

## Chapter Five

# Reproductive Health

### Chapter Objectives

*On completion of this chapter, the student should be able to discuss:*

1. The four primary mechanisms by which birth control can be accomplished.
2. Contraceptive efforts from a historical perspective.
3. Ways in which sociocultural considerations influence contraceptive decision making.
4. The prevalence of contraceptive use among American women today.
5. Economic issues associated with contraception.
6. The concept of fertility awareness.
7. The mechanisms, risks, benefits, side effects, and contraindications of hormonal, barrier, permanent, and other methods of contraception.
8. The options available for an unplanned pregnancy.
9. The difference between induced and spontaneous abortion.
10. Abortion from a historical perspective.
11. The pro-life, pro-choice, and middle ground positions on abortion.
12. Abortion from an epidemiological perspective.
13. The major types of abortion procedures.
14. Reasons why the assessment of risks, benefits, and contraindications is an integral component of contraceptive decision making.
15. The strategies in effective contraceptive decision making.
16. The importance of careful decision making regarding abortion.



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## Introduction

A woman's ability to control her reproductive functioning is a necessary part of her health, career preparation, and family growth management. Approximately 70% of reproductive-age women in the United States use some form of birth control. The two most popular forms of birth control are female sterilization and the birth control pill (Figures 5.1 and 5.2). Many methods of **contraception** are available today, and no one method is perfect. Ultimately, contraception is a shared responsibility. The best method is one that a woman and her partner feel comfortable using and one that they will use correctly and consistently. The risk for sexually transmitted infections, including HIV, should also play an essential part in a couple's decision.



■ Choosing the right contraception is a decision that couples should make together.

## Perspectives on Contraception

Although the terms “birth control” and “contraception” are often used interchangeably, each conveys a slightly different perspective on **fertility** control. *Contraception* is a specific term for any procedure used to prevent fertilization of an ovum. *Birth control* is an umbrella term that refers to procedures that prevent the birth of a baby, so it would include all available contraceptive measures as well as sterilization, the **intrauterine device** (IUD), and abortion procedures. Contraceptive methods do not necessarily provide protection from sexually transmitted diseases.

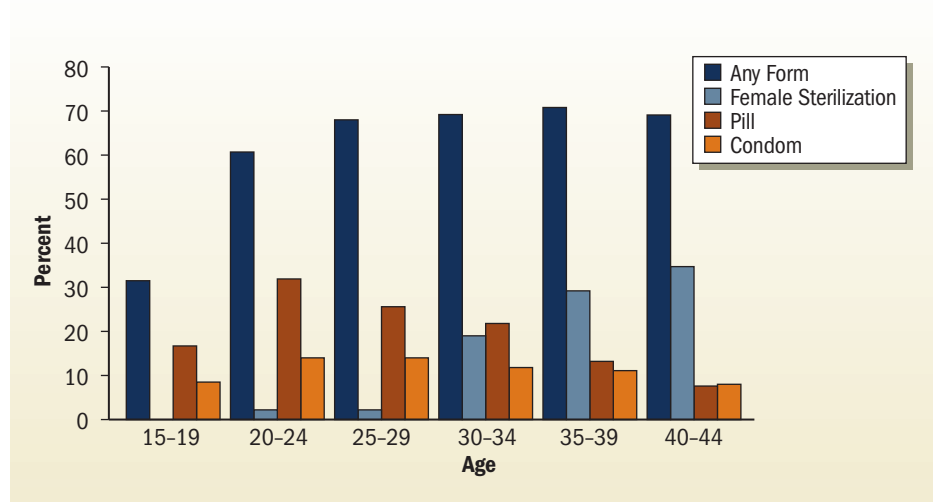
There are four primary mechanisms by which birth control can be accomplished:

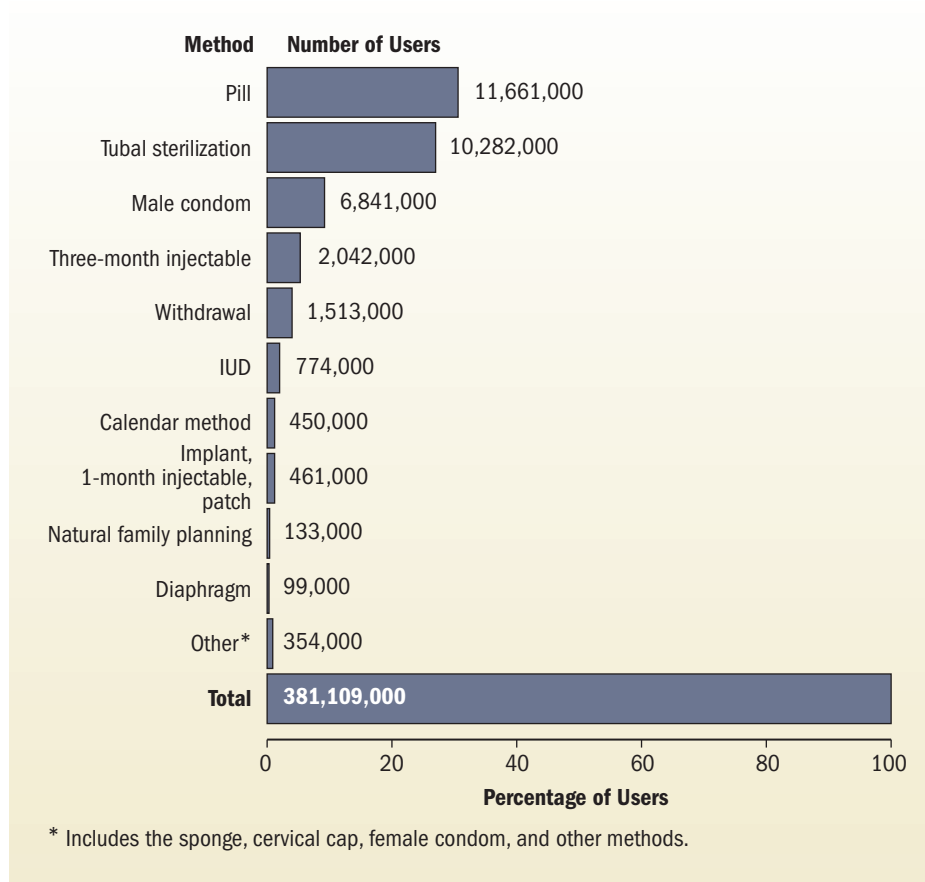
1. Preventing sperm from entering the female reproductive system. Strategies that use this mechanism include abstinence, withdrawal, the condom, and male sterilization.
2. Preventing sperm from fertilizing an ovum once it has entered the female reproductive system. Strategies that use this mechanism include the diaphragm, cervical cap, contraceptive sponge, and spermicides.
3. Preventing ovulation and/or preventing the ovum from reaching the sperm. Strategies that use this mechanism include oral contraceptives, hormone implants, hormone injectables, hormone patch, vaginal ring, and female sterilization.
4. Preventing progression of a fertilized egg. Strategies that use this mechanism include the IUD, some forms of oral contraceptives, emergency birth control, and abortion.

**Figure 5.1**

**Percentage of U.S. women ages 15 to 44 using certain contraceptive methods, 2002, by age group.**

**Source:** Mosher, W.D., Martinez, G.M., Chandra, A., Abma, J.C., and Wilson, S.J. (2004). Use of contraception and use of family planning services in the United States, 1982–2002. *Advance Data from Vital Health Statistics*, no. 350. Hyattsville, MD: National Center for Health Statistics.



**Figure 5.2**

**Contraceptive method choice among U.S. women using contraception, 2002.**

**Source:** The Alan Guttmacher Institute. (2005). Contraceptive Use: Retrieved online January 16, 2006, from [http://www.guttmacher.org/pubs/fb\\_contr\\_use.html](http://www.guttmacher.org/pubs/fb_contr_use.html).

The decision to have sex or intercourse is a major decision for every person. The risks of unprotected sex include pregnancy and infections. Some couples may elect to practice **oral sex**, outcourse, or other forms of sexual intimacy before engaging in sex. Oral sex, or oral–genital contact, does not result in pregnancy but can result in the transmission of sexually transmitted infections, or STIs (see Chapter 7 for more information). Outcourse is the sharing of sexual intimacy with behaviors such as kissing, petting, and mutual masturbation. The advantages of outcourse include no risk of pregnancy without penile–vaginal penetration and the behaviors permit emotional bonding and closeness. These activities can result in STI transmission if fluids are exchanged or if genital skin comes in contact with another person’s genitals, mouth, or anus. Couples who practice outcourse require strong and motivated discipline. Ejaculation on, next to, or inside the vaginal opening has real risk for pregnancy and requires contraception if pregnancy is not desired.

Contraceptive decision making is not easy. Couples are often faced with a choice between highly effective contraceptive methods that have a number of side effects and

other methods that have few side effects but may detract from sexual enjoyment and may have a higher failure rate.

### Historical Overview

Throughout history, women have attempted to control their fertility status by using many different methods. Records indicate that ancient Egyptian and Greek women made primitive diaphragms by inserting paste-like mixtures into their vaginas. Women from many ages and cultures have consumed various teas and septic solutions with the hopes that they would prevent unwanted pregnancy. Early attempts at spermicidal agents included mixtures of acid, juice, honey, alcohol, opium, and vinegar.

Until the introduction of the birth control pill in 1960, diaphragms and condoms were the primary forms of contraception. Early condoms were probably made from linen

*“I am dependent on our local family planning clinic for birth control. We can’t afford a private doctor.”*

**26-year-old mother of three**

sheaths. The cervical cap was introduced in the early 1800s, and the diaphragm was introduced later in the same century. In the mid-nineteenth century, feminists in the United States began a birth control campaign associated with the slogan “Voluntary Motherhood.” This campaign advocated birth control by abstinence. Margaret Sanger (1879–1966) and Mary Coffin Dennett (1872–1947) were early promoters of contraceptive birth control (sexual intercourse without pregnancy) in the United States, although the two advocated different means to achieve their goals (see the **Profiles of Remarkable Women** at the end of this chapter).

Birth control remained at the center of national attention for many years. “Race suicide” was an antifeminist theory developed between 1905 and 1910 in reaction to the lower birth rates and changes in family structure that were attributed to the birth control movement. Proponents of this theory, including President Theodore Roosevelt, believed that upper-class, educated women were failing society by not having large families and that they were allowing the upper classes to be overtaken by immigrants and the poor.

Although women today take the availability of birth control devices and information for granted, only in recent years has it been legal to use them. Fifty years ago, birth control pills were illegal in some states. That changed in 1965 with the Supreme Court’s landmark decision, *Griswold v. Connecticut*, which struck down a statute that made the use of birth control illegal and criminalized spreading information about its use. Justice William Orville Douglas found the strength for the decision in the fact that the case involved “the intimate relationship of husband and wife” and contraceptives were a logical extension of the marital relationship. In 1972, the Court invalidated a Massachusetts law that had made it a felony to give contraceptives to anyone other than a married person.

Recent legal victories in the contraceptive movement have mandated increased women’s access to contraception through their health insurers. Federal employees won mandated coverage for contraception via an act of Congress in 1998. More recently, women’s advocacy groups have pressured insurers and employers to include oral contraception in covered prescription drug benefits. More than three-quarters of women age 18–44 rely on private insurance to defray their medical expenses.<sup>1</sup> Until recently, many insurers did not offer reimbursement for oral contraception, leaving many women to pay for their “pill” out of pocket.

Federal restrictions on contraceptive development have resulted in the United States lagging behind many countries in this arena, leaving U.S. couples with fewer contra-

ceptive options than couples in other developed nations. U.S. women have a responsibility to stay informed as contraceptive technology continues to evolve and to stay aware of the political and economic forces that might facilitate or impede the availability of these devices or agents.

## Sociocultural Considerations

Birth control attitudes and practices vary widely among social classes. In some cultures, motherhood has the ultimate status and is considered a personal achievement. In male-dominated relationships and marriages, a woman may have considerable difficulty in expressing and asserting her concerns and needs for contraception.

Religious beliefs also may influence a woman’s attitudes and practices about contraception. Many Protestant denominations endorse birth control as a marital option, although a growing number of ultraconservative Protestant denominations are espousing limiting its use. Conservative and Reform Judaism teachings emphasize the individual choice of the married couple, with couples able to limit their family size for either health or social reasons. Orthodox Jews may practice contraception under special health circumstances by consulting with medical and rabbinical authorities. The Roman Catholic Church traditionally and still officially accepts only rhythm methods of contraception. According to its teachings, the primary purpose of sexual intercourse is procreation, and any interference with procreation is considered to be a violation of natural law. Studies show that significant numbers of Catholics do use contraceptives, but this practice in violation of church teachings creates emotional difficulties for some Catholic women. White women raised as fundamental Protestants are more likely to report any sterilization operation than their black or Hispanic counterparts.<sup>2</sup> The Muslim faith also forbids contraception, because reproduction is seen as both a sacred duty and a gift. Although Muslims, on average, have the highest birth rates in the world, many Muslim couples use contraception, and some Islamic scholars approve of its use.

Use of family planning services has increased in recent years from 33% in 1995 to 42% in 2002. The National Survey of Family Growth, conducted by the U.S. federal

*I am really concerned about birth control. My family expects me to be a virgin when I marry. But we aren't ready to get married yet and I am not a virgin. I am afraid that my family will not understand this problem.*

**20-year-old Hispanic American woman**

government, revealed that in 2002, 42% of women 15 to 44 years of age had at least one family planning service in the past year.<sup>3</sup> However, white non-Hispanic women were more likely to receive family planning from private doctors or HMOs and less likely to receive their family planning from clinics, which deliver services to people with lower incomes and often have fewer resources.<sup>3</sup> The underlying reasons for these differences are complex, but may in part be because black and Hispanic women are less likely than white women to have health insurance or sufficient monetary means to pay private practitioners. The geographical distribution of clinics and private practitioners' offices may also help explain disparities in contraceptive use.

The same study compared specific contraceptive behaviors among these three groups of women. It found that white non-Hispanic women were more likely to use some form of contraception than black or Hispanic women (64.5% versus 57.4% and 59.0%, respectively). The most commonly used contraceptive method also differed among racial and ethnic groups. White women were most likely to rely on birth control pills, whereas black and Hispanic women were most likely to rely on female sterilization. However, male sterilization was much more common among white couples than it was among black or Hispanic couples (Figure 5.3). In a study to evaluate availability

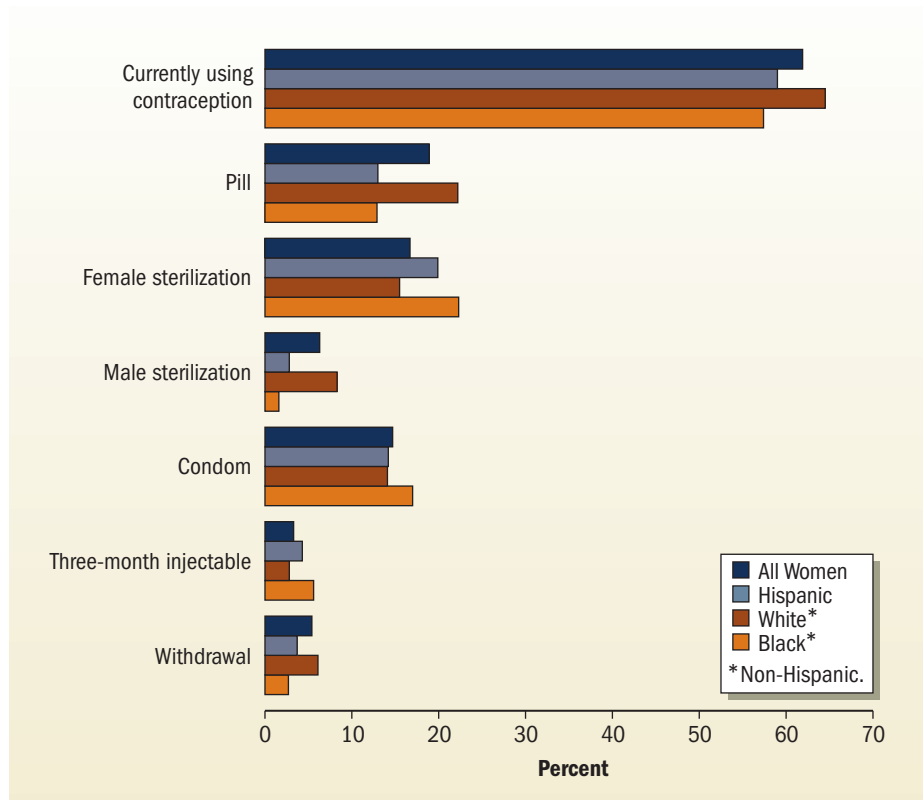
trends and use of publicly funded family planning clinics in the United States, researchers found that contraceptive services grew from 1994 to 2001. More than 6.7 million women received services, an 8% rise in clinics and a 2% rise in clients since 1994. However, the authors noted considerable variability in the states' ability to provide needed services, especially for low-income women.<sup>4</sup>

### Economic Perspective

Contraceptives have costs for both individuals and societies. At the personal level, the cost of different contraceptive methods is an important consideration for couples considering adopting a new method. The costs of using different contraceptive methods vary significantly, both for the initial purchase and for how often (if at all) the method needs to be repurchased. Birth control pills and diaphragms, for example, both have required office visit costs, but pills may cost about \$35 per month, whereas a diaphragm may have

*We are happily married, and someday we wish to have children, but right now our goals are to establish our careers. It would be really difficult for me to establish myself professionally if I become pregnant during the next three years.*

**26-year-old attorney**



**Figure 5.3**  
**Percentage of U.S. women, ages 15 to 44 years, using certain methods of contraception, distributed by ethnicity/race, 2002.**

**Source:** Mosher, W.D., Martinez, G.M., Chandra, A., Abma, J.C., and Wilson, S.J. (2004). Use of contraception and use of family planning services in the United States, 1982-2002. *Advance Data from Vital and Health Statistics*, no. 350. Hyattsville, MD: National Center for Health Statistics.

a one-time cost of about \$100. Additional costs are often associated with some methods. For example, contraceptive jelly or cream must be used with a diaphragm, and insertion and removal fees should be considered with an IUD. Understanding all the cost considerations should be part of any personal decision about contraceptive use.

