continuing education for pharmacists

Volume XXXVI, No. 3

Practice Considerations for Pharmacists Providing Contraception

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Dr. Lindsey Peters has no relevant financial relationships to disclose.

Goal. The goal of this lesson is to compare and contrast current contraceptive options and key considerations pharmacists should think through when helping patients develop a reproductive life plan.

Objectives. At the completion of this activity, the participant will be able to:

1. identify differences among contraceptive options in effectiveness, onset of action, permanence, cost, and availability;
2. compare and contrast characteristics of contraceptive methods including potential health risks and benefits, the ability to prevent sexually transmitted infections (STIs), degree of partner involvement, and other important patient preferences; and
3. appropriately select a contraceptive method for a specific patient based on patient characteristics and preferences.

Background

"Unintended" pregnancies refer to pregnancies which the woman reports to have desired later ("mistimed" pregnancy) or never ("unwanted" pregnancy) and have been associated with adverse pregnancy outcomes. Approximately 45 percent of all pregnancies in the United States (U.S.) are unintended, which significantly impacts population health. Pharmacists' roles in the provision of family planning products is expanding in the U.S. through statewide protocols and collaborative practice agreements, consistent with pharmacists' expertise and availability. To fulfill these roles, pharmacists need to understand important considerations when helping patients choose an appropriate method and counseling them on correct and consistent use. A recent review article provided an excellent overview of available barrier and non-barrier contraceptive products and details the pharmacology of each method. This lesson focuses on considerations for pharmacists when suggesting products and educating patients about contraception.

Considerations When Assisting Patients in Choosing a Contraceptive Method

When pharmacists help patients choose a contraceptive method, there are many factors to consider (Table 1). Each is detailed below.

Effectiveness. One of the first considerations when choosing a contraceptive method is to evaluate the effectiveness of the available options. The effectiveness percentage, or how well a method prevents pregnancy, is provided for "optimal" use and "typical" use. For example, with perfect, optimal use the male condom prevents 98 percent of pregnancies, but when evaluating how condoms are typically used, only 85 percent of pregnancies are prevented. If a patient or couple strongly desires to prevent pregnancy, a highly effective method of contraception such as long-acting reversible contraception (LARC) or surgical methods should be considered. For individuals or couples who are ambivalent about pregnancy planning or intention, a less effective method may be appropriate. It is the goal for patients to have the method most effective for them.

Generally with typical use, non-hormonal options are less effective than hormonal options. Non-hormonal options such as male condoms, female condoms, sponges, diaphragms, and cervical caps range in optimal effectiveness from 80 percent to 98 percent and typical rates of 71 percent to 88 percent. There are ways to increase the effectiveness of these products. Although most condoms

Table 1
Considerations when choosing a contraceptive method

- Effectiveness
- Cost
- Health risk
- Partner involvement
- Onset of action and permanence
- Ability to prevent transmission of sexually transmitted infections (STI)
- Availability
- Other patient preferences (religious beliefs, complexity of the method, etc.)

Table 2
Cost and typical effectiveness

Method	Approximate Cost*	Effectiveness
Male Condoms	$1 per condom	+ +
Female Condoms	$4 per condom	+ +
Sponges	$4 per sponge	+ +
Diaphragms	$75 per diaphragm	+ +
Cervical Caps	$75 per cap	+ +
Progestin-Only Pills	$36–$55 per pack	+ + +
Combined Hormonal Contraceptives	$32–$180 per pack	+ + +
Transdermal Patches	$132 per box	+ + +
Vaginal Rings	$147 per ring	+ + +
Injectable medroxyprogesterone	$189–$195 per injection	+ + +
Subdermal Rods	$926 per device	+ + + +
Intrauterine Devices	$750–$972 per device	+ + + +
Surgical Sterilization	$1,500–$6,000 per procedure	+ + + +

*Additional costs, such as provider fees, may apply.

come pre-lubricated, it is important to ensure that the correct lubricant is used based on the condom type. Water-based lubricants should be used with a latex or polyisoprene condom. Oil-based lubricants or petroleum jelly will damage the condom and decrease the effectiveness. The male partner can help increase the effectiveness of the contraceptive sponge by using a latex condom or pulling out prior to ejaculation. The contraceptive effectiveness of the cervical cap and diaphragm increases when paired with spermicidal creams, jellies, or films.

