Patient education: Birth control; which method is right for me? (Beyond the Basics)

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INTRODUCTION

There are a number of methods available to help prevent pregnancy, with some of the most popular including condoms and birth control pills. Deciding which method is right can be tough because there are many issues to consider, including costs, future pregnancy plans, side effects, and others.

This article reviews all methods of birth control. More detailed discussions of hormonal, long-term, and barrier birth control methods are available separately. (See "Patient education: Long-acting methods of birth control (Beyond the Basics)" and "Patient education: Barrier and pericoital methods of birth control (Beyond the Basics)" and "Patient education: Hormonal methods of birth control (Beyond the Basics)".)

EFFECTIVENESS OF BIRTH CONTROL

Birth control methods vary widely with respect to their effectiveness (table 1). Contraceptives can fail for a number of reasons, including incorrect use and failure of the medication, device, or method itself.

Certain birth control methods, such as intrauterine devices (IUDs) and the implant have the lowest risk of failure (pregnancy). This is because they are the easiest to use properly. You should consider these methods if you want the lowest chance of a mistake or failure, which could lead to pregnancy. (See "Patient education: Long-acting methods of birth control (Beyond the Basics)".)

Overall, birth control methods that are designed for use at or near the time of sex (eg, the condom, diaphragm) are generally less effective than other birth control methods (eg, IUD, birth control pill).

If you forget to use birth control or if your method fails, there is an option to reduce your risk of becoming pregnant for up to five days after you have sex. This is called the morning after pill, or emergency contraception. (See "Patient education: Emergency contraception (morning after pill) (Beyond the Basics)".)

CHOOSING A BIRTH CONTROL METHOD

It can be difficult to decide which birth control method is best because of the wide variety of options available. The best method is one that you will use consistently, is acceptable to you and your partner, and does not cause bothersome side effects. Other factors to consider include:

- How effective is the method?
- Is it convenient? Do I have to remember to use it? If so, will I remember to use it?
- Do I have to use/take it every day?
- Is this method reversible? Can I get pregnant immediately after stopping it?
- Will this method cause me to bleed more or less? Will the bleeding I have while using the method be predictable or not predictable?
- Are there side effects or potential complications?
- Is this method affordable?
- Does this method protect against sexually transmitted diseases?

You should also consider how easy it is to get your birth control. For some forms, you need to see a doctor for a prescription. But there may be other options; for example, in some areas, you can get birth control pills online through services such as Nurx (www.nurx.com), PRJKT RUBY (www.prjktruby.com), or the Pill Club (www.thepillclub.com). There are other online resources available as well.

No method of birth control is perfect. You must balance the advantages and disadvantages of each method and then choose the method that you will be able to use consistently and correctly.

INTRAUTERINE DEVICES (IUD)

IUDs are placed by a health care provider through the vagina and cervix, into the uterus. The currently available IUDs are safe and effective. These devices include:

- **Copper-containing IUD** – The Copper-containing IUD remains effective for at least 10 years, but can be removed at any time. The Copper IUD does not contain any hormones. Some women have a heavier menstrual period or more cramps during their period while using a copper IUD.
- **Levonorgestrel-releasing IUD** – The levonorgestrel-releasing IUD (which is available in different doses) releases a hormone, levonorgestrel, which thickens the cervical mucus and thins the endometrium (the lining of the uterus). This IUD also decreases the amount you bleed during your period and decreases pain associated with periods. IUDs can be left in place for up to three to six years (depending on the type of IUD chosen) but can be removed at any time. They are highly effective in preventing pregnancy. Some women stop having menstrual periods entirely; this effect is reversed when the IUD is removed.

BIRTH CONTROL IMPLANT

A single-rod progestin implant, Nexplanon, is available in the United States and elsewhere. It is inserted by a health care provider into your arm. While it prevents pregnancy for at least 3 years as the hormone is slowly absorbed into the body, it can be removed at any time. It is effective within 24 hours of insertion. Irregular bleeding is the most bothersome side effect. Most women can become pregnant quickly after the rod is removed. (See "Patient education: Hormonal methods of birth control (Beyond the Basics)".)

INJECTABLE BIRTH CONTROL

The only injectable method of birth control currently available in the United States is medroxyprogesterone acetate or DMPA (Depo-Provera). This is a progestin hormone, which is long-lasting. DMPA is injected deep into a muscle, such as the buttock or upper arm, once every three months. A version that is given under the skin is also available.

DMPA is very effective, when used consistently. A full discussion is available separately. (See "Patient education: Hormonal methods of birth control (Beyond the Basics)".)

Side effects — The most common side effects of DMPA are irregular or prolonged vaginal bleeding and spotting, particularly during the first three to six months. Up to 50 percent of women completely

stop having menstrual periods after using DMPA for one year. Although ovulation and menstrual periods generally return within six months of the last DMPA injection, it can take up to a year and a half for ovulation and cycles to return. For this reason, DMPA should be used only by women who do not wish to become pregnant in the next year or longer.

BIRTH CONTROL PILLS

Most birth control pills, also referred to as "the pill," contain a combination of two female hormones. A full discussion of birth control pills is available separately. (See "Patient education: Hormonal methods of birth control (Beyond the Basics)".)

How well do they work? — When taken properly, birth control pills are effective. In general, if you miss one pill, you should take it as soon as possible. If you miss two or more pills, continue to take one pill per day and use a back-up method of birth control (eg, a condom) for seven days. If you miss two or more pills, you should also consider taking the morning after (emergency contraception) pill. (See "Patient education: Emergency contraception (morning after pill) (Beyond the Basics)".)

Side effects — Side effects of the pill include:

- Nausea, breast tenderness, bloating, and mood changes, which typically improve after two to three months.
- Irregular vaginal spotting or bleeding. This is particularly common during the first few months. Forgetting a pill can also cause irregular bleeding.

Progestin-only pills — Unlike traditional birth control pills, the progestin-only pill, also called the mini pill, does not contain estrogen. It does contain progestin, a hormone that is similar to the female hormone, progesterone. This type of pill is useful for women who cannot or should not take estrogen.

Progestin-only pills are as effective as combination pills if they are taken at the same time every day. However, the progestin-only pill becomes less effective if you are more than three hours late in taking it, in which case, emergency contraceptives may be considered.

SKIN PATCHES

Birth control skin patches contain two hormones, estrogen and progestin, similar to birth control pills. The patch is as effective as birth control pills, and may be preferred by some women because you do not have to take it every day.

Xulane is the only skin patch birth control available in the United States. You wear the patch for one week on the upper arm, shoulder, upper back, or hip. After one week, you remove the old patch and apply a new patch; you repeat this for three weeks. During the fourth week, you do not wear a patch and your menstrual period occurs during this week.

The risks and side effects of the patch are similar to those of a birth control pill, although there may be a slightly higher risk of developing a blood clot.

VAGINAL RING

A flexible plastic vaginal ring (commercial names NuvaRing or Annovera) contains estrogen and a progestin. You wear the ring in the vagina, where hormones are slowly absorbed into the body. You wear the ring inside the vagina for three weeks, followed by one week when you do not wear the ring; your menstrual period occurs during the fourth week. With NuvaRing, a new ring is placed each four weeks. With Annovera, the same ring is used for one year (13 28-day cycles). Vaginal ring contraceptive prevents pregnancy similarly to a birth control pill.

The ring is not noticeable, and it is easy for most women to insert and remove. You may take the ring out of the vagina for up to three hours if desired, such as during intercourse. Risks and side effects of the vaginal ring are similar to those of birth control pills.

BARRIER METHODS

Barrier contraceptives prevent sperm from entering the uterus. Barrier contraceptives include the condom, diaphragm, and cervical cap. A full discussion of barrier methods of birth control is available separately. (See "Patient education: Barrier and pericoital methods of birth control (Beyond the Basics)".)