Contraceptive failures also present cost considerations. Emergency contraception may require a prescription and office costs. The expenses associated with pregnancy or a child are part of the larger personal economic consideration when determining contraceptive costs. STI risk and the costs of STI screening and treatment also contribute to the costs of contraceptive failure. Additionally, there are personal emotional costs to contraceptive failure. If a woman is not prepared to handle an unwanted pregnancy or STI, her behavioral and contraceptive choices should reflect this personal priority.

As **Table 5.1** shows, contraceptive costs vary considerably in private and public settings. Couples may be able to save on contraceptive costs by using a publicly funded facility. Publicly funded family planning clinics currently provide care for more than one-quarter of the more than 20 million women who obtain contraceptive services from a medical provider.<sup>5</sup> Health insurance can sometimes also help defray contraceptive costs. Currently 27 states have laws that require insurers that provide coverage for prescription drugs in general to provide coverage of the full range of FDA-approved contraceptive drugs and devices.<sup>5</sup> Some states still permit employers or insurers to refuse to cover contraceptives on religious or moral grounds. Federal law requires insurance coverage of contraceptives for federal employees and their dependents. A 2002 study found that most insurance plans purchased by employers for their employees cover a full range of prescriptive contraceptives,<sup>6</sup> but half of women in the United States live in states that do not require insurers to provide coverage. About half of all Americans who do have employer-based health insurance obtain coverage from employers that self-insure, and self-insured plans are exempt from state coverage requirements. Additionally, one in six (17%) non-elderly women in the United States are uninsured.<sup>7</sup> Women who are Latina, low-income, single, and young are particularly likely to be uninsured. Insurance coverage remains an important cost determinant for personal contraceptive decision making.

Societal costs are an important economic dimension of contraception. Unintended pregnancy is a major public health and societal health problem in the United States. Roughly half of the 6 million pregnancies that occur in the United States every year are unintended. As a result of these unintended pregnancies, 1.4 million unplanned

**Table 5.1** Contraceptive Costs\*

<b>Low Cost/Low Reliability</b>	<b>Cost Per Use</b>
Fertility awareness	No cost
Male condom	\$.50–\$3.00
Female condom	\$.50–\$3.00
Spermicides	\$.50–\$3.00
<b>Higher initial Cost/ Higher Reliability</b>	<b>Cost for Method and Fitting</b>
Diaphragm	\$100–\$200 plus spermicide per use
Cervical cap	\$100–\$200 spermicide per use
<b>Hormonal Options/ High Reliability</b>	<b>Monthly Cost</b>
Combined pills	\$20–35 month plus examination costs
Progestin-only pills	\$20–35 month plus examination costs
Transdermal contraceptive patch	\$25–30 month plus examination costs
Injectables	\$60–\$75 (for 3months) plus examination costs
Vaginal ring	\$35–\$40 plus examination costs
<b>Long-term Contraceptives</b>	<b>Cost</b>
Implants	\$450–\$750 for 5years
IUDs	\$430 for up to 10 years
Intrauterine system (IUS)	\$395 for 5 years
<b>Permanent Contraception</b>	<b>Cost</b>
Female sterilization	\$1,200
Vasectomy (for males)	\$250–\$400

\*These are approximate costs for public-sector settings. Private settings have significantly higher costs.

**Source:** Association of Reproductive Health Professionals. (2008). Comparison chart average costs of contraception. Retrieved July 10, 2008, from <http://www.arhp.org/crc/compare-methods.html>.

births and 1.3 million abortions occur each year.<sup>8</sup> Universal access to contraceptives will be key to reducing both these numbers and their associated financial, emotional, and societal costs. From state to state, there have been vastly different levels of progress in service availability, laws and policies, and public funding to support access to contraceptive services. Together the personal and societal costs of contraceptive use, as well as contraceptive misuse and the lack of contraceptive use, play an enormous role in many areas of life in the United States.

## Epidemiology of Contraceptives

### Contraceptive Use

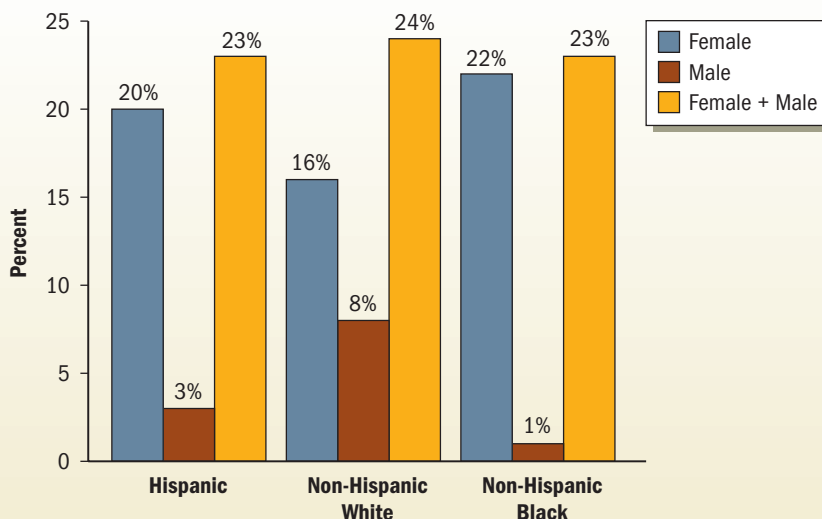
Most reproductive-age women in the United States use some form of contraception. Ninety-eight percent of all women who have ever had intercourse have used at least

one method of birth control.<sup>3</sup> The pill is the leading method of choice; female sterilization is the second-leading method. The National Surveys of Family Growth from 1982, 1995, and 2002 provide useful insights into trends and contraceptive practices among U.S. women. From 1982 to 2002, the percentage of women whose male partner had ever used a condom increased from 52% to 90%. Contraceptive use at the first premarital intercourse increased from 43% in 1982 to 79% in 2002. Contraception use varies among racial and ethnic groups. Non-Hispanic black and Hispanic women are more likely to use female sterilization than non-Hispanic white women. White women are more likely to rely on male sterilization. When male and female sterilization rates are considered together, there are minor differences in the three groups (see **Figure 5.4**).

Contraceptive decision making is a complex task for a woman and her partner. Men and women have somewhat different priorities when choosing a contraceptive method. According to a study conducted by the Kaiser Family Foundation, women consider the following characteristics to be “very important” when choosing a contraceptive method:<sup>9</sup>

- Effectively prevents pregnancy (90%)
- Effectively protects against sexually transmitted diseases (77%)
- Provides no health risk (77%)
- Is easy to use (51%)
- Requires no advance planning (45%)

Together these factors influence which contraceptive method is chosen, how regularly it is used, and ultimately how effective a contraceptive strategy will be for a woman.



**Figure 5.4**

**Percentage of U.S. women 15–44 years of age and their partners using sterilization for contraception by race and Hispanic origin, United States, 2002.**

**Source:** Adapted from: Mosher, W.D., Martinez, G.M., Chandra, A. Contraception and use of family planning services in the United States, 1982–2002. *Vital Health Statistics*, Hyattsville, MD: National Center for Health Statistics.

## Contraceptive Efficacy

Consistency and correct use are the two most important factors that determine contraceptive efficacy—how well a particular method is likely to work. However, even if used consistently and correctly, some methods are more likely to work than others. Contraceptive failure rates provide important information in the selection of a birth control method. Failure rates are determined by following large groups of couples who use specific methods of birth control for a specified time and then counting the number of pregnancies that occur. The larger the number of study participants, the more reliable the study results. A failure rate of 2% means 2 pregnancies per 100 women per year studied.

Two types of failure rates exist:

- The lowest observed failure rate represents a method’s absolute top performance, the highest efficacy ever achieved in a reputable clinical trial. This rate is often referred to as the failure rate with perfect use.
- The failure rate for typical users is an average rate based on an analysis of a range of reputable studies. The failure rate for typical users is usually lower than the best observed failure rates (**Table 5.2**).

In 2001, the U.S. government’s *Healthy People 2010* initiative set a goal of reducing contraceptive failure during the first year of use from 13% in 1995 to 7% by 2010. Researchers found that in 2002, 12.4% of all episodes of contraceptive use ended with a failure within 12 months after they were started. The study showed no clear improvement in contraception effectiveness between 1995 and 2002.<sup>10</sup>

Age influences the efficacy of the birth control method, with married older women generally being more successful contraceptors than unmarried younger women. The reasons for this discrepancy are not totally understood. It may be that younger women are less experienced with careful planning, are less likely to follow a routine, may be more fertile, may have intercourse more often, or may experience a combination of these factors. At any rate, young women who wish to avoid pregnancy need to take extra care with contraception.

Several methods of contraception have demonstrated high levels of effectiveness, defined as a failure rate of two or fewer pregnancies per 100 couples per year. These methods include pills (oral contraceptives), Norplant (hormone implants), Depo-Provera and Lunelle (hormone injectables), IUDs, spermicidal condoms (if used correctly), NuvaRing (vaginal hormone ring), Ortho Evra (hormone patch), and sterilization. Methods that have lower rates of effectiveness include diaphragms, cervical caps, sponges, and spermicidal agents, such as foams, creams, gels, suppositories, and vaginal contraceptive film. The effective-

**Table 5.2** Contraceptive Efficacy Rates: Percentage of Women Experiencing an Accidental Pregnancy in the First Year of Use

Method	Perfect Use	Typical Use
Pill (combined)	0.3	8.0
Tubal sterilization	0.5	0.5
Male condom	2.0	15.0
Vasectomy	0.1	0.2
Withdrawal	4.0	27.0
IUD (copper-T)	0.6	0.8
IUD (Merena)	0.2	0.2
Periodic abstinence	3.0–5.0	25.0
Implant	0.05	0.05
Patch	0.3	8.0
Diaphragm	6.0	16.0
Sponge: parous women	20.0	32.0
Sponge: nulliparous women	9.0	16.0
Female condom	5.0	21.0
Spermicides (alone)	18.0	29.0
No method	85.0	85.0

**Source:** Trussell, J. (2007). Contraceptive efficacy. In Hatcher, R.A., Trussell, J., Nelson, A.L., Cates, W., Stewart, F.H., Kowal, D. *Contraceptive Technology*. 19th rev. ed. New York: Ardent Media. Retrieved and modified July 14, 2008, from <http://www.contraceptivetechnology.com/table.html>.

ness of a birth control method depends in large part on how carefully and consistently it is used. A diaphragm does not work when it is left in a drawer, pills may be forgotten, and condoms may break or leak.

### Special Population: Adolescents

Teens and young adults often harbor many myths and misconceptions about contraception (see **Table 5.3**). Teenage girls tend to rely on their male partners for contraceptive implementation (withdrawal and use of condoms) during early sexual intercourse experiences and later adopt prescription methods. The average delay between first inter-

**Table 5.3** Myths and Misconceptions About Contraceptives

There are perhaps as many myths and misconceptions about contraceptives as there are facts. A few of the more common ones are summarized below:

**Myth: Birth control pills make a woman fat.**

Some women may gain a few pounds while taking the pill; some women may lose weight.

**Myth: A woman needs to take a break from the pill every year.**

There is no medical reason to have a break from the pill; it can be taken for many years without a break.

**Myth: IUDs make sex uncomfortable for men.**

IUDs are rarely felt by the male partner.

**Myth: Wearing two condoms will provide twice as much protection.**

Using more than one condom actually increases the risk of tearing due to friction.

**Myth: Condoms detract from sexual pleasure.**

Some condoms are designed to increase sensitivity. Not using a condom increases the risk of sexually transmitted infections.

**Myth: Plastic wrap can be a substitute for a condom.**

Plastic wrap, balloons, and plastic bags do not work as protection during sexual intercourse. They do not fit and can be easily torn or displaced during sex.

**Myth: A woman can't get pregnant while she is breastfeeding.**

Breastfeeding will delay ovulation and will reduce the chance of getting pregnant, but it is not a guarantee. Nursing mothers who are sure they do not want to become pregnant should use an additional form of birth control.

**Myth: Douching, showering, or urinating after sex will prevent pregnancy.**

Douching is not effective, and there is some evidence that it may increase the risk for pregnancy by propelling the semen toward the cervix. Showering or urinating will not stop the sperm that have already entered the uterus through the cervix.

course and the first visit for medical consultation is about one year, and this visit is often motivated by a pregnancy scare. Among single female adolescents using contraceptives, however, the pill and condom are the most popular methods. Teen contraceptive use does appear to be improving. Compared to teenagers in 1995, teenagers in 2002 were more likely to use contraception the first time they had intercourse. Teenagers in 2002 also were more likely to have used condoms or injectable methods of birth control and were less likely to use no method of contraception at all.<sup>3</sup> Unprotected adolescent sexual activity poses a risk not only for unintended pregnancy, but also for sexually transmitted infections (see Chapter 7).

## Contraceptive Methods

### Fertility Awareness Methods

Methods of fertility awareness include the calendar method, basal body temperature, and cervical mucus or ovulation method. These methods are based on avoidance of sexual intercourse during a woman's fertile time of the month, which includes the days previous to, during, and immediately following ovulation. An understanding of the female menstrual cycle is an essential foundation for using fertility awareness methods. Couples using fertility awareness tend to have more accidental pregnancies than couples using most other contraceptive methods (Table 5.2).

One of the most important changes during the menstrual cycle is the cyclical variations of hormones from the anterior pituitary and the ovaries. The cyclical variations in these hormones cause biological alterations throughout the cycle. These cyclical hormones cause fluctuations in basal temperature patterns and variations in the type of cervical mucus produced. Many women are able to feel these changes during their fertility cycles and use methods of fertility awareness as either contraceptive techniques or methods for contraception.

The calendar method requires determining when ovulation occurs by calculating the length of consecutive menstrual cycles. It is not reliably effective, especially for women who do not have regular menstrual cycles. Measuring the body's daily temperature (basal body temperature)

■ One type of birth control pills.



is another way to determine that ovulation has occurred. When progesterone is released immediately after ovulation, the body's temperature increases a small amount; however, women need to be certain that other factors, such as sexual activity, illness, or infection, are not causing these temperature fluctuations. Women also may determine the most fertile phase of the menstrual cycle by monitoring the change in the quality of the cervical mucus. During the fertile phase, women experience an increase in discharge and change in color and consistency of the mucus.

Fertility awareness methods have the advantage of causing no side effects, and anyone can use them. Also, a couple using fertility awareness with another contraception method has a lower risk of unintended pregnancy than a couple using either method alone. These methods help a woman understand her body and her cycles. It also empowers her with practical knowledge. This method may be used with other barrier forms of contraception. Fertility awareness methods have many drawbacks, however, including limited effectiveness, the need to abstain from sexual intercourse during many days of the month, and the lack of protection against sexually transmitted infections. For a woman who absolutely does not wish to become pregnant, fertility awareness methods for contraception have inherent liabilities. Timing of ovulation is not the only critical dimension of fertility awareness. Women can get pregnant a few days before and a few days after ovulation. Sperm can be viable for as long as five days, and eggs are viable for 24 hours. Fertility awareness methods depend on complex calculations, personal discipline, and good luck. Couples who rely on fertility awareness methods should plan on eventual failure of these methods.

### Hormonal Methods

#### Oral Contraceptives

Currently about 19% of women 15 to 44 years of age who use contraception take oral contraceptives, or birth control pills, making them the most commonly used nonsurgical method of birth control (see Figures 5.1 through 5.3). Since its introduction in the United States in the 1960s, the birth control pill has been one of the most extensively studied pharmacological preparations. The pill has changed

*Well, I am proof that you need to follow directions. I thought that using a diaphragm was enough. I don't like that spermicidal stuff, and I thought a diaphragm alone was good protection. So I am pregnant. I can't believe that this is because I didn't follow directions.*

**21-year-old pregnant woman**

considerably since its initial launch into the marketplace. Although the specific hormones are the same or similar, the dosages and formulations have undergone tremendous changes.

Oral contraceptives are now available in packets of 21, 28, or 91 pills to be taken once a day, preferably at the same time each day. It is important to take the pills as prescribed. There are many brands, which can have different hormone levels; different women find that they prefer different formulations of pills. Talking with a health-care provider about symptoms and concerns may help a woman find the pill that best suits her individual needs. Pills are usually started on the first or fifth day of a menstrual cycle. Sometimes women need to use a back-up contraceptive for the first few days of starting the pill. Back-up contraception should also be used when a pill user has extended vomiting or diarrhea.

Birth control pills offer many benefits, in addition to contraception, for women. Oral contraceptives are associated with lighter and less painful periods, decreased symptoms of premenstrual syndrome (PMS), and improved skin conditions. They may also provide some protection against benign breast disease, ovarian cysts, pelvic inflammatory disease (PID), ovarian cancer, and endometrial cancer. Long-term use of oral contraceptives also increases a woman's bone density, thereby protecting her against osteoporosis. Many perimenopausal women also receive benefits from oral contraceptives, such as decreased complaints associated with menopause. Although generally safe, birth control pills may be a health risk for some women, primarily smokers or women at risk for high blood pressure.