Hormonal options such as progestin-only pills and various combined hormonal contraceptive preparations vary in typical effectiveness from 92 percent to 97 percent with effectiveness upwards of 99 percent with optimal use. Newer routes of delivery, such as transdermal patches, vaginal rings, subdermal rods, and hormonal intrauterine devices (IUDs) are available. The subdermal rod and IUDs are usually classified as LARC. Although with perfect use the ability to prevent pregnancy is nearly equal, with typical use the subdermal rod is most effective with a 99.9 percent effectiveness rating. Other extremely effective options are permanent surgical methods with typical and optimal effectiveness of 99.9 percent.

The Centers for Disease Control and Prevention (CDC) provide an effectiveness chart of family planning methods. Table 2 shows a comparison of methods including their approximate cost and relative effectiveness. The methods that have the greater number of plus signs indicate that they have the greater effectiveness. The exact percentage of effectiveness varies depending on which resource is cited, but overall the surgical and LARC methods are most effective, while the non-hormonal options are least effective.

Cost. A second factor to consider is the affordability of the available options. The male condom is the least expensive option, while the surgical options are the most costly. Available over-the-counter (OTC), male and female condoms are approximately $1 and $4 per condom respectively. Diaphragms and surgical caps are approximately $75 per device and require the woman to be fitted by a healthcare provider. The hormonal pills require a prescription in most states and range in price from $32 to $180 per pack. The transdermal patch averages $132 per box while the vaginal ring costs $147 per ring. The injectable medroxyprogesterone acetate syringe is approximately $190 per dose and requires a prescription. Of the LARC, the rod averages $926 per device and the IUD ranges from $750 to $972 per device. Both of the LARC options must be inserted by a trained healthcare provider. Surgical options are the most expensive and range from $1,500 to $6,000 per procedure. Additional provider fees may occur for consultation, procedures, and follow-up appointments. These costs were obtained from *Lexi-Comp* and Planned Parenthood at the time of writing.

Health Risk and Benefit. There are different health risks associated with each of the available options. CDC has provided two important documents with detailed recommendations. The first is the U.S. Medical Eligibility Criteria for Contraceptive Use 2016 (U.S. MEC). It is intended to help healthcare providers when counseling women, men, and couples about contraception and provides guidance on the safety of contraceptive method use for women with specific characteristics and medical conditions. The second document is the U.S. Selected Practice Recommendations for Contraceptive Use 2016 (U.S. SPR) which addresses how to use contraceptive methods safely and effectively. The U.S. MEC can be thought of as helping with the "who" while the U.S. SPR can help counsel on the "how" of the various methods.

There are also a variety of phone apps that can be downloaded to help provide quality family planning services. A few examples of important factors to consider are described below. Table 3 provides a summary of a few select health conditions or patient characteristics and suggestions when selecting a form of contraception. These recommendations are from the CDC's Summary Chart of U.S. MEC.

For non-hormonal options, allergies are one of the important risks to consider. Male condoms are typically latex, but are available as latex-free (e.g., polyurethane, polyisoprene, or animal membrane) for those with a latex allergy. The female condom is a lubricated

Table 3
Recommendations to consider when selecting a contraceptive method based on health condition or patient characteristic*

