

Combined hormonal contraceptives

This statement has been developed and reviewed be the Women's Health Committee and approved by the RANZCOG Board and Council.

A list of Women's Health Committee Members can be found in Appendix A.

Disclosure statements have been received from all members of this committee.

Disclaimer This information is intended to provide general advice to practitioners. This information should not be relied on as a substitute for proper assessment with respect to the particular circumstances of each case and the needs of any patient. This document reflects emerging clinical and scientific advances as of the date issued and is subject to change. The document has been prepared having regard to general circumstances.

First endorsed by RANZCOG: November 2012

Current: March 2019 Review due: March 2022 Objectives: To provide advice on combined oral contraceptives.

Target audience: Health professionals providing gynaecological care.

Values: The evidence was reviewed by the Women's Health Committee (RANZCOG), and applied to local factors relating to Australia and New Zealand.

Background: This statement was first developed by Women's Health Committee in November 2012 and reviewed in March 2019.

Funding: The development and review of this statement was funded by RANZCOG.

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1. Plain language summary

With appropriate use, combined hormonal contraceptive (CHC) methods are safe and effective. Women planning to use CHCs should discuss this choice with their doctor to make sure that this is a safe and suitable choice for them. This choice will not only depend on a woman's medical and family history, but also on the findings from physical examination (blood pressure and weight, for example) and sometimes the results of tests. The choice will also take into account factors such as the desire for non-contraceptive benefits (acne, hirsutism, heavy menstrual bleeding), cost, and personal preference.

A range of RANZCOG Patient Information Pamphlets can be ordered via: https://www.ranzcog.edu.au/Womens-Health/Patient-Information-Guides/Patient-Information-Pamphlets

2. Introduction

2.1 Definition

Combined hormonal contraceptives (CHCs), available as combined oral contraceptives (known as 'the pill') and the vaginal ring, are preparations of an oestrogen and a progestagen. CHCs contain ethinyloestradiol (EE), oestradiol valerate, or oestradiol and one of a range of progestogens.

There are a number of different combined oral contraceptives (COC) formulations and brands. Packaging regimens for pills consist of a minimum of 21 days of hormone pills followed by up to 7 days of placebo.

COC formulations are either:

- Monophasic: All active tablets have an identical formulation.
- Multiphasic: There are two or more formulations within the active pills.

The combined vaginal ring is a 54mm ethylene vinyl acetate copolymer ring and releases a combination of 15mcg EE and 120mcg etonogestrel daily. It is available in Australia as NuvaRing®. It is placed in the vagina for 3 weeks. It is then removed, disposed of and the woman then has a 7 day hormone free week before a new ring is inserted.

The COC and vaginal ring work in the same way and are treated similarly in terms of contraindications, complications, side effects and drug interactions. It is assumed that the vaginal ring will offer similar benefits to the COC but because it is relatively new, extensive supporting evidence is lacking. The majority of this statement, unless otherwise stated, refers to both the COC and the vaginal ring.

2.2 Mechanism of action

The primary mechanism of action is prevention of ovulation. In addition, CHCs thicken cervical mucus, preventing sperm penetration.

2.3 Efficacy

One year efficacy rate estimates for perfect use are 99.7%, and for typical use 91%. Low typical use rates emphasise the need for users to have a clear understanding of how to start, adherence and missed pill information.

3. Discussion and recommendations

3.1 Advantages as a method of contraception, CHCs

- Are very effective with correct use;
- Are readily accessible to most women;
- Are easily reversible;
- Provide predictable withdrawal bleeds and the ability to manipulate cycles;
- Can be used to manage menstrual problems, e.g. heavy menstrual bleeding (HMB),^{2, 3} dysmenorrhea⁴ and symptoms of endometriosis;⁵
- Can improve acne;⁶
- Can reduce the risk of endometrial⁷ and ovarian cancer;⁸
- Can reduce the risk of bowel cancer;⁹
- Can be used to manage pre-menstrual syndrome (PMS), and its more severe form pre-menstrual dysphoric disorder (PMDD), in some women;¹⁰⁻¹⁴
- Can reduce the incidence of functional ovarian cysts¹⁵ and benign ovarian tumours¹⁶
- Can be useful in managing symptoms of polycystic ovarian syndrome; 17, 18
- Can assist with management of perimenopausal symptoms.

