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This lesson has been approved for 1.5 CEUs by both the Canadian Council on Continuing Education in Pharmacy and by l'Ordre des pharmaciens du Quebec. Accreditation of this program will be recognized by CCCEP until August 15, 2014.

LEARNING OBJECTIVES

Upon successful completion of this lesson, you should be able to:

1. Recommend a hormonal contraceptive
2. Give appropriate counselling on the use of hormonal contraceptives
3. Explain and manage drug interactions and side effects with hormonal contraception
4. Discuss risks and benefits of hormonal contraception

To successfully complete the post-test for this lesson, you may need access to a recent edition (e.g., 2010, 2011) of the *Compendium of Pharmaceuticals and Specialties* (CPS) for additional information.

INSTRUCTIONS

1. After carefully reading this lesson, study each question and select the one answer you believe to be correct.
   For immediate results answer online at www.CanadianHealthcareNetwork.ca.
2. To pass this lesson, a grade of at least 70% (11 out of 15) is required. If you pass, your CEU(s) will be recorded with the relevant provincial authority(ies). (Note: some provinces require individual pharmacists to notify them.)

ANSWERING

For immediate results, answer online at **www.canadianhealthcarenetwork.ca.**

Contraception: questions and answers for the pharmacist

Ema Ferreira, B.Pharm., M.Sc., Pharm.D., FSCPH

Introduction

Contraception is an important topic for women, men and health professionals. Several choices are now available and pharmacists need to have a good grasp of the subject to give appropriate advice on the best contraceptive method to use. This lesson provides an overview of hormonal contraceptives available in Canada and answers several common questions on hormonal contraception.

Epidemiology

According to the most recent Canadian surveys, oral contraception, condoms and sterilization are the contraceptive methods-of-choice among Canadian women of reproductive age.[1,2] These choices are based on effectiveness, ease of use and recommendations by health professionals.[1]

Overview of available hormonal contraceptives

Table 1 reviews the efficacy, advantages and disadvantages of available methods of hormonal contraception.

Appropriate use of hormonal contraception

COMBINED ORAL CONTRACEPTIVES

COCs can be taken cyclically (21 days of active pills and seven days of hormone-free period) or continuously for extended periods without a hormone-free period. When initiating COC, they can be started on first day of menses or on the first Sunday after the onset of menstruation. If the first tablet is started after the fifth day of a cycle, a barrier method is recommended for seven days.[5] Continuous or extended use is possible with monophasic or multiphasic COCs.[8] When COCs are taken cyclically, the hormone-free period should never be longer than seven days.[5]

Quick start, which means taking the first tablet at the office or at the pharmacy along with a back up method for seven days, has been shown to improve adherence compared to starting the COC after the next menses.[2]

TRANSDERMAL CONTRACEPTIVE PATCH

The contraceptive patch is started on the first day of menses and a back-up barrier method is recommended for seven days for the first month of use. The patch is changed every week for three weeks followed by a hormone-free week. Quick start and continuous use without a hormone-free period are also possible with the patch.[5]

table 1

Hormonal contraceptive methods: effectiveness, advantages and disadvantages[2-6]

METHOD	ANNUAL PREGNANCY RATES		ADVANTAGES	DISADVANTAGES	COMMENTS
	Perfect use	*Typical use*			
Combined oral contraceptives (COCs)	0.3%	8%	Effective; contraceptive effect is reversible Non-contraceptive benefits (refer to Q. 3)	Side effects and risks (refer to Q. 4 & 5)	Cyclical or prolonged use (without hormone-free period) is possible.
Transdermal contraceptive patch	0.3%	8%	Effective and reversible Non-contraceptive benefits (refer to Q. 3) Once-a-week patch change increases compliance compared to COC	Side effects and risks similar to COC Skin irritation Patch can detach (rarely)	May be less effective in women who weigh >90 kg Cyclical or prolonged use (without hormone-free period) is possible.
Vaginal contraceptive ring	0.3%	8%	Effective and reversible Non-contraceptive benefits (refer to Q. 3) Once-a-month ring change increases compliance compared to COC	Side effects and risks Local irritation (vaginitis, leucorrhea, vaginal discomfort) Expulsion (rare)	Spermicides or vaginal miconazole have no effect on the efficacy Cyclical or prolonged use (without hormone-free period) is possible.
Progestin-only pill	0.3%	8%	Effective and reversible Good alternative when estrogens are contraindicated	Side effects, including irregular bleeding	Often a first-choice during breastfeeding Less forgiving than COC (have to be taken within three-hour window every day)
Depot medroxyprogesterone acetate (DMPA)	0.3%	3%	Effective Good alternative when estrogens are contraindicated Every-three month dosing increases compliance compared to COC Amenorrhea in 55–60% of women at 12 months	Delayed return to fertility Possible effects on mineral bone-density Side effects: menstrual cycle disturbances, headache, weight changes and mood effects	
Levonorgestrel intrauterine device (LNG-IUD)	0.2%	0.2%	Up to 5 years protection Good alternative when estrogens are contraindicated Decreases menorrhagia May protect against endometrial hyperplasia Improved compliance compared to other forms of contraception	Requires physician to insert	Can be inserted in nulliparous women