Health Condition or Patient Characteristic	Recommendations to Consider When Selecting a Contraceptive Method
Acne	• Some have FDA-approval (e.g., Estrostep®, Ortho Tri-Cyclen®, Yaz®)
Breastfeeding	• Do not use CHC <21 days postpartum • Generally, estrogen products are okay >42 days postpartum (or 30-42 days postpartum without other risk factors for VTE) • Estrogen can reduce milk production
Breast Cancer (Current)	• Copper IUD preferred
Cirrhosis (severe)	• Do not use CHC
Diabetes	• If concomitant nephropathy, retinopathy, neuropathy, other vascular disease or diabetes >20 years duration: do not use CHC, and avoid DMPA
Desire for quick return to fertility	• Avoid DMPA as its median time to conception from first omitted dose is approximately 10 months
Hyperlipidemia	• Copper IUD is preferred, all other acceptable • Estrogen increases triglycerides and progestin increases LDL
Hypertension	• If uncontrolled (BP ≥160/100) or vascular disease: do not use CHC
Latex allergy	• Use latex-free condoms (e.g., polyurethane, polyisoprene, or animal membrane)
Migraine with aura	• Do not use CHC
Non-adherence	• IUD, implant, DMPA, weekly patch, or monthly ring preferred • Avoid POP
Obesity	• Consider extended cycle formulation with up to 35 mcg ethinyl estradiol • Patch may not be as effective in women weighing ≥90 kg • Avoid DMPA due to weight gain
Osteoporosis	• Avoid DMPA due to decreases in bone mineral density (recommended not to continue for more than 2 years)
Smoking	• Do not use CHC in women ≥35 years and smoking ≥15 cigarettes/day • Generally recommended to avoid CHC in women ≥35 years who smoke cigarettes
Stroke	• Copper IUD preferred • Do not use CHC
STI prevention	• Latex, polyurethane, and polyisoprene condoms
Unexplained vaginal bleeding	• Do not use IUD
VTE (acute or high risk)	• Do not use CHC • Estrogens increase hepatic production of factor VII, factor X, and fibrinogen in the coagulation cascade

*CDC's U.S. Medical Eligibility Criteria for Contraceptive Use 2016. FDA = Food and Drug Administration; CHC = Combined Hormonal Contraception; VTE = Venous Thromboembolism; POP = Progestin-Only Pill; IUD = Intrauterine Device; DMPA = Depot Medroxyprogesterone Acetate; BP = Blood Pressure

polyurethane or nitrile condom and, therefore, allergies are less likely. The sponge contains sodium metabisulfite and women who have had a severe allergic reaction to sulfites should not use it. Toxic shock syndrome may also be of potential concern with use of the diaphragm or sponge, and women should be counseled to reduce the risk by not using the products during menstruation and removing the products from the body within the specified time limits.

Prior to initiating combined hormonal contraceptives, it is necessary to obtain a medical history and blood pressure measurement. There are various concurrent disease states or medications that may affect which contraceptive option should be selected. For example, CDC recommends specific patient populations in which it is unacceptable to use estrogen therapy. Some examples include: acute or high risk of venous thromboembolism (VTE), smoking ≥15 cigarettes per day and age ≥35, blood pressure ≥ 160/100, or breast cancer (current). In other at-risk patients, it may be reasonable to avoid higher estrogen-containing contraceptives; to avoid drospirenone-containing agents as a result of the 2012 FDA safety announcement warning of the higher risk of VTE compared to others; and to avoid the transdermal patch due to 60 percent higher systemic estrogen content than most combined hormonal contraceptives. It is important to note that most reasons to not use combined hormonal contraceptives (CHC) in Table 3 are related to the estrogen component. One key difference between CHC and the other methods listed in the U.S. MEC is the presence of estrogen. Therefore, when considering reasons to avoid CHC, it is reasonable to identify those as reasons to avoid estrogen.

Another common concern with

Table 4
Common adverse effects related to hormonal contraception and suggestions for improvement

Adverse Effect	Cause	Suggestion for Improvement
Acne or oily skin	Too much androgen	Choose a progestin with decreased androgen activity
Breast tenderness	Too much estrogen or too much progestin	Decrease estrogen and/or progestin content
Changes in mood	Too much progestin	Decrease progestin content
Early or mid-cycle breakthrough bleeding	Too little estrogen	Increase estrogen content
Increased blood pressure	Too much estrogen	Decrease estrogen content
Hirsutism	Too much androgen	Choose a progestin with decreased androgen activity
Late breakthrough bleeding	Too little progestin	Increase progestin content
Weight gain (and increased appetite)	Too much androgen	Choose a progestin with decreased androgen activity

oral contraceptives is the possibility of drug interactions due to either pharmacokinetic interactions or alterations in gastrointestinal absorption or motility. Rifampin has a true pharmacokinetic interaction with combined hormonal contraceptives. The interactions with other antibiotics and oral contraceptives are not understood as well.

