



Contraception in early adolescence

Key concepts

- Advice about sexual health and contraception should be considered for all adolescents, including those aged as young as 12 or 13 years
- Contraceptive advice and treatment may be given to young adolescents when it is judged to be in their best medical interests, they understand the information and they are able to give informed consent
- Condoms plus one other method of contraception is recommended for young adolescents to protect against sexually transmitted infections and pregnancy
- All appropriate contraceptive options should be discussed and, provided there are no medical contraindications, patient choice encouraged

Identifying young adolescents who are sexually active

Many young people are having sex. New Zealand research found that approximately one-third of females reported sexual intercourse before the age of 16 years.¹ This research is now over ten years old and it is likely that an even larger proportion of girls are becoming sexually active at a young age.

A smaller study involving 654 Year 10 students (average age 14 years) in the Hawke's Bay region in 1998 found that nearly 40% reported having had sexual intercourse, with 12% first having sex at age 12 years or younger.² Māori students were nearly three times as likely as non-Māori students to be sexually active. Just over 20% of the students who were sexually active reported having more than five partners.²

These statistics emphasise the importance of considering sexual health and contraception for all adolescents, including those aged as young as 12 or 13 years. It can sometimes be difficult for clinicians to broach this subject and to be able to judge when a conversation about sex is appropriate when dealing with a young patient. In some cases, the patient will present asking for advice on contraception or sexually transmitted infections (STIs), but in the majority of cases, opportunistic intervention will be necessary.

Who is most likely to be sexually active at a younger age?

When considering which young adolescents to target for contraceptive intervention, the following predictors for early sexual activity may be helpful:¹

- Use of alcohol
- Cigarette smoking
- Non-attendance at school
- Conduct disorder
- For girls: mother having her first child before age 20 years

Establish a rapport and encourage discussion

When providing advice about sexual health it is important to establish a rapport and allow sufficient time and support for the young person to make informed choices. Encourage discussion about the following topics:

- The emotional and physical implications of sexual activity, including the risks of pregnancy and sexually transmitted infections
- Whether the relationship is mutually agreed or whether there may be coercion or abuse
- Reinforce the confidentiality of the consultation but encourage the young person to discuss their sexual health with a parent, carer or trusted adult
- The need for any additional counselling or support

Assessing competency in young people

The Contraception, Sterilisation and Abortion Act (1977) allows people aged under 16 years to consent to their own medical treatment and to be given contraceptive information, services and prescriptions. In practice, contraceptive advice and treatment is given to young adolescents when it is judged to be in their best medical interests and they are able to give informed consent. The Fraser Guidelines can assist clinicians in making this decision.

The Fraser Guidelines refer to a legal case which considered whether a doctor should be able to give contraceptive advice or treatment to a person aged under 16 years, without parental consent.³ Since this case in

Age of sexual consent

The age of sexual consent in New Zealand is 16 years, i.e. it is an offence to have a sexual connection with a person aged under 16 years. It is also an offence for a person to have a sexual connection with somebody aged under 18 years if they are in a position of power or authority to that person or if they have a responsibility for their care or upbringing.⁴

Young adolescents who are similar in age are not usually prosecuted for having a consensual sexual relationship. Where there are issues of concern that may place the young person in physical or psychological danger, or if there is a significant age difference between the young person and their partner, the case should be discussed with a public health officer or child protection service.

1985, these guidelines have been widely used to assess if a young person has the maturity to make their own healthcare decisions and whether they also understand the implications of those decisions (known as “Gillick competency”).