VAGINAL CONTRACEPTIVE RING

The vaginal ring is inserted from the first to the fifth day of menstruation. If started later, a barrier method should be added for seven days. Quick start and continuous use changing the ring every four weeks are also possible with the contraceptive ring.[5]

PROGESTIN-ONLY CONTRACEPTIVES

Progestin-only pill

The progestin-only pill is taken daily without interruption and is started on the first day of menses. If started later, a barrier contraceptive method must be used for 48 hours.[5]

DEPOT-MEDROXYPROGESTERONE ACETATE (DMPA)

DMPA is injected every 12 weeks and is started within the first five days of menstruation. If it is started later a back up method is recommended for seven days.[5-7]

Questions and answers

1. How should we help women to select a contraceptive? Table 1 presents the available hormonal contraceptives. Pharmacists can work with patients to determine which method would be most suitable, taking into account the patient's preferences, medical history, advantages and drawbacks, compliance and safe sex issues.[2] Consistent and correct use depends on a wide range of factors such as income, age, and culture.[7] Appropriate counselling should allow each patient to make an informed choice and to understand the contraceptive correctly.

2. Which contraceptives allow practising "safe sex"? Only latex or polyurethane male and female condoms protect against sexually transmitted infections (STI) and HIV.[2]

When a risk of STI or HIV transmission is identified, the pharmacist should strongly recommend double protection (e.g., simultaneous use of condoms with a hormonal method) for pregnancy and STI prevention.[7]

3. What are the benefits of hormonal contraception? Other than contraception, combined hormonal contraceptives (CHCs) offer several other benefits. To promote compliance, it is important to convey these benefits to women taking a CHC.[2,5] These advantages are:

- decrease in premenstrual symptoms;
- regularization of menstrual cycle and reduction of menstrual flow;
- decrease in abnormal uterine bleeding;
- decrease in the risk of anemia;
- reduction in the risk of ectopic pregnancy;
- decrease in premenopausal symptoms;
- improvement of acne and hirsutism;
- decrease in endometriosis;
- reduction of benign breast diseases and ovarian cysts;
- decrease in the incidence of ovarian and endometrial cancers;
- decrease in the risk of pelvic inflammatory disease;
- reduction of uterine leiomyomas (fibroids);
- possible decrease in the number of colorectal cancers;
- positive effect on bone mass.

The progestin-only pill can decrease menstrual flow, reduce menstrual cramps and premenstrual symptoms.[5]
DMPA also offers non-contraceptive benefits:[2,5]

- Amenorrhea occurs in 55–60% of users at 12 months, which decreases the incidence of dysmenorrhea and anemia;
- Decreases the risk of endometrial cancer;
- Decreases symptoms associated with endometriosis, premenstrual syndrome and chronic pelvic pain.

4. What are the risks of hormonal contraception? Venous thromboembolism (VTE) is an uncommon but serious side effect of CHC. Case-control studies have shown an increase in relative risk ratios of VTE and pulmonary embolism ranging from 2.1 to 4.4.[6] VTE in non-users is 4–5/10,000 and in COC users is 9–10/10,000. The risk is related mostly to the dose of estrogen. COCs containing ≤ 35 µg estrogen carry a lower risk of VTE than COC containing 50 µg. Preliminary data suggest further risk reduction with doses < 35 µg; data are still lacking to confirm this finding.[9]

COCs are associated with an increased risk of myocardial infarction (MI).[5] However, the risk of MI was only observed with a COC containing ≥ 50 µg of estrogen.[5]

Some symptoms must be recognized by patients and health professionals as warnings of potentially serious conditions: 1) severe abdominal pain (cholelithiasis, clot, pancreatitis, liver tumours), 2) chest pain, dyspnea or nose bleeds (pulmonary embolism, myocardial infarction or angina), 3) blurry vision or other eye problems (stroke, hypertension), 4) leg pain (deep vein thrombosis).[5]

DMPA has been associated with a reduced bone mineral density, especially in the first two years of use. Once the contraceptive is stopped, there is a substantial recovery of bone mass.[2]

5. How can we manage side effects associated with hormonal contraception? Side effects are usually benign and transient and often occur during the first three months; they're the most common reason for stopping CHC. The most frequent side effects are abnormal bleeding, nausea and vomiting, weight gain, breast tenderness and headache.[2,5,6] Table 2 offers management options for these and other side effects.