The American College of Obstetricians and Gynecologists (ACOG) states that ampicillin, doxycycline, fluconazole, metronidazole, miconazole, fluoroquinolones, and tetracyclines do not decrease steroid levels in women taking oral contraceptives. However, the Council on Scientific Affairs at the American Medical Association recommends that women be informed of the low risk of interactions with other antibiotics and appropriate additional non-hormonal contraceptive agents should be considered.

Other specific recommendations may be found in the U.S. SPR for interactions with anticonvulsants, antiretrovirals, St. John's wort, women on concomitant chronic CYP3A4 inducers, genetically fast metabolizers, etc. In these patients, it may be appropriate to initiate therapy with a higher estrogen content than typically recommended.

Many side effects associated with combined hormonal contraceptives are related to the estrogenic, progestogenic, and androgenic effects and can be managed by adjusting the hormone content. Table 4 provides a summary of common adverse effects related to estrogen, progestin, or androgen content and changes to make in hormone content after an adequate trial. With too little estrogen in their combined contraceptive, women often experience early cycle breakthrough bleeding, while too little progestin may cause late breakthrough bleeding.

Women may experience adverse effects related to androgen excess such as increased appetite, weight gain, acne, or hirsutism. These effects are more common with progestins with increased androgenic properties such as levonorgestrel. A complete review of estrogen and progestin agents used in hormonal contraception is beyond the scope of this lesson. However, a brief summary table of the commonly used progestins is shown in Table 5. The later generations of progestins (e.g., drospirenone) have higher progestin activity and would be the best choice if a woman was experiencing side effects caused by too little progestin. A comparison of relative androgenic activity is shown in Table 5 as well. To modify the estrogen component, the dose of ethinyl estradiol, the most commonly used estrogen component, can be adjusted anywhere from 20 mcg to 50 mcg per dose. After the recommended two to three months of therapy, a simple change in hormone content can resolve common complaints as shown in Table 4. There are some serious adverse effects associated with combined hormonal contraceptives that pharmacists should be monitoring for and including in patient counseling. Combined hormonal contraceptives should be discontinued if *ACHES* (***a***bdominal pain, ***c***hest pain, migraine ***h***eadaches, ***e***ye problems, or ***s***evere leg pain) occur. These could possibly be due to underlying disorders such as pancreatitis, VTE, acute coronary syndromes, or stroke.

Injectable depot medroxyprogesterone acetate (DMPA) has a Black Box warning for loss of bone mineral density (BMD). The warning states that DMPA should be continued for more than two years only if other contraceptive methods are inadequate as the loss of BMD seems to be greater with increasing duration of use and may not be completely reversible. Most clinicians view the effects of DMPA on BMD as a surrogate marker and there are no clear data that demonstrate the effects of DMPA use on fracture risk. ACOG and CDC continue to recommend that for most patients the benefits of DMPA outweigh the risks, even when used beyond two years of use. In appropriate patients, pharmacists could consider recommending calcium and vitamin D supplementation. Weight gain is a common side effect associated with DMPA and, therefore, DMPA may not be the

best option for overweight or obese women.

Patients requesting IUDs must undergo a cervical inspection prior to IUD insertion. Once inserted, the pharmacist should counsel patients about possible *PAINS* (late ***p***eriod, ***a***bdominal pain, ***i***nfection exposure, ***n***ot feeling well, or ***s***tring missing) that would require a physician referral. One rare, yet serious, underlying cause for these symptoms is pelvic inflammatory disease. The risk seems to be the greatest during the first 20 days after the procedure because bacteria are introduced into the genital tract during IUD insertion.

There are non-contraceptive health benefits associated with combined hormonal contraceptives. Some of these benefits include relief from menstruation-related problems, improvement in menstrual regularity, decreased iron deficiency anemia, and improvements in acne. While current or recent use of estrogen may increase the risk of breast cancer, combined hormonal contraceptives reduce the risk of ovarian and endometrial cancer.

Partner Involvement. A fourth factor to consider is the willingness of a partner to accept and support a given contraceptive method. Some methods, such as male condoms or vasectomy, require action from the male. Meanwhile, the hormonal options available focus on females and their compliance with daily medications or insertion of LARC. When developing a patient's reproductive life plan, assess each partner's ability to contribute to pregnancy prevention.