3.2 Disadvantages as a method of contraception, CHCs

- Typical use failure rates are high;
- Some formulations are relatively expensive;
- As an oestrogen containing contraceptive method, there are rare but serious risks including venous thromboembolism (VTE) and arterial disease, so personal and family history are particularly important;
- Some common conditions limit use, e.g. migraine with aura (absolute contraindication; UK MEC 4 of the UK medical eligibility criteria; see link:
 http://www.fsrh.org/pdfs/UKMEC2009.pdf) and BMI of ≥ 35kg/m² (strong relative contraindication; UK MEC 3).

3.3 CHC components

Until recently the only oestrogen used in Australian CHCs was ethinyloestradiol (EE). The active oestrogen in the recent oestradiol and oestradiol valerate pills is structurally identical to the oestradiol produced by the ovaries.

Newer progestogens, cyproterone acetate, etonogestrel, drospirenone, dienogest and nomogestrel acetate, have been developed over recent decades to avoid androgenic side effects and to have a minimal negative impact on EE induced changes to lipids. Some have been designed with additional potential benefits, e.g. drospirenone is a spironolactone analogue and has a mild diuretic effect. However there is insufficient clinical evidence to preferentially initially prescribe newer progestogens over the older levonorgestrel and norethisterone products. Selecting a progestogen type other than levonorgestrel or norethisterone for women with a pre-existing condition such as acne, pre-menstrual dysphoric disorder or heavy menstrual bleeding may be considered.

3.4 Contraindications

There are a number of conditions which represents an unacceptable health risk if the contraceptive method is used as defined by the UK Medical eligibility criteria for contraceptive use. For CHCs these include:

- Breastfeeding and ≤6 weeks postpartum
- Smoker ≥35 year and ≥ 15 cigarettes/day
- Presence of multiple risk factors for CVD including older age, smoking, diabetes, hypertension
- Hypertension with systolic ≥160mmHg or diastolic ≥95mmHg
- Vascular disease
- Major surgery with prolonged immobilisation

- Current or past history of venous thromboembolism (VTE);
- Known thrombogenic mutations * (Factor V Leiden, Prothrombin mutation, Protein S, Protein C and Antithrombin deficiencies)
- Migraine with aura
- Current or past history of Ischemic Heart Disease (IHD);
- Complicated valvular heart disease
- Diabetes complicated by nephropathy, retinopathy or vascular disease
- Breast cancer;
- Severe Liver disease including cirrhosis hepatocellular adenoma and hepatoma
- Raynaud's with lupus anticoagulant
- SLE with antiphospolipid antibodies
- * 'Routine screening is not appropriate because of the rarity of the conditions and the high cost of screening' (http://www.fsrh.org/pdfs/UKMEC2009.pdf).

Other important considerations are:

- Breastfeeding;
- Drug interactions.

Detailed information on contraindications to CHC use using the medical eligibility criteria (MEC) framework for contraception developed by WHO and modified by the UK Faculty of Sexual and Reproductive Health Care are available on the Faculty of Sexual Reproductive Health Care (FSRH) website (http://www.fsrh.org/pages/clinical_guidance.asp) or in Contraception: An Australian Clinical Practice Handbook (available from all Australian state Family Planning Organisations).

3.5 Serious risks

3.5.1 VTE

30-35 ug pills EE pills with either desogestrel, gestodene, cyproterone acetate (CPA) and drosperinone appear to increase the risk of VTE compared to pills containing LNG or norethisterone by a factor of 1.5-1.8. However the absolute risk is low. Selection of a pill other than levonorgestrel can be considered where there a pre-existing medical condition such as acne or hirsuitism.