6. What are the absolute contraindications to using combined hormonal contraception? The following are absolute contraindications to CHCs:[4-5]

- pregnancy;
- undiagnosed vaginal bleeding;
- postpartum period (< 3 weeks) without breastfeeding; postpartum period (< 6 weeks) if breastfeeding;
- smoking and age > 35 years (> 15 cigarettes daily);
- severe hypertension (systolic ≥ 160 mmHg or diastolic ≥ 100 mmHg);
- hypertension associated with vascular disease;
- diabetes with neuropathy, retinopathy, nephropathy, other vascular disease or of > 20 years' duration;
- current or past venous thromboembolic disease or cerebrovascular accident;
- current breast cancer;
- ischemic heart disease (current and past);
- complicated valvular heart disease (risk of atrial fibrillation, pulmonary hypertension or history of subacute infectious endocarditis);
- multiple risk factors for arterial cardiovascular disease (e.g., older age, smoking, diabetes, hypertension);
- severe cirrhosis or liver tumour (adenoma or hepatoma) or active viral hepatitis;
- migraine with aura or focal neurologic symptoms;
- migraine without aura in women aged ≥ 35;
- known thrombogenic mutation;
- surgery with prolonged immobilization;
- active or unstable systemic lupus erythematous or with positive (or unknown status) antiphospholipid antibodies.

7. Are some hormonal contraceptives better for a woman with specific medical or personal condition? Table 3 summarizes recommendations for use of hormonal contraception in women with specific conditions.

8. What are the most significant drug interactions with hormonal contraception? One of the roles of the pharmacist is to detect and manage drug interactions. Several drug interactions with hormonal contraception can compromise contraceptive efficacy or alter the pharmacokinetics of other drugs.

Several drugs can decrease hormone concentrations and compromise efficacy:

- Antimicrobials: rifabutin, rifampin and griseofulvin. There is no significant interaction with other antibiotics and a back-up method is not mandatory during antibiotic treatment.[4,5]
- Anticonvulsants:[17-20] Phenobarbital, primidone, carbamazepine, oxcarbazepine, phenytoin, topiramate (> 200 mg/day).
- Antiretrovirals:[17,21] nevirapine, amprenavir, fosamprenavir, ritonavir, nelfinavir, tipranavir/ritonavir, lopinavir/ritonavir, darunavir/ritonavir
- Other: butalbital,[17] St-John's wort,[23-24] modafinil.[17]

CHCs can also affect concentrations of other drugs including lamotrigine[17-20]