When considering discussing contraception with a young person, the clinician should be satisfied that:³

- The young person understands the advice being given
- The young person cannot be persuaded to involve parents/carers or allow the medical practitioner to do so on their behalf
- The young person is likely to begin, or continue having, sexual intercourse with or without contraception
- Unless the young person receives contraception, their physical or mental health (or both) is likely to suffer
- The young person’s best interests require contraceptive advice, treatment or supplies to be given with or without parental consent

Appropriate contraception for young adolescents

Young adolescents who are sexually active require contraception to prevent pregnancy but also protection to prevent acquisition of STIs. Young people are at increased risk of acquiring a STI, due to a number of factors including:

- **Physical and immunological immaturity.** In young girls, the lower genital tract is lined with columnar epithelium cells. During puberty these cells slowly regress into the endocervix. There is evidence that until they regress, the columnar epithelium cells that remain exposed on the exocervix are more susceptible to attachment and invasion by organisms responsible for STIs. In addition, adolescents are more immunologically immature than adults and therefore more likely to acquire an infection when exposed to an STI pathogen for the first time.⁵
- **Lack of use of barrier contraception.** This may be due to lack of knowledge, lack of access to condoms or a misperception that condoms are not required if other forms of contraception are being used
- **Age at first intercourse.** Initiating sexual activity at a younger age results in a longer period of exposure to transmissible pathogens and an increased number of partners
- **Co-existence of other risk behaviours** such as drug or alcohol misuse

 **Best Practice Tip:** Young adolescent girls should be well informed about and have access to Human Papillomavirus (HPV) Vaccine. This vaccine helps to protect against HPV serotypes implicated in cervical cancer formation (types 16, 18) as well as those which can cause external genital warts (types 6 and 11).

Contraceptive choice: condoms plus one other method

There is no “one size fits all” solution when it comes to selecting contraception for young adolescents. However, the use of condoms plus one other form of contraception

is likely to be the most appropriate regimen. All available methods of contraception should be discussed and, provided there are no medical contraindications, patient choice encouraged. It is more likely that a young patient will adhere to a treatment if they have been well-informed and have had input into the decision.

Table 1 lists pros, cons and contraindications for contraceptive options in young adolescents, which may be considered when making a treatment choice.

N.B. Hormonal methods of contraception are not appropriate for girls prior to menarche.

Condoms

Condoms are recommended, along with one other method, as the best form of contraception for young adolescents. Condoms alone (along with education on their use and the risks of STIs and pregnancy) may be appropriate for young adolescents who are sexually active infrequently or those who are not yet sexually active but wish to be prepared.

Condoms are fully subsidised on the pharmaceutical schedule. However, many young people may be too embarrassed to collect their prescription so practices are encouraged to keep a supply of condoms to give away (available on a Practitioner’s Supply Order).

Combined oral contraceptive and progestogen-only pills

For many young adolescent girls, contraception means “going on the pill”. This can be an effective form of contraception if used correctly, but may be inappropriate if there is any concern about compliance with treatment. Progestogen-only pills are associated with less adverse-effects and contraindications to use than combined oral contraceptives, but adherence to a strict dosing time-frame is necessary, therefore making this option less suitable for some young people.

Oral contraceptives are usually commenced on the first day of the next menstrual period. However, pills may be started at any time and some clinicians may prefer to advise an immediate start to ensure compliance. If the

Table 1: Pros, cons and contraindications for contraceptive options in young adolescents

Notes:

- This table relates to contraception in young adolescents - different pros, cons and contraindications may apply to older age groups
- Use of certain anticonvulsants decreases the effectiveness of COCs and progestogen-only contraception
- Female condoms (femidoms) and diaphragms are not generally considered as suitable options for young adolescents due to lack of availability or inaccurate use
- Natural family planning is an unsuitable contraceptive method for young adolescents
- For a complete list of World Health Organisation Medical Eligibility Criteria for contraceptive use, see: www.who.int/reproductivehealth/publications/family_planning/9241562668index/en/index.html

