ORAL CONTRACEPTIVES

EMERGENCY CONTRACEPTION

INJECTABLE CONTRACEPTIVES

CONTRACEPTIVE IMPLANTS

INTRAUTERINE DEVICES

CONDOMS (MALE & FEMALE)

SPERMICIDES

FEMALE CERVICAL BARRIER METHODS

FEMALE AND MALE STERILIZATION

FERTILITY AWARENESS-BASED METHODS

PRB

INFORM
EMPOWER
ADVANCE

CONTRACEPTIVE EVIDENCE

QUESTIONS AND ANSWERS

BY **MIA FOREMAN** AND **JEFF SPIELER**

www.prb.org

POPULATION REFERENCE BUREAU

CONTRACEPTIVE EVIDENCE

QUESTIONS AND ANSWERS

TABLE OF CONTENTS

ORAL CONTRACEPTIVES 3
EMERGENCY CONTRACEPTIVE PILLS 5
INJECTABLE CONTRACEPTIVES 6
CONTRACEPTIVE IMPLANTS 8
INTRAUTERINE DEVICES 9
CONDOMS (MALE AND FEMALE) 10
SPERMICIDES 11
FEMALE CERVICAL BARRIER METHODS 11
FEMALE AND MALE STERILIZATION 11
FERTILITY AWARENESS-BASED METHODS 13
THE NEED FOR ACCURATE INFORMATION 15
REFERENCES 15

ACKNOWLEDGMENTS

This publication was written by Mia Foreman, policy analyst in International Programs at the Population Reference Bureau (PRB), and Jeff Spieler, senior technical adviser for Science and Technology in the Office of Population and Reproductive Health within the Bureau of Global Health at the U.S Agency for International Development (USAID). Special thanks to Shelley Snyder and Chelsea Polis at USAID; Elizabeth Westley from the International Consortium for Emergency Contraception; Anne Burke, the Department of Gynecology and Obstetrics at Johns Hopkins Bayview; and Jay Gribble, Donna Clifton, Charlotte Feldman-Jacobs, and Deborah Mesce of PRB who provided input. This publication is made possible by the generous support of the American people through the United States Agency for International Development (USAID) under the terms of the IDEA Project (No. AID-OAA-A-10-00009). The contents are the responsibility of the Population Reference Bureau and do not necessarily reflect the views of USAID or the United States Government.

© 2013 Population Reference Bureau. All rights reserved.

USAID FROM THE AMERICAN PEOPLE

IDEA INFORMING DECISIONMAKERS TO ACT

PRB INFORM EMPOWER ADVANCE

POPULATION REFERENCE BUREAU

The Population Reference Bureau **INFORMS** people around the world about population, health, and the environment, and **EMPOWERS** them to use that information to **ADVANCE** the well-being of current and future generations.

www.prb.org

POPULATION REFERENCE BUREAU

1875 Connecticut Ave., NW
Suite 520
Washington, DC 20009 USA

202 483 1100 PHONE
202 328 3937 FAX
popref@prb.org E-MAIL

CONTRACEPTIVE EVIDENCE: QUESTIONS AND ANSWERS

Twenty-five years ago, the Population Reference Bureau (PRB) published *Contraceptive Safety: Rumors and Realities* to provide policymakers, program managers, and service providers with accurate information on the risks and benefits of contraceptive methods. In 1998, PRB updated the resource to include the latest scientific research on all available methods and to add other methods, such as the female condom and emergency contraceptive pills.[1]

Nevertheless, rumors and incomplete information continue to spread and inhibit clients from making an informed choice and accessing a contraceptive method that works for them. It is the goal of this newest resource, *Contraceptive Evidence: Questions and Answers*, to help women and men choose a method based on scientific evidence rather than rumors and to assist policymakers, program managers, and providers in filling those needs.

Need for Family Planning Services

There are still 222 million women who have an unmet need for modern contraception, meaning they do not want to become pregnant for two years or more but are not using a modern contraceptive method. There are several reasons for this unmet need, including:[2]

- Fear of side effects—perceived and real.
- Limited knowledge about methods.
- Weak health systems that impede access to contraceptive methods.
- Laws that require a husband's consent to seek family planning services.
- Reliance on breastfeeding to prevent another pregnancy.
- Opposition to family planning by a partner or family members.
- Infrequent sexual intercourse.

In addition, health providers can inadvertently play a negative role by giving incorrect information to clients. By further perpetuating myths and rumors about family planning, providers may undermine efforts to help women achieve their reproductive goals.[3] Better quality of care, including better contraceptive counseling, information, and public education, is a key part of the solution to reducing unmet need for family planning.

Family planning has a multitude of health, social, and economic benefits for women and their families, including improving maternal and infant health, reducing unintended pregnancies and unsafe abortions, and preventing the spread of HIV.

As their educational and employment opportunities improve, women are more likely to use family planning. At the same time, by using family planning, women are able to stay in school longer and participate more in the labor force. Family planning contributes to reducing malnutrition and improving child survival by managing family size and spacing of births.

ORAL CONTRACEPTIVES (The Pill)

Question: What are oral contraceptives (the Pill)?

Answer: There are two types of oral contraceptives (the Pill), combined and progestin-only. Combined oral contraceptives contain low doses of two hormones, a progestin and an estrogen, which are naturally found in a woman's body. Progestin-only pills contain very low doses of only progestin and can be used while breastfeeding or by women who cannot use methods with estrogen.

Both types of oral contraceptives prevent pregnancy by preventing ovulation (the release of eggs from the ovaries) or thickening cervical mucus (thus blocking sperm from meeting an egg).[4]

Question: Will the pill cause birth defects if a woman wants to become pregnant in the future?

Answer: No. Evidence shows that using the pill will not cause birth defects if a woman wishes to become pregnant in the future. The pill will not harm the fetus if a woman becomes pregnant while taking the pill or if she does not know she is already pregnant and takes the pill by accident.[5]

Question: Will using the pill cause a woman to be infertile in the future?

Answer: No. Use of the pill does not cause infertility. In fact, use of the pill may help a woman to preserve her fertility by protecting her from pelvic inflammatory disease, an infection of the upper reproductive tract that can lead to infertility. When a woman stops using the pill, fertility returns without a delay in most cases. A small percentage of women may experience a short delay of one to three months, which is not an unusual side effect.[6]

Question: Does using the pill increase a woman's risk of developing ovarian or endometrial cancer?

Answer: Women who use the pill significantly reduce their risk of ovarian and endometrial cancers, by as much as 50 percent if the pill is used for 10 years or more.[7] Protection against these two forms of cancer continues for 15 or more years after stopping use of the pill.[8]

Question: Does using the pill increase a woman's risk of developing breast cancer?

Answer: Some studies find that women who have used combined oral contraceptives more than 10 years ago face the same risk of breast cancer as women who have never used them. Current users of combined oral contraceptives and women who have used the pill within the past 10 years are slightly more likely to be diagnosed with breast cancer; this *may* not be associated with a biological effect of the pill, but rather, by earlier detection. When current or former users of combined oral contraceptives are diagnosed with breast cancer, the cancer is typically less advanced than in other women.[9]

Question: Does using the pill increase a woman's risk of developing cervical cancer?