Onset of Action and Permanence. Similar to effectiveness, the onset of action and subsequent permanence of the available contraceptive options vary considerably. Male and female condoms may only be used once and should be discarded after one use. With the sponge, the patient can have intercourse more than once during the first 24 hours without removing the sponge, but it must be left in place for at least six hours after the last time the patient has intercourse. The diaphragm and cervical cap can be used multiple times, but with each use it is recommended to remove the device within 24 to 48 hours.

Table 5
Summary of common progestin agents

Progestin	Generation	Androgenic Activity
Norethindrone	1st	++
Norgestrel	2nd	+++
Levonorgestrel	2nd	++++
Norgestimate	3rd	++
Drospirenone	4th	–

With initiation of the progestin-only pill, protection begins after two days. It must be taken every day at the same time to maintain efficacy. If taken more than three hours late, patients should use "back-up" methods (barrier methods such as condoms or spermicides) for 48 hours. Most women should start with combined hormonal contraception with 20 mcg ethinyl estradiol (EE) in combination with an older progestin, such as levonorgestrel or norethindrone, daily to minimize adverse effects while maintaining efficacy. "Sunday start" method is where the woman begins taking the pills on the first Sunday after the menstrual cycle begins. This is the most common method and provides for weekends free of menstrual periods. Another common method is the "quick start" method where the woman begins the first tablet on the day of the office visit. Benefits to the quick start method include increased initiation and continuation of the method and earlier protection from pregnancy without significant differences in bleeding patterns.

When first initiating contraception with combined hormonal contraceptives, it is recommended to use back-up methods for at least seven days. Due to user failure with medication adherence, an article in the *American Family Physician* journal recommends using back-up methods for the entire first cycle. Due to the high incidence of missed doses by women taking oral contraceptives, pharmacists should show patients where to find the recommended actions after late or missed pills. In general, this information is provided in the package insert provided to the patient and is available in the U.S. SPR on the CDC website. ACOG states that there is no evidence that combined hormonal contraceptive use decreases subsequent fertility. The average delay in ovulation after discontinuing combined hormonal contraceptives is one to two weeks. ACOG and the North American Menopause Society recommend that women continue contraceptive use until menopause or age 50 to 55 years.

The permanence of the patch or ring depends on the ability to keep the dosage formulation intact. For the patch, instruct the woman to apply the patch to her upper arm, buttocks, lower abdomen, or back at the beginning of the menstrual cycle and replace every week for three weeks; the fourth week is patch free. Approximately 5 percent of patches will need to be replaced because they become partially detached or fall off altogether. If the patch is detached for more than 24 hours, a new cycle should be restarted and an alternate contraceptive method should be used for seven days. A woman's ability to become pregnant returns quickly when the use of the patch is stopped.

For the ring, instruct the woman to insert the ring vaginally on or before the fifth day of the menstrual cycle, leave in place for three weeks, then remove for one week. Squeeze the ring between the thumb and index finger and insert it into the vagina. It is recommended to insert the ring into the upper

one-third of the vaginal cavity, but the hormones within the vaginal ring are absorbed anywhere in the vagina. There is no danger of inserting the ring too far because the cervix will prevent it from traveling up the genital tract.

The injectable medroxyprogesterone acetate is administered every three months within five days of the onset of menstrual bleeding. On average, the median time to conception from the first omitted dose is approximately 10 months.

If the patient is interested in a longer-term option, one of the LARC methods may be the best choice. The subdermal rod is placed under the skin in the patient's inner, upper arm between days 1 and 5 of her cycle by a trained healthcare professional. The rod must be replaced every three years. Once the rod is removed, the woman may become fertile between one week to three months. Each of the available IUDs have different durations of use. Of the progestin products, Skyla® and Liletta® must be replaced three years, while Mirena® and Kyleena® must be replaced every five years. The copper IUD, ParaGard®, only needs to be replaced once every 10 years. IUDs are long-acting, but are also reversible; once removed by a healthcare professional, the return to fertility after use of the hormonal IUD is approximately 30 days.