Condoms		
Pros	Cons (and considerations)	Contraindications
<ul style="list-style-type: none"> ▪ If used correctly, provides protection from STIs ▪ Can be used for vaginal, anal and oral sex ▪ Easy to obtain (may be purchased by anyone, in a variety of retail locations, also funded on prescription) ▪ Easy to use ▪ No adverse effects (unless allergic to latex) ▪ May prevent cancer of the cervix (by protecting against HPV infection) ▪ Can be used with other forms of contraception 	<p>Contraceptive and STI protection can fail if condom slips, breaks or is used incorrectly</p>	<p>Latex allergy (use a latex free variety)</p>
Combined oral contraceptive (COC)		
Pros	Cons (and considerations)	Contraindications
<ul style="list-style-type: none"> ▪ If taken correctly is 99% effective in preventing pregnancy ▪ Regular withdrawal bleeds, usually lighter and less uncomfortable than normal menstrual period ▪ May reduce iron deficiency ▪ May reduce the future risk of endometrial and ovarian cancer ▪ Some COC types can improve acne ▪ Several brands fully funded 	<ul style="list-style-type: none"> ▪ Does not provide protection from STIs ▪ Must be taken daily (ideally at a similar time of day) to be effective ▪ Initial adverse effects may include; bleeding, nausea, breast tenderness, headaches, changes in mood and libido ▪ Increases risk of venous thromboembolism (VTE) 	<ul style="list-style-type: none"> ▪ History of migraine with aura ▪ Current or past history of VTE or known thrombogenic mutation (N.B. screening for this is not appropriate) ▪ Valvular and congenital heart disease ▪ BMI ≥ 40
Progestogen only pill (POP)		
Pros	Cons (and considerations)	Contraindications
<ul style="list-style-type: none"> ▪ If taken correctly, Noriday (fully funded) or Microlut are 96-99% effective and Cerazette more than 99% effective in preventing pregnancy ▪ Serious adverse effects are extremely uncommon ▪ Decreased risk of ectopic pregnancy 	<ul style="list-style-type: none"> ▪ Does not provide protection from STIs ▪ Must be taken at the same time every day (increased risk of pregnancy if Noriday or Microlut taken more than three hours late or Cerazette taken more than 12 hours late) ▪ May cause irregular bleeding or spotting ▪ May cause adverse androgenic symptoms, e.g. acne, weight gain, mood changes 	<p>Generally not recommended if current VTE and not recommended to be continued if migraine with aura develops after initiation</p>

Intrauterine contraceptive device (IUCD)		
Pros	Cons (and considerations)	Contraindications
<ul style="list-style-type: none"> ▪ 99% effective in preventing pregnancy ▪ Can stay in place for five years or more ▪ Does not involve hormones (contains copper) ▪ Can be used to prevent pregnancy after unprotected sexual intercourse ▪ Fully funded (Multiload Cu-375) 	<ul style="list-style-type: none"> ▪ Does not provide protection from STIs ▪ Increased risk of pelvic infection during insertion (about 1%)¹⁰ – prior screening for infection (and treatment) necessary ▪ May cause increased bleeding and cramping during a period ▪ May cause pain during insertion or removal ▪ Insertion may be difficult in young adolescents or those who have never had a vaginal examination ▪ Device more likely to be expelled in nulliparous women ▪ Risk of vasovagal or cervical shock 	<ul style="list-style-type: none"> ▪ Current chlamydia, gonorrhoea, purulent cervicitis or pelvic inflammatory disease N.B. use is not recommended if very high likelihood of exposure to gonorrhoea or chlamydia infection ▪ Unexplained vaginal bleeding ▪ Uterine cavity abnormality
Levonorgestrel Intrauterine System (LNG-IUS) – Mirena		
Pros	Cons (and considerations)	Contraindications
<ul style="list-style-type: none"> ▪ > 99% effective in preventing pregnancy ▪ Can stay in place for five years ▪ After approximately one year, periods are lighter or absent 	<ul style="list-style-type: none"> ▪ Does not provide protection from STIs ▪ Currently unfunded unless specific criteria met, i.e. heavy menstrual periods and ferritin <16 mcg/L (approximate cost \$300) ▪ Increased risk of pelvic infection during insertion – prior screening for infection (and treatment) necessary ▪ May cause adverse androgenic symptoms, e.g. acne, weight gain, mood changes ▪ May cause pain during insertion or removal ▪ Insertion may be difficult in young adolescents or those who have never had a vaginal examination ▪ Risk of vasovagal or cervical shock 	<ul style="list-style-type: none"> ▪ Current chlamydia, gonorrhoea, purulent cervicitis or pelvic inflammatory disease N.B. use is not recommended if very high likelihood of exposure to gonorrhoea or chlamydia infection ▪ Unexplained vaginal bleeding ▪ Uterine cavity abnormality <p>Generally not recommended if current VTE and not recommended to be continued if migraine with aura develops after initiation</p>
Long-acting implantable progestogen (reversible) contraceptives e.g. Jadelle, Implanon		
Pros	Cons (and considerations)	Contraindications
<ul style="list-style-type: none"> ▪ >99% effective at preventing pregnancy ▪ Jadelle (2 rods) lasts up to five years (fully funded) ▪ Implanon (1 rod) lasts up to three years ▪ Can be removed at any time and the effects are fully reversible 	<ul style="list-style-type: none"> ▪ Does not provide protection from STIs ▪ Involves minor surgery (with local anaesthetic) to place or remove rod(s) under the skin of the upper arm ▪ Menstrual irregularities are frequently reported ▪ May cause adverse androgenic symptoms, e.g. acne, weight gain, mood changes ▪ Implanon is not funded (approximate cost \$380), insertion and removal of Jadelle and Implanon may incur an additional cost 	<p>Generally not recommended if current VTE and not recommended to be continued if migraine with aura develops after insertion</p>