Answer: The risk of cervical cancer increases slightly during use, especially if a woman takes the pill for more than five years. Women who take oral contraceptive pills for more than five years have a much higher risk of being infected with human papillomavirus (HPV, which can cause cervical cancer) than those who do not use the pill. Women taking the pill for fewer than five years do not have a higher risk of cervical cancer.

The reason for this increased risk is not entirely clear. Some research suggests that hormones in the pill might help HPV enter the cervical cells. Another possibility is that women who use the pill may be more sexually active or less likely to use condoms (which protect against HPV transmission).[10]

Question: Does using the pill increase a woman's risk of developing liver cancer?

Answer: Use of the pill is associated with an increased risk of noncancerous tumors on the liver.[11] Some studies have shown that women who take the pill for more than five years have an increased risk of acquiring cancerous liver tumors, while other studies have not shown this relationship.

Question: Does using the pill cause blood clots?

Answer: The use of oral contraceptives does come with an increased risk of blood clots. Blood clots usually occur in the leg, but occasionally develop in other parts of the body. Most clots are treated with medicines to thin the blood and are not life-threatening. However, sometimes a clot can travel to the lungs and cause serious health problems.

Recently, the United States Food and Drug Administration (FDA) concluded that there is a threefold increase in the risk of blood clots among women who use oral contraceptives containing levonorgestrel and a sixfold increase among the newer methods that contain drospirenone. Levonorgestrel and drospirenone are synthetic hormones that mimic the action of progesterone to prevent pregnancy.[12] The FDA continues to emphasize that the risk of blood clots from oral contraceptives is still small, even when using a pill that contains drospirenone. Women who are pregnant have a higher risk of developing blood clots than women who are using any type of oral contraceptive.[13]

Question: Should a woman stop using the pill after a year or two to give her body a "rest" from the hormones?

Answer: There is no scientific evidence to suggest that a woman should take a break after a year or two of continuous use of oral contraceptives. Today's oral contraceptives are considered safe to take for years at a time and it may be healthier for a woman to remain on the pill if she is planning to use the pill again in the future. The fluctuations in hormones from starting and stopping pill use can cause side effects to reappear and increase the risk of an unintended pregnancy, which poses a bigger health risk than using the pill.[14]

Question: Does using the pill increase the risk of contracting HIV?

Answer: No. Using the pill does not appear to increase a woman's risk of contracting HIV, but it also does not protect her against sexually transmitted infections (STIs) including HIV. It is important that sexually active women and men have access to and use condoms to prevent the risk of contracting or spreading HIV and other STIs. While condoms provide dual protection, using both a condom and another contraceptive method can greatly reduce a women's risk of both unintended pregnancy and contracting HIV or other STIs.[15]

Question: If a woman is already HIV positive, does using an oral contraceptive pill accelerate the progression of her HIV disease?

Answer: WHO states that women at high risk of contracting HIV or those living with HIV can use all existing hormonal contraceptive methods, including oral contraceptives, without restriction.[16] Using an oral contraceptive pill does not cause the HIV disease to progress faster in a woman who is already HIV positive.[17] In fact, voluntary use of contraception by HIV-positive women who wish to prevent pregnancy continues to be the most effective strategy to prevent the birth of HIV-positive newborns.[18] For women and men who are at high risk of HIV or are already HIV positive, correct and consistent use of condoms is essential to prevent HIV transmission to noninfected sexual partners.

EMERGENCY CONTRACEPTIVE PILLS (ECPs)

Question: What are emergency contraceptive pills?

Answer: Emergency contraceptive pills (ECPs) are either small tablets sold specifically as an emergency contraceptive product or a high dose of a daily oral contraceptive pill; the pills consist of a combination of progestin and estrogen or progestin only. Both types of ECPs are effective in preventing pregnancy when taken within five days of unprotected sex. However, the sooner a woman takes ECPs after unprotected sex, the more effective it will be. For many women, emergency contraceptive pills offer an opportunity to prevent unintended pregnancy following the failure of a method (such as a condom breaking), unprotected sex, or rape.

Because this contraceptive method is not as effective as using most routine methods, it is generally not recommended that women use it as an ongoing method of pregnancy prevention.

Question: Is using ECPs the same as having an abortion?

Answer: Using ECPs is not the same as having an abortion. ECPs prevent or delay ovulation, inhibit the transport of the egg or sperm, and thus can interfere with fertilization of the egg. There is no evidence that ECPs will prevent or interfere with implantation of a fertilized egg. Once a woman is pregnant, ECPs will not induce an abortion or affect the developing embryo, unlike pills used for medical abortion, which are designed to terminate a pregnancy.

Question: How effective are ECPs?

Emergency contraceptive pills are effective for up to five days after unprotected intercourse. ECP regimens reduce a women's chance of pregnancy when used correctly. ECPs containing levonorgestrel are significantly more effective than older ECP regimens and certainly more effective than using nothing at all.[19] Anti-progestin ECPs, such as mifepristone or ulipristal acetate, are at least as effective as levonorgestrel ECPs and potentially even more effective.[20] Most efficacy estimates for levonorgestrel ECP range between 59 percent and 95 percent.[21] A meta-analysis estimated that a 10 mg dose of mifepristone will prevent 84 percent of unintended pregnancies.[22] The average efficacy of ulipristal acetate is estimated to be between 62 percent to 85 percent.[23] ECPs should be taken as soon as possible after unprotected sex to be most effective at preventing an unintended pregnancy.

Question: If a woman uses EC and is already pregnant, will her child suffer from birth defects?

Answer: Similar to oral contraceptives, there is no evidence that use of EC causes birth defects if the woman is already pregnant. Studies that have examined births to women who continued to take EC without knowing they were pregnant found no increased risk of birth defects.[24]

Question: Can a woman use EC as a regular method of family planning?

Answer: Emergency contraceptive pills are generally not recommended as a regular method of family planning. Using EC as a regular form of family planning can be very expensive, can cause a woman's period to be irregular over time, and is less effective at preventing pregnancy than most other contraceptive methods.[25]

Question: After a woman takes EC, will she be protected from pregnancy until she gets her next period?

Answer: No. EC is most effective right after unprotected intercourse. It continues to reduce the risk of pregnancy up to five days; however, as more time passes, it is less effective. In addition, a single use of EC will not protect against a second or third act of unprotected intercourse during the same cycle. To avoid pregnancy, a woman must use another contraceptive method after taking emergency contraceptive pills.[26]

INJECTABLE CONTRACEPTIVES

Question: If a woman uses an injectable contraceptive, does her risk of cancer increase?