table 2

Management of side effects related to hormonal contraception

SIDE EFFECT	SUGGESTED SOLUTIONS		COMMENT
	Initiated by the pharmacist	Requiring a medical evaluation	
Amenorrhea	Recommend a pregnancy test if appropriate • If negative: reassure	If pregnancy test negative and amenorrhea not desired: – Change to a different CHC; or – Add conjugated estrogens (0.625–1.25 mg or 17β-estradiol 1–2 mg PO daily for 10 days[5]	Not dangerous. Observed in 2–3% of cycles[5]
Chloasma/ melasma	Prevention with adequate solar protection.[5]	Changing CHC does not solve the problem. Refer to a dermatologist if necessary.	Hyperpigmentation might be permanent.[5]
Breast tenderness	OTC analgesics	If very uncomfortable, try a CHC with less estrogen. If galactorrhea, serum prolactin levels should be tested.[5]	Usually subsides after a few cycles without treatment.[5] Could be linked to estrogen dose.[5] Could be more frequent with contraceptive patch during first few cycles.[10]
Irregular bleeding - spotting	Reassure and encourage compliance. Ask about: – Proper use (compliance, missed doses, etc); – Pregnancy symptoms; – Diarrhea or vomiting; – Dyspareunia (pain during intercourse) and bleeding after coitus; – Other medications (including natural products); – Smoking; – Unprotected sex. Reinforce compliance, smoking cessation and double protection (adding a condom) if STI risk identified. Shorten hormone-free interval with CHC to 3 days.[11]	Refer to physician for screening or Pap test if appropriate (e.g., STI risk or dyspareunia).[5] Add conjugated estrogens (0.625–1.25 mg) or 17β-estradiol (1–2 mg PO daily) for 10 days.[5] Change progestin class (e.g., from the gonane* class to the estrane class or vice versa)[5] Use COC with a higher dose of estrogen.[12] Add ibuprofen 800 mg PO BID for 7–10 days.[11-12] DMPA: Increase the dose or shorten dosing interval for 2–3 injections or, add estrogen or ibuprofen as described above.[2] If breakthrough bleeding occurs when taking continuous CHC, take a 3- to 7-day hormone-free period and then restart CHC.[8]	More frequent during first three cycles: 10–30% experience this in the first month of use.[5] Improves with time.[5] Not necessarily a sign of lack of contraceptive efficacy.[5] Incidence is similar with different CHC, however:[5] – More frequent with vaginal ring[10] and with COC containing 20 µg of estrogen.[13] – More frequent with DMPA within first 6 months. Can be associated with: poor compliance, pregnancy, smoking, Chlamydia infection, drug interactions, endometrial atrophy, and uterine and cervical anomalies.[5]
Migraines and headaches	If sudden, de novo or with neurologic or ophthalmological symptoms: – Contraceptive might have to be stopped; – Medical referral is recommended.[5] In other cases: recommend appropriate treatments for headache.	If headache is present during hormone-free week, prolonged or continuous CHC is an alternative.[8] Choose a CHC with less estrogen or a progestin-only contraceptive.[5]	Migraine might be associated with an increased risk of stroke.[5] Might be related to estrogen component.[5]
Nausea and vomiting	Take the COC with food or at bedtime.[5] Pregnancy test might be recommended, especially if woman has been taking the contraceptive for a long time without previous nausea and vomiting.[5] Medical referral might be required.	Reduce the estrogen dose in the CHC.[5]	Possible during first months of use and usually subsides with time.[5] Might be related to estrogen component.[5]
Weight gain	Reassure women; recommend healthy diet and regular exercise.[11]	Refer to physician if significant weight gain. Switch to another contraceptive method if weight gain with DMPA.	The association between the use of COC and weight gain is not proven.[11] Weight gain has been reported with DMPA.[5]

CHC = combined hormonal contraceptive; COCs = combined oral contraceptives; DMPA = depot medroxyprogesterone acetate; STI = sexually transmitted infection
*estranes: ethynodiol diacetate; norethindrone, norethindrone acetate; gonanes: (dl) norgestrel, levonorgestrel, norgestimate, desogestrel, norelgestromin, etonogestrel; pregnanes: cyproterone acetate, medroxyprogesterone; other: drospirenone.

(Table 3), as well as amprenavir,[21] theophylline,[17] tizanidine,[17] cyclosporine,[17] clozapine,[17] chlorpromazine,[22] levothyroxine[17] and phenytoin.[17, 26]

9. How should a pharmacist counsel a woman starting hormonal contraception for the first time and what follow-up is recommended? Contraceptive counselling and follow-up recommendations are summarized in Table 4.

10. Is it safe to conceive right after discontinuing COC? Yes. Return to fertility is prompt with all methods, with the exception of DMPA; the median delay in return to fertility with this method is 10 months, from the date of the last injection, regardless of the duration of use.[7]

Clinicians may suggest waiting at least one month after stopping hormonal contraception to have an accurate first day of last menses (for gestational age accuracy) and to start on the proper dose of folic acid to prevent congenital malformations.

11. How should pharmacists respond to questions about missed doses? In 2008, new recommendations were published for the management of missed CHC doses (Table 5).[25] These are complex and the pharmacist should understand them well in order to give clear and concise verbal and written information. These recommendations are based on the following principles:

- A higher risk of ovulation occurs when the hormone-free period is longer than seven days;
- Ovulation is rare if seven consecutive days of CHC are taken.

PROGESTIN-ONLY CONTRACEPTIVES

If there is a delay of three hours or more for a dose of a progestin-only pill (including missed doses), it is recommended to take a tablet as soon as possible, to continue to take one tablet daily as usual and add a barrier contraceptive method for 48 hours. If unprotected sex occurred in the past five days, emergency contraception is recommended.[25] When DMPA is used, emergency contraception should be considered if the injection is missed or delayed for 14 weeks or longer.[25]

12. How can pharmacists promote adherence to contraceptives? Several strategies can be used to promote adherence, including:[2,5,7]

- Explain the importance of a) taking COCs every day, or b) changing a vaginal ring or patch at the correct time, or c) making an appointment for the DMPA injection;
- Tell patients to adopt a routine to take COCs (e.g., after brushing teeth/hair, after morning coffee, etc.);
- Give written personalized information;

table 4 Pharmacist counselling and follow-up recommended for women on hormonal contraceptives[2,7]

MOMENT	COUNSELLING AND FOLLOW-UP
First prescription	• Confirm the absence of contraindications • Counsel on the appropriate use of the contraceptive: - Understanding of efficacy; - Benefits, including non-contraceptive benefits, and risks of hormonal contraception; - Appropriate use: - Depending on the method, indicate appropriate time to start (COC, patch, ring, oral progestin); - Inform that quick start is possible with the use of an additional non-hormonal method for seven days - Explain proper use and dosage; - Explain importance of not prolonging hormone-free interval; • Review appropriate time to take contraceptive (or change patch/ring, etc) • Discuss main side effects, how to manage them and indicate when to consult a health professional • Explain what to do in case of missed dose(s). • Stress the importance of the use of latex or polyurethane condoms to prevent transmission of STIs; • Inform on the availability of emergency contraception; • Discuss the importance of a folic acid-containing vitamin and return of fertility if contemplating pregnancy.
Every renewal	• Verify compliance • Discuss topics that were not addressed at first visit • Check if side effects are present and follow-up if necessary • Verify the absence of contraindications • Confirm the contraceptive method is still suitable.
Once a year	• Remind of the importance of Pap test and STI screening (if appropriate) • Remind the importance of folic acid-containing vitamin in case a pregnancy is planned

COC = combined oral contraceptive; STI = sexually transmitted infection

table 5 Recommendations for missed doses of COC, patch or ring [25]

AT ANY TIME	FIRST WEEK OF CYCLE	SECOND AND THIRD WEEKS OF CYCLE	
Missed < 24 hours of CHC (< 3 hours for the vaginal ring)	1 day or more without CHC or a hormone-free period > 7 days	Missed < 3 days of CHC	≥ 3 consecutive days without CHC
Start contraceptive as soon as possible	Continue contraceptive until the end of the cycle Add a barrier method for 7 days Use EC if necessary*	Start contraceptive as soon as possible Continue contraceptive until the end of the cycle Start another cycle without a hormone-free period	Start contraceptive as soon as possible Continue contraceptive until the end of the cycle Add a barrier method for 7 days Start another cycle without a hormone-free period Use EC if necessary

CHC = combined hormonal contraceptive; COC = combined oral contraceptive; EC = emergency contraception * Use EC if patient had unprotected sexual relations during 5 previous days
The contraceptive patch is efficacious for up to 9 days; therefore, the 3 days without effective contraception starts at day 12.
The contraceptive patch can be removed for up to 24 hours and the vaginal ring for up to 3 hours without compromising their efficacy.

table 3 Combined hormonal contraceptive use in women with specific conditions[6,14-20]

CONDITION	RECOMMENDATIONS FOR CHC USE
Age >35 years	• Can be used by healthy and non-smoking women > 35 years; • Perimenopausal women may benefit from CHC due to positive effect on bone mass, increased menstrual regularity, reduction in heavy menstrual flow and vasomotor symptoms. • Reduction in ovarian and endometrial cancers is more important in this age category; • Probability of venous thromboembolic disease increases with age; evaluate all risk factors (obesity, cardiovascular disease, smoking, etc.)
Diabetes	• Can be used by women with diabetes who are < 35 years of age without comorbidities (e.g. hypertension or vascular disease), who do not smoke, and do not have nephropathy, neuropathy, retinopathy, other vascular disease or hypertension. • Does not affect glycemia, Hb_{A1C} or the progression of the disease significantly. • Previous gestational diabetes is not a contraindication.
Dyslipidemias	• Most women with dyslipidemia can use CHC. • Lipid profile monitoring might be necessary in certain cases. • In case of overt hypertriglyceridemia, avoid CHC due to an increased risk of pancreatitis
Epilepsy	Carbamazepine, phenytoin, phenobarbital, oxcarbazepine, primidone, or topiramate (> 200 mg daily) • These hepatic enzyme inducers can reduce the efficacy of CHC. • DMPA or LNG-IUD are preferred to CHC. • If taking CHC, shorten hormone-free period to 4 days instead of 7 days.[7] • Do not recommend progestin-only pill. • No significant interaction with topiramate 100 mg PO BID or less. For doses > 200 mg per day, follow recommendations above for other anticonvulsants.
Lamotrigine	• Lamotrigine concentrations can double during the hormone-free period. - Some clinicians recommend reducing the lamotrigine dose by 25% during the hormone-free period. - Continuous CHC is a good alternative to prevent lamotrigine concentration fluctuations. • Since CHC decreases lamotrigine levels, when a CHC is started, lamotrigine dose might have to be doubled. • Interaction not observed if concomitant use with valproic acid.[15] • In women taking lamotrigine with lamotrigine glucuronidation inducers (e.g., phenytoin, phenobarbital), levels are not expected to decrease further when starting CHC.[15] • Progestin-only methods are suitable for women on lamotrigine (including tablets, injection and IUD).[4,15]
Hypertension and other cardiovascular diseases	• Can be used by women ≤ 35 years with controlled hypertension if: - There is no target organ damage; - The woman does not smoke. • Progestin-only contraceptives are appropriate alternatives; • Ischemic heart disease, complicated valvular heart disease or severe hypertension are absolute contraindications.
Inflammatory bowel disease	• Oral CHC cannot be properly absorbed if diarrhea is severe; additional non-hormonal method should be used during these episodes. • Contraceptive patch and vaginal ring are alternatives.
Liver disorders	• Severe cirrhosis, liver tumours or active viral hepatitis are absolute contraindications. • Mild cirrhosis or a history of hepatitis is not a contraindication. Once the liver enzymes are normalized, CHC can be used. Thereafter, monitoring liver enzymes two to three months after beginning CHC is recommended. • Mild cirrhosis with an associated cholestasis is a relative contraindication. • History of pregnancy-induced cholestasis is not a contraindication.
Lupus (systemic lupus erythematous)	• CHC can be used if the disease is inactive, stable and without antiphospholipid antibodies. • Caution is recommended in the presence of vascular disease, nephritis or antiphospholipid antibodies.
Migraines and headaches	• Contraindicated in migraines with neurologic symptoms or aura. Not contraindicated if tension headaches. • Important to evaluate the type of headache (medical diagnosis) and other risk factors (comorbidities, smoking, etc). • In migraines without aura: - If another risk factor is present, medical evaluation is recommended; - If no other risk factor is present CHC can be used; - Age ≥ 35 is a risk factor for stroke. • Stop CHC if: - Exacerbation of symptoms, - New aura appears, - The usual aura transforms.
Post-partum and breastfeeding	• During the first three weeks of the postpartum period, women are at higher risk of thrombosis and estrogens can affect milk production, therefore; - If the woman is not breastfeeding, she should wait at least three weeks to start CHC; - If the woman breastfeeds, a progestin-only contraceptive is recommended as a first choice and CHC should only start once breastfeeding is well established (i.e., at least six weeks postpartum). • LNG-IUD should be inserted within 48 hours postpartum, and, if not, at least six weeks postpartum.
Smoking	• CHC is contraindicated in women aged ≥35 who smoke ≥15 cigarettes per day. • CHC is relatively contraindicated in women who smoke ≤15 cigarettes per day. Consider other risk factors including age, obesity, diabetes, etc. • Inform women of the benefits of smoking cessation and offer appropriate counselling and support.
Surgery	• CHC should be stopped one month prior to surgery that requires prolonged immobilization or is related to cancer. • Once the patient can mobilize, CHC can be restarted.
Thromboembolic disease (history of VTE/pulmonary embolism/stroke)	• Avoid estrogen-containing contraceptives. • Progestin-only contraceptives are good alternatives.

A1C = glycated hemoglobin; CHC = combined hormonal contraceptive; DMPA = depot medroxyprogesterone acetate; IUD = intrauterine device; LNG-IUD = levonorgestrel intrauterine device; VTE = venous thromboembolism

- Clarify the approach to missed pills or to misuse of a contraceptive;
- Inform about the availability of oral emergency contraception, if necessary;
- If a compliance problem is identified:
  - Ask the woman what could remind her to take her pill or improve her compliance;
  - Discuss all non-hormonal and hormonal methods, explaining advantages and disadvantages, in order to identify the best method for this woman.
- The quick-start method, whereby the woman takes her first pill (while using a back up contraceptive method for seven days) on the day of the office or pharmacy visit has been found to promote continuation of CHCs through the second month.[2]

Summary

The best contraceptive for a couple is one that is effective, medically safe, and suitable for their lifestyle and allows proper compliance.

The failure rate is much higher with typical use than optimal use; therefore, proper counselling is essential to promote the best adherence possible.

Questions

Answer online at www.CanadianHealthcareNetwork.ca, CE section, Quick Search CCCEP #1065-2011-279-I-P

1. Mary, 36-years-old, comes to renew her COC prescription and asks you to recommend a treatment for headaches. She takes Yasmin (drospirenone 3 mg/ethinylestradiol 30 µg) cyclically. She has an active script for acetaminophen 300 mg/codeine 30 mg tablets. You obtain the following information:

- *She has a headache once or twice a month mostly during the hormone-free week but occasionally at other times;*
- *Her headaches can be related to stress;*
- *She is usually nauseous when she has a headache, especially if she takes the acetaminophen/codeine tablets;*
- *She had tried feverfew for her headaches with very little relief;*
- *She has a healthy lifestyle and is compliant with her contraceptive.*

For Mary, which statement is false?

a) Migraines with neurologic symptoms are a contraindication to COCs.
b) Tension headaches are a contraindication to the contraceptive patch.
c) The contraceptive vaginal ring used in a continuous fashion would be an appropriate recommendation for this woman.
d) If a severe headache occurs while taking a COC, a medical referral is warranted.
e) Taking a COC with less estrogen content could help reduce the occurrence of headaches.

2. Julie is a 30-year-old with type 1 diabetes. Her diabetes was diagnosed seven years ago and is well controlled with no vascular disease. She had viral hepatitis five years ago, which has resolved without sequelae. Her mother was diagnosed with breast cancer two years ago. Julie weighs 85 kg.

Given her personal and family history, which of the following would be an absolute contraindication for CHC?

a) Type 1 diabetes
b) family history of breast cancer
c) her weight
d) history of viral hepatitis
e) there is no absolute contraindication to CHC

3. Genevieve, 33 years-of-age, has three children (2, 4 and 7). She doesn't want any more kids and would like to restart the "pill" or something more reliable than condoms. You learn that her last pregnancy was a surprise, likely caused by noncompliance. She's in a stable relationship, a non-smoker, drinks a glass of wine a week and weighs 83 kg. She suffers from hypertension, which started during her last pregnancy and is now well-controlled. Her pharmacy profile is:

- *hydrochlorothiazide 12.5 mg daily AM for almost the past two years;*
- *methyldopa 500 mg BID from June 2008 to February 2009;*
- *prenatal vitamins 2008-2009;*
- *she also takes a garlic clove once daily for hypertension.*

Which of the following statements is true?

a) The contraceptive patch is not a good alternative for this woman since she is hypertensive and weighs more than 80 kg.
b) The vaginal ring would be a good option for this woman since it is only changed once a month and contains only progestin.
c) DMPA would be a good option since it is administered only once every three months.
d) Hypertensive women should not use hormonal contraception.
e) There is a significant interaction between garlic and CHCs.

4. Among the following health benefits, which one is not associated with CHC?

a) a reduction in the incidence of ovarian cancer
b) a reduction in the incidence of endometrial cancer
c) a reduction in the risk of breast cancer
d) a reduction in the incidence of ovarian cysts
e) a reduction in the risk of pelvic inflammatory disease

5. Among the following conditions, which one requires a prompt medical referral while taking CHC?

a) severe abdominal pain
b) diarrhea
c) chloasma
d) headache relieved by acetaminophen
e) irregular bleeding

6. Which statement is false?

a) DMPA can cause a reduction in bone mass that is mostly reversible after stopping treatment.
b) One of the benefits of continuous CHC is a decrease in headaches that could occur during the hormone-free period.
c) The first seven days of CHC prevents ovulation and the following 14 days maintain the ovarian suppression.
d) Once applied a contraceptive patch is effective for 12 days.
e) Contraceptive patch detachment for less than 24 hours does not compromise contraceptive efficacy.

7. Which statement is false?

a) Quick start of CHC (e.g., starting at the pharmacy) can increase compliance.
b) The main reason why women stop taking CHC is side effects.
c) Multiphasic COC cannot be used for continuous use.
d) To reduce irregular bleeding, a COC containing a progestin from a different class can be tried.
e) Spotting while taking a CHC can be a sign of pregnancy.

8. Which statement is false?

a) When a CHC is started and a woman is also on lamotrigine (monotherapy), it is recommended to double the dose of lamotrigine.
b) It is preferable that women who take carbamazepine do not use CHC.
c) Very few interactions are reported with antiretrovirals since HIV-positive women do not take hormonal contraceptives but rely on non-hormonal contraceptives.
d) Levothyroxine concentrations can decrease when a CHC is added therefore levothyroxine dose might need to be adjusted.
e) Natural health products can interact with CHC.

9. Which statement is false?

a) A contraceptive ring can be inserted for up to six weeks and remain effective.
b) In order to manage irregular bleeding associated with depot-medroxyprogesterone acetate injection, a pharmacist can recommend a short course of ibuprofen.
c) To increase contraception and STI protection, a condom should be used along with a hormonal contraceptive.
d) The contraceptive patch can be less effective in women that weigh more than 90 kg.
e) When taken properly, a contraceptive vaginal ring can be removed for up to three hours without compromising efficacy.

10. Which of the following conditions is not an absolute contraindication to combined hormonal contraception?

a) a perimenopausal woman with heavy menstrual periods
b) a 32-year-old woman with ischemic heart disease
c) a 34-year-old woman with active viral hepatitis
d) a 33-year-old woman who is breastfeeding a three-week-old baby.
e) a 45-year-old woman with tension headaches

11. Which of the following recommendations is appropriate for a woman who experiences

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Questions

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irregular bleeding while taking a COC?

a) Lengthen the hormone-free period to nine days to allow a proper cleansing of the uterus.
b) Use a COC with lower estrogen content.
c) Refer to a physician to possibly add ibuprofen 800 mg twice daily for 10 days.
d) Change to a progestin from the same class (i.e., another gonane, for example).
e) Stop taking the contraceptive for a month and restart after the break.

12. Which of the following drugs can reduce the efficacy of a combined hormonal contraceptive?

a) theophylline
b) lamotrigine
c) amoxicillin
d) nevirapine
e) chlorpromazine

13. What should a woman do if she misses the third pill (>24 h) in the first week of a COC pill pack (when she takes the pill 21 days on, seven days off)?

a) Take an active tablet as soon as possible and continue to take a tablet daily until the end of the pack. Add a barrier method for seven days. Omit the hormone-free period. Use emergency contraception if required.
b) Take an active tablet as soon as possible and continue to take a tablet daily until the end of the pack. Add a barrier method for seven days. Use emergency contraception if required.
c) Take two active tablets as soon as possible and continue to take a tablet daily until the end of the pack. Use emergency contraception if required.
d) Take two active tablets as soon as possible and continue to take a tablet daily until the end of the pack. Add a barrier method for seven days. Use emergency contraception if required.

14. What should a woman do if she forgot to change her second contraceptive patch yesterday?

a) Change her patch and continue as usual.
b) Apply a new patch as soon as possible. Keep the same change day. Restart a new three-patch cycle without a hormone-free period.
c) Use an emergency oral contraceptive as soon as possible.
d) Apply a new patch as soon as possible. Keep the same change day. Restart a new three-patch cycle without a hormone-free period. Add a barrier method for 7 days.

15. When is emergency contraception indicated?

a) When a contraceptive vaginal ring is removed for three days or more during the second or third weeks of cycle (and unprotected sex within five days).
b) When there is a delay of five hours in the dose when taking progestin-only tablets (and unprotected sex within five days).
c) When a depot-medroxyprogesterone acetate (DMPA) injection is delayed for more than 14 weeks (and the woman has had unprotected sex within 14 days).
d) None of the above situations.
e) All of a, b and c

References are available at www.CanadianHealthcareNetwork.ca, CE section.

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THIS MONTH
Contraception: questions and answers for the pharmacist

AUTHOR
Since 1998, Ema Ferreira has been a pharmacist in obstetrics and gynecology at CHU Ste-Justine, a tertiary university hospital. She is a Clinical Associate Professor for courses on therapeutics during pregnancy and lactation, contraception and other women's health issues. Ema has authored several articles, participated in conferences, and written book chapters on topics related to her clinical field and teaching interests.

All lessons are reviewed by expert pharmacists for accuracy, currency and relevance to current pharmacy practice.

This lesson is valid until August 15, 2014. Information about contraception may change over the course of this time. Readers are responsible for determining the most current aspects of this topic.

CE PROJECT MANAGER
Sheila McGovern, sheila.mcgovern@rogers.com

CE CLINICAL EDITORS
Deirdre Maclean, Lu-Ann Murdoch, B.Sc.Phm.

CE DESIGNER
Linda Rapini, Toronto, Ont.

CE MANAGING EDITOR
Rosalind Stefanac, Toronto, Ont.
rosalind.stefanac@rci.rogers.com

This lesson is published by Rogers Publishing Ltd., One Mount Pleasant Rd., 7th floor, Toronto, ON M4Y 2Y5. Editorial office: Tel: (416) 764-3926 Fax: (416) 764-3931. CE queries: Tel: (416) 764-3879 Fax: (416) 764-3937 mayra.ramos@rci.rogers.com. No part of this CE lesson may be reproduced, in whole or in part, without the written permission of the publisher.

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EMAIL education@canadianhealthcarenetwork.ca

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FOR ENGLISH LESSONS
Mayra Ramos
FAX (416) 764-3937 **EMAIL** education@canadianhealthcarenetwork.ca

POUR LES LEÇONS EN FRANÇAIS
Francine Beauchamp
FAX (514) 843-2182 **EMAIL** formationcontinue@professionsante.ca