Progestogen injectable: depot medroxyprogesterone acetate

Pros	Cons (and considerations)	Contraindications
<ul style="list-style-type: none"> ▪ Almost 99% effective in preventing pregnancy ▪ Lasts for 12 weeks ▪ Reduces the risk of endometrial cancer ▪ May decrease pre-menstrual syndrome ▪ May be useful for girls who have heavy or painful periods - amenorrhoea occurs in around half of all users in the first year ▪ Fully funded 	<ul style="list-style-type: none"> ▪ Does not provide protection from STIs ▪ Theoretical concern that optimal peak bone density not achieved in adolescents ▪ May initially cause irregular or prolonged bleeding (treated by using the COC for one month or having the next injection earlier) ▪ May cause adverse androgenic symptoms, e.g. acne, weight gain, mood changes ▪ Return to fertility after discontinuation delayed for six to eight months (but can be up to 18 months) 	<p>Current advice is to consider second-line in young adolescents, i.e. use only if other methods have been discussed and considered unsuitable (due to effects on bone density)</p> <p>Generally not recommended if current VTE and not recommended to be continued if migraine with aura develops after insertion.</p>

“quick start” method is used, pregnancy should first be ruled out based on history of sexual activity in relation to the girl’s menstrual cycle, or if history is unreliable, a urine pregnancy test. In some cases, use of the emergency contraceptive pill may be necessary (see over page).

Begin with a standard dose (30 mcg ethinylloestradiol) pill such as Levenl, Monofeme or Norimin (funded options). If adverse effects persist after three months of use, consider switching to a different brand. If monthly periods are not desired, active pills may be used continuously for twelve weeks, followed by one week of pill-free days.

To optimise adherence to oral contraceptives in young adolescents, the following three key points should be emphasised to the patient:⁶

1. When to start the pill
2. The importance of taking the pill at the same time each day – suggest setting a cell phone reminder or placing the pill packet by her toothbrush
3. Instructions to call the practice with any questions or problems, e.g. missed pill

 For further information about oral contraceptives, including solutions to adverse effects, see “Combined oral contraceptive: issues for current users”, BPJ 12 (Apr, 2008).

Intrauterine contraceptive device (IUCD)

For many young adolescent girls, remembering to take a daily pill (or choosing to adhere to this regimen) is prone to error. A longer-term, “passive” option for contraception such as an intrauterine contraceptive device (IUCD) may be considered more appropriate in some circumstances. IUCDs are not recommended when there is a high likelihood of exposure to STIs (especially chlamydia and gonorrhoea).⁷ This may be determined by unreliable use of condoms, multiple sexual partners or a partner with multiple sexual partners.

There are two types of IUCD – non-hormonal (containing copper) and hormonal (containing progestogen). The Multiload Cu 375 (active for five years) is currently the only funded non-hormonal IUCD. Mirena, a levonorgestrel-containing IUCD (active for five years), is only funded under Special Authority for women who have heavy menstrual bleeding, resulting in iron deficiency anaemia (unlikely in a young adolescent).

IUCDs are not often used by young adolescents, possibly due in part to reluctance of clinicians to offer this method of contraceptive to this age group. There may be concerns about the practicalities of inserting an IUCD in a non-mature woman, especially if the patient has never had a vaginal examination. IUCDs are safe to insert in younger adolescents, but before a decision is made, the procedure

should be carefully explained, including the possibility of discomfort or pain during the gynaecological examination and device insertion. In some cases, vasovagal or cervical shock can occur.

Swabs for infection should be taken prior to insertion of an IUCD. An IUCD should not be used if the patient has a current STI, pelvic inflammatory disease, purulent cervicitis or unexplained vaginal bleeding.⁷

Long-acting progestogen contraceptive implants

Another option for long-term, “passive” contraception is a progestogen-containing contraceptive implant which is inserted under the skin of the upper arm.

There are currently two contraceptive implants available in New Zealand – Jadelle and Implanon, although only Jadelle is funded. Jadelle (levonorgestrel) is a two rod implant system which lasts for five years. Implanon

(etonogestrel) uses only one rod and is active for three years.

It is recommended that clinicians receive training before performing an insertion or removal of a contraceptive implant (contact the product manufacturer for training opportunities). The procedure involves the use of local anaesthetic at the implant site. Contraception is achieved after 24 hours.

Menstrual bleeding irregularities are common with use of a progestogen implant. This may include prolonged bleeding or spotting, heaving bleeding, no bleeding at all or a combination of these patterns. Approximately 14% of all women who use Jadelle discontinue it before five years due to intolerable menstrual irregularities.⁸

Progestogen implants are not thought to be associated with adverse effects on bone density.⁷

Use of emergency contraception in young people

Young adolescents should be encouraged to phone or visit their general practice or pharmacy as soon as possible if they have had problems with contraception, e.g. no contraception used or condom broke or slipped when sexual intercourse took place, vomiting or diarrhoea while taking the oral contraceptive pill, missed pills or missed DMPA injection.

If the history suggests that there may be a risk of pregnancy, use of the emergency contraceptive pill (ECP) should be discussed. The ECP is most effective if taken within 72 hours of unprotected sexual intercourse, but can be used up to five days after the incident. The ECP disrupts ovulation, thereby preventing pregnancy from occurring. It does not affect an established pregnancy or harm a developing embryo.¹¹

The active ingredient in the ECP is levonorgestrel, which is a common constituent in oral contraceptive pills. The

ECP is considered safe for use in adolescents.¹² Usually a single 1.5 mg tablet is taken, however, an additional dose may be required if vomiting occurs within three hours.¹³ Concomitant use of liver enzyme inducing medicines (e.g. phenytoin, carbamazepine, St John’s Wort) can reduce the efficacy of the ECP,¹³ so an additional ECP dose is recommended (i.e. two tablets).

An alternative method of emergency contraception is the copper IUCD (Multiload Cu 375). It can be fitted up to five days after sexual intercourse, and is almost 100% effective. When the time of ovulation can be estimated, the IUCD can be inserted beyond five days after intercourse, as long as the insertion does not occur more than five days after ovulation. Prophylactic antibiotics (to cover chlamydia) should be given prior to IUCD insertion while waiting for the results of the vaginal/cervical culture.

Depot medroxyprogesterone acetate (DMPA) injection

Injectable progestogen is a medium-term contraceptive option that does not rely on daily pill-taking or insertion or implantation of devices. DMPA is, however, currently considered a second-line contraceptive option for young adolescents due to the theoretical risk that it prevents optimal peak bone mass from being achieved.

In 2004, the US Federal Drug Agency ruled that a “black box” warning must be added to depo-provera, advising against use for more than two years, due to its adverse effects on bone density. However, latest evidence suggests that this warning should be removed – research shows that bone density returns to normal within one to two years after discontinuation of DMPA in adolescent girls.⁹ Current best practice is to consider DMPA for use in young adolescent girls (i.e. aged under 16 to 17 years, before peak bone mass is achieved) only if other contraceptive methods are unsuitable.

DMPA is often started during a menstrual period to ensure absence of pregnancy, but it may be started at any time

if pregnancy can be ruled out. Injections need to be given every three months and the next appointment should be made at the time of the first injection, with a reminder sent out closer to the time.

 For further information about discussing sexual health with patients and management of sexually transmitted infections see:

- “Let’s talk about sex” BPJ 20 (April, 2009)
- “Treatment of sexually transmitted and other genital infections” BPJ 20 (April, 2009)
- “Sexually transmitted infections in New Zealand – what testing is needed and when?” Best Tests (March, 2009)

ACKNOWLEDGEMENT Thank you to **Dr Dawn Miller**, Senior Lecturer, Obstetrics and Gynaecology, Department of Women’s and Children’s Health, Dunedin School of Medicine, University of Otago for expert guidance in developing this article.

References

1. Paul C, Fitzjohn J, Herbison P, Dickson N. The determinants of sexual intercourse before age 16. *J Adolesc Health* 2000;27(2):136-47.
2. Fenwicke R. The sexual activity of 654 fourth form Hawkes Bay students. *N Z Med J* 2000;113(1121):460-4.
3. Gillick vs West Norfolk and Wisbech Health Authority & Department of Health and Social Security United Kingdom House of Lords decisions, 1985. Available from: www.bailii.org/uk/cases/UKHL/1985/7.html (Accessed Mar, 2011).
4. New Zealand Government. Crimes Amendment Act 2005 No 41, Public Act. New Zealand Legislation: Acts. Wellington: Parliamentary Counsel Office, 2005. Available from: www.legislation.govt.nz/act/public/2005/0041/latest/DLM346175.html (Accessed Mar, 2011).
5. Shrier L. Sexually transmitted diseases in adolescents: biological, cognitive, psychological, behavioural and social issues. *Adolesc Med Clin* 2004;15(2):215-34.
6. Chacko M. Contraception: overview of issues specific to adolescents: UpToDate, 2010. Available from: www.uptodate.com (Accessed Mar, 2011).
7. World Health Organisation (WHO). Medical eligibility criteria for contraceptive use. Geneva: WHO, 2004.
8. Sivin I, Nash H, Waldman S. Jadelle levonorgestrel rod implants: a summary of scientific data and lessons learned from programmatic experience. New York: Population Council, 2002. Available from: www.popcouncil.org/pdfs/jadelle_monograph.pdf (Accessed Mar, 2011).
9. Kaunitz A, Grimes D. Removing the black box warning for depot medroxyprogesterone acetate. *Contraception* 2011;[Epub ahead of print].
10. Yen S, Saah T, Hillard P. IUDs and Adolescents - An Under-Utilized opportunity for Pregnancy Prevention. *J Ped Adoles Gyn* 2010;23(3):123-8.
11. De Santis M, Cavaliere A, Straface G, et al. Failure of the emergency contraceptive levonorgestrel and the risk of adverse effects in pregnancy and on fetal development: an observational cohort study. *Fertil Steril* 2005;84(2):296-9.
12. World Health Organisation (WHO). Safety of levonorgestrel-alone emergency contraceptive pills. Geneva: WHO, 2010. Available from: www.who.int/reproductivehealth/publications/family_planning/RHR_HRP_10_6/en/index.html (Accessed Mar, 2011).
13. Bayer New Zealand Limited. Postinor-1. Medicine Safety Data Sheet, 2007. Available from: www.medsafe.govt.nz (Accessed Mar, 2011).