With birth control pills, the woman's own reproductive hormone cycle is generally suppressed, and the synthetic estrogen and progestin of the pill produce an artificial cycle to replace it. Without the natural signals, the egg follicle in the ovary cannot mature, and ovulation cannot occur. Another way the pill prevents pregnancy is by inducing development of thick cervical mucus, in contrast to the profuse, slippery mucus associated with ovulation. The thick cervical mucus impedes sperm movement through the cervical canal and inhibits chemical changes in sperm cells that would permit them to penetrate the outer layer of the egg. The pill also acts as a contraceptive by preventing the uterine lining from thickening as it normally does in the menstrual cycle. Thus, even if ovulation and conception did manage to occur, successful implantation would be quite unlikely.

Overall, birth control pills are highly effective in preventing pregnancy. Effectiveness rates of 99% can be expected when they are taken properly.

### Side Effects

Several side effects have been associated with birth control pills. They may include both negative and positive changes:

1. Shorter, lighter, and more regular menstrual periods. The reduced amount of uterine lining results in reduced blood loss.
2. Reduction or elimination of menstrual cramps. Cramping is often associated with ovulation; because ovulation does not occur with use of birth control pills, cramping is reduced or eliminated. Steady progestin exposure with birth control pills tends to reduce or eliminate cramps and menstrual discomfort.
3. Mood changes. Some women may experience diverse reactions to birth control pills, such as irritability, depression, or mood swings. Some women, particularly those with a history of depression or premenstrual syndrome (PMS), may find these mood-related changes intolerable and choose to discontinue the pill.
4. Reduction or elimination of premenstrual symptoms. In many women, PMS tends to be significantly reduced or eliminated with birth control pills.
5. Decreased libido. For some women, birth control pills may increase sex drive by reducing anxiety about pregnancy and alleviating discomfort or distaste at having to "get ready" for sex. From a biochemical perspective, however, some women may experience adverse reactions to birth control pills and experience a decrease in sex drive, depression, irritability, or mood swings.
6. Spotting or bleeding between periods. The estrogen level maintained in the body by the pill is often lower than the natural level produced by the ovaries. This lower level may trigger slight uterine bleeding, which is generally referred to as "break-through bleeding." Such bleeding is more likely to occur when a pill is taken late or forgotten.
7. Weight changes. Some birth control pill users gain weight with the pill; others lose weight with its use.
8. Acne improvement. Most women who have acne notice significant improvement when they take birth control pills, and some brands of pills are used to treat acne in some patients. However, birth control pills may cause chloasma, the darkening of skin pigment on the upper lip, under the eyes, and on the forehead. These effects are not common and

disappear when use of the birth control pills is discontinued.

Other effects associated with birth control pills include nausea, tender or larger breasts, headaches, and fluid retention.

### Risks and Complications

Risks and complications are a major concern for oral contraceptive users, although many of these fears are unfounded. Safety issues concerning oral contraceptives are mainly based on the use of pills with high levels of hormones (current brands contain less than 50 micrograms of estrogen) and the risks associated with smoking and use of oral contraceptives.

One concern about oral contraceptives has been that they may increase the risk of venous thromboembolism, or the formation of abnormal blood clots. Current evidence indicates that this increased risk is very small, and may not actually exist. In a recent meta-analysis study, only 10 of 16 studies examining oral contraceptives' influence on venous thromboembolism found "good" evidence for an increased risk.<sup>11</sup>

An increased risk of high blood pressure, especially for older women and obese women, also has been associated with use of birth control pills. Other concerns identified by earlier studies of high-dose oral contraceptives include an increased risk of stroke and heart attack. Recent studies show that there is no increased risk for either condition in women who preexisting risk factors, regardless of age. There is, however, an increased risk if the woman smokes or has hypertension. For women with cardiovascular risk factors or for women who smoke, nonhormonal methods of birth control may be the best option.<sup>12</sup>

Concerns have been raised about a possible connection between the pill and cancer in women. Because the pills were introduced five decades ago, sufficient time has elapsed to permit long-term studies on the possible association between the pill and cancer. Because some cancers depend on naturally occurring sex hormones, researchers have wondered if the hormones in oral contraceptives affect cancer risk. To date, hundreds of studies have been conducted. The results have not always been consistent. Researchers have learned that taking oral contraceptives *reduces* a woman's chances of getting endometrial and ovarian cancers, but some studies have shown an *increased* risk for breast and cervical cancers. Other studies have shown no increased risk for breast cancer among pill users.<sup>13,14,15</sup>

Some evidence has shown that long-term use of birth control pills is associated with changes in the surface of the cervix. These changes may make pill users more vulnerable

to cervical cancer and sexually transmitted diseases of the cervix, particularly chlamydia. Confounding factors, however, make it very difficult to draw conclusions based on this evidence. Contradictory studies have shown no significant alterations of the cervix that would lead to associated risks. Women who have more than one sexual partner or who are at risk of transmission of sexually transmitted diseases should consider using condoms in combination with birth control pills.

Several drugs can reduce the contraceptive effectiveness of the pill and increase the risk of bleeding between periods. These drugs include barbiturates, some anticonvulsants, antifungal medications, phenytoin (Dilantin), and certain antibiotics such as isoniazid, rifampin, and possibly tetracycline. It is probably wise for any woman using birth control pills to employ a backup form of contraception while taking any of these medications. Oral contraceptives also may prolong the effects of caffeine, theophylline, and benzodiazepines (e.g., Librium, Valium, and Xanax).

### Advantages

Birth control pills provide the maximum protection possible with a temporary contraceptive method. They do not require any additional supplies or equipment, and they do not interfere with the spontaneity of lovemaking. Also, they provide freedom from heavy menstrual cramps and excessive menstrual bleeding, and often relieve premenstrual symptoms. Menstrual periods become regular and predictable. Birth control pills provide some benefits as well as pregnancy prevention. For example, women who take birth control pills have a lower prevalence of ovarian and endometrial cancers, and benign breast disease and ovarian cysts are less common in them. Women who take the pill also may be at lower risk for developing PID, iron-deficiency anemia, and osteoporosis.

### Contraindications

A contraindication is a medical condition that renders a treatment or procedure that otherwise might be recommended inadvisable or unsafe. Women who are contemplating use of birth control pills should carefully review and evaluate the contraindications before deciding to proceed with them. Absolute contraindications—meaning that the pills absolutely should not be taken—specified by the FDA include the following conditions:

- Known cardiovascular disorder, now or in the past, such as thrombophlebitis, stroke, heart attack, coronary artery disease, or angina pectoris
- Impaired liver function

- Known or suspected cancer of the breast, uterus, cervix, or vagina
- Known or suspected estrogen-dependent neoplasia (abnormal tissue growth)
- Current or suspected pregnancy
- Abnormal vaginal bleeding
- Jaundice during previous pill use or pregnancy
- Malignant melanoma, now or in the past
- Smoking in women older than 35 years of age

Oral contraceptive use when breastfeeding has generated concern for infant safety. Studies are limited and although there is no evidence of harm, the question cannot be definitively answered. The American Academy of Family Physicians noted that the existing low-quality research evidence suggests that combined oral contraceptives may reduce the volume of breast milk but does not affect infant growth.<sup>16</sup>

### Types of Birth Control Pills

There are currently more than 50 birth control pill brands available in monophasic (each cycle provides 21 identical hormone-containing pills), biphasic (two-phase), and triphasic (three-phase) formulations. Triphasic pills, the most recently introduced combination pills, contain three different **progestin** doses for different parts of each pill cycle. The primary advantage of triphasic pills is that the overall amount of progestin in a cycle is lower than it is with regular, identical-dose pills.

Traditionally, oral contraceptives have been prescribed in 21-day cycles of active hormone pills followed by a 7-day placebo or pill-free interval that produces predictable withdrawal bleeding in most users. Some women who follow this regimen, however, experience nuisance breakthrough bleeding, spotting, or amenorrhea. New formulations of continuous oral contraceptive therapy provide continuous

hormonal dosing without periods of menstrual flow. The most commonly prescribed regimen for extended therapy is 84 days of active pill use followed by a 7-day hormone-free interval. Patient satisfaction studies indicate that many women prefer continuous therapy, as it provides fewer and lighter bleeding days and less bloating and menstrual pain.<sup>17</sup> Most clinicians do not feel that prescribed withdrawal bleeding has benefits or is necessary.<sup>18,19</sup>

Estrogen dose is generally considered to be the most important factor in selecting a pill. Side effects and complications are reduced with lower estrogen doses. Minipills are estrogen-free birth control pills that provide a continuous, low dose of progestin. They are slightly less effective than the phasic pills and often cause irregular menstrual patterns. Minipills do not totally suppress hormone production. Natural estrogen and progesterone production usually remains sufficient to trigger menstrual periods. There is less margin of error with these oral contraceptives, however. The likelihood of pregnancy increases substantially with just one or two missed tablets. Although menstrual periods tend to be less predictable with the minipills, women who use them generally experience fewer premenstrual symptoms, lighter or absent menstrual periods, decreased menstrual cramps, and less pain during ovulation.

Like other oral contraceptives, the minipill requires a prescription and does not protect against STIs, including HIV/AIDS. The minipill must be taken at the same time every day and it may be less effective when taken with some drugs. Women on the minipill face an increased risk of functional ovarian cysts and ectopic pregnancies. Menstrual bleeding may be irregular.

### Hormonal Implants

A hormonal implant is a matchstick-like small rod that releases a small, steady dose of hormones under the skin. Implants work like oral contraceptives, providing progestin that prevents ovulation. Progestin also thickens cervical mucous, preventing sperm from migrating through the cervix to the uterus. The implant is usually inserted under the skin of the upper arm, and it provides contraceptive protection for three years or until it is removed. The insertion procedure usually lasts about five minutes. A local anesthetic is used, and the procedure is usually painless. Hormonal implants are more than 99% effective in preventing pregnancy, but like other hormonal birth control products, they do not provide any protection against STIs. Hormonal implants are not as widely available as other forms of hormonal contraception because of the training that is needed for insertion and removal.

Please supply Figure UN5-03

- The minipill can be an effective form of birth control, but it must be taken every day, preferably at a consistent time.

- The patch is worn on the skin for one week and replaced on the same day of the week for three consecutive weeks.



Irregular menstrual bleeding is the most common side effect reported with the implant. This usually occurs in the first few months of use. After one year on the implant, most women report that they have fewer and lighter menstrual periods, and some women stop having periods entirely. Some women will report longer and heavier periods. Another possible side effect is difficulty in removing the implants, but this is minimized with an experienced practitioner. Fertility is not affected after the implant is removed. Benefits, cautions, and contraindications for implants are similar to those for the minipill. Studies have shown that the implant is safely tolerated and does not increase the risk for cardiovascular disease.<sup>20,21</sup>

The hormonal implant is highly convenient. Candidates for a hormonal implant include those women who do not desire children for at least three to five years and who are seeking a highly effective and convenient form of birth control. Women for whom other methods may be contraindicated or for whom contraceptive compliance is an issue may find the implant appealing. Women who are pregnant, or who have unexplained vaginal bleeding, serious liver disease, or a history of breast cancer should not use a hormonal implant. Although the initial cost of the implant can be several hundred dollars, this cost provides pregnancy protection for three years, making it a cost-effective solution in the long run. Many insurers will cover the cost of the hormonal implant.

### Hormonal Delivery Methods: Injectables, Patches, and Vaginal Rings

Other hormonal forms of contraception besides the pill and the implant include injectables, patches, and vaginal rings. They are all similar in that they provide a steady and predictable doses of contraceptive hormones that prevent ovulation and thicken the cervical mucus.

The most common hormonal injectable, or “shot,” is Depo-Provera. This injection of progestin is given intramuscularly, and it lasts three to four months. It has both a theoretical and actual-use effectiveness of almost 100%. It works best with a regular schedule of getting the injection every 12 weeks. In a study comparing the injectable and the pill, the injectable protected against bloating and mood swings but had an increased association with weight gain, bleeding episodes of more than 20 days, and missed periods.<sup>22</sup> Some women experience a delayed return to fertility after discontinuing the injections. Women who cannot take estrogen or women who are breastfeeding are not good candidates for the injectable. The risk of STI transmission presents with the injectable. One study found that women using Depo-Provera were more likely to develop gonorrhea or chlamydia than comparable women using oral contraceptives or other forms of birth control.<sup>23</sup> Women who use injectable contraception and who have multiple sex partners (or exposure to multiple partners through their partner) may wish to use condoms during sex to reduce their risk of infection.

The contraceptive patch is an adhesive patch that delivers hormones to the body. It is worn on the skin for one week and then is replaced on the same day of the week for three consecutive weeks. The fourth week is patch-free, and then the patch-use cycle resumes. The patch is durable and does not break away from the skin during warm weather, bathing, or vigorous exercise. Contraceptive patch users are exposed to higher doses of estrogen than pill users. Side effects to the patch are similar to oral contraceptives, though patch users report increased transient breast tenderness. The patch is less effective in women weighing 198 pounds (90 kilograms) or more.<sup>24</sup>

Vaginal rings are a relatively new hormonal contraceptive. One vaginal ring, the NuvaRing, is inserted in the vagina for three weeks and then removed for a week of menstruation. A new ring is inserted after the menstrual week. The ring releases a gradual and steady dose of



- Several contraceptive choices are available today.

hormones. Women must learn to correctly insert the ring. Most women do not feel the ring when it is properly inserted. It can occasionally dislodge when a tampon is removed, but the ring can be rinsed and reinserted if this happens. Less than 1 out of 100 users will become pregnant using the ring as directed. Typical use results in 8 out of 100 users becoming pregnant each year with the ring.<sup>25</sup>

## Barrier Methods

**Barrier methods** of contraception were the primary forms of contraception before the pill and IUD. After the introduction of the latter “high-tech” birth control measures, barrier methods were seen as messy, unromantic, and less sophisticated. Barrier methods do offer several advantages over other contraceptives. The condom has reemerged, particularly as a result of the AIDS epidemic, as a major form of protection against HIV infection as well as other sexually transmitted infections, such as herpes and gonorrhea. In addition, the diligent and proper use of condoms has demonstrated pregnancy protection rates fairly comparable to those seen with the pill and IUD. Another major compelling reason for the return to barrier methods is that they have virtually no associated health risks, with the exception of rare allergic responses or localized irritation.

Barrier methods, as the name implies, provide a physical or chemical barrier that prevents sperm from fertilizing eggs. All barrier methods (except plain condoms) are used with **spermicide**, a chemical that breaks down the cell membranes of sperm. Most barrier methods are used inside the vagina to cover the cervix and prevent sperm from entering the uterus. Male condoms are protective sheaths that enclose the penis during intercourse and ejaculation. Female condoms line the inside of the vagina and prevent semen from coming in contact with the vagina.

Barrier methods are very safe for the user, and problems and risks tend to be rare. One rare but important risk from barrier methods is toxic shock syndrome (TSS), which may be associated with the diaphragm, cap, and sponge. Although the TSS risk is small, it is recommended that the diaphragm, sponge, or cervical cap not be used during a menstrual period or when any type of vaginal bleeding occurs. Further recommendations include delaying using these devices four to six weeks after having a baby or until all postpartum bleeding completely stops. TSS risk also can be minimized by not leaving the devices in place in the vagina for longer than the recommended time period.

Vaginal birth control devices are also associated with some other complications. A **diaphragm**, sponge, or **cervical cap** may cause a vaginal bacterial infection if it is left in

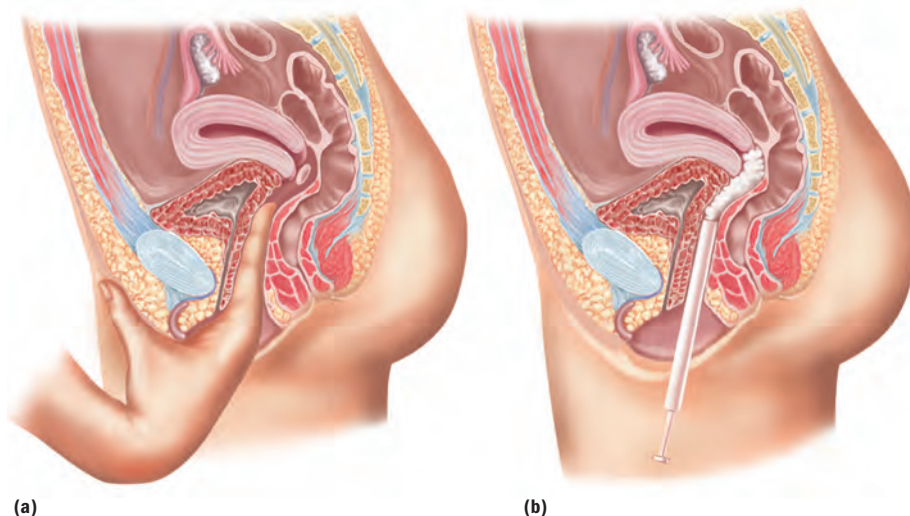
place for more than 24 hours. A foul-smelling discharge is an indication of such an infection and should be evaluated by a clinician. The diaphragm and cervical cap also may increase the risk of urinary tract infections, indicated by painful and frequent urination.

Although the diaphragm and cervical cap require fitting by a clinician, the other barrier methods may be conveniently purchased in pharmacies. With the exception of abstinence, condoms are the only contraceptive method that can reduce the risk of transmission of sexually transmitted infections, including HIV. Barrier methods are seen as non-invasive contraceptive measures by those women who do not want to have an IUD inside their uterus and who do not want to manipulate their hormonal system. They may also be used as backup contraceptive measures for a woman who has forgotten a pill or who questions an IUD's effectiveness. Some couples have intercourse sporadically or infrequently and find that barrier methods are appealing because they are effective but have to be used only when necessary. Older women and careful users find barrier methods to be more effective than do younger women, women who have frequent intercourse, and those who are not careful users.

## Spermicides

Spermicidal agents are available as creams, foams, films, suppositories, or gels. Foams, creams, and jellies are inserted into the vagina via an applicator (**Figure 5.5**). Suppositories are soft capsules that melt into a thick spermicidal liquid agent after being inserted into the vagina. Contraceptive film contains spermicide in a small, thin sheet of glycerine that is placed over the cervix. It melts in response to body temperature, and the spermicide in the film is released into the vagina. Spermicides are available without prescription in drugstores or from online retailers. Spermicides do provide some protection as mechanical barriers, by spreading over the surface of the cervix and blocking access to the cervical opening. More importantly, though, the active ingredient in most spermicides, nonoxynol-9 (N-9) inactivates sperm by breaking down the surface of the sperm cells on contact. To be effective, spermicides must be inserted deep into the vagina.

Spermicidal agents have the advantage of being effective immediately upon use, and they may provide some level of protection against STIs. They do have time limits and their effectiveness varies. It is important to carefully read and comply with the timing instructions of each type of spermicide. An additional application of spermicide is needed for each round of lovemaking, and the product should be left in place with no douching for at least six

**Figure 5.5****Spermicidal agents.**

**Hints:** (1) Woman should lie down after insertion; spermicide will leak out and have reduced effectiveness if she is in a vertical position. (2) No douching for 8 hours. (3) Keep extra supplies available—it is not possible to measure residual amounts of foam in containers. (4) Repeat intercourse requires repeat application of spermicide. (5) Wash reusable applicators with soap and water after use. Follow directions carefully for amounts and frequency of use.

hours after each round. Spermicidal agents may be used alone or with diaphragms, cervical caps, or condoms. Contraceptive protection is more effective when the agent is used with a barrier method. Spermicides have been found safe to use for extended periods. Studies have shown that exposure to different formulations and doses of spermicides containing N-9 is unlikely to cause harmful changes to cervical cells.<sup>24</sup>

### Diaphragm

A diaphragm is a dome-shaped latex cup rimmed with a firm but flexible band or spring (**Figure 5.6**). It must be first coated with a spermicidal agent before being inserted into the vagina before intercourse. The spermicidal agent is important because it creates a tighter seal around the cervix and kills sperm on contact. The diaphragm is anchored in place by the pubic bone, and it is sized to fit each woman. Because the diaphragm must fit the cervix it is to cover, this contraceptive method requires clinician examination, fitting, and prescription. During the fitting, it is important to evaluate the comfort of the diaphragm as well as to practice its insertion and removal.

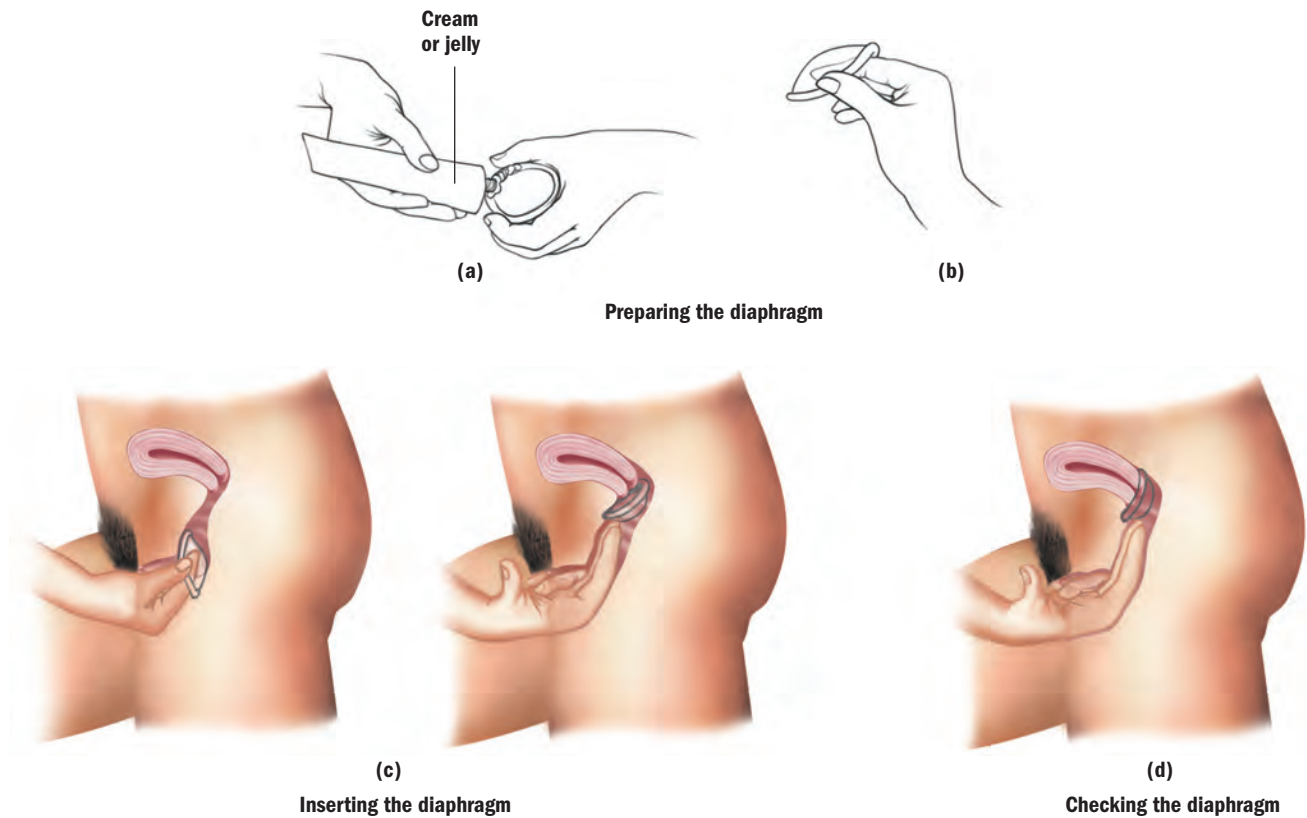
Diaphragm effectiveness depends on proper fit and diligent use. A diaphragm that is too small may not stay in place and slip off the cervix; one that is too large may press on the urethra and cause a urinary tract infection. Application of the spermicidal cream or gel and insertion of the diaphragm can occur as long as six hours before intercourse. If intercourse occurs more than once, it is important to use an additional application of spermicide for each event, regardless of how short a time the diaphragm has been in place. The diaphragm should not be removed or dislodged to add the cream or gel for a follow-up round of lovemaking; spermicide can be inserted directly into the vagina.

Like the cervical cap, the diaphragm may be inserted as long as six hours before intercourse and need not interrupt or interfere with lovemaking. It should be left in place for a minimum of six hours after intercourse to allow the spermicide to kill all of the sperm. Douching should not occur during that time. A diaphragm is not recommended during menstruation.

The diaphragm should not remain in place longer than 24 hours. After removal, the diaphragm should be washed with warm water and soap, rinsed, and dried with a towel. Petroleum jelly or oil-based lubricants should not be used with a diaphragm for lubrication because they will weaken the latex. If additional lubrication is desired, a water-soluble lubricant, such as K-Y Jelly or Astroglide, may be used.

- A diaphragm is a dome-shaped latex cup rimmed with a firm but flexible band or spring.





**Figure 5.6**

**Diaphragm. Hints:** (1) Apply 1 to 2 tsp of spermicide to diaphragm rim and inside dome. (2) Insert the diaphragm by holding it in one hand, squeezing rim together in center. With other hand, spread labia and insert diaphragm. (3) Diaphragm is inserted deep into vagina with the anterior rim tucked into place last. (4) Check for proper placement of the diaphragm. Cervix is felt through dome—feels like tip of the nose. (5) To remove the diaphragm, assume the squatting position and break the suction by placing index finger between diaphragm and pubic bone. Hook finger behind anterior rim, bear down, and remove.

Side effects with the diaphragm are infrequent. An allergic response to the latex of the diaphragm or to the spermicide is possible but rare. Urinary tract infections are another possible side effect of the diaphragm. Some diaphragm users feel bladder pressure, rectal pressure, or cramps when the diaphragm is left in place six hours after intercourse. A smaller diaphragm or a different rim type might help relieve this side effect. Women with poor muscle tone of the vagina, a vaginal or cervical infection, vaginal bleeding, or a history of toxic shock syndrome should not use a diaphragm. After childbirth, weight loss or gain of more than 10 pounds, pelvic surgery, or a miscarriage or an abortion, women should have their diaphragms refitted to ensure proper size.

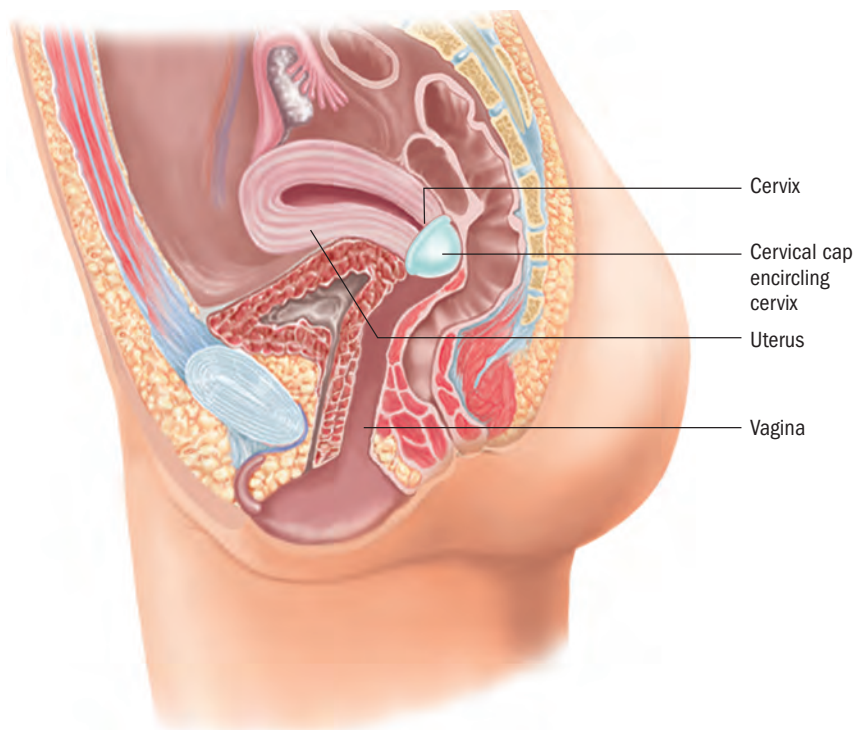
### Cervical Cap

The cervical cap, shown in **Figure 5.7**, looks and works like a small, deep diaphragm. It is made of latex and is used with a spermicidal agent. The cap fits snugly over the

- The cervical cap looks and works much like a small, deep diaphragm; it is made of latex and is used with a spermicidal agent.



cervix and is held in place by suction. Caps require a clinician's examination, fitting, and prescription. A cervical cap should be replaced each year for best protection. Due to normal anatomical variances, not every woman can be properly fitted with a cervical cap. Because it is smaller than a diaphragm, some women find that insertion and removal of the cap is more frustrating and time consuming than using a diaphragm.

**Figure 5.7**

**Cervical cap. Hints:** (1) Fill cap approximately two-thirds full of spermicide. (2) Insert the cap by holding it in one hand, squeezing rim together in center. With other hand, spread labia and insert cap. (3) Cap is inserted deep into vagina. Use the index finger to press cap around the cervix until dome covers the cervix. (4) To avoid odor and reduce the risk of complications, remove within recommended time. (5) To remove the cap, break the suction by placing index finger between cap and pubic bone. Grasp dome and pull down and out.

The cap's effectiveness depends on proper fitting and placement each time it is used. Like the diaphragm, the cap may be inserted hours before lovemaking, but unlike the diaphragm, it can be left in place up to 48 hours. Fresh spermicidal agent should be used with each round of sex. Women should check the seal of the cap before sex and reposition it over the cervix if it has become dislodged. If the cap has moved during sex, additional spermicide should be used. A woman should not douche while the cap is in place, and a cervical cap should not be used during menstruation.

Side effects of the cervical cap are rare, but some women or their partners are allergic to latex. After childbirth, weight loss or weight gain of 10 pounds or more, pelvic surgery, a miscarriage, or an abortion, women should have their cervical caps refitted to ensure proper sizing. The cap is not recommended for women who have a history of toxic shock syndrome or a history of reproductive tract infections. Unlike the diaphragm, women with poor vaginal muscle tone or a history of urinary tract infections can use a cervical cap.

### Vaginal Shield

The vaginal shield, also known as Lea's shield, is a new form of barrier contraception now available in the United States. It is a soft silicone cup with a loop used to facilitate removal from the vagina. Like the diaphragm and cap, it is reusable and covers the cervix. However, the shield is not

held in place by the cervix; the shield works by volume and is held in place by the vaginal muscles. Because it does not depend on vaginal length or cervical size, one size of the shield fits all women.

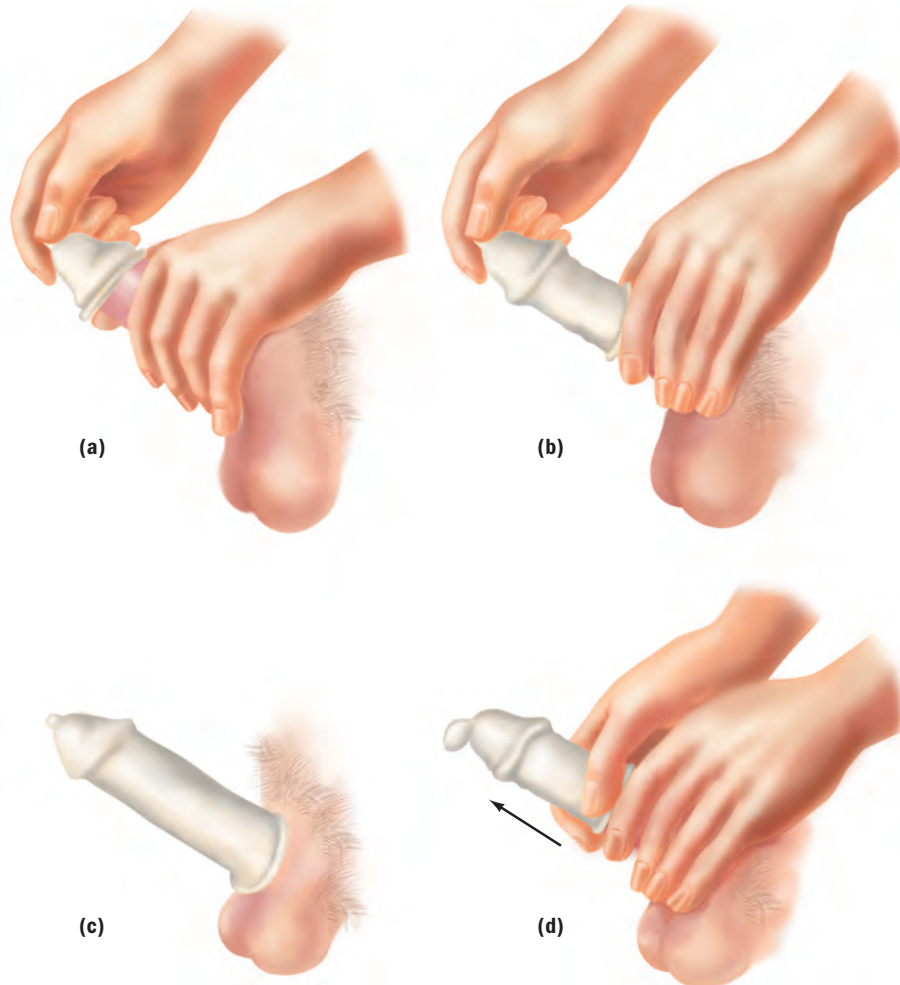
Like other vaginal barrier methods, the shield works by completely covering the cervix. It is inserted like a tampon, and the air trapped between the cervix and the shield creates a snug fit in the vagina. Like other vaginal barrier methods, it is recommended that spermicides be used with the shield. Most women have little or no difficulty inserting and removing the shield. Most women do not feel the shield when it is in place but occasionally a male partner can feel the device. The shield should not be used during menstruation. The shield requires a prescription and is not available over-the-counter in drugstores.

### Condom

**Condoms (Figure 5.8)** recently have resurfaced as a popular barrier contraceptive. Women are now responsible for nearly 40% of total condom sales, and condoms are advertised in women's magazines. Condoms are available with lubricants and spermicides and come in a variety of colors and textures. Condoms are portable, disposable, and easy to purchase. They may be discreetly carried and are, therefore, easily available when necessary. Women do not experience any post-intercourse vaginal leaking, and condoms permit the male partner to take an active role in birth control. Latex and polyurethane condoms are also the only

### Figure 5.8

**Condom use. Hints:** (1) Avoid prolonged heat or pressure—condoms should not be stored in glove compartments or wallets. (2) Use only once and throw away. (3) If condom should break, use an extra dose of spermicide. (4) Put condom on an erect penis *before* it comes into contact with the vagina, pinching the tip of the condom to prevent air from becoming trapped. (5) Hold onto the rim of the condom as the penis is withdrawn from the vagina. (6) Do not use petroleum-based lubricants with condoms. (7) Latex condoms are more impermeable to the AIDS virus, though some individuals are sensitive or allergic to latex.



methods that effectively prevent STIs, including HIV infection. For couples who want to be especially diligent in their birth control efforts, condom use can supplement other forms of contraception.

Condoms should be stored in a cool, dry place, because storage in a heated area (such as a glove compartment) can result in their deterioration. Latex condoms should not be lubricated with an oil-based lubricant (such as Vaseline), which can weaken the latex. If extra lubrication is desired, a water-soluble lubricant (such as K-Y Jelly or Astroglide) or prelubricated condoms can be used. Prelubricated condoms may also help to reduce friction during intercourse and reduce the risk of vaginal or penile irritation.

If a couple selects condoms as their method of birth control, it is essential that a condom be used for every love-making event. Effective use of this contraceptive method requires commitment and discipline. A spermicide-coated condom affords the most effective birth control protection and offers additional protection from STIs. The clear fluid that collects on the end of an erect penis may contain live

sperm, so the condom should be placed on the penis before the penis comes near the vagina. It is important that room be left at the end of the condom to collect the semen. A person should pinch the tip of the condom before putting it on; this will ensure that there is room for the semen and will prevent air bubbles, which increase the risk for breakage, from forming. A condom that is stretched very tightly over the head of the penis is more likely to break or to force the seminal fluid along the shaft of the penis and out the upper end of the condom. The penis should be withdrawn from the vagina before the erection subsides, and the condom should be held during this withdrawal of the penis. As the penis begins to lose its erection, the condom will collapse and the contents of the condom may spill within the vagina. A quick visual inspection to ensure that the contents are inside and that no spill or leakage has occurred is a good idea.

Couples should use condoms both during and after treatment for any reproductive tract infection as a precaution against reinfection. Use of a latex or polyurethane con-



- Condoms can be latex, polyurethane, or lambskin. Latex and polyurethane condoms offer better protection from sexually transmitted diseases than other types of condoms.

dom is encouraged for women who are at risk for sexually transmitted diseases—even for those who are using an effective form of birth control, such as the pill. Lambskin and novelty condoms do not protect against diseases. Condoms also should be used on any items that are used during sexual activity that penetrate both partners. Examples would include shared sex toys, such as vibrators and dildos. In such cases, condoms should be changed between insertions if penetrating both vaginal and anal regions. Couples should not use more than one condom at a time, and condoms should never be reused.

### Female Condom

The **female condom** is another form of barrier contraception. It is the only female-initiated contraceptive method currently available that can prevent pregnancy and sexually transmitted infections. The female condom, approved by the FDA in 1993, is now available in many countries and is often promoted as a woman-controlled device for HIV protection. In spite of the educational details necessary for individual use, the female condom has enormous potential for improving women's choices for contraception and STI prevention, both in the United States and around the world. Twelve million female condoms are distributed annually, but this represents less than 1% of global male condom distribution.<sup>27</sup> The condom lines the entire vagina, preventing the penis and semen from coming in direct

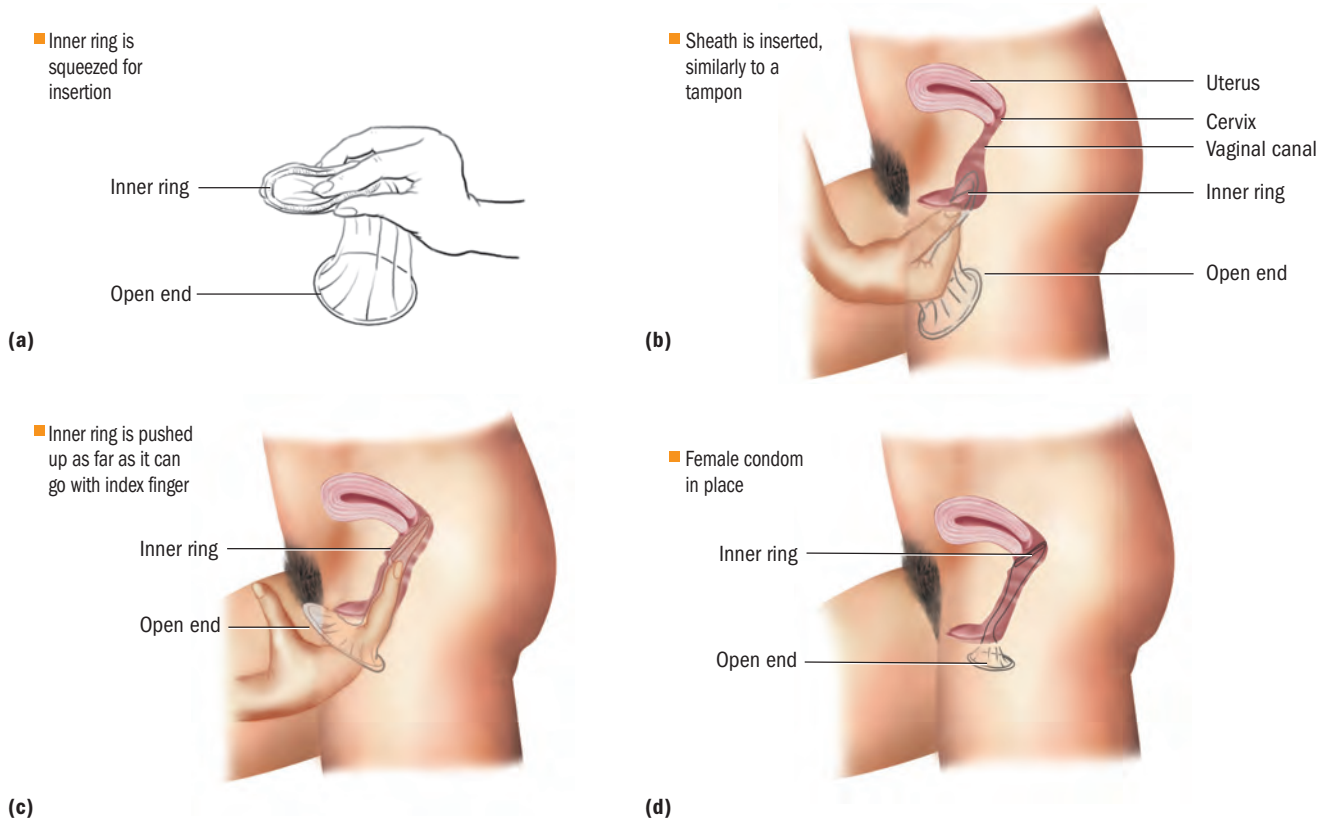


- The female condom works by lining the entire vagina, thereby preventing the penis and semen from coming in direct physical contact with the vagina.

physical contact with the vagina. It consists of a sheath with a closed ring at one end and an open ring at the other. The female condom covers part of the external genitals, providing extra protection from semen leakage. Although lubricant is contained inside the female condom, additional lubricant is provided, and it should be used.

The female condom gives the woman more control and a sense of freedom with her personal protection. A woman does not need to see a clinician because the female condom is available in some drugstores and through online retailers. It is safe and fairly effective in preventing both pregnancy and sexually transmitted infections. The female condom can make rustling noises during sex, but additional lubricant will help diminish this effect. The size and shape of the condom are unappealing to some women. Proper insertion of the penis into the condom is essential for the condom's effectiveness. Because the female condom is made of polyurethane, not latex, it may be more appealing to individuals who have latex allergies, and because polyurethane transmits heat well, some couples find increased pleasure with the female condom. The female condom is not as widely available as the male condom and it costs more. The female condom can be inserted as long as eight hours before sex. A study comparing the efficacy of the male and female condoms found that although mechanical problems are more common with the female condom, both devices involve a similar risk of semen exposure.<sup>28</sup>

Use of the female condom requires paying attention to details, as well as patience and practice (see **Figure 5.9**). Before insertion, the sides of the female condom should be rubbed together to evenly distribute the lubrication inside the pouch. The female condom should be stored in a cool, dry place and it should be used only once. It should not be

**Figure 5.9****The female condom.**

used with a male condom, diaphragm, cervical cap, or sponge. The only side effect to the female condom is possible allergy to the lubricant.

### Contraceptive Sponge

The **contraceptive sponge** is a barrier method that acts as both a cervical barrier and a source of spermicide; it also absorbs ejaculated semen. The sponge is a soft disk-shaped device made from polyurethane foam. One side of the sponge has a dimple that fits up against the cervix, and the other side has a nylon loop that facilitates removal. The sponge is relatively inexpensive, available without a fitting or a prescription, and available in drugstores and online retailers. The sponge is portable, disposable, and can be inserted a few hours before having sex. It does not interrupt lovemaking. The sponge is designed for 24 hours of use, and it should remain in place for 6 hours after the last round of sex. It does not require repeat applications of spermicide for additional sex, and it is less messy than some other forms of spermicidal agents. Because the sponge covers the cervix, it may offer some protection against

STIs, but this protection should not be considered to be reliable. The effectiveness of sponge birth control, like all methods, varies depending on how it is used. The sponge is more effective in women who have never given birth than in women who have. Individual sponges cannot be reused. The sponge can be easy to use, although some women may have difficulty learning to properly insert and remove it.

- The contraceptive sponge acts as both a cervical barrier and a source of spermicide. It absorbs ejaculated semen.



## Permanent Methods

Healthy men and women usually have many years of fertility after they have completed their childbearing. Surgical **sterilization** offers permanent birth control for individuals who do not wish to have any more children. Female sterilization is second only to oral contraceptives in overall popularity as a method of birth control (see Figures 5.1 and 5.2). Today, advantages of sterilization include a very high rate of effectiveness and relatively quick, simple procedures that have minimal complications and side effects. An important disadvantage of sterilization as a form of birth control is that although it can sometimes be surgically reversed (a much more complicated procedure than sterilization), it should be considered a lifetime permanent choice to end childbearing. Also, sterilization, for men and women, provides no protection against STIs.

One of the most important decisions for a couple is which partner will undergo permanent sterilization. Women have the option of having a tubal ligation (tubes “tied”), and men have the option of a vasectomy. The most common choice is for a tubal ligation. This may be due to several factors. Many couples don’t realize that a vasectomy poses far less risk to men than the risks associated with tubal ligation for women. Men may also be reluctant to have the procedure. A vasectomy is usually performed in a physician’s office and a ligation requires a hospital setting.

### Female Sterilization (Tubal Ligation)

Trends among contracepting older reproductive-age U.S. women show a dramatic increase in sterilization rates. Sterilization of women has been made much easier in recent years by the development of new instruments and new techniques that have replaced laparotomy, which involves surgically opening the abdomen and tying off the fallopian tubes. Because a significant number of unwanted subsequent pregnancies occurred with this procedure, newer techniques were developed that destroy or remove part of the fallopian tube.

*We have three children and that is our family. The decision for sterilization was not difficult once we realized that we did not wish to become pregnant again. Our sex lives have improved—there is no need to worry about birth control anymore.*

**35-year-old woman**

Laparoscopic sterilization, also known as “band-aid” surgery, is one of these techniques. A laparoscope, a tube equipped with light and magnification lenses (see **Figure 5.10**), is inserted into the abdomen to provide a view of the uterus and tubes. The doctor uses a cauterizing instrument, rings, or clips to seal the fallopian tubes.

Minilaparotomy is the latest technique for tubal ligation. It requires a small abdominal incision and is performed under local or general anesthesia. The fallopian tubes are lifted out through the incision, cut, sealed, and replaced. The entire procedure takes a few minutes; the woman is able to go home after a few hours of recovery and observation.

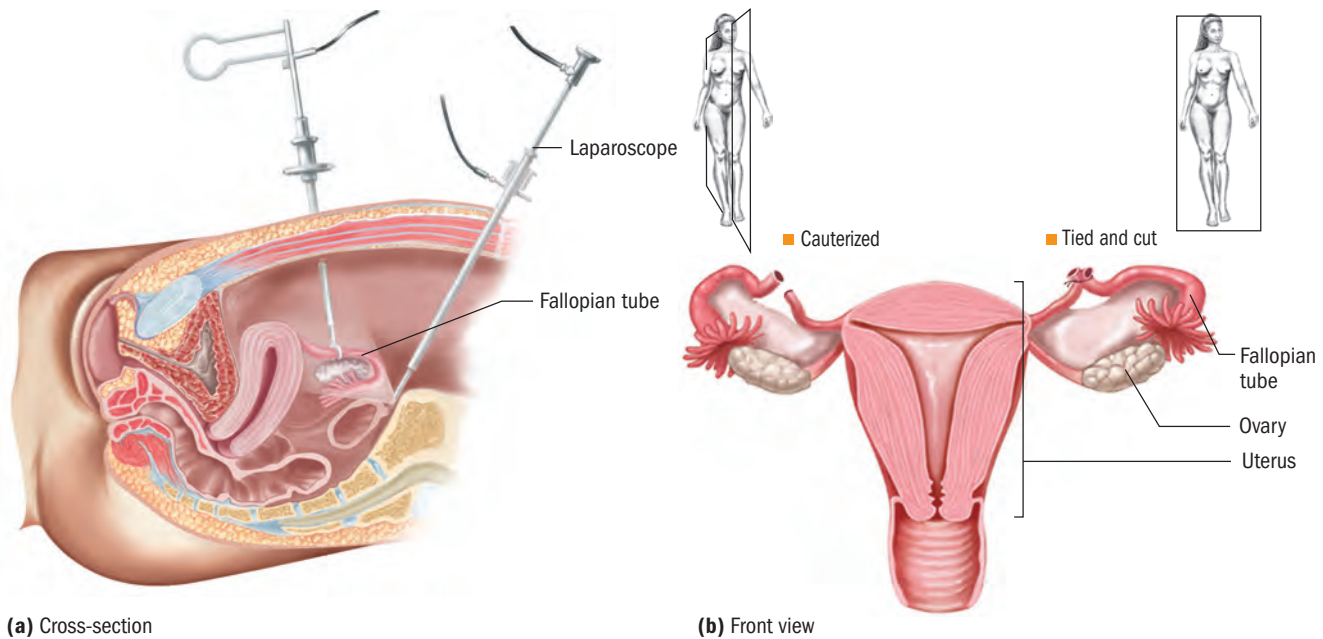
A new, less invasive form of female sterilization, called Essure, has been available since 2002. It is performed in an ambulatory clinic setting. The procedure requires the insertion of a small plug through a hysteroscope into each of the fallopian tubes. The plugs cause a local inflammatory process that results in tubal occlusion within three months of insertion. A back-up form of birth control is needed for three months; a radiologic confirmation test then is performed to confirm that the tubes are completely blocked. The method offers high sterilization efficacy without incisions, general anesthesia, or a prolonged recovery period for the woman.<sup>29</sup> The procedure has also been found to be more cost-effective than laparoscopic tubal ligation.<sup>30</sup>

### Male Sterilization (Vasectomy)

A **vasectomy**, a 30-minute surgical procedure usually performed under local anesthesia in a physician’s office, can permanently sterilize a man. In most cases, one or two small incisions are made just through the skin of the scrotum. The vas deferens is lifted through the incision and the two ends are tied or cauterized to seal them. Most men are able to return to work and normal activities the day after surgery but are advised to avoid strenuous activities, such as straining and lifting, for the first week after surgery.

Vasectomy does not provide immediate contraceptive protection. Live sperm may remain in semen temporarily because mature sperm are stored in the vas deferens above the surgical site. As a consequence, men often are advised to use backup contraception for approximately 15 to 20 ejaculations.

Vasectomy offers several advantages. It is extremely effective as a permanent form of birth control and has a very low risk of complications compared to temporary forms of birth control or tubal ligation for women. Vasectomy does not cause any change in hormone levels or in the



**Figure 5.10**

**Female sterilization. Hints:**

(1) Resume normal activity slowly after procedure. (2) Most sutures are dissolvable. (3) Take mild analgesic for discomfort. (4) Resume sexual activity when comfortable. (5) Seek medical attention if temperature rises above 100°F, or if acute pain, discharge from incision, or bleeding is experienced.

appearance or volume of semen. It also permits the male partner to take an active role in contraceptive responsibility.

### Other Forms of Contraception

Not all contraceptive methods are appropriate for general use. Some methods are valid approaches to birth control, yet are associated with fairly high failure rates. **Abstinence** refers to no penis-in-vagina intercourse and depends on a couple's sustained willpower. Some couples consider oral sex or mutual masturbation, which do not result in pregnancy, a form of abstinence. In theory, abstinence is 100% effective; unfortunately, this method requires considerable sacrifice and has a high rate of failure in practice.

Withdrawal, also known as coitus interruptus, refers to interrupting lovemaking before ejaculation of semen. Al-

though it may seem logical that conception requires semen and therefore requires ejaculation, withdrawal often fails as a form of birth control when the man is unable to remove his penis in time or because some sperm are released before ejaculation. The failure rate for withdrawal as a form of birth control is fairly high because it is difficult for a man to know exactly when ejaculation will occur. It also is mentally and physically difficult to suddenly stop in the midst of lovemaking. Withdrawal does not protect either partner from sexually transmitted infections.

### Lactational Amenorrhea Method (LAM)

Breastfeeding women may use the lactational amenorrhea method, alone or with other forms of contraception, for the first six months postpartum. For LAM to be effective, the woman must be breastfeeding exclusively on demand, be amenorrheic (no vaginal bleeding after eight weeks postpartum), and have an infant younger than six months. The failure rate of this contraceptive method is reported to be less than 2% if these criteria are met.<sup>31</sup> If pregnancy is not desired, another method of contraception must be used as soon as menstruation resumes, breastfeeding is decreased, or the baby reaches six months of age.

*"He told me that he knew what he was doing. It was the first time that I had sex. He pulled out but I still got pregnant. I was so foolish to think that I would not or could not get pregnant."*

**16-year-old student**

### Intrauterine Devices

An intrauterine device (IUD) is a small object that a clinician inserts into a woman's uterus. Today, the IUD is the most widely used contraceptive in the world.<sup>32</sup> The IUD, however, is not as popular in the United States as it is in the rest of the world. For example, a recent study in California found that although the IUD is available at no cost from the state family planning program for low-income women, only 1.3% of female patients obtain IUDs annually.<sup>33</sup> Modern forms of the IUD provide very effective and reversible long-term protection from unwanted pregnancy without increasing the risk of reproductive tract infections. Although initial costs for an IUD may be higher than other forms of contraception, their long-term effectiveness is an important consideration, and IUDs yield a very low cost over time.

There is not yet scientific consensus about how IUDs prevent pregnancy, and their different designs present different theories for their effectiveness. The horizontal arms of some designs contain copper that is slowly released into the uterine cavity, preventing sperm from successfully reaching eggs from a woman's ovaries. Other types contain a progestin hormone that is slowly released, causing a thickening of the cervical mucous that prevents sperm migration to the egg. All IUDs are believed to establish a chronic sterile inflammatory reaction in the uterus that interferes with sperm function so that fertilization is less likely to occur. IUDs also interfere with implantation, but the extent to which this contributes to their contraceptive effectiveness is not known.<sup>32</sup>

There are currently two highly effective forms of IUDs available in the United States. One form is the Copper T-IUD, which is effective for at least 10 years. This long-term effectiveness presents a good alternative to a younger woman who might be contemplating sterilization. The other available IUD is the LNG-IUS, which may be left in the uterus for up to seven years. It is more effective than the copper IUD and is sometimes used as a treatment for endometriosis or as an alternative to hysterectomy for menorrhagia, a condition characterized by abnormally heavy and prolonged menstrual periods at regular intervals. Both IUD forms rival surgical sterilization in their effectiveness in preventing pregnancy. Less than 1% of users will experience an accidental pregnancy in the first year. These IUDs prevent ectopic pregnancies, and they provide some protection against endometrial cancer. Menstrual cramping is decreased with the IUDs, and menstrual blood flow is often dramatically reduced. It has been suggested that IUDs may not be offered to young women as often as hormonal contraceptives due to provider educational and training issues.<sup>33</sup>

### Emergency Birth Control

Contraceptive methods are not universally effective, and accidents can occur with any method or any couple. A bout of a gastrointestinal illness can reduce the effectiveness of the pill; condoms may break; a cervical cap can become dislodged; and a diaphragm can be removed too early. These unintended consequences can lead to an unplanned pregnancy. Women, their partners, and clinicians have often had a need for measures that can provide immediate additional back-up protection. Emergency contraception (EC) is known by several other names, including emergency birth control (EBC), the morning-after pill, and postcoital contraception. These terms all relate to a therapy or a procedure used to prevent pregnancy after an unprotected or inadequately protected act of sexual intercourse. A recent review by the Cochrane Group found several interventions are available for emergency contraception. Their review concluded that the copper IUD inserted after

please supply UNF 5.11

- An intrauterine device (IUD) is a small object placed in the uterus through the cervix by a clinician.

*"I did not know that my regular birth control pills could be used for emergency contraception. I had missed a couple of them because I forgot to take them with me on a weekend trip. My pharmacist was very helpful in explaining my EC options."*

**20-year-old college student**

unprotected intercourse was effective in providing emergency contraception. Of the hormonal methods, the group concluded that 25–50 mg of mifepristone was superior to other hormonal regimens. Other hormonal regimens and dosages were also effective.<sup>34</sup>

EC is not intended for routine use, but as a backup in the event of unprotected sex or a contraceptive failure. Emergency contraception should not be confused with medical abortion. A medical abortion is used to terminate an existing pregnancy. EC is effective only before a pregnancy is established. *EC is not a medical abortion drug.* EC works by inhibiting or delaying ovulation or by preventing the implantation of a fertilized egg in the uterus. EC is ineffective after implantation. Studies indicate that EC confers no increased risk to an established pregnancy or harm to the developing embryo.<sup>35</sup>

In the United States, the availability of hormonal emergency contraception has been a political story as much as a medical story. Conservative groups have organized heavy resistance to the availability and use of the product. In 1999 the Food and Drug Administration (FDA) approved a form of EC for use with a doctor's prescription. In 2003, a combined panel of the FDA's Advisory Committee on Reproductive Health Drugs and the Advisory Committee on Nonprescription Drugs concluded that the EC regimen was safe for nonprescription status. However, EC was not available for over-the-counter (OTC) sales until 2006. The approved form is a prepackaged dose of progestin hormones, the same hormone used in daily oral contraceptives.

Plan B is the only dedicated EC product currently available in the United States. It is a two-dose regimen that should be taken within 120 hours of unprotected sex in order to be effective. Previously available only by prescription, it is now available in most major pharmacies. Plan B is not stocked on the shelves, but is available from the pharmacist. Men or women 18 years old or over may purchase Plan B. Early data indicate that availability of Plan B increased after it was awarded OTC status.<sup>36</sup> Some insurance plans will provide coverage and reimbursement for Plan B; however, most will require a prescription from a clinician. Although Plan B is the only dedicated product specifically marketed for emergency contraception in the United States, specific dosages of 21 brands of oral contraceptives on the market today can also be used for emergency contraception.

Many women still do not understand EC. Survey data show that many women are unaware of EC, misunderstand its use and safety, do not have convenient and prompt access to it, or do not use it when a need arises.<sup>37</sup> Some groups have argued that EC availability would lead to increased sexual behavior risk taking; others have argued that EC would lead to lower unintended pregnancy rates. Long-term studies are not yet available to answer these important concerns. One study compared women seeking EC and women seeking family planning to be quite different. The EC group had higher levels of education, were more likely to have been protected at their last intercourse, and were less likely to have a previous STI.<sup>38</sup>

## Gender Dimensions

### CONTRACEPTION

Historically, contraceptive options have been largely for women. This may be due in part to the reality that women, not men, get pregnant, or the fact that family planning research and contraceptive services have focused disproportionately on women. The female reproductive system has been extensively studied for centuries. Studies on male contraceptives have been seriously limited. Today options for the male range from mildly effective (withdrawal) to highly effective (vasectomy). It could be argued that the remarkable effectiveness of modern hormonal contraceptives for women has given women high levels of protection, but that it has absolved men from participating in contraceptive protection and decision making. Men are often silent partners in preventing unwanted pregnancies.

Several factors contribute to the dominant role women play in contraceptive decision making and the availability of services for them. Modern medical care services provide ready access to contraceptive information and options for women. Women are taught and encouraged to see a gynecologist in their teens. There is not a parallel system for

men. Society educates girls and young women early that the penalty of unprotected sex will be an unwanted pregnancy, shame, and economic hardships. The educational message to boys and young men is not the same, although legal issues surrounding paternity and child support in recent years have introduced the penalty concept to an unwanted pregnancy.

Multicultural surveys demonstrate that men are willing to participate in contraception, and their female partners trust them to do so.<sup>41</sup> Male contraceptive research includes hormonal and nonhormonal methods. Today the most significant barriers for expanded use include limited delivery methods and perceived regulatory obstacles. New reversible hormonal advances in oral, implant, and injectable androgen methods are promising options for men.<sup>42</sup> Recent international clinical studies have shown 90–95% efficacy rates for male hormonal methods.<sup>41</sup> Nonhormonal male contraceptives include products that target sperm motility. Although considerable progress has been made in clinical research on male contraception, no new product is currently available or likely to be so in the near future.

Providing EC in advance of need gives women rapid access to the medication in case of unprotected intercourse or contraceptive failure. Studies have examined the availability of an advance supply of EC to see how it would affect contraceptive use. Results are early and also somewhat mixed. One study found that advance provision of EC significantly increased use without reducing use of routine contraception.<sup>39</sup> Another meta-analysis found that advance provision of emergency contraception did not reduce pregnancy rates and did not negatively affect sexual and reproductive health behaviors. The authors acknowledge that many variables need further study to better understand the behavioral and social issues surrounding the failure to use emergency contraception even when it is readily available.<sup>40</sup>

Time is critically important for EC to be effective. To help make accurate and sensitive information readily available to women, information is available on the Internet from the Office of Population Research at Princeton University and from the Association of Reproductive Health Professionals at <http://ec.princeton.edu/get-ec-now.html>. The site has no connection with any pharmaceutical company or for-profit organization, and the information is peer reviewed by a panel of independent experts.

## Handling an Unplanned Pregnancy

Women who experience an unplanned pregnancy must face a difficult decision. They may decide to terminate the pregnancy, to carry the baby to term and keep the child, or to carry the baby to term and have the child adopted. A woman must consider the implications of each decision and feel comfortable with her choice. Having a baby brings major changes to a woman's life, and it may cause many difficulties for a woman who is young and single. Plans for future education, careers, or relationships may have to be sacrificed to raise a child. All of these issues must be considered so that a woman does not resent her child based on a decision she has made. A woman may be concerned about financial and emotional support during the pregnancy, especially if she does not have support from the baby's father or from family and friends. Many family planning clinics, crisis pregnancy centers, and health departments have programs set up to meet the needs of these women.

Unplanned pregnancies are not always unwanted pregnancies. Often, a couple is not planning to have a child at the time that they become pregnant, but they want a child and happily decide to proceed with the pregnancy.


If a woman decides that she would like to carry the baby to term but not raise the child, she should look into adoption. Adoption can be "open," where the birth mother has some role in the child's future, or "closed," where the whole process remains confidential. Both public and private adoption services are available. Public adoption services are usually less costly but may be very competitive and require long waits. Parents often have to be more flexible about the age or race of child they are willing to take. Private adoptions usually involve a financial arrangement negotiated by an agency or lawyer between the adoptive parents and the birth mother. Private adoptions can be faster and allow adoptive parents and birth mothers to have more options in selecting each other. Adoptions also can be domestic or international, though adoption laws vary from country to country. In all adoptions, a host of legal and ethical factors must be considered by all parties involved. Many adoption agencies can help match the child with an adoptive family and may be able to arrange for the adoptive parents to pay for the mother's health-care costs during the pregnancy.

Other women choose to terminate their pregnancies. In these cases, a decision should be made as early as possible to ensure a safe abortion.

## Perspectives on Abortion

**Abortion** may be defined as the spontaneous or induced expulsion of an embryo or fetus before it is viable or can survive on its own. This can occur without human interference. Natural complications of fetal development, perhaps due to genetic, medical, or hormonal problems, can result in the spontaneous termination of the pregnancy. This termination of pregnancy is called a miscarriage or a spontaneous abortion (see Chapter 6). In contrast to a spontaneous abortion, an induced abortion involves a decision to terminate a pregnancy by medical procedures.

Abortions are one of the most common medical procedures undergone by women of reproductive age. Each year, about 1.2 million women in the United States end their pregnancies through abortion. This number represents almost 20% of the 6.4 million annual pregnancies in the



*I am an organized and responsible person. I was a victim of contraceptive failure. It was impossible for me to have a child at that time in my life. It would have destroyed everything that I had worked years for. So I had an abortion. I am not proud of it, but I am grateful that I was able to go to a safe facility.*

**32-year-old woman**

United States. About one-third of unwanted pregnancies in the United States end in abortion.<sup>43</sup>

## Historical Overview

Women have ended unwanted pregnancies for thousands of years. The earliest methods used to induce an abortion were often either dangerous or used in ways to control women: 5,000 years ago, a Chinese emperor described how mercury could be used to induce an abortion; in the Western world, ancient Greeks and Romans considered abortion acceptable during the early stages of pregnancy, but they did not allow women an active role in family planning.<sup>44</sup> Later, women healers in western Europe and the United States provided abortions and trained other women to do so, until the late 1800s.

But by 1910, many states had passed legislation promoted by male physicians that prohibited abortion during all stages of pregnancy, with the exception of pregnancies that endangered the mother's health. During this time, the issue of equity emerged as an abortion public policy consideration. Women with greater personal financial resources were able to arrange for safer, more "legal" abortions by traveling to less rigid jurisdictions or by persuading physicians to make therapeutic exceptions. Women with fewer financial resources were more likely to suffer from unsafe abortions and incompetent abortionists. Legal prohibition did not have its intended effect of reducing the incidence of abortions, however. Estimates of the number of illegal abortions performed annually in the 1950s and 1960s range from 200,000 to 1.2 million.

The landmark Supreme Court decision *Roe v. Wade* legalized abortion in the United States on January 22, 1973. This decision declared unconstitutional all state laws that prohibited or restricted abortion during the first trimester of pregnancy. The decision stated that the "right of privacy . . . founded on the Fourteenth Amendment's concept of personal liberty . . . is broad enough to encompass a woman's decision whether or not to terminate her pregnancy." The ruling also limited state interventions in second-trimester abortions and left the issue of third-trimester abortions up to each individual state.

Socially conservative groups quickly rallied against the decision, organizing the "right to life" movement and working to enact laws restricting abortion at the state and federal levels.

In 1976, Congress introduced and passed the Hyde Amendment. This legislation banned Medicaid funding for abortion unless a woman's life was in danger. This amend-

ment disproportionately affected low-income women, who were less likely than other women to be able to pay for abortion services or to receive contraception. A compromise version of the Hyde Amendment eventually added exceptions for promptly reported rape and incest cases in which two physicians would testify that the woman's health would be seriously impaired by maintaining the pregnancy. Although the Supreme Court reaffirmed the central holding of *Roe v. Wade* in 1986, a newly constituted Court agreed to hear the case *Webster v. Reproductive Health Services* in 1989. Its decision on the *Webster* case returned to the states the authority to limit a woman's right to a legal abortion.

The 1991 case of *Rust v. Sullivan* upheld the constitutionality of the "gag rule," which prohibited federally funded clinics from providing information about and referrals for abortion. In 1992, the Court's ruling in the case of *Planned Parenthood of Southeastern Pennsylvania v. Casey* reaffirmed the central holdings of *Roe v. Wade*, but allowed states to restrict abortion access. This decision prompted many states to require parental consent and waiting periods.

Laws have also limited antiabortion demonstrators' proximity to abortion clinics. These laws were instituted to ensure the safety and privacy of women seeking abortions after many attacks on abortion clinics, women seeking abortions, and abortion providers took place.

## Current Perspectives

During the presidency of George W. Bush, the appointments of Justices John Roberts and Samuel Alito made the Supreme Court significantly more conservative on social issues. This conservative slant was visible in the 2007 case of *Gonzales v. Carhart*, which upheld a federal ban on a rare abortion procedure known as dilatation and extraction, despite the fact that the law did not allow an exception to the ban when it was necessary to protect a woman's health. In 2000, a court without the Bush appointees had ruled against a Nebraska law that created a very similar "partial birth" abortion ban for this reason. Some political com-

"I am on my own, financially and mentally. I can't stand it now, I think it's a sin to bring the child here and not be able to provide for it . . . This is just in the best interest for me and the children—no, my children and this child."

**19-year-old woman with three children,  
living below the poverty line**

**Source:** Finer, L., et al. (2005). Reasons U.S. women have abortions: Quantitative and qualitative perspectives.

mentators believe the 2009 court could make a decision that would overthrow *Roe v. Wade*.

With the shifting balance of the Supreme Court, socially conservative state governments have enacted stronger limitations on abortion. In South Dakota, for example, a law that went into effect in 2008 requires doctors to tell women that abortion “terminates the life of a whole, separate, unique human being” and to cite medically inaccurate information linking abortion to suicide and other risks.<sup>45</sup>

**Figure 5.11** compares the relative strictness of abortion laws, as well as the comparative ease of access to abortion services, in the United States.

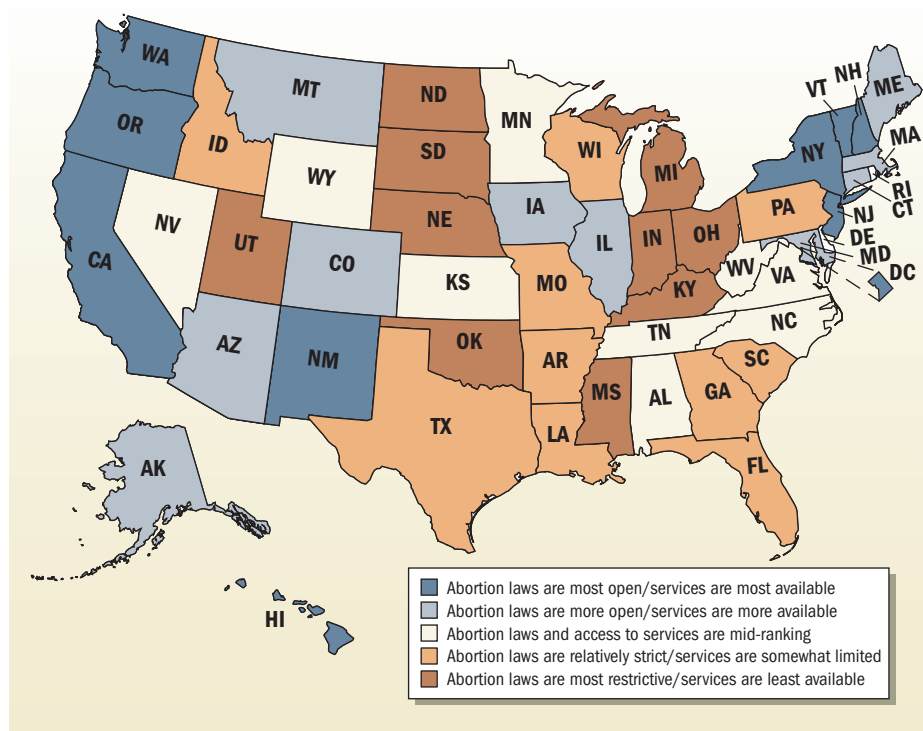


■ Abortion continues to be one of the greatest debates in American society.

### Current Perspectives

Abortion is both one of the most common gynecological procedures women experience and among the most controversial and passionately debated topics in the United States. Generally, people who believe that abortion should be illegal describe themselves as “pro-life,” whereas people who believe that women should be able to choose abortion to end their pregnancies describe themselves as “pro-choice.” Journalists, who wish to appear neutral and not imply that either group is against life or choice, use the terms “antiabortion” and “abortion rights” to describe activists on either side.

Women choose to end their pregnancies for a variety of reasons. Women are most likely to choose abortion when facing an unwanted pregnancy. In a survey of more than 1,000 abortion patients, 74% of women said that having a child would reduce their ability to work, finish their education, or care for existing dependents; 73% said they could not afford to have a baby at the time; and 48% said they were either having relationship problems or did not want to be a single mother. Other commonly cited reasons were that the woman had completed her childbearing (38% of



**Figure 5.11**

State-by-State comparison of abortion laws and access to services, 2006.

**Source:** Ipas, National Gay and Lesbian Taskforce, Sistersong Women of Color, Reproductive Health Collective, and Center for Reproductive Rights. (2008). Mapping our rights. Retrieved March 10, 2009, from [www.mappingourrights.org](http://www.mappingourrights.org).

women), was not ready for another child (32%), or did not want people to know she was pregnant or that she had had sex (25%).<sup>46</sup>

### The Antiabortion Perspective

The antiabortion (or “pro-life”) position is typically based on the belief that a fertilized ovum is a human being from the moment of conception onward. From this perspective, a fetus has a right to live, and a woman does not have the ability to override that right by choosing an abortion.

Antiabortion efforts to overturn abortion public policy have taken three major approaches: amendments to the U.S. and state constitutions that define human life beginning at conception; legislation and government action that defines human life beginning at conception; and efforts to slow or restrict access to abortion services. By defining a fetus as “human,” antiabortion groups hope to afford fetuses the same legal rights and protection as adults and children and ultimately outlaw (or put severe legal restrictions on) all abortions.

### The Abortion-Rights Perspective

Abortion-rights (or “pro-choice”) advocates favor full legalization and ready availability of abortions. Abortion-rights advocates believe that women facing unwanted pregnancies will usually find a way to end them, and that legalizing abortion at least provides these women with safe services rather than putting their lives at risk. Additionally, abortion-rights activists typically do not believe that a fertilized ovum qualifies as “human life.” Instead, they see abortion as part of a spectrum of a woman’s reproductive health care. Abortion-rights advocates believe that a woman should be able to choose whether or not to end a pregnancy because the fetus is ultimately still part of her body.

### Middle Ground

Most Americans’ opinions about abortion have elements of both the antiabortion and the abortion-rights perspectives. A poll conducted by *Time* magazine in August 2008 found that 46% of respondents thought abortion should always be legal in the first trimester, 40% thought abortion should be legal in some circumstances, and 10% thought abortion should be illegal in all circumstances (4% said they had no answer). Finding a suitable compromise on such a divisive issue remains a political and personal challenge. For people who believe that human life begins at conception and that abortion ends that life, even the idea of compromise can be repugnant.

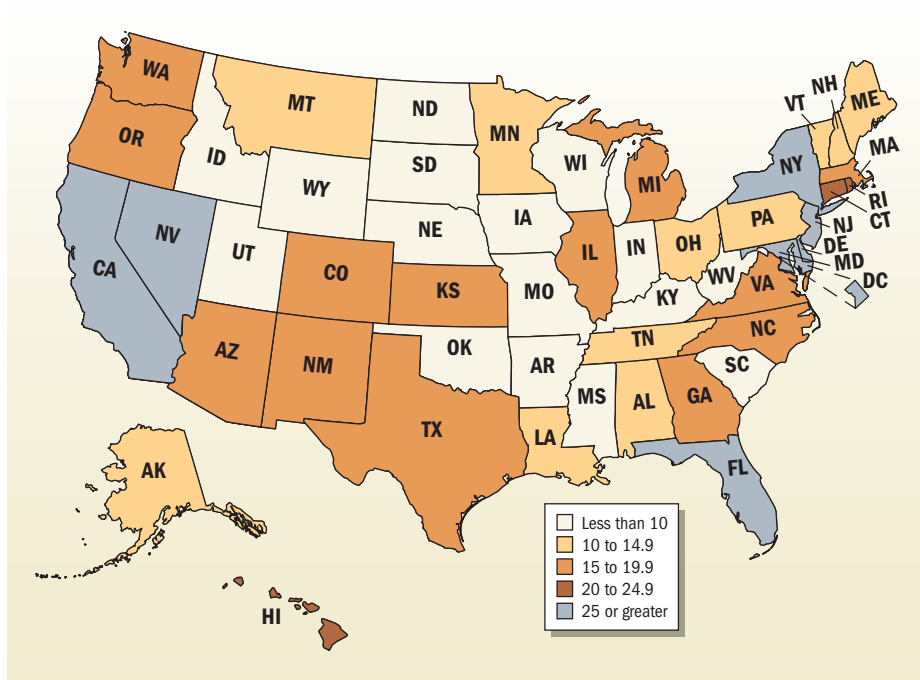
However, research has found some ways that abortions can be prevented without increasing or decreasing women’s access to safe services. The easiest of these methods may be to increase access to contraception. Roughly half the pregnancies that occur in the United States are unintentional, and almost half of unintended pregnancies (or more than one in five total pregnancies in the United States) end in abortion.<sup>46</sup> Allowing women and their partners to control when and if they want to have children will prevent enormous psychological and financial burdens for families as well. Increasing public assistance may also reduce abortion levels, because funds and aid will allow women living in poverty to better care for unintended pregnancies that do occur.<sup>46</sup>

### Epidemiology

Abortions have been legal throughout the United States since 1973 (state laws, however, make abortion services more difficult to obtain in some states than in others). **Figure 5.12** depicts the rate of abortions in the United States over the past three decades. After an initial rise in the 1970s following legislation, the number of induced abortions stabilized in the 1980s, at about 1.6 million per year.<sup>5</sup> This declining trend increased in the first years of the twenty-first century; from 2000 to 2005, the number of abortions dropped in the United States by 9%.<sup>43</sup> Possible reasons for this decline include increased contraceptive use, more women completing their pregnancies, fewer unintended pregnancies, and reduced access to abortion services in some areas.<sup>43</sup>

Several factors also appear to have played a part in this decline. Changes in U.S. demographics meant that a lower proportion of the female population was of childbearing age and at risk for having to consider abortion. The drive to educate girls about teen pregnancy and contraceptive options has also helped to reduce teen pregnancy. Other factors affecting the decline in abortions over time may include reduced access to abortion services, changing attitudes toward abortion, or continuation of unplanned pregnancies.

The profile of the typical abortion seeker has also changed in the last 20 years. In addition to young women who experience an unintended pregnancy, the growing number of women who get pregnant over the age of 35 has led to an increase in women who find out that their developing babies are at very high risk of birth defects or have a chromosomal abnormality like trisomy 18. Women living in poverty continue to be much more likely than wealthy



**Figure 5.12**

Rate of legal abortions per 1,000 women of reproductive age by state, 2005.

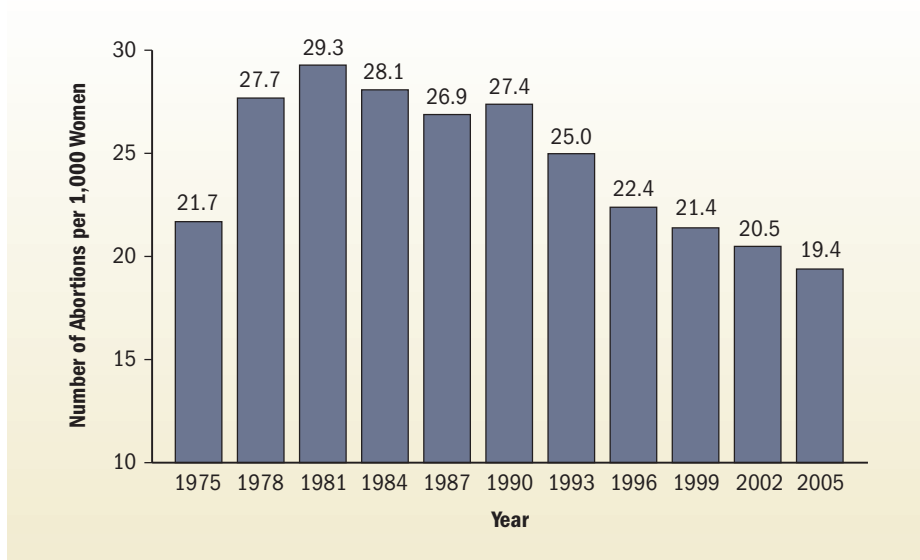
Source: Jones, R., Zolna, M. Henshaw, S., & Finer, L. (2008). Abortion in the United States: Incidence and access to service, 2005. *Perspectives on Reproductive Health* 40(1):6-16.

women to have abortions, in large part because poor women are more likely to experience unwanted pregnancies. In 2005, the average cost of an abortion at 10 weeks was \$413.<sup>43</sup>

More than half of women in the United States who receive abortions already have one or more children, seven out of 10 women who receive abortions have never been married. The average age of women receiving abortions has increased: in 1980, 64.7% of women who had abortions were 24 or younger; by 2005 this number had dropped to

50%.<sup>45</sup> Figure 5.14 illustrates abortion rates by race/ethnicity and age.

Adolescent females are a special population of concern with abortions. Factors contributing to adolescent pregnancies and decisions about keeping or terminating the pregnancy depend on a variety of socioeconomic considerations. Girls age 19 and younger account for 20% of all abortions in the United States.<sup>47</sup> One study found that 61% of the adolescents indicated that one or both parents knew about the abortion.<sup>48</sup> Studies also have found that a



**Figure 5.13**

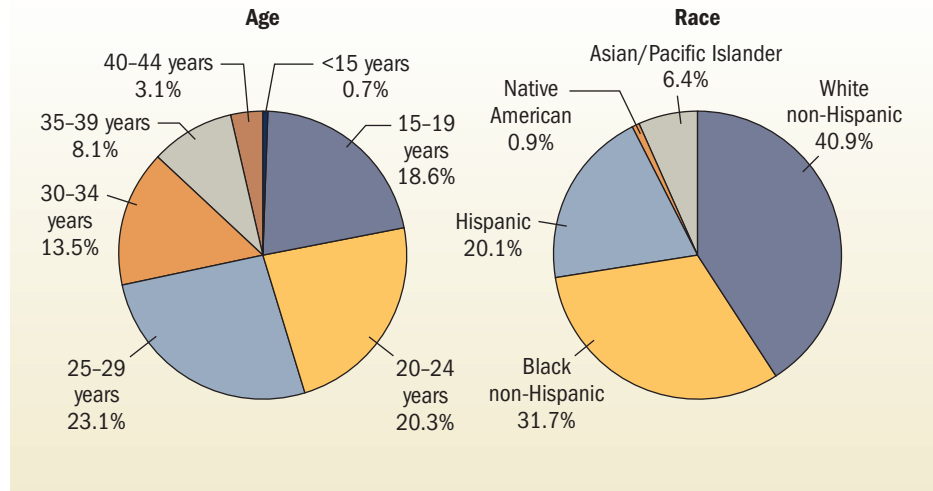
The number of abortions in the United States per 1,000 women ages 15-44, by year.

Source: Jones, R., Zolna, M. Henshaw, S., & Finer, L. (2008). Abortion in the United States: Incidence and access to service, 2005. *Perspectives on Reproductive Health* 40(1):6-16.

**Figure 5.14**

**Percentage of total abortions in the United States, by age and race/ethnicity, 2000–2001.**

**Source:** Jones, R.K., Darroch, J.E., and Henshaw, S.K. (2002). Patterns in the socioeconomic characteristics of women obtaining abortions in 2000–2001. *Perspectives on Sexual and Reproductive Health* 34(5): Table 1. Reprinted with permission from The Guttmacher Institute.



teen's decision to have an abortion is based on concerns about how a baby would change her life and feelings that she is not mature enough or financially capable of raising a child.<sup>48</sup>

## Abortion Procedures

### Surgical Abortion

**Vacuum curettage** is the most widely used abortion technique in the United States. This procedure is performed while the woman is under local anesthesia. About 87% of all legal abortions done in the United States use vacuum curettage.<sup>49</sup> It involves dilating the cervix and then inserting a vacuum curette—an instrument consisting of a tube with a scoop attached for scraping away tissue—through the cervix into the uterus. The other end of the tube is attached to a suction-producing apparatus, and the contents of the uterus are aspirated into a collection vessel. Vacuum curettage is usually performed during the first trimester of pregnancy, or until 13 weeks, but can be done up to 20 weeks following conception. The length of pregnancy is determined from the onset of the last menstrual flow or the last missed period. Through 13 weeks of pregnancy, this procedure can be performed in a clinical office setting with appropriate backup facilities for unexpected medical problems.

**Dilatation and curettage (D&C)** is a technique used for many gynecological procedures but rarely in abortions. A sharp curette is used to scrape out the contents of the uterus. The procedure requires that the woman be under general anesthesia. D&C is rarely used in abortions in the United States because it is more painful than the vacuum

curettage method, causes more blood loss, and requires larger cervical dilation.

Dilatation and evacuation is a procedure that combines the D&C and vacuum curettage approaches. It is usually done between 13 and 15 weeks' gestation, but may be done through week 22. At this time, the cervix needs to be dilated to a greater extent because the products of conception are larger. This procedure is performed in the operating room of a clinic or hospital.

Oxytocin, a product produced in the posterior pituitary and also commercially manufactured, is often used to facilitate uterine contractions. It is commonly used with the D&C method and with hypertonic saline during second-trimester abortions.

As with all medical procedures, abortions carry some health risks. Abortion-related health risks are greatly reduced if the pregnancy is terminated as early as possible, the woman is healthy, the clinician is skilled, and the woman is confident in her decision to have an abortion.<sup>8</sup> The risk of death or serious complications increases dramatically as the gestation period increases; however, a woman is 11 times more likely to die during childbirth than from a legal abortion.<sup>28</sup> The most common post-abortion problems include infection, retained products of conception in the uterus, continuing pregnancy, cervical or uterine trauma, and bleeding.

### Medical Abortion

A medical abortion (sometimes referred to as a medication abortion or "abortion with pills") is an abortion performed with medication instead of surgery. Medical abortion offers women the opportunity to end pregnancies safely and

- Most abortions in the United States are performed using vacuum curettage.



in a way that many women feel is less invasive and more private than surgical abortion procedures. Two drugs called mifepristone and misoprostol, used in succession, can end an early pregnancy. Since FDA approval of mifepristone, medical abortions have grown in popularity as a method of ending a pregnancy. About 13% of abortions performed in the United States in 2005 were performed with medical abortion.<sup>43</sup>

Mifepristone, formerly known as RU-486, is a hormone pill that blocks the action of progesterone, which is necessary for ending a pregnancy. The FDA approved mifepristone in 2000 as a safe and effective alternative to surgical abortion in the United States. A woman first takes mifepristone at a provider's office; this causes the uterine lining to break down. Days later, misoprostol is used to induce contractions and expel the fetal tissue. In some cases, a provider may use a medication called methotrexate instead of mifepristone.

Medical abortions must be administered by a woman's doctor. Heavy bleeding and cramping ensue as a result of the misoprostol. These symptoms may last from a few hours to two weeks. The entire abortion is therefore considered to take anywhere from a few days to a few weeks and requires several visits to the health-care provider's office. Possible side effects may include nausea, vomiting, diarrhea, headaches, hot flushes, and mouth sores.

Medical abortions may be performed as soon as a pregnancy is confirmed, and they must be performed within seven weeks after a woman's last menstrual period. Women who are older than 35 years of age or who smoke should not use methotrexate or mifepristone. Other conditions that may preclude a woman from having a medical abor-

tion include history of asthma, cardiovascular disease, uncontrolled hypertension, diabetes, ovarian cysts or tumors, and severe anemia.

Currently, lawmakers in many states are moving to restrict medical abortion. At both the federal and state levels, some have proposed legislation designed to curtail the availability of mifepristone and limit the number of doctors who can prescribe it.

## Global Perspectives

Every year, problems caused by pregnancy or childbirth kill more than 500,000 women. Ninety-nine out of 100 of these deaths occur in the developing world.<sup>50</sup> Problems related to pregnancy and childbirth also cause serious health problems for 10 to 20 million women a year. Women in the developing world facing unplanned or unwanted pregnancies are especially vulnerable.

Despite the magnitude of this problem, the solutions to ending it are simple: provide women with skilled attendants (such as doctors or midwives) when they give birth, provide family planning so that women and their partners can choose when and if they want to have children, and allow women access to safe abortion services.<sup>50</sup> However, poor health systems, a lack of organized political willpower, and in the case of abortion, legal restrictions and religious opposition, have limited progress in this arena. Reduction in maternal mortality has been extremely slow over the past 20 years. Maternal deaths in sub-Saharan Africa, where the problem is the worst, have not lessened.<sup>51</sup>

Forty-two million women received abortions in 2003. Half of these abortions were performed under unsafe conditions or by people without the knowledge, training, or equipment to perform these abortions safely. There is a huge difference between abortions performed under safe and unsafe conditions. Abortions performed in safe conditions by qualified providers pose little risk to a woman's health. Abortions performed under unsafe conditions, or by people without enough training, equipment, or knowledge to perform these abortions safely, however, pose a grave risk to women's long-term health and survival.<sup>52</sup> Globally, about 13% of the deaths and 20% of the injuries developing from pregnancy and childbirth result from unsafe abortion. Almost all of these deaths and injuries occurred in countries with severe legal restrictions on abortion.<sup>53</sup> Laws that restrict abortion do not appear to affect its incidence: even though abortion is illegal under many circumstances in most countries in Africa and legal in most circumstances for most European countries, women in

both Europe and Africa receive abortions at almost exactly the same rate.<sup>53</sup>

## Informed Decision Making

### Contraception

Many effective, yet imperfect, birth control methods are available to women today. The decision-making challenge is to determine which method or combination of methods best meets each woman's unique needs. Safety and reliability are always the first concern. Other factors, such as health status, lifestyle, financial considerations, and patterns in sexual activity, also determine which method is best suited to meet a woman's needs. Many women will decide to change to a different birth control method as factors change. Communication is an essential component of contraceptive decision making. It is important that couples talk about their feelings, needs, and fears.

### Determining Personal Needs

Sexual urges and sexual activity are normal, but pregnancy is a very real possible consequence of heterosexual inter-

course. Both homosexual and heterosexual relationships also carry the risk of sexually transmitted infections, including HIV. For both technological and sociological reasons, women have traditionally shouldered the major responsibility for contraception. This has been both unfair and unreasonable for women. Although most of the current contraceptives require primary use by women, couples can share the responsibility for contraception in many ways. Open and honest communication, sensitivity to each other's needs and feelings, and awareness of each method's strengths and weaknesses are essential components for effective decision making.

Specific strategies for informed contraceptive decision making include the following (Self-Assessment 5.1):

1. Review needs.
  - It is important to consider when or if pregnancy may be desired. If never, perhaps sterilization is a more logical option. If pregnancy is desired in a few years, the more effective hormonal methods may be preferable. If pregnancy is desired later within the year, one of the barrier methods may be a better choice. If a woman does not want to become pregnant and an abortion is out of the question, she may wish to consider a combina-

### Self-Assessment 5.1

#### Strategies for Contraceptive Decision Making

Contraceptive decision-making is a personal and private matter between a woman and her partner. The couple should consider several factors before deciding on what method to use. These factors include:

1. **Evaluate needs:**
  - When/if a pregnancy will be desired
  - How disruptive or difficult an unplanned pregnancy would be
  - Frequency of intercourse
  - Number of partners
  - Risk of STIs
  - Personal preferences for lovemaking
  - Level of partner cooperation and interest
  - Significance of spontaneity
  - Comfort with touching one's own body or partner's comfort level of touching or being touched
  - Manual dexterity for certain methods
  - Financial considerations
2. **Review medical history:**
  - Cardiovascular risk factors
  - History of cancer
  - Certain disabilities or chronic conditions
  - Smoking status
  - Allergies
  - Circulatory disorders
3. **Review reproductive health history:**
  - History of abortion or pregnancy scare
  - Vaginal or cervical infections
  - History of STIs
  - Number of sexual partners or partner's number of partners
  - Drug use (including alcohol)
  - Past use of contraceptives
4. **Put risks and benefits of methods in perspective:**
  - Weigh the advantages and disadvantages of each method in a personal perspective (see **Table 5.4**)
5. **Reevaluate decision periodically:**
  - Each partner should assess level of compliance
  - Each partner should assess level of satisfaction



■ Several contraceptive choices are available today.

tion of two good birth control methods, such as foam and condoms, or pills and condoms.

- Frequency of intercourse is another major consideration to review. If intercourse occurs frequently, barrier methods may prove to be inconvenient.
- Number of partners should be considered. If a woman has more than one partner, or if her partner has another partner, she is at a greater risk for infection. In this case, a condom with spermicide in addition to birth control pills would provide the best protection against both sexually transmitted infections and pregnancy.
- Emotional, behavioral, and psychological needs should be considered. Even though a method may appear logical from a medical point of view, if it is distasteful or undesirable, chances are that compliance with that method will be poor. The degree of partner cooperation is another important consideration, because barrier methods are more likely to be successful if there is partner cooperation and support.
- Couples should be honest and realistic when deciding which kinds of contraception they will use. Couples who are unable or unwilling to use condoms every time they have sexual intercourse may wish to consider another form of contraception to supplement or replace condoms. Birth control pills will not be effective unless a woman remembers to take them every day.
- Perhaps one of the most important considerations is an evaluation of partner feelings and support. Ideally, the contraceptive choice will be a joint decision made by a couple following open, honest discussion of all the considerations and issues. In

a less than ideal situation, a woman would be unwise to depend on her partner for contraceptive decision making or use.

2. Consider medical factors. Risk factors for cardiovascular disease, smoking status, circulatory disorders, and other medical factors must be carefully reviewed before deciding on birth control pills. A history of vaginal or cervical infections may rule out the use of diaphragms or cervical caps.
3. Review failure rates. The higher the failure rate, the greater the risk of an unwanted pregnancy. The difference in failure rates between “typical” and “perfect” use provides an estimate of the role human error plays for most couples. Some contraceptive methods, such as sterilization, are effective for virtually all couples; for other methods, failure rates for the average couple may be several times higher than for a consistent and diligent couple. Remember that typical failure rates are only an average, and that failure rates for couples who are less than diligent may be even higher.
4. Put the risks and benefits of the various methods in perspective. It is important to weigh all dimensions and issues of the relationship carefully against the advantages and disadvantages of each birth control method. The risks and benefits of each method need to be carefully assessed in terms of the individuals involved and their relationship. Some couples find that they can use a numerical rating scheme to determine the best contraceptive that meets their unique needs.
5. Periodically reevaluate the decision. Regular gynecological check-ups are ideal opportunities to discuss contraceptive needs, options, and concerns with a clinician. At regular intervals, contracepting couples need to reexamine the level of effectiveness and their individual levels of satisfaction with the selected method. A couple may want to reconsider both partners’ needs, feelings, and family planning goals.

### When to See a Health-Care Provider

It is necessary to see a clinician for prescription of the diaphragm, cervical cap, any hormonal methods, IUD, or sterilization. Other forms of birth control do not require a clinician’s prescription, but conditions associated with these forms may warrant a clinic visit. In general, a woman

should consult a clinician any time she experiences pain during intercourse or any unusual bleeding, spotting, discharge, or odor. Any burning or itching associated with spermicide use may be an indication of an allergy to the agent.

With a diaphragm, it is wise to check with a clinician any time the diaphragm does not seem to be fitting properly or there is discomfort, pain, or recurring bladder infections. After having a baby, it may be necessary to be refitted for a different-sized diaphragm because vaginal depth and muscle tone are usually altered by full-term pregnancy.

## Abortion

Decisions regarding an unwanted pregnancy are private, personal, and difficult. They should not be rushed, and all options should be carefully weighed. Being able to talk through the process with a trusted person is essential. Options include terminating the pregnancy, continuing the pregnancy and raising the child, or continuing the pregnancy and relinquishing the child for adoption. Many supportive services are available for each of these options.

If a woman elects to have an abortion and is confident in her decision, she can reduce her risk of medical complications from the procedure by making arrangements in a timely fashion. In selecting an abortion facility, a primary concern should be the availability of around-the-clock emergency care services. Infection, bleeding, and other complications can almost always be treated successfully if treatment begins promptly. Other ways to minimize risks from an abortion include making sure the surgeon who performs the procedure is well trained and experienced and verifying the facility provides comprehensive care including postoperative instructions, education, and supportive services. Abortion counseling services are perhaps one of the most important features of a comprehensive facility.

## Summary

Being able to control reproductive functioning is a necessary component of women's health, career preparation, and family growth management. Many methods of contraception are available today, and no method is perfect. **Table 5.4** compares the methods discussed in this chapter. Ulti-

mately, contraception is a shared responsibility. The best method is one that a woman and her partner feel comfortable using, and one that they will use correctly and consistently. Although ideally contraception is a shared responsibility between both partners, in today's world a woman is likely to bear the burden of an unexpected pregnancy. All women in relationships where there is the possibility of pregnancy should therefore make informed, well-thought-out decisions regarding contraception.

Abortion is something that no woman wants to face, but it is something that many women facing unwanted pregnancies will have to consider. Whether a woman considers herself pro-life or pro-choice, she should be sensitive to the difficulties unwanted pregnancies bring. Abortion is not just an issue for young, unmarried women; many women who have planned a pregnancy turn to abortion when they discover their developing fetus has a serious birth defect or chromosomal abnormality. Questions around abortion continue to be a focus for much of the women's health and women's rights movements, as well as for conservative and religious political movements.

Preventing unwanted pregnancy is a primary responsibility of all sexually active couples. In the event of an unwanted pregnancy, understanding all options and risks is a critical prerequisite for effective decision making.

## Topics for Discussion

1. What are some explanations for the higher contraceptive failure rate among younger women compared with older women?
2. What are some of the common reasons for using birth control?
3. What are some reasons that couples fail to use contraceptives or fail to use them correctly?
4. How can couples share in the responsibilities associated with contraception?
5. When are contraceptive "risky" times likely to occur in a relationship?
6. How can a couple improve their communication about sexuality issues, including contraception?
7. How may sociocultural beliefs and practices influence contraceptive decision making?

**Table 5.4 Comparisons: Contraceptive Options**

Fertility Awareness Methods			
<b>“Perfect use” effectiveness</b>	96%	<b>Disadvantages</b>	Requires considerable discipline and partner cooperation; does not reduce STI risk
<b>Typical effectiveness</b>	75%	<b>Availability</b>	No purchase required
<b>How it works</b>	Prevents sperm from reaching egg	<b>Comments</b>	Unreliable form of contraception
<b>Advantages</b>	No costs; causes no health problems; no side effects or contraindications; no supplies or advance preparation; partner shares responsibility; no delay or interference with spontaneity		
Withdrawal			
<b>“Perfect use” effectiveness</b>	96%	<b>Disadvantages</b>	Requires consistent discipline and partner cooperation; compromises spontaneity; may decrease pleasure; does not reduce STI risk
<b>Typical effectiveness</b>	73%	<b>Availability</b>	No purchase required
<b>How it works</b>	Prevents sperm from reaching egg	<b>Comments</b>	Unreliable form of contraception
<b>Advantages</b>	No costs; causes no health problems; no side effects or contraindications; no supplies or advance preparation; partner shares responsibility		
Birth Control Pills			
<b>“Perfect use” effectiveness</b>	99%	<b>Disadvantages</b>	No protection against STIs; may be contraindicated for women with cardiovascular risk problems or women who smoke; must be taken daily; inconsistent studies for breast cancer risk
<b>Typical effectiveness</b>	92%	<b>Availability</b>	Requires clinical examination and prescription
<b>How it works</b>	Prevents release of eggs from the ovaries; thickens cervical mucous; causes uterine lining changes	<b>Comments</b>	Most effective form of temporary contraception; combination pills contain both synthetic estrogen and progesterone; minipill contains only progesterone and may cause some irregular bleeding
<b>Advantages</b>	Fairly inexpensive; lighter and less painful periods; decreased PMS symptoms; improved skin conditions; protective for some chronic diseases; does not interfere with sexual activity; no delay or interference with spontaneity		
Hormonal Implants			
<b>“Perfect use” effectiveness</b>	99%	<b>Disadvantages</b>	Must be removed by clinician; irregular menstrual bleeding may occur; no protection against STIs; may be contraindicated for women with cardiovascular risk problems or women who smoke
<b>Typical effectiveness</b>	99%	<b>Availability</b>	Must be inserted by clinician; not all clinicians are trained for insertion and removal
<b>How it works</b>	Prevents release of eggs from the ovaries; thickens cervical mucous; causes uterine lining changes	<b>Comments</b>	Highly effective contraceptive; reversible once implant is removed
<b>Advantages</b>	Fairly inexpensive; provides protection up to three years or until it is removed; highly convenient—nothing to remember; protective for some chronic diseases; no delay or interference with spontaneity		

(continues)

**Table 5.4** Comparisons: Contraceptive Options (*continued*)

Injectable Contraceptives			
<b>“Perfect use” effectiveness</b>	99%	<b>Disadvantages</b>	Must be prescribed by clinician; more weight gain and bleeding issues than with pill; no protection against STIs; may be contraindicated for women with cardiovascular risk problems or women who smoke
<b>Typical effectiveness</b>	97%		
<b>How it works</b>	Prevents release of eggs from the ovaries; thickens cervical mucous; causes uterine lining changes	<b>Availability</b>	Clinical exam required; must be injected by clinician; not as widely available as the pill
<b>Advantages</b>	Fairly inexpensive; lasts three to four months; less bloating and mood swings than with pill; convenient—nothing to remember; protective for some chronic diseases; no delay or interference with spontaneity	<b>Comments</b>	Highly effective contraceptive; reversible once injections wear off although there may be a waiting period; contains only progesterone so it is an option for women who cannot take estrogen
Hormonal Patches			
<b>“Perfect use” effectiveness</b>	99%	<b>Disadvantages</b>	Less effective in women weighing more than 198 pounds; no protection against STIs; may be contraindicated for women with cardiovascular risk problems or women who smoke
<b>Typical effectiveness</b>	92%		
<b>How it works</b>	Prevents release of eggs from the ovaries; thickens cervical mucous; causes uterine lining changes	<b>Availability</b>	Requires clinical examination and prescription
<b>Advantages</b>	Fairly inexpensive; convenient; weekly schedule is easier than daily pill; similar side effects and benefits as pill; no delay or interference with spontaneity	<b>Comments</b>	Highly effective and convenient contraceptive
Vaginal Ring			
<b>“Perfect use” effectiveness</b>	99%	<b>Disadvantages</b>	Requires clinical visit; women must learn to correctly insert and remove the ring; no protection against STIs; may be contraindicated for women with cardiovascular risk problems or women who smoke
<b>Typical effectiveness</b>	92%		
<b>How it works</b>	Prevents release of eggs from the ovaries; thickens cervical mucous; causes uterine lining changes	<b>Availability</b>	Relatively new form of contraception; not all clinicians may be prescribing it
<b>Advantages</b>	Inexpensive; convenient; requires removal every three weeks; weekly schedule is easier than daily pill; similar side effects and benefits as pill; no delay or interference with spontaneity	<b>Comments</b>	Highly effective and convenient contraceptive
Spermicide			
<b>“Perfect use” effectiveness</b>	82%	<b>Disadvantages</b>	Required for each sex act; messy; must be applied just before intercourse; effective for 30–60 minutes; may be awkward, disruptive, or embarrassing to use
<b>Typical effectiveness</b>	71%		
<b>How it works</b>	Kills sperm; absorbs ejaculate; blocks sperm from entering vaginal tract	<b>Availability</b>	Easily available in drugstores and online pharmacies in creams, foams, gels, film, or suppositories
<b>Advantages</b>	Inexpensive; no clinical visit; able to use it only as needed; few side effects and contraindications; provides some protection against some STIs; provides additional lubrication; effective immediately	<b>Comments</b>	Best contraceptive results are achieved when spermicide is used with a barrier method such as a condom or diaphragm

**Table 5.4 Comparisons: Contraceptive Options (continued)**

Diaphragm			
<b>“Perfect use” effectiveness</b>	94%	<b>Disadvantages</b>	Fairly expensive one-time cost; clinical visit, filling, and prescription required; must be used with a spermicide; may be awkward or inconvenient; may increase risk of urinary tract infections; dependent upon proper fit and diligent use
<b>Typical effectiveness</b>	84%		
<b>How it works</b>	Blocks sperms from reaching egg; spermicide inactivates sperm		
<b>Advantages</b>	Used only when needed; no side effects or contraindications (latex allergies are rare); can be inserted up to 6 hours ahead of time; reusable	<b>Availability</b>	Clinical visit and fitting required
		<b>Comments</b>	Spermicide must be used with each act of intercourse; diaphragm should be refitted when weight changes +/- 10 pounds
Contraceptive Sponge			
<b>“Perfect use” effectiveness</b>		<b>Advantages</b>	Easy to use; spermicide is contained in sponge; may be inserted up to 24 hours before sex; provides continuous protection for 24 hours; relatively inexpensive; available without a fitting or prescription; less messy than other forms of spermicides; may provide some protection against STIs; disposable
<b>Parous women (women who have had children)</b>	80%		
<b>Nulliparous women (women who have not had children)</b>	91%		
<b>Typical effectiveness</b>		<b>Disadvantages</b>	Less effective in women who have had children; requires some practice to insert and remove
<b>Parous women</b>	68%	<b>Availability</b>	Available in drugstores and online pharmacies
<b>Nulliparous women</b>	84%	<b>Comments</b>	Sponges should not be reused
<b>How it works</b>	Kills sperm; absorbs ejaculate; blocks sperm from entering cervix		
Cervical Cap			
<b>“Perfect use” effectiveness</b>	82%	<b>Disadvantages</b>	Fairly expensive one-time cost; clinical visit, filling, and prescription required; not all women can be fitted with a cap; due to smaller size it may be more difficult to insert and remove than a diaphragm; effectiveness is dependent upon proper fitting, proper placement, and spermicide use each time
<b>Typical effectiveness</b>	76%		
<b>How it works</b>	Blocks sperms from reaching egg; spermicide inactivates sperm		
<b>Advantages</b>	Easy to use once technique is mastered; may be inserted up to 48 hours before sex; some protection against STIs; few side effects (latex allergies are rare); reusable	<b>Availability</b>	Generally available, although not all clinicians are skilled in educating women about insertion and removal
		<b>Comments</b>	Should be replaced each year; should be refitted when weight changes +/- 10 pounds
Shield			
<b>“Perfect use” effectiveness</b>	94%	<b>Disadvantages</b>	Clinical visit required for prescription; must be used with a spermicide; may be awkward or inconvenient; dependent upