CHOOSING A CONTRACEPTIVE

Choosing a method of birth control is a highly personal decision, based on individual preferences, medical history, lifestyle, and other factors. Each method carries with it a number of risks and benefits of which the user should be aware.

Each method of birth control has a failure rate--an inability to prevent pregnancy over a 1-year period. Sometimes the failure rate is due to the method and sometimes it is due to human error, such as incorrect use or not using it at all. Each method has possible side effects, some minor and some serious. Some methods require lifestyle modifications, such as remembering to use the method with each and every sexual intercourse. Some cannot be used by individuals with certain medical problems.

SPERMICIDES USED ALONE

Spermicides, which come in many forms--foams, jellies, gels, and suppositories--work by forming a physical and chemical barrier to sperm. They should be inserted into the vagina within an hour before intercourse. If intercourse is repeated, more spermicide should be inserted. The active ingredient in most spermicides is the chemical nonoxynol-9. The failure rate for spermicides in preventing pregnancy when used alone is from 20% to 30%.

Spermicides are available without a prescription. People who experience burning or irritation with these products should not use them.

BARRIER METHODS

There are five barrier methods of contraception: male condoms, female condoms, diaphragm, sponge, and cervical cap. In each instance, the method works by keeping the sperm and egg apart. Usually, these methods have only minor side effects. The main possible side effect is an allergic reaction either to the material of the barrier or the spermicides that should be used with them. Using the methods correctly for each and every sexual intercourse gives the best protection.

For many people, the prevention of sexually transmitted diseases (STDs), including HIV (human immunodeficiency virus), which leads to AIDS, is a factor in choosing a contraceptive. Only one form of birth control currently available--the latex condom, worn by the man--is considered highly effective in helping protect against HIV and other STDs. FDA has approved the marketing of male condoms made from polyurethane as also effective in preventing STDs, including HIV. However, at press time, they were not yet being sold in this country. Reality Female Condom, made from polyurethane, may give limited protection against STDs but has not been proven as effective as male latex condoms. People who use another form of birth

control but who also want a highly effective way to reduce their STD risks, should also use a latex condom for every sex act, from start to finish.

MALE CONDOM

A male condom is a sheath that covers the penis during sex. Condoms on the market at press time were made of either latex rubber or natural skin (also called "lambskin" but actually made from sheep intestines). Of these two types, only latex condoms have been shown to be highly effective in helping to prevent STDs. Latex provides a good barrier to even small viruses such as human immunodeficiency virus and hepatitis B. Each condom can only be used once. Condoms have a birth control failure rate of about 15%. Most of the failures can be traced to improper use.

Some condoms have spermicide added. This may give some additional contraceptive protection. Vaginal spermicides may also be added before sexual intercourse.

Some condoms have lubricants added. These do not improve birth control or STD protection. Non-oil-based lubricants can also be used with condoms. However, oil-based lubricants such as petroleum jelly (Vaseline) should not be used because they weaken the latex. Condoms are available without a prescription. Most condom failures can be traced to improper use.

FEMALE CONDOM

The Reality Female Condom consists of a lubricated polyurethane sheath with a flexible polyurethane ring on each end.

One ring is inserted into the vagina much like a diaphragm, while the other remains outside, partially covering the labia. The female condom may offer some protection against STDs, but for highly effective protection, male latex condoms must be used. (The female condom should not be used at the same time as the male condom because they will not both stay in place.)

In a 6-month trial, the pregnancy rate for the Reality Female Condom was about 13%. The estimated yearly failure rate ranges from 21% to 26%. This means that about 1 in 4 women who use Reality may become pregnant during a year.

SPONGE

The contraceptive sponge is made of white polyurethane foam. The sponge, shaped like a small doughnut, contains the spermicide nonoxynol-9. Like the diaphragm, it is inserted into the vagina to cover the cervix during and after intercourse. It does not require fitting by a health professional and is available without prescription. It is to be used only once and then discarded. The failure rate is between 18% and 28%. An extremely rare side effect is toxic shock syndrome (TSS), a potentially fatal infection caused by a strain of the bacterium Staphylococcus aureus and more commonly associated with tampon use.

DIAPHRAGM

The diaphragm is a flexible rubber disk with a rigid rim. Diaphragms range in size from 2 to 4 inches in diameter and are designed to cover the cervix during and after intercourse so that sperm cannot reach the uterus. Spermicidal jelly or cream must be placed inside the diaphragm for it to be effective.

The diaphragm must be fitted by a health professional and the correct size prescribed to ensure a snug seal with the vaginal wall. If intercourse is repeated, additional spermicide should be added with the diaphragm still in place. The diaphragm should be left in place for at least six hours after intercourse. The diaphragm used with spermicide has a failure rate of from 6% to 18%.

Barrier methods, which work by keeping the sperm and egg apart, usually have only minor side effects.

In addition to the possible allergic reactions or irritation common to all barrier methods, there have been some reports of bladder infections with this method. As with the contraceptive sponge, TSS is an extremely rare side effect.

CERVICAL CAP

The cervical cap, approved for contraceptive use in the United States in 1988, is a dome-shaped rubber cap in various sizes that fits snugly over the cervix. Like the diaphragm, it is used with a spermicide and must be fitted by a health professional. It is more difficult to insert than the diaphragm, but may be left in place for up to 48 hours. In addition to the allergic reactions that can occur with any barrier method, 5.2% to 27% of users in various studies have reported an unpleasant odor and/or discharge. There also appears to be an increased incidence of irregular Pap tests in the first 6 months of using the cap, and TSS is an extremely rare side effect. The cap has a failure rate of about 18%.

HORMONAL CONTRACEPTION

Hormonal contraception involves ways of delivering forms of two female reproductive hormones--estrogen and progestogen--that help regulate ovulation (release of an egg), the condition of the uterine lining, and other parts of the menstrual cycle. Unlike barrier methods, hormones are not inert, do interact with the body, and have the potential for serious side effects, though this is rare. When properly used, hormonal methods are also extremely effective. Hormonal methods are available only by prescription.

BIRTH CONTROL PILLS

There are two types of birth control pills: combination pills, which contain both estrogen and a progestin (a natural or synthetic progesterone), and "mini-pills," which contain only progestin. The combination pill prevents ovulation, while the mini-pill reduces cervical mucus and causes it to thicken. This prevents the sperm from reaching the egg. Also, progestins keep the endometfium (uterine lining) from thickening. This prevents the fertilized egg from implanting in the uterus. The failure rate for the mini-pill is 1% to 3%; for the combination pill it is 1% to 2%.

Combination oral contraceptives offer significant protection against ovarian cancer, endometrial cancer, iron-deficiency anemia, pelvic inflammatory disease (PID), and fibrocystic breast disease. Women who take combination pills have a lower risk of functional ovarian cysts.

The decision about whether to take an oral contraceptive should be made only after consultation with a health professional. Smokers and women with certain medical conditions should not take the pill. These conditions include: a history of blood clots in the legs, eyes, or deep veins of the legs; heart attacks, strokes, or angina; cancer of the breast, vagina, cervix, or uterus; any undiagnosed, abnormal vaginal bleeding; liver tumors; or jaundice due to pregnancy or use of birth control pills.

Women with the following conditions should discuss with a health professional whether the benefits of the pill outweigh its risks for them:

- High blood pressure
- Heart, kidney, or gallbladder disease
- A family history of heart attack or stroke
- Severe headaches or depression
- Elevated cholesterol or triglycerides
- Epilepsy
- Diabetes

Serious side effects of the pill include blood clots that can lead to stroke, heart attack, pulmonary embolism, or death. A clot may, on rare occasions, occur in the blood vessel of the eye, causing impaired vision or even blindness. The pills may also cause high blood pressure that returns to normal after oral contraceptives are stopped. Minor side effects, which usually subside after a few months' use, include: nausea, headaches, breast swelling, fluid retention, weight gain, irregular bleeding, and depression. Sometimes taking a pill with a lower dose of hormones can reduce these effects.

The effectiveness of birth control pills may be reduced by a few other medications, including some antibiotics, barbiturates, and antifungal medications. On the other hand, birth control pills may prolong the effects of theophylline and caffeine. They also may prolong the effects of benzodiazepines such as Librium (chlordiazepoxide), Valium (diazepam), and Xanax (alprazolam). Because of the variety of these drug interactions, women should always tell their health professionals when they are taking birth control pills.

Methods of hormonal contraception, when used properly, are extremely effective.

NORPLANT

Norplant--the first contraceptive implant--was approved by FDA in 1990. In a minor surgical procedure, 6 matchstick-sized rubber capsules containing progestin are placed just underneath the skin of the upper arm. The implant is effective within 24 hours and provides progestin for up to 5 years or until it is removed. Both the insertion and the removal must be performed by a qualified professional.

Because contraception is automatic and does not depend on the user, the failure rate for Norplant is less than 1% for women who weigh less than 150 pounds. Women who weigh more have a higher pregnancy rate after the first 2 years.

Women who cannot take birth control pills for medical reasons should not consider Norplant a contraceptive option. The potential side effects of the implant include: irregular menstrual bleeding, headaches, nervousness, depression, nausea, dizziness, skin rash, acne, change of appetite, breast tenderness, weight gain, enlargement of the ovaries or fallopian tubes, and excessive growth of body and facial hair. These side effects may subside after the first year.

DEPO-PROVERA

Depo-Provera is an injectable form of a progestin. It was approved by the FDA in 1992 for contraceptive use. Previously, it was approved for treating endometrial and renal cancers. Depo-Provera has a failure rate of only 1%. Each injection provides contraceptive protection for 14 weeks. It is injected every 3 months into a muscle in the buttocks or arm by a trained professional. The side effects are the same as those for Norplant and progestin-only pills. In addition, there may be irregular bleeding and spotting during the first months followed by periods of amenorrhea (no menstrual period). About 50% of the women who use Depo-Provera for 1 year or longer report amenorrhea. Other side effects, such as weight gain and others described for Norplant, may occur.

INTRAUTERINE DEVICES

IUDs are small, plastic, flexible devices that are inserted into the uterus through the cervix by a trained clinician. Only two IUDs are presently marketed in the United States: ParaGard T380A, a T-shaped device partially covered by copper and effective for 8 years; and Progestasert, which is also T-shaped but contains a progestin released over a 1-year period. After that time, the IUD should be replaced. Both IUDs have a 4% to 5% failure rate.

It is not known exactly how IUDs work. At one time it was thought that the IUD affected the uterus so that it would be inhospitable to implantation. New evidence, however, suggests that uterine and tubal fluids are altered, particularly in the case of copper-bearing IUDs, inhibiting the transport of sperm through the cervical mucus and uterus.

The risk of PID with IUD use is highest in those with multiple sex partners or with a history of previous PID. Therefore, the IUD is recommended primarily for women in mutually monogamous relationships.

In addition to PID, other complications include perforation of the uterus (usually at the time of insertion), septic abortion, or ectopic (tubal) pregnancy. Women may also experience some short-term side effects--cramping and dizziness at the time of insertion; bleeding, cramps and backache that may continue for a few days after the insertion; spotting between periods; and longer and heavier menstruation during the first few periods after insertion.

PERIODIC ABSTINENCE

Periodic abstinence entails not having sexual intercourse during the woman's fertile period. Sometimes this method is called natural family planning (NFP) or "rhythm." Using periodic abstinence is dependent on the ability to identify the approximately 10 days in each menstrual cycle that a woman is fertile. Methods to help determine this include:

- The basal body temperature method is based on the knowledge that just before ovulation a woman's basal body temperature drops several tenths of a degree and after ovulation it returns to normal. The method requires that the woman take her temperature each morning before she gets out of bed. There are now electronic thermometers with memories and electrical resistance meters that can more accurately pinpoint a woman's fertile period.
- The cervical mucus method, also called the Billings method, depends on a woman recognizing the changes in cervical mucus that indicate ovulation is occurring or has occurred.

Periodic abstinence has a failure rate of 14% to 47%. It has none of the side effects of artificial methods of contraception.

SURGICAL STERILIZATION

Surgical sterilization must be considered permanent. Tubal ligation seals a woman's fallopian tubes so that an egg cannot travel to the uterus. Vasectomy involves closing off a man's vas deferens so that sperm will not be carried to the penis.

Vasectomy is considered safer than female sterilization. It is a minor surgical procedure, most often performed in a doctor's office under local anesthesia. The procedure usually takes less than 30 minutes. Minor post-surgical complications may occur.

Tubal ligation is an operating-room procedure performed under general anesthesia. The fallopian tubes can be reached by a number of surgical techniques, and, depending on the technique, the operation is sometimes an outpatient procedure or requires only an overnight stay. In a minilaparotomy, a 2-inch incision is made in the abdomen. The surgeon, using special instruments, lifts the fallopian tubes and, using clips, a plastic ring, or an electric current, seals the tubes. Another method, laparoscopy, involves making a small incision above the navel, and distending the abdominal cavity so that the intestine separates from the uterus and fallopian tubes. Then a laparoscope--a miniaturized, flexible telescope--is used to visualize the fallopian tubes while closing them off.

Both of these methods are replacing the traditional laparotomy.

Major complications, which are rare in female sterilization, include: infection, hemorrhage, and problems associated with the use of general anesthesia. It is estimated that major complications occur in 1.7 percent of the cases, while the overall complication rate has been reported to be between 0.1% and 15.3%.

The failure rate of laparoscopy and minilaparotomy procedures, as well as vasectomy, is less than 1%. Although there has been some success in reopening the fallopian tubes or the vas deferens, the success rate is low, and sterilization should be considered irreversible.

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