproved dose.^{21, 26} The effectiveness of levonorgestrel emergency contraception is also reduced in patients taking enzyme-inducing medicines.

After use of levonorgestrel emergency contraception, patients should expect a change in menstruation, typically occurring earlier and heavier than expected.²⁴ Other adverse effects include headache, nausea, dizziness and, less commonly vomiting.²¹ If vomiting does occur and it is within two hours of administration, a repeat dose or use of a copper IUD is recommended.²¹ There is limited evidence as to whether taking levonorgestrel emergency contraception with food, or prior administration of antiemetic medicines, can help reduce nausea.²⁷ However, these approaches are widely recommended and may benefit some patients. Some evidence suggests that if levonorgestrel emergency contraception fails there may be a higher risk of ectopic pregnancy, however, this has not been consistently observed in studies and the absolute rate is very low.²¹

Sterilisation methods

Discussion about sterilisation should cover issues such as life stage, future plans and relationship stability and ensure that both partners have an opportunity to express any questions or concerns. Information should be provided on other contraceptive options for the female partner that would offer a similar level of effectiveness, such as an implant or IUD; also consider if the patient has a history of menstrual difficulties that may reoccur when their current contraceptive is stopped, and menstruation resumes after sterilisation.

Sterilisation options include vasectomy and tubal ligation or occlusion. Tubal ligation or occlusion is carried out by laparoscopy or laparotomy and is typically performed under general anaesthesia. Vasectomy is typically performed with a local anaesthetic.²⁸

Some patients may be eligible for a sterilisation procedure performed in the public health system, however, most patients will need to seek private treatment. Vasectomies are also performed in some primary care clinics. Some patients may be eligible for assistance from Work and Income (WINZ) to assist with the cost of a vasectomy (see: www.workandincome.govt.nz/eligibility/health-and-disability/vasectomies.html).

Sterilisation options are not intended to be reversed. Reversal procedures may be possible, depending on the technique used, but are more complex than the initial sterilisation procedure and may not be successful.



Acknowledgement: Thank you to **Dr Beth Messenger**, National Medical Advisor, Family Planning New Zealand for expert review of this article

N.B. Expert reviewers are not responsible for the final content of the article.

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