Male condom — The male condom is a thin, flexible sheath placed over the penis. To be effective, men who use condoms must carefully follow instructions for their use. Condoms are most effective when used with a vaginal spermicide (see 'Spermicide' below). Many people who choose another method of birth control (eg, pills) also use condoms to decrease their risk of getting sexually transmitted diseases.

Female condom — The female condom is worn by a woman to prevent semen from entering the vagina. It is a sheath made of polyurethane and is prelubricated. You place it inside the vagina. One ring-shaped part of this method remains inside the vagina while a second ring-shaped part remains outside the vagina.

Diaphragm/cervical cap — The diaphragm and cervical cap fit over the cervix, preventing sperm from entering the uterus. These devices are available in latex (the Prentif cap) or silicone rubber (FemCap) in multiple sizes, and require fitting by a clinician. These devices must be used with a spermicide and left in place for six to eight hours after sex. The diaphragm must be removed after this period. However, the cervical cap can remain in place for up to 24 hours.

Spermicide — Spermicides are chemical substances that destroy sperm. They are available in most pharmacies without a prescription. Spermicides are available in a variety of forms including gel, foam, cream, film, suppository, and tablet.

PERMANENT BIRTH CONTROL

This is a procedure that permanently prevents you from becoming pregnant or having children. Tubal ligation (for women) and vasectomy (for men) are the two most common permanent birth control procedures. These procedures are permanent, and should only be considered after you discuss all available options with a health care provider and if you are certain you wish to permanently prevent pregnancy. (See "Patient education: Permanent birth control for women (Beyond the Basics)" and "Patient education: Vasectomy (Beyond the Basics)".)

Tubal ligation — Tubal ligation is a procedure for women that surgically cuts, blocks, or seals the fallopian tubes to prevent pregnancy. The procedure is usually done in an operating room as a day surgery. Women who have recently delivered a baby can undergo tubal ligation before going home. The procedure may be done at another time as well. This is discussed in more detail separately. (See "Patient education: Permanent birth control for women (Beyond the Basics)".)

Vasectomy — Vasectomy is a procedure for men that cuts or blocks the vas deferens, the tubes that carry sperm from the testes. It is a safe, highly effective procedure that can be performed in a doctor's office under local anesthesia. Following vasectomy, you must use another method of birth control (eg, condoms) for approximately three months, until testing confirms that no sperm are present in the semen. This is discussed in more detail separately. (See "Patient education: Vasectomy (Beyond the Basics)".)

OTHER BIRTH CONTROL METHODS

Some women and their partners cannot or choose not to use the birth control methods mentioned above due to religious or cultural reasons. Fertility-awareness based methods for preventing pregnancy are based upon the physiological changes during the menstrual cycle. These methods, also called "natural family planning," involve identifying the fertile days of the menstrual cycle using a

combination of cycle length and physical manifestations of ovulation (change in cervical secretions, basal body temperature) and then avoiding sexual intercourse or using barrier methods on those days.

EMERGENCY CONTRACEPTION

Emergency contraception refers to the use of medication after unprotected intercourse to prevent pregnancy. Types of emergency contraception include the intrauterine device (IUD) or pills. You can use emergency contraception if you forget to take your birth control pill, if a condom breaks during sex, or if you have unprotected sex for other reasons (including victims of sexual assault). An IUD can be inserted for use as emergency contraception and is much more effective at preventing a pregnancy than pills. It is the best choice for emergency contraception, and you can continue to use it as your ongoing method of birth control. The other options are morning after pills, which may be hormonal (eg, Plan B One-Step, which is available without a prescription) or nonhormonal (eg, Ella). Detailed information on emergency contraception is available separately. (See "Patient education: Emergency contraception (morning after pill) (Beyond the Basics)".)

WHERE TO GET MORE INFORMATION

Your health care provider is the best source of information for questions and concerns related to your medical problem. An excellent website to help you choose a method of birth control is www.bedsider.org.

This article will be updated as needed on our web site (www.uptodate.com/patients). Related topics for patients, as well as selected articles written for health care professionals, are also available. Some of the most relevant are listed below.

Patient level information — UpToDate offers two types of patient education materials.

The Basics — The Basics patient education pieces answer the four or five key questions a patient might have about a given condition. These articles are best for patients who want a general overview and who prefer short, easy-to-read materials.

Patient education: Choosing birth control (The Basics)
Patient education: Long-acting methods of birth control (The Basics)
Patient education: Hormonal birth control (The Basics)
Patient education: Permanent birth control for women (The Basics)

Beyond the Basics — Beyond the Basics patient education pieces are longer, more sophisticated, and more detailed. These articles are best for patients who want in-depth information and are comfortable with some medical jargon.

Patient education: Long-acting methods of birth control (Beyond the Basics)
Patient education: Barrier and pericoital methods of birth control (Beyond the Basics)
Patient education: Hormonal methods of birth control (Beyond the Basics)
Patient education: Emergency contraception (morning after pill) (Beyond the Basics)
Patient education: Permanent birth control for women (Beyond the Basics)
Patient education: Vasectomy (Beyond the Basics)
Patient education: Maternal health and nutrition during breastfeeding (Beyond the Basics)

Professional level information — Professional level articles are designed to keep doctors and other health professionals up-to-date on the latest medical findings. These articles are thorough, long, and complex, and they contain multiple references to the research on which they are based. Professional level articles are best for people who are comfortable with a lot of medical terminology and who want to read the same materials their doctors are reading.

Intrauterine contraception: Candidates and device selection
Contraception counseling for females with obesity
Contraceptive counseling for women with inherited thrombophilias
Contraception: Issues specific to adolescents
Depot medroxyprogesterone acetate (DMPA) for contraception: Formulations, patient selection and drug administration
Emergency contraception
Female condoms
Fertility awareness-based methods of pregnancy prevention
Hormonal contraception for suppression of menstruation
Pericoital contraception: Diaphragm, cervical cap, spermicide, and sponge
Hysteroscopic female permanent contraception
Etonogestrel contraceptive implant
Male condoms
Intrauterine contraception: Management of side effects and complications
Evaluation and management of unscheduled bleeding in women using contraception
Contraceptive counseling and selection for women
Combined estrogen-progestin oral contraceptives: Patient selection, counseling, and use
Postpartum contraception: Counseling and methods
Progestin-only pills (POPs) for contraception
Combined estrogen-progestin contraception: Side effects and health concerns

Female interval permanent contraception: Procedures
Transdermal contraceptive patch
Vasectomy

The following organizations also provide reliable health information.

- National Library of Medicine

  (www.nlm.nih.gov/medlineplus/birthcontrol.html, available in Spanish)

- National Women's Health Resource Center (NWHRC)

  Toll-free: (877) 986-9472
  (http://www.healthywomen.org/healthcenter/birth-control)
- Planned Parenthood Federation of America

  Phone: (212) 541-7800
  (http://plannedparenthood.org/learn/birth-control/)
- Bedsider – A site that provides information on birth control for people ages 18 to 29 years run by the nonprofit Power to Decide

(http://bedsider.org)

- Center for Young Women's Health – A site by Boston Children's Hospital that provides general and sexual health information for teens and young adults

(http://youngwomenshealth.org)

[1-3]

REFERENCES

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2. Moreau C, Cleland K, Trussell J. Contraceptive discontinuation attributed to method dissatisfaction in the United States. Contraception 2007; 76:267.

3. Trussell J, Wynn LL. Reducing unintended pregnancy in the United States. Contraception 2008; 77:1.

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GRAPHICS

Percentage of women experiencing unintended pregnancy during the first year of contraceptive use (typical and perfect use) and the percentage continuing use at the end of the first year: United States

Method	Percent of women experiencing an unintended pregnancy within the first year of use (%)		Percent of women continuing use at one year (%)[Δ]
	Typical use*	Perfect use[¶]	
No method[◇]	85	85	
Spermicides[§]	21	16	42
Female condom[¥]	21	5	41
Withdrawal	20	4	46
Diaphragm[‡]	17	16	57
Sponge	17	12	36
Parous women	27	20	
Nulliparous women	14	9	
Fertility awareness-based methods[†]	15		47
Ovulation method[†]	23	3	
TwoDay method[†]	14	4	
Standard Days method[†]	12	5	
Natural Cycles[†]	8	1	
Symptothermal method[†]	2	0.4	
Male condom[¥]	13	2	43
Combined and progestin-only pills	7	0.3	67
Evra patch	7	0.3	67
NuvaRing	7	0.3	67
Depo-Provera	4	0.2	56
Intrauterine contraceptives**			
ParaGard (copper T)	0.8	0.6	78
Mirena (52 mg LNG)	0.7	0.5	80
Skyla (13.5 mg LNG)	0.4	0.3	
Kyleena (19.5 mg LNG)	0.2	0.2	
Liletta (52 mg LNG)	0.1	0.1	
Nexplanon	0.1	0.1	89
Tubal occlusion	0.5	0.5	100
Vasectomy	0.15	0.1	100
Emergency contraceptives: Use of emergency contraceptive pills or placement of a copper intrauterine contraceptive after unprotected intercourse substantially reduces the risk of pregnancy.			
Lactational amenorrhea method: LAM is a highly effective, **temporary** method of contraception.[¶¶]			

Among *typical* couples who initiate use of a method (not necessarily for the first time), the percentage who experience an accidental pregnancy during the first year if they do not stop use for any reason other than pregnancy. Estimates

of the probability of pregnancy during the first year of typical use for fertility awareness-based methods, withdrawal, the male condom, the pill, and Depo-Provera are taken from the 2006 to 2010 National Survey of Family Growth (NSFG) corrected for under-reporting of abortion.

LNG: levonorgestrel; LAM: lactational amenorrhea method; FABM: fertility awareness-based methods; NSFG: National Survey of Family Growth; LH: luteinizing hormone.

* Data from United States populations.

¶ Among couples who initiate use of a method (not necessarily for the first time) and who use it perfectly (both consistently and correctly), the percentage who experience an accidental pregnancy during the first year if they do not stop use for any other reason.

Δ Among couples attempting to avoid pregnancy, the percentage who continue to use a method for 1 year.

◇ This estimate represents the percentage who would become pregnant within 1 year among women now relying on reversible methods of contraception if they abandoned contraception altogether.

§ 150 mg gel, 100 mg gel, 100 mg suppository, 100 mg film.

¥ Without spermicides.

‡ With spermicidal cream or jelly.

† Approximately 80% of segments of FABM use in the 2006 to 2010 NSFG were reported as calendar rhythm. Specific FABM methods are too uncommonly used in the United States to permit calculation of typical use failure rates for each using NSFG data; rates provided for individual methods are derived from clinical studies. The Ovulation and TwoDay methods are based on evaluation of cervical mucus. The Standard Days method avoids intercourse on cycle days 8 through 19. Natural Cycles is a fertility app that requires user input of basal body temperature (BBT) recordings and dates of menstruation and optional LH urinary test results. The Symptothermal method is a double-check method based on evaluation of cervical mucus to determine the first fertile day and evaluation of cervical mucus and temperature to determine the last fertile day.

** All of these estimates are low, below 1%, and we caution readers not to put any emphasis on the differences among these very small probabilities.

¶¶ However, to maintain effective protection against pregnancy, another method of contraception must be used as soon as menstruation resumes, the frequency or duration of breastfeeds is reduced, bottle feeds are introduced, or the baby reaches 6 months of age.

Graphic 120134 Version 1.0

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