Answer: Similar to oral contraceptives, injectables provide protection from the risk of ovarian and endometrial cancers.[27] A recent study in Thailand found women who had ever used depot medroxyprogesterone acetate (DMPA—a common injectable contraceptive) had a 39 percent reduction in ovarian cancer. Using DMPA for three years or more reduced the risk by 83 percent compared to women who had never used DMPA. DMPA also protects against uterine cancer.[28]

In April 2012, a study published in the journal *Cancer Research* linked the use of DMPA with a heightened risk for breast cancer for women between the ages of 20 to 44.[29] Similar to previous studies, this study showed that the increased risk disappeared within months after women discontinued DMPA use, and that women who used DMPA for less than a year or who had stopped using for more than a year earlier were not at increased risk for breast cancer.

Additional clinical trials and research have been insufficient in making the link between DMPA and breast cancer due to the inability to pinpoint if DMPA accelerates the growth of pre-existing cancerous cells or if researchers are seeing a heightened risk of breast cancer among current and very recent DMPA users because they are under surveillance and therefore receiving earlier detection of breast cancer. Since breast cancer is rare among young women, it should be noted that many health experts agree the health benefits of using DMPA to prevent pregnancy outweigh the risks.[30]

Question: If a woman uses an injectable contraceptive, will she have to stop using it at times to resume a regular menstrual cycle?

Answer: No, women using injectable contraceptives do not have to take breaks from their normal contraceptive regimen for this reason. Some women may experience no monthly bleeding while using an injectable contraceptive. The progestin hormone present in the method prevents the lining of the uterus from building up as thickly as it does among women who are not using any contraceptive method. The result is either light bleeding or no bleeding each month, but there is no health risk.

Some women may experience the opposite side effect: heavy, prolonged, or irregular bleeding. This type of bleeding is also not harmful and tends to lessen or stop after the first few months of use. When a woman stops using injectable contraception, her menses returns after several months.[31]

Question: If a woman uses an injectable contraceptive and is already pregnant, will her child suffer from health problems?

Answer: Similar to other contraceptive methods, evidence from a number of studies shows no risk to the fetus if a woman accidentally uses an injectable method while pregnant or becomes pregnant while using the method.[32]

Question: If a woman uses an injectable contraceptive, does she risk becoming infertile?

Answer: Injectable contraception does not cause a woman to become infertile but there may be a delay in the time it takes to become pregnant after discontinuing use of the method. To ensure ongoing protection from pregnancy, DMPA must be administered approximately every 13 weeks. Studies suggest that after the last injection, on average, a woman can become pregnant again within nine months.[33] Studies have not found an association between the duration of DMPA use and the time until fertility returns; this interval will be shorter for some women and longer for others. Since a woman can become pregnant before having her first period after discontinuing use of an injectable, it is important that she and her partner use a condom or another barrier method to prevent an unplanned pregnancy, unless she discontinued DMPA to try to become pregnant.

Question: Will using an injectable contraceptive cause a woman to suffer bone density loss?

Answer: There is evidence that injectable contraception does contribute to bone density loss, especially in the hip and lower spine, within two years of receiving the first injection. Women who use an injectable and have low levels of calcium intake, smoke, and have never given birth are at the highest risk for bone density loss.[34]

Women who use injectable contraceptives as adults appear to regain most of the lost bone density after they stop using the method. Current research is examining whether bone loss in adolescents and young women is fully reversible. WHO considers it acceptable for adolescents to use an injectable contraceptive because preventing unintended pregnancies at a young age outweighs the risk of a fracture later in life.[35]

Question: Will using an injectable contraceptive increase a woman's risk of contracting HIV?

Answer: Some studies suggest that HIV-negative women using a progesterone-only injectable (which does not contain estrogen), such as DMPA, may be at increased risk of acquiring HIV, but several other studies do not support this association. In 2012, a committee of experts reviewed all the available evidence and agreed that the data are not sufficiently conclusive to change current guidelines. However, because of the inconclusive nature of the available evidence, women using progesterone-only injectable contraception at high risk of HIV should be strongly advised always to also use condoms (male or female) and to take other HIV preventive measures.[36]

Question: If a woman is HIV positive, will using an injectable contraceptive speed up the progression of her HIV disease?

Answer: The bulk of evidence indicates that HIV-positive women can use hormonal contraceptive methods, including injectable contraceptives, without concerns that this will accelerate HIV disease progression.[37]

Question: If a woman uses injectable contraception and is HIV positive, does this increase her chances of transmitting the virus to sexual partners?

Answer: One study suggests that injectable contraceptives may be associated with female-to-male HIV transmission. However, the body of evidence on this subject is limited and additional evidence is needed.[38]

It is important that women at risk of HIV infection and those who are HIV positive use condoms to reduce the risk of acquiring and transmitting HIV and other STIs. Injectable contraception does not protect against HIV or other STIs.[39]

CONTRACEPTIVE IMPLANTS

Question: Is there a risk that implant rods can move from a woman's arm to other parts of her body?

Answer: No; implants are inserted just under the skin in the inner part of the upper arm, and will not move from that general area. In very rare cases an implant can shift a centimeter or two, which is not harmful. The implant is too large to enter the bloodstream and cannot come out of the skin unless it has been inserted incorrectly and the incision site does not heal properly. The implant can be felt at any time by lightly touching the skin above where it was inserted.[40]

Question: What happens to a newborn if a woman becomes pregnant while using a contraceptive implant?

Answer: Contraceptive implants are safe and appropriate for most women and adolescents and have a 99 percent effectiveness rate.[41] In the unlikely event that a woman becomes pregnant while using an implant, she should seek medical care immediately because there is a higher chance her pregnancy may develop outside the uterus (ectopic pregnancy).[42] There is no other known harm to the mother or fetus if implants are still in place during pregnancy and if a woman becomes pregnant while using the method, she should have the implant removed.

Question: How long is the surgical procedure to insert and remove an implant? Does it hurt?

Answer: Depending on the type of implant, the average time to insert an implant is two minutes and the average time to remove an implant is four minutes.[43] The majority of users have not reported excessive difficulty or pain during insertion or removal. A health care provider will numb a small area of the woman's arm before insertion and removal. Normal side effects for insertion or removal may be bruising, minor pain or bleeding, and scarring. Rarely, infection at the site may occur if the insertion or removal is not done properly.[44]

Question: Contraceptive implants are a long-acting contraceptive method. If a woman has an implant inserted, can it be removed any time?

Answer: The duration of contraceptive protection varies by brand: Jadelle provides pregnancy protection for five years; Sino-implant (II), for four years; and Implanon and Nexplanon, for three years. A woman can have the implant removed any time regardless of how long it protects against pregnancy. After removal, there is no delay in return to fertility.[45]

Implants are an excellent contraceptive method for women who wish to delay a first birth or space their next birth for two or more years. It is also an option for women who do not want to become pregnant at any time in the future but are not interested in permanent contraceptive methods such as sterilization, or other long-acting contraceptive methods such as the intrauterine device.

Question: If a woman uses a contraceptive implant, does her risk of cancer increase?

Answer: The possible increased risks of cancer that have been recorded in some studies are not large enough to outweigh the benefits of using a contraceptive implant. A contraceptive implant likely protects against pelvic inflammatory disease (PID), and PID has been associated with ovarian cancer.[46] However, WHO suggests that if a woman had breast cancer within the last five years, she should use a non-hormonal contraception method.

INTRAUTERINE DEVICES (IUDs)

Question: If a woman uses an IUD, will she be able to become pregnant in the future?

Answer: The IUD itself does not cause infertility (inability to become pregnant) after IUD removal. Almost all women who use an IUD can become pregnant once the IUD is removed, assuming they are still of childbearing age and have no other conditions that have affected their fertility. However, a woman who has a pelvic infection or an STI should not receive an IUD until these infections have been treated. If an IUD is inserted in the presence of an infection, there is a chance of introducing bacteria that can lead to infertility.[47]

Question: Does a woman have to be a certain age to use an IUD? Does she need to have had a child already?

Answer: There is no minimum or maximum age limit for using an IUD. Once a woman reaches menopause (no longer menstruating) the IUD should be removed within 12 months.[48] Most women who are within their reproductive years can use the IUD regardless of whether they have previously given birth. The primary factor in deciding whether or not to use an IUD is the presence of an STI or a pelvic infection.

Question: If a woman would like to use an IUD as a contraceptive method but is not sure how long she would like to use it, should she still choose to use this method?

Answer: An IUD protects women from pregnancy for five to 12 years depending on the type used. Regardless, the IUD can be removed by a trained health care provider at any time and for any reason. If a woman is in her late 30s or early 40s, an IUD could last through her childbearing years. Once a woman has the IUD removed, her fertility will soon return. However, fertility normally decreases with age.[49]

Question: What happens to the IUD during sexual intercourse? Is there a risk that it will travel to other parts of a woman's body?

Answer: An IUD will never travel to other parts of the body such as the heart, brain, or anywhere outside the uterus. During sexual intercourse, the IUD does not move. Sometimes a man can feel the strings located at the end of the IUD. If this is bothersome, the health care provider can cut the strings shorter so they are not outside the cervical canal. A man also may feel the IUD if it has been expelled from the cervix. Within the first year of use, spontaneous IUD expulsion occurs in 2 percent to 10 percent of women.[50] If a woman suspects that IUD expulsion has occurred, she should see a health care provider immediately.[51]

Question: Is there a risk to the newborn if a woman becomes pregnant while using an IUD?

Answer: During the first year of use, pregnancy rates among IUD users are less than 1 per 100 users compared with 3 per 100 for the injection of Depo-Provera, 8 per 100 for the oral contraceptive pill, and 15 per 100 for the condom.[52] If a woman does become pregnant while using the IUD, there is no evidence that it will harm the fetus. If she finds that she is pregnant while using the IUD, she should have the IUD removed to decrease the chance of a miscarriage or infection. She should also see her health care provider to ensure the pregnancy is not ectopic (developing outside the uterus).[53]

CONDOMS (Male and Female)

Question: If a condom comes off or breaks during sexual intercourse, is there a chance it can permanently lodge inside a woman's body?

Answer: While condom breakage is not very common with high-quality condoms, a male condom can break during intercourse for many reasons, including how it was used, used past its expiration date, damaged when removed from the package, used more than once, or improperly manufactured.

There is a small chance that a condom can become lodged inside a woman's vagina, for example, if the condom fits too loosely or if a man withdraws his penis without holding the base of the condom. If the condom is lodged in the vagina, it cannot travel to other parts of the body. If the condom cannot be removed manually, the woman should go to her gynecologist or to a hospital's emergency room for help and to prevent bacteria build-up that can lead to an infection.

To reduce the chances of breaking, the condom should be stored in a cool and dry environment. Users should also avoid tearing or damaging the condom while removing it from the package, squeeze the tip to press air out of the reservoir, unroll the condom over the erect penis, and apply a lubricant or spermicide that is not oil-based as the oil will damage latex condoms.[54]

Similar to male condoms, female condoms cannot permanently lodge inside a women's body.

Question: If a man uses a condom, will he be able to have an erection?

Answer: Some men may, at times, experience a loss of erection while applying or using condoms. Men may be more likely to experience condom-associated erection loss if they lack confidence to use condoms correctly or experience problems with the way a condom fits or feels.[55] If a man finds he is having difficulty keeping an erection while wearing a condom, more lubrication may help increase sensation for the man, or he may wish to try a different brand of condom. Men who suffer from premature ejaculation may find that using condoms helps them with this problem.[56]

Question: Condoms are often thought of as being needed only for risky sex, such as having intercourse with sex workers. Is this true?

Answer: No, condoms are not used only for high-risk sex. Around the world, many people prefer to use condoms for pregnancy prevention, for infection prevention, or for both reasons. When condoms are used correctly, only 3 out of 100 women whose partners use male condoms will become pregnant, while only 5 out of 100 women using a female condom will become pregnant. Both are cost effective and easy to use with few or no side effects. Condoms are currently the only form of contraception that can prevent transmission of an STI, including HIV. Since condoms protect people against infections, they are a preferred method for many sexually active individuals, including those who have multiple partners and sex workers.[57]

SPERMICIDES

Question: What is spermicide?

Answer: Spermicide is a contraceptive method that contains chemicals that damages sperm, killing the cells in the semen. Spermicides are available in creams, film, foams, gels, and suppositories and are typically used with a diaphragm or cervical cap, or included in certain brands of condoms.

Repeated and high-dose use of the spermicide nonoxynol-9 is associated with increased risk of genital lesions, which may increase the risk of HIV infection. Therefore, women at high risk of HIV and women living with HIV or AIDS are not recommended to use spermicides.[58] It is a safe and moderately effective contraceptive option for women at low risk for HIV/STIs who do not intend to use the product more than once a day.

Question: If a woman uses a spermicide, will there be damage to her newborn child if she becomes pregnant in the future?

Answer: Most researchers do not believe that there is a correlation between birth defects and the use of spermicides.[59] In the 1980s, three studies reported possible adverse associations between spermicide exposure and birth defects, but these studies appear to have had serious methodology problems.[60] Additional research has shown no adverse fetal effects associated with spermicide use; thus, it is confirmed there is no association between spermicide use and fetal defects.[61]

FFEMALE CERVICAL BARRIER METHODS (Contraceptive Sponge, Diaphragm, and Cervical Cap)

Question: Do diaphragms, cervical caps, and contraceptive sponges prevent cervical cancer?

Answer: Using a diaphragm does not prevent cervical cancer. The human papillomavirus (HPV) is an STI known to cause cervical cancer. Currently, there is also no evidence that using a contraceptive sponge or cervical cap prevents the spread of HPV.[62]

FEMALE AND MALE STERILIZATION

Question: After a woman is sterilized, is there a chance she can still become pregnant?

Answer: Female sterilization (tubal ligation) is an effective form of contraception that permanently prevents a woman from becoming pregnant. In most cases, a tubal ligation is more than 99 percent effective, with only 1 in 200 women becoming pregnant after the operation, mainly because the fallopian tubes grow back together after being cut.

Question: After a man is sterilized, is there a chance that he can still impregnate a woman?

Answer: While male sterilization (vasectomy) is a permanent contraception method for men, the couple must use another contraceptive method for up to three months after the vasectomy for full protection from pregnancy.