There are multiple permanent sterilization methods that a male or female patient can undergo including vasectomy, tubal ligation, or tubal occlusion. In a vasectomy (male sterilization), the two vas deferens that carry sperm are surgically disconnected.

One option of female sterilization is a tubal ligation, where the fallopian tubes are either cut, tied, or sealed. This prevents the egg from moving into the uterus, where fertilization could typically occur.

A second permanent option for females is the Essure® method, a type of tubal occlusion. A spring-like device is threaded into the fallopian tubes, causing scar tissue to form around the coil, closing off the fallopian tubes, and preventing conception. Although these are permanent methods of contraception, it may take a few weeks to achieve complete sterilization. For example, male patients who have undergone vasectomy should use back-up methods for three months; only when the sperm count is zero can sterilization be guaranteed.

Preventing Transmission of STI. Most birth control methods do not protect against STI or human immunodeficiency virus (HIV). One extremely important aspect about male condoms is that latex, polyurethane, and polyisoprene condoms can reduce transmission of STI and HIV. The natural, animal membrane condoms do not protect against STI. It is important to remind patients to check expiration dates and inspect condoms for holes, tears, or other signs of damage before use. Tell patients to store condoms in a cool, dry place to avoid latex degradation.

The female condom also protects against STI and, due to the large area covered externally, it may actually protect against STI better than male condoms.

All types of condoms need to be applied and removed correctly to ensure increased effectiveness of prevention of pregnancy and STI. Inform patients that male and female condoms should not be used at the same time.

Although they are considered barrier methods of contraception, the diaphragm, cervical cap and sponge do not protect against STI. For patients who are at risk for contracting STI, "dual protection" (a condom and a more effective form of contraception) should be recommended.

Availability. One important consideration when choosing a contraceptive method is to assess the product's availability and the patient's access to care. Is a prescription necessary? Some products such as the cervical cap, diaphragm, and hormonal options currently require a prescription. LARC and surgical options require provider visits and follow-up care. Although male and female condoms, sponges, and spermicides are available OTC, some of these products (such as the female condom and the sponge) are difficult to find.

The role that pharmacists play in assisting patients with family planning decisions is expanding. There have been new collaborative practice agreements around the country that allow pharmacists to dispense hormonal contraception following statewide protocols. Pharmacists may be able to provide current "prescription-only contraception" over the counter in the near future.

Patient Preferences. A final consideration, but quite possibly the most important, is the patient's preference. A patient's choice could encompass many factors such as religious beliefs, complexity of the method, the degree of interruption of spontaneity, "messiness" of the method, and other considerations. For example, women often report feeling self-conscious because the female condom is visible outside of the vagina and may make a squeaking noise. For women who do not desire protection from STI, a product like the sponge may be more advantageous because it does not affect a woman's hormones, can be carried in a small purse, and usually cannot be felt during intercourse.

Progestin-only pills must be taken within the same three-hour window every day which may be cumbersome for women. For combined hormonal contraceptive pills, extended-cycle regimens are available that eliminate or reduce the number of menstrual cycles per year. By using commercially available products or monophasic 28-day packs and skipping the placebo days, women often find extended-cycle regimens more convenient and prefer only four menstrual cycles per year.

The transdermal patch provides a weekly option for patients who have difficulty with compli-

ance with daily oral contraceptives. Some women report improved sex lives because it increases spontaneity. Device-related issues such as foreign-body sensation or device expulsion were the most common reasons for discontinuation of the vaginal ring and, therefore, may be a concern. While the injectable option offers a viable alternative for patients who have adherence issues or precautions for estrogen use, its 10-month return-to-fertility may be problematic in those who hope to conceive in the near future. Because the subdermal rod is progestin only, it is a good option for patients with VTE risk factors such as smoking. LARC provides long-lasting contraception without permanent sterilization, eliminates the need to take a pill every day, and may be more convenient because nothing needs to be put in place before vaginal intercourse.

These are just a few examples of characteristics that may influence patient preference. Ultimately, all of these considerations (effectiveness, cost, health risk, partner involvement, onset of action and permanence, ability to prevent transmission of STI, availability and patient preferences) should be evaluated to help guide the selection of the best contraceptive method for a particular patient or couple.

Conclusion

There are many important responsibilities for pharmacists when aiding patients with contraception. Community and ambulatory care pharmacists are well-positioned to help patients with this issue through selection of an appropriate product that fits the patient's needs.

Beginning October 2, 2017, Ohio pharmacists were given the opportunity to legally administer select dangerous drugs, including medroxyprogesterone acetate to their patients in accordance with section 4729.45 of the Ohio Revised Code and rule 4729-5-40 of the Ohio Administrative Code. With recent changes in many other states, pharmacists are getting even more involved in this aspect of patient care.

The author, the Ohio Pharmacists Foundation and the Ohio Pharmacists Association disclaim any liability to you or your patients resulting from reliance solely upon the information contained herein. Bibliography for additional reading and inquiry is available upon request.

This lesson is a knowledge-based CPE activity and is targeted to pharmacists in all practice settings. Disclosure: The OPF trustees and other individuals responsible for planning OPF continuing pharmacy education activities have no relevant financial relationships to disclose.

Program 0129-0000-18-003-H01-P
Release date: 3-15-18
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continuing education quiz

Practice Considerations for Pharmacists Providing Contraception

1. Which lubricant should be used with latex or polyisoprene condoms?
   a. Oil-based b. Water-based

2. Which of the following contraceptive methods is the most effective?
   a. Injectable medroxyprogesterone acetate
   b. Cervical caps
   c. Combined hormonal pill
   d. Subdermal rod

3. Which of the following contraceptive options is the least expensive?
   a. Male condom c. Transdermal patch
   b. Diaphragm d. Vaginal ring

4. Estrogen therapy should be avoided in all of the following situations EXCEPT:
   a. acute or high risk of venous thromboembolism.
   b. age ≥25 years.
   c. blood pressure ≥160/100.
   d. breast cancer (current).

5. Which of the following provides women with approximately 60 percent higher systemic estrogen content compared to most other combined hormonal contraceptives?
   a. Vaginal ring
   b. Combined hormonal contraceptive pill
   c. Transdermal patch
   d. Injectable medroxyprogesterone acetate

6. Which of the following has a true pharmacokinetic interaction with combined hormonal contraceptives?
   a. Ampicillin c. St. John's wort
   b. Fluoroquinolones d. Rifampin

Completely fill in the lettered box corresponding to your answer.

1. [a] [b]	6. [a] [b] [c] [d]	11. [a] [b] [c] [d]
2. [a] [b] [c] [d]	7. [a] [b] [c]	12. [a] [b] [c] [d]
3. [a] [b] [c] [d]	8. [a] [b] [c] [d]	13. [a] [b] [c] [d]
4. [a] [b] [c] [d]	9. [a] [b] [c]	14. [a] [b] [c] [d]
5. [a] [b] [c] [d]	10. [a] [b]	15. [a] [b] [c] [d]

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   ❑ yes ❑ no If no, why?_____
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7. Weight gain can be a common adverse effect of too much:
   a. androgen. c. progestin.
   b. estrogen.

8. Injectable depot medroxyprogesterone acetate has a Black Box warning for:
   a. pelvic inflammatory disease.
   b. venous thromboembolism.
   c. loss of bone mineral density.
   d. pancreatitis.

9. All of the following contraceptive options may be used more than once without discarding EXCEPT the:
   a. female condom. c. cervical cap.
   b. diaphragm.

10. What is the most common start method for combined hormonal contraceptive agents?
   a. Quick start b. Sunday start

11. On average, the median time to conception from the first omitted dose is approximately 10 months for:
   a. transdermal patch.
   b. progestin-only pill.
   c. Liletta® IUD.
   d. injectable medroxyprogesterone acetate.

12. Male patients who have undergone vasectomy should use a back-up contraceptive method for:
   a. one month. c. three months.
   b. two months. d. four months.

13. Which of the following reduces transmission of sexually transmitted infections?
   a. Male condom c. Cervical cap
   b. Diaphragm d. Sponge

14. All of the following are available OTC EXCEPT:
   a. sponge. c. spermicide.
   b. diaphragm. d. female condom.

15. Which of the following methods does not affect a woman's hormones?
   a. Sponge c. Progestin-only pill
   b. Vaginal ring d. Transdermal patch

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