3.5.2 Cancer

The results of a recent large UK cohort study indicate that COC use is not associated with an overall increased risk of cancer. In fact women are relatively protected and there was a statistically significant reduction in the overall risk of cancer in older women who had ever used oral contraceptives compared to those who had not.²²

3.5.3 Breast cancer

Evidence is divided on whether use of CHCs increases the risk of breast cancer. $^{23-26}$ Any increased risk for current users is small and there is no significant difference in risk between ever-users and never-users of CHCs. $^{27,\,28}$ Use of CHCs has not been shown to be associated with increased mortality from breast cancer. $^{22,\,26,\,29}$

3.5.4 Cervical cancer

Although multiple confounders have made studies difficult to interpret, the balance of evidence supports a small increase in the risk of cervical cancer in users of CHCs. This risk increases with duration of use and gradually decreases after cessation.³⁰ The rate of cervical cancer in Australia is 4.9/10,000 women per year and is one of the lowest in the world.³¹ Regular cervical screening minimises the risk of cervical cancer.³²

3.5.5 Liver cancer

Early studies indicated there was an increased risk of hepatocellular carcinoma in CHC users³³ but this was not confirmed in a more recent large cohort study.²⁷ Regardless, there is no evidence that CHCs further increase the risk of hepatocellular carcinoma in women with chronic viral hepatitis.³⁴

3.6 Choice of CHC

Consider a monophasic COC as a good first choice (a pill with levonorgestrel or norethisterone). Other pills or the vaginal ring are safe to use where there is a specific potential benefit to the woman or there are side effects to first line pills.

3.7 Commencing CHCs

Women who are not using another method of contraception may choose a Traditional or Quick Start initiation regimen. The Quick Start method means starting the pill on the day it is prescribed if the user is unlikely to be pregnant already. A back-up form of birth control (eg, condoms) is needed for the first seven days after the Quick Start.

3.8 Return for review

CHC use may be reviewed after four months initially, and then yearly, provided the woman is at low risk for cardiovascular disease.

3.9 Extended use/tricycling or continuous COC pack use

This method is a useful way to minimise bleeding. Extended use can also be useful to:

- Decrease the risk of break-through ovulation associated with missed pills in women who forget pills regularly.³⁵ Another method not relying on daily intake is preferred for these women.
- Avoid withdrawal headaches, in the hormone free week. 36-38
- Avoid PMS.^{37, 38}
- Avoid unacceptably heavy or painful withdrawal bleeds.
- Decrease the risk of breakthrough ovulation in women taking liver enzyme inducers.

Traditionally women wanting to minimise menstruation have been advised to tricycle, meaning to run 3 cycles of the active hormonal pills or vaginal ring together, omitting the placebo break for 2 packs out of 3. A Cochrane review did not demonstrate any additional safety issues for women taking CHCs continuously without placebo breaks for up to 12 months.³⁹

Disadvantages are the increased cost, and for some women unpredictable bleeding. ENREF 42⁴⁰⁻⁴²

Adapted from Contraception: An Australian Clinical Practice Handbook, 2012, 3rd edition. Family Planning NSW, Family Planning Qld, Family Planning Victoria (member organisations of Sexual Health and Family Planning Australia).

4. Conclusion

Provided they are used correctly, all combined hormonal contraceptive methods in Australia and New Zealand have high efficacy. Choice of CHC type for medically eligible women will be determined by a variety of factors including desire for non-contraceptive benefits (acne, hirsutism, heavy menstrual bleeding), cost and personal preference.

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6. Links to other College statements

Evidence-based Medicine, Obstetrics and Gynaecology (C-Gen 15)

Appendices

Appendix A Women's Health Committee Membership

Name	Position on Committee
Professor Yee Leung	Chair and Board Member
Dr Gillian Gibson	Deputy Chair, Gynaecology
	Deputy Chair, Obstetrics and
Dr Scott White	Subspecialties Representative
Associate Professor Ian Pettigrew	Member and EAC Representative
Dr Kristy Milward	Member and Councillor
Dr Will Milford	Member and Councillor
Dr Frank O'Keeffe	Member and Councillor
Professor Sue Walker	Member
Dr Roy Watson	Member and Councillor
Dr Susan Fleming	Member and Councillor
Dr Marilyn Clarke	ATSI Representative
Associate Professor Kirsten Black	Member
Dr Thangeswaran Rudra	Member
Dr Nisha Khot	Member and SIMG Representative
Dr Judith Gardiner	Diplomate Representative
Dr Angela Brown	Midwifery Representative
Ms Ann Jorgensen	Community Representative
Dr Rebecca Mackenzie-Proctor	Trainee Representative
Prof Caroline De Costa	Co-opted member (ANZJOG member)
Dr Christine Sammartino	Observer

Appendix B Overview of the development and review process for this statement

i. Steps in developing and updating this statement

This statement was originally developed in November 2012 and was most recently reviewed in March 2019. The Women's Health Committee carried out the following steps in reviewing this statement:

- Declarations of interest were sought from all members prior to reviewing this statement.
- Structured clinical questions were developed and agreed upon.
- An updated literature search to answer the clinical questions was undertaken.
- At the November 2018 face-to-face committee meeting, the existing consensus-based recommendations were reviewed and updated (where appropriate) based on the available body of evidence and clinical expertise. Recommendations were graded as set out below in Appendix B part iii)

ii. Declaration of interest process and management

Declaring interests is essential in order to prevent any potential conflict between the private interests of members, and their duties as part of the Women's Health Committee.

A declaration of interest form specific to guidelines and statements was developed by RANZCOG and approved by the RANZCOG Board in September 2012. The Women's Health Committee members

were required to declare their relevant interests in writing on this form prior to participating in the review of this statement.

Members were required to update their information as soon as they become aware of any changes to their interests and there was also a standing agenda item at each meeting where declarations of interest were called for and recorded as part of the meeting minutes.

There were no significant real or perceived conflicts of interest that required management during the process of updating this statement.

iii. Grading of recommendations

Each recommendation in this College statement is given an overall grade as per the table below, based on the National Health and Medical Research Council (NHMRC) Levels of Evidence and Grades of Recommendations for Developers of Guidelines. Where no robust evidence was available but there was sufficient consensus within the Women's Health Committee, consensus-based recommendations were developed or existing ones updated and are identifiable as such. Consensus-based recommendations were agreed to by the entire committee. Good Practice Notes are highlighted throughout and provide practical guidance to facilitate implementation. These were also developed through consensus of the entire committee.

Recommendation category		Description
Evidence-based	А	Body of evidence can be trusted to guide practice
	В	Body of evidence can be trusted to guide practice in most situations
	С	Body of evidence provides some support for recommendation(s) but care should be taken in its application
	D	The body of evidence is weak and the recommendation must be applied with caution
Consensus-based		Recommendation based on clinical opinion and expertise as insufficient evidence available
Good Practice Note		Practical advice and information based on clinical opinion and expertise

Appendix C Full Disclaimer

This information is intended to provide general advice to practitioners, and should not be relied on as a substitute for proper assessment with respect to the particular circumstances of each case and the needs of any patient.

This information has been prepared having regard to general circumstances. It is the responsibility of each practitioner to have regard to the particular circumstances of each case. Clinical management should be responsive to the needs of the individual patient and the particular circumstances of each case.

This information has been prepared having regard to the information available at the time of its preparation, and each practitioner should have regard to relevant information, research or material which may have been published or become available subsequently.

Whilst the College endeavours to ensure that information is accurate and current at the time of preparation, it takes no responsibility for matters arising from changed circumstances or information or material that may have become subsequently available.