After three months, vasectomies have a failure rate of less than 1 percent, which means it is a very effective method. Failure tends to occur when sperm find a new way to enter the *vas deferens*, which transports the sperm during ejaculation.[63]

Question: Will sterilization make a person gain weight?

Answer: There is no correlation between sterilization and weight gain. Women may believe that sterilization causes weight gain because most clients are sterilized in their 30s or later, a time when the metabolism rate slows and weight gain is common. The weight gain tends to be associated with aging rather than the sterilization procedure.[64]

Question: Will sterilization make a person physically weak?

Answer: Since sterilization is a minor surgical procedure, a woman or man may feel a bit weak while recovering from the procedure, but this only lasts several days to a few weeks after surgery. Once recovered, a patient's physical strength returns to normal.[65]

Question: Is a vasectomy a painful procedure? Is it complicated?

Answer: No. A vasectomy is a quick procedure that requires a health care provider to close or block the *vas deferens*, the tube that carries sperm from the testicles to the urethra in preparation for ejaculation.

After a man completes the outpatient procedure, he may experience slight or moderate discomfort, which can be alleviated by using an athletic supporter, ice bag, and a pain reliever. He should also avoid strenuous physical work or exercise for one week.[66]

Question: Is a tubal ligation a painful procedure? Is it complicated?

Answer: No. During a tubal ligation, a medical provider performs minor surgery that prevents the movement of the egg to the fallopian tubes and uterus for fertilization and blocks sperm from traveling up the fallopian tubes to the egg.

A tubal ligation is an outpatient procedure lasting 20 to 30 minutes under local or general anesthesia. A woman may experience some side effects, such as abdominal pain or cramping, fatigue, dizziness, and bloating. A pain reliever helps alleviate the discomfort.

Question: If a woman chooses to undergo tubal ligation, will she no longer menstruate?

Answer: Tubal ligation does not prevent a woman from menstruating. Unlike a hysterectomy, which is the removal of the uterus and stops future menstruation, tubal ligation is the blocking or tying of fallopian tubes to prevent the egg from moving into the uterus for possible fertilization by sperm. Tubal ligation has no effect on the production of female hormones and a woman will still shed the lining of the uterus (the endometrium) each month. If a woman chooses tubal ligation during her later reproductive years, her menstrual cycle may change due to menopause rather than as a result of the procedure itself.[67]

Question: Is vasectomy the same thing as castration?

Answer: No. Castration is the removal of the testicles, which is not what happens during a vasectomy. A vasectomy is a procedure that blocks the passage of sperm from the testicles to the tubes called the *vas deferens*. A man's testicles are not involved in the procedure.

Question: After a vasectomy, can a man still produce semen and ejaculate?

Answer: Yes. A man will still be able to produce semen and ejaculate, but there will be no sperm in the semen.[68]

Question: Will a man still desire sex and be able to perform sexually after he has a vasectomy?

Answer: A man's sexual desire and ability to have sex is not affected by a vasectomy. Male sterilization does not interfere with hormone production in the testes or with the blood vessels or nerves necessary for an erection. A vasectomy does not cause impotence or affect a man's ability to have and maintain an erection. The only difference is there will no longer be sperm released into the semen during ejaculation. This may actually increase sexual pleasure due to lack of fear of an unplanned pregnancy.[69]

Question: If a man has a vasectomy, is he at greater risk of getting prostate cancer?

Answer: Most studies find no relation between vasectomy and risk of prostate cancer.[70] In 2002, the *Journal of the American Medical Association* published the results of a study showing no association between prostate cancer and vasectomy.[71]

Question: Can a vasectomy increase a man's chances of heart problems or harm his immune system?

Answer: There is no link between a vasectomy and coronary heart disease or immune-related diseases.[72] This rumor began when earlier studies, using vasectomized monkeys as research subjects, showed a correlation between diet and heart problems. Subsequent studies in humans have shown no association.

Question: If a man gets a vasectomy, is he still able to do physical labor?

Answer: After surgery, he may need to take a one-week break from lifting and heavy work, but he can return to his normal work once he has recovered.[73]

FERTILITY AWARENESS-BASED METHODS

Question: What are fertility awareness-based methods?

Answer: Fertility awareness-based methods (also known as natural family planning) include a variety of options for couples to protect themselves from pregnancy by knowing when the woman is fertile during her menstrual cycle. The fertile time is when she can become pregnant.

The methods include *calendar-based methods* that involve tracking the days of the menstrual cycle to identify the start and end of the fertile time and *symptoms-based methods* that require observing cervical secretions and/or a woman's body temperature, which rises slightly after ovulation. This allows the couple to time intercourse to prevent or achieve pregnancy depending on the couple's family planning intentions.

When the woman is fertile, the couple prevents pregnancy by avoiding unprotected sex by either abstaining or using another contraceptive method. Fertility awareness-based methods have no side effects or health risks, other than the possibility of unintended pregnancy if the method should fail (and the potential for sexually transmitted infections). When commonly used during the first year, 12 to 25 of every 100 couples will experience a pregnancy, depending on the method they are using.[74]

Question: Does one need to be literate and highly educated to use a fertility awareness-based method for family planning?

Answer: Studies in Latin America, Asia, and Africa have shown that women with very little education and those who cannot read or write use fertility awareness-based methods, such as the Standard Days Method (SDM), as effectively as highly educated women, but may require more counseling time and tailored materials. SDM uses memory aids such as CycleBeads, a color-coded string of beads that indicates the days of a women's reproductive cycle when pregnancy is likely or unlikely to occur. These tools, along with other counseling information that uses pictures to explain the method, help women and men who are unable to read understand how a method works.[75]

Other fertility awareness-based methods—such as the TwoDay Method, the Lactational Amenorrhea Method (LAM), the Billings Ovulation Method, the basal body temperature method, and the symptothermal method—are also available for women and men who may have little education. Additional counseling may be needed to ensure that the client understands how to use the method but the effectiveness rate is the same as other clients with more education.

Question: If a woman wants to use a fertility awareness-based method, does she need to have a regular menstrual cycle?

Answer: If a woman does not have a regular menstrual cycle (a cycle that usually lasts between 26 and 32 days), she is still eligible to use some fertility awareness methods. If a woman has two or more cycles that fall outside of the 26- to 32-day range, she will reduce her chances of becoming pregnant if she uses a symptoms-based method, such as the TwoDay Method, the basal body temperature method, Billings Ovulation Method, or the symptothermal method.[76]

Question: What do couples do on the days when a woman is at risk of becoming pregnant?

Answer: During the days when a woman is fertile, the couple will either need to abstain from sex or use a barrier method. While it may be difficult to change the behavior of a male partner, including him during family planning counseling sessions can help both partners understand the importance of preventing pregnancy and practicing abstinence or a barrier method during fertile days.[77]

Question: The Lactational Amenorrhea Method (LAM) requires the mother to exclusively breastfeed her newborn for the first six months. Does a baby need to be fed more than only breast milk to intake adequate nutrients?

Answer: A woman can use LAM if the mother's menstrual period has not returned, the baby is breastfed only, and the baby is younger than 6 months. According to WHO, exclusive breastfeeding for the first six months is the optimal way to feed an infant, providing all the energy and nutrients needed. Breastfeeding also helps reduce infant mortality due to common childhood illnesses such as diarrhea or pneumonia and helps infants recover from illness more quickly. Exclusive breastfeeding also helps the growth and development of the infant.[78]

Question: If a woman is HIV positive, is it safe for her to use the Lactational Amenorrhea Method as a contraceptive method?

Answer: If she is HIV positive, she can pass HIV to her baby through breast milk but receiving HIV treatment significantly reduces the chances. WHO suggests that HIV-positive women use replacement feeding instead of breastfeeding if safe drinking water is consistently available, and if the replacement is:

- Acceptable to the mother and baby.
- Affordable for the mother.
- Feasible to purchase or make.
- Available for the full first six months of the infant's life.

If all the criteria above cannot be met, WHO recommends exclusive breastfeeding for HIV-positive women rather than mixed feeding (breastfeeding and also providing replacement foods). The benefits of exclusive breastfeeding must be weighed against the danger of passing HIV to the infant. If the five conditions above cannot be met for replacement feeding, especially in areas of the world where infectious disease and malnutrition are common causes of infant deaths, breastfeeding may still be the best choice for HIV-positive women and their children.

Women who are HIV positive should be counseled about the risks and benefits of breastfeeding and about LAM no longer being effective once the mother begins giving her infant replacement foods, her menstruation returns, and/or her infant is older than 6 months.[79]

THE NEED FOR ACCURATE INFORMATION

All of the contraceptive methods reviewed in this document can significantly reduce the chances of unintended pregnancy if used correctly and consistently, and most are safe for the majority of users and under almost all conditions. Addressing misinformation about each method helps women and men choose which method(s) to use based on scientific evidence rather than myths and rumors. Access to accurate information about all contraceptive methods ensures that women and men are able to evaluate which method is right for them based on their childbearing goals, health status, relationship, and living conditions.

References

1 Population Reference Bureau, *Contraceptive Safety: Rumors and Realities* (Washington, DC: Population Reference Bureau, 1998).

2 Jacqueline E. Darroch, Gilda Sedgh, and Haley Ball, *Contraceptive Technologies: Responding to Women's Needs* (New York: Guttmacher Institute, 2011).

3 Martha Campbell, Nuriye Nalan Sahin-Hodoglugil, and Malcom Potts, "Barriers to Fertility Regulation: A Review of the Literature," *Studies in Family Planning* 37, no. 2 (2006): 2.

4 World Health Organization, Department of Reproductive Health and Research, and Johns Hopkins Bloomberg School of Public Health, Center for Communication Programs, *Family Planning: A Global Handbook for Providers* (Baltimore: World Health Organization and Johns Hopkins Bloomberg School of Public Health, 2011).

5 International Planned Parenthood Federation, "Combined Oral Contraceptive Myths" (June 2012), accessed at www.ippf.org/our-work/what-we-do/contraception/myths/Combined-Oral-Contraceptives, on Nov. 30, 2012.

6 Johns Hopkins Bloomberg School of Public Health, Center for Communication Programs, *Contraceptive Myths and Counseling Messages: The Complete Content From the Online Database* (Baltimore: Johns Hopkins Bloomberg School of Public Health, 2007).

7 Laura J. Havrilesky et al., "Oral Contraceptive Pills as Primary Prevention for Ovarian Cancer: A Systematic Review and Meta-analysis," *Obstetrics & Gynecology* 122, no. 1 (2013): 139-47; and Alfred O Mueck, Harald Seeger, and Thomas Rabe, "Hormonal Contraception and Risk of Endometrial Cancer: A Systematic Review," *Endocrine-Related Cancer* 17, no. 4 (2010): 263-67.

8 Mueck, Seeger, and Rabe, "Hormonal Contraception and Risk of Endometrial Cancer"; and Collaborative Group on Epidemiological Studies of Ovarian Cancer, "Ovarian Cancer and Oral Contraceptives: Collaborative Reanalysis of Data From 45 Epidemiological Studies Including 23,257 Women With Ovarian Cancer and 87,303 Controls," *The Lancet* 31, no. 9609 (2008): 303-14.

9 World Health Organization, Department of Reproductive Health and Research, and Johns Hopkins Bloomberg School of Public Health, Center for Communication Programs, *Family Planning: A Global Handbook for Providers*.

10 Victor Moreno et al., "Effect of Oral Contraceptives on Risk of Cervical Cancer in Women With Human Papillomavirus Infection: The IARC Multicentric Case-Control Study," *The Lancet* 359, no. 9312 (2002):1085-92.

11 Carlo La Vecchia and Alessandra Tavani, "Female Hormones and Benign Liver Tumours," *Digestive and Liver Disease* 38, no. 8 (2006): 535-36; and Olivier Farges et al., "Changing Trends in Malignant Transformation of Hepatocellular Adenoma," *Gut* 60, no. 1 (2011): 85-89.

12 U.S National Library of Medicine and the National Institutes of Health, "Levonorgestrel (2010)," accessed at www.nlm.nih.gov/medlineplus/druginfo/meds/a610021.html, on July 23, 2013; and United States Food and Drug Administration, "FDA Drug Safety Communication: Updated Information About the Risk of Blood Clots in Women Taking Birth Control Pills Containing Drospierenone" (2013), accessed at www.fda.gov/Drugs/DrugSafety/ucm299305.htm, on July 23, 2013.

13 United States Food and Drug Administration, "FDA Drug Safety Communication: Updated Information About the Risk of Blood Clots in Women Taking Birth Control Pills Containing Drospierenone."

14 International Planned Parenthood Federation, "Combined Oral Contraceptive Myths."

15 World Health Organization, "Hormonal Contraception and HIV" (2013), accessed at www.who.int/reproductivehealth/topics/family_planning/hc_hiv/en/, on Dec. 13, 2012; and Chelsea B. Polis and Kathryn M. Curtis, "Use of Hormonal Contraceptives and HIV Acquisition in Women: A Systematic Review of the Epidemiological Evidence," *Lancet Infectious Diseases* (forthcoming).

16 World Health Organization, "Hormonal Contraception and HIV."

17 Sharon J. Phillips, Kathryn M. Curtis, and Chelsea B. Polis, "Effect of Hormonal Contraceptive Methods on HIV Disease Progression: A Systematic Review," *AIDS* 27, no. 5 (2013):787-94.

18 World Health Organization, "Hormonal Contraception and HIV."

19 Linan Cheng et al., "Interventions for Emergency Contraception," *Cochrane Database System Review* (2008); Task Force on Postovulatory Methods of Fertility Regulation, "Randomised Controlled Trial of Levonorgestrel Versus the Yuzpe Regimen of Combined Oral Contraceptives for Emergency Contraception," *Lancet* 352, no. 9126 (1998): 428-33; and Elizabeth G. Raymond et al., "Minimum Effectiveness of the Levonorgestrel Regimen of Emergency Contraception," *Contraception* 69, no. 1 (2004): 79-81

20 Cheng et al., "Interventions for Emergency Contraception"; and Anna Glasier et al., "Ulipristal Acetate Versus Levonorgestrel for Emergency Contraception: A Randomized Non-inferiority Trial and Meta-analysis," *Lancet* 375, no. 9714 (2010): 555-62.

21 James Trussel, "Understanding Contraceptive Failure," *Best Practice & Research Clinical Obstetrics and Gynaecology* 23, no. 2 (2009): 199-209; and Olukayode A. Dada et al., "A Randomized, Double-blind, Noninferiority Study to Compare Two Regimens of Levonorgestrel for Emergency Contraception in Nigeria," *Contraception* 82, no. 4 (2010):373-78.

22 Gilda Piaggio et al., "Combined Estimates of Effectiveness of Mifepristone 10 mg in Emergency Contraception," *Contraception* 69, no. 6 (2003): 439-46.

23 Paul Fine et al., "Ulipristal Acetate Taken 48-120 Hours After Intercourse for Emergency Contraception," *Obstetric Gynecology* 115, no. 2, part 1 (2010): 257-63; Glasier et al., "Ulipristal Acetate Versus Levonorgestrel for Emergency Contraception"; and Mitchell D. Creinin et al., "Progesterone Receptor Modulator for Emergency Contraception: A Randomized Controlled Rrial," *Obstetric Gynecology* 108, no. 5 (2006):1089-97.

24 Lin Zhang et al., "Pregnancy Outcome After Levonorgestrel-only Emergency Contraception Failure: A Prospective Cohort Study," *Human Reproduction* 24, no. 7 (2009):1605-11; and Marco De Santis et al., "Failure of the Emergency Contraceptive Levonorgestrel and the Risk of Adverse Effects in Pregnancy and on Fetal Development: An Observational Cohort Study," *Fertility Sterility* 84, no. 2 (2005): 296-99.

25 Planned Parenthood, "Morning-After Pill (Emergency Contraception)" (2012), accessed at www.plannedparenthood.org/health-topics/emergency-contraception-morning-after-pill-4363.asp, on Dec. 13, 2012.

26 Planned Parenthood, "Morning-After Pill (Emergency Contraception)."

27 World Health Organization, Department of Reproductive Health and Research, and Johns Hopkins Bloomberg School of Public Health, Center for Communication Programs, *Family Planning: A Global Handbook for Providers*; and World Health Organization, *Medical Eligibility Criteria for Contraceptive Use: Fourth Edition* (Geneva: World Health Organization, 2010).

28 Sarikapan Wilailak et al., "Depot Medroxyprogesterone Acetate and Epithelial Ovarian Cancer: A Multicenter Case-Control Study," *British Journal of Obstetrics and Gynaecology* 119, no. 6 (2012): 672-77.

29 Christopher I. Li et al., "Effect of Depo-Medroxyprogesterone Acetate on Breast Cancer Risk Among Women 20-44 Years of Age," *Cancer Research* 72 (2012): 2028-35.

30 Elizabeth Futrell, "Exploring the Link Between Injectable Contraception and Breast Cancer" (2012), accessed at www.k4health.org/blog/post/exploring-link-between-injectable-contraception-and-breast-cancer, on July 23, 2013.

31 Johns Hopkins Bloomberg School of Public Health, Center for Communication Programs, *Contraceptive Myths and Counseling Messages*.

32 World Health Organization, Department of Reproductive Health and Research, and Johns Hopkins Bloomberg School of Public Health, Center for Communication Programs, *Family Planning: A Global Handbook for Providers*.

33 Tieng Pardthaisong, Ronald H. Gray, and Edwin B. McDaniel, "Return of Fertility After Discontinuation of Depot Medroxyprogesterone Acetate and Intra-Uterine Devices in Northern Thailand," *Lancet* 315, no. 8167 (1980): 509-12; and P.C. Schwallie and J.R. Assenzo, "The Effect of Depo-Medroxyprogesterone Acetate on Pituitary and Ovarian Function and the Return of Fertility Following its Discontinuation: A Review," *Contraception* 10, no. 2 (1974): 181-202.

34 Mahbubur Rahman and Abbey B. Berenson, "Predictors of Higher Bone Mineral Density Loss and Use of Depot-Medroxyprogesterone Acetate," *Obstetrics and Gynecology* 115, no. 1 (2010): 35-40.

35 World Health Organization, *Medical Eligibility Criteria for Contraceptive Use: Fourth Edition*.

36 World Health Organization, "Hormonal Contraception and HIV"; and Polis and Curtis, "Use of Hormonal Contraceptives and HIV Acquisition in Women."

37 Phillips, Curtis, and Polis, "Effect of Hormonal Contraceptive Methods on HIV Disease Progression."

38 Chelsea B. Polis, Sharon J. Phillips, and Kathryn M. Curtis, "Hormonal Contraceptive Use and Female-to-Male HIV Transmission: A Systematic Review of the Epidemiologic Evidence," *AIDS* 27, no. 4 (2013): 493-95.

39 World Health Organization, "Hormonal Contraception and HIV."

40 The Family Planning Association, "Contraceptive Implant: Your Guide" (2013), accessed at www.fpa.org.uk/helpandadvice/contraception/contraceptiveimplant, on Dec. 18, 2012.

41 World Health Organization, Department of Reproductive Health and Research, and Johns Hopkins Bloomberg School of Public Health, Center for Communication Programs, *Family Planning: A Global Handbook for Providers*.

42 Mira Harrison-Woolrych and Richard Hill, "Unintended Pregnancies With Etonogestrel Implant (Implanon): A Case Series From Post-Marketing Experience in Australia," *Contraception* 71, no. 4 (2006): 306-8.

43 Phillip Darney, "Everything You Need to Know About the Contraceptive Implant," *The Journal of Family Practice* 18, no. 9 (2006).

44 Irving Sivin, "Risks and Benefits, Advantages and Disadvantages of Levonorgestrel-Releasing Contraceptive Implant," *Drug Safety* 26, no. 5 (2003): 303-35.

45 Reproductive Health Supplies Coalition, "Contraceptive Implants" (March 2012), accessed at www.path.org/publications/files/RHSC_implants_ br.pdf, on Dec. 18, 2012.

46 Hui-Wen Lin et al., "Risk of Ovarian Cancer in Women With Pelvic Inflammatory Disease: A Population-Based Study," *Lancet Oncology* 12, no. 9 (2011): 900-904.

47 David Hubacher et al., "Use of Copper Intrauterine Devices and the Risk of Tubal Infertility Among Nulligravid Women," *New England Journal of Medicine* 345, no. 8 (2001): 561-67; and Anshu P. Mohllajee, Kathryn M. Curtis, and Herbert B. Peterson, "Does Insertion and Use of an Intrauterine Device Increase the Risk of Pelvic Inflammatory Disease Among Women With a Sexually Transmitted Infection? A Systematic Review," *Contraception* 73, no. 2 (2006): 145-53.

48 World Health Organization, Department of Reproductive Health and Research, and Johns Hopkins Bloomberg School of Public Health, Center for Communication Programs, *Family Planning: A Global Handbook for Providers*.

49 Association of Reproductive Health Professionals, "A Woman's Guide to Understanding IUDs," accessed at www.arhp.org/Publications-and-Resources/Patient-Resources/printed-materials/Understanding-IUDs, on Dec. 19, 2012.

50 Robert A. Hatcher et al., *Contraceptive Technology*, 20th Revised Edition (Atlanta: Ardent Media, Inc., 2011).

51 International Planned Parenthood Federation, "Intra-Uterine Devices" (2012), accessed at www.ippf.org/our-work/what-we-do/contraception/myths/Intrauterine-Devices, on Nov. 30, 2012.

52 Association of Reproductive Health Professionals, "A Woman's Guide to Understanding IUDs"; and World Health Organization, Department of Reproductive Health and Research, and Johns Hopkins Bloomberg School of Public Health, Center for Communication Programs, *Family Planning: A Global Handbook for Providers*.

53 Ezio Fulcheri, Elisa di Capua, and Nicola Ragni, "Pregnancy Despite IUD: Adverse Effects on Pregnancy Evolution and Fetus," Contraception 68, no. 1 (2003): 35-38

54 Centers for Disease Control and Prevention, "Contraception" (Sept. 10, 2013), accessed at www.cdc.gov/reproductivehealth/unintendedpregnancy/contraception.htm, on Dec. 19, 2012.

55 Cynthia Graham et al., "Erection Loss in Association With Condom Use Among Young Men Attending a Public STI Clinic: Potential Correlates and Implications for Risk Behavior," *Sexual Health* 3, no. 4 (2006): 255-60.

56 Johns Hopkins Bloomberg School of Public Health, Center for Communication Programs, *Contraceptive Myths and Counseling Messages*.

57 World Health Organization, Department of Reproductive Health and Research, and Johns Hopkins Bloomberg School of Public Health, Center for Communication Programs, *Family Planning: A Global Handbook for Providers*.

58 World Health Organization, *Medical Eligibility Criteria for Contraceptive Use.*

59 U.S. Department of Health and Human Services, *Family Planning Methods and Practices: Africa* (Atlanta: Centers for Disease Control and Prevention, 2000).

60 George Huggins et al., "Vaginal Spermicides and Outcome of Pregnancy: Findings in a Large Cohort Study," *Contraception* 25, no. 3 (1982): 219-30; Hershel Jick et al., "Vaginal Spermicides and Congenital Disorders," *The Journal of the American Medical Association* 245, no. 13 (1981): 1329-32; and Kenneth Rothman, "Spermicide Use and Down's Syndrome," *American Journal of Public Health* 72, no. 4 (1982): 399-401

61 Thomas R. Einarson et al., "Maternal Spermicide Use and Adverse Reproductive Outcome: A Meta-analysis," *American Journal of Obstetric Gynecology* 162, no. 3 (1990): 655-60; U.S. Food and Drug Administration, "Data Do Not Support Association Between Spermicides, Birth Defects," *FDA Drug Bulletin* 11, no. 2 (1986): 21; Joe Leigh Simpson and Owen P. Phillips, "Spermicides, Hormonal Contraception and Congenital Malformations," *Advances in Contraception* 6, no. 3 (1990): 141-67; and Barbara Strobino, Jennie Kline, and Dorothy Warburton, "Spermicide Use and Pregnancy Outcome," *American Journal of Public Health* 78, no. 3 (1988): 260-63.

62 George F. Sawaya et al., "Effect of Diaphragm and Lubricant Gel Provision on Human Papillomavirus Infection Among Women Provided With Condoms: A Randomized Controlled Trial," *Journal of Obstetrics and Gynecology* 112, no. 5 (2008): 990-97.

63 World Health Organization, Department of Reproductive Health and Research, and Johns Hopkins Bloomberg School of Public Health, Center for Communication Programs. *Family Planning: A Global Handbook for Providers*.

64 Cori Baill, Vanessa E. Cullins, and Sangeeta Pati, "Counseling Issues in Tubal Sterilization," *American Family Physician* 16, no. 6 (2003): 1287-94.

65 World Health Organization, Department of Reproductive Health and Research, and Johns Hopkins Bloomberg School of Public Health, Center for Communication Programs, *Family Planning: A Global Handbook for Providers*.

66 Planned Parenthood, "Vasectomy" (2012), accessed at www.plannedparenthood.org/health-topics/birth-control/vasectomy-4249.htm, on Dec. 20, 2012

67 FHI 360, *Does Sterilization Affect Menstrual Patterns?* (Research Triangle Park, North Carolina: FHI, 2006).

68 U.S. Department of Health and Human Services, *Family Planning Methods and Practices: Africa*.

69 Jay I. Sandlow et al., "Psychological Correlates of Vasectomy," *Fertility and Sterility* 75, no. 3 (2001): 544-48.

70 Hatcher et al., *Contraceptive Technology*.

71 Brian Cox et al., "Vasectomy and Risk of Prostate Cancer," *Journal of the American Medical Association* 287, no. 23 (2002): 3110-15.

72 Ira D. Sharlip et al., *Vasectomy: AUA Guideline* (May 2012), accessed at www.auanet.org/common/pdf/education/clinical-guidance/Vasectomy.pdf, on Dec. 20, 2012.

73 Mayo Clinic, "Vasectomy: An Effective Form of Male Birth Control" (Feb. 20, 2011), accessed at www.mayoclinic.com/health/vasectomy/MY00483, on Dec. 26, 2012.

74 World Health Organization, Department of Reproductive Health and Research, and Johns Hopkins Bloomberg School of Public Health, Center for Communication Programs, *Family Planning: A Global Handbook for Providers*.

75 Georgetown University, Institute for Reproductive Health, *Standard Days Method: Implementation Guidelines for Program Personnel* (Washington, DC: Institute for Reproductive Health, Georgetown University, 2006).

76 World Health Organization, Department of Reproductive Health and Research, and Johns Hopkins Bloomberg School of Public Health, Center for Communication Programs. *Family Planning: A Global Handbook for Providers*.

77 Irit Sinai et al., "Fertility Awareness-Based Methods of Family Planning: Predictors of Correct Use," International Family Planning Perspectives 32, no. 2 (2006): 94-100.

78 World Health Organization, "Exclusive Breastfeeding for Six Months Best for Babies Everywhere" (Jan. 15, 2011), accessed at www.who.int/mediacentre/news/statements/2011/breastfeeding_20110115/en/, on Dec. 27, 2012.

79 World Health Organization, *HIV and Infant Feeding 2010: An Updated Framework for Priority Action* (Geneva: WHO, 2012); and Federico León et al., *The Balanced Counseling Strategy: A Toolkit for Family Planning Service Providers* (Washington, DC: Population Council, 2008).

www.prb.org

POPULATION REFERENCE BUREAU

1875 Connecticut Avenue., NW
Suite 520
Washington, DC 20009

202 483 1100 PHONE
202 328 3937 FAX
popref@prb.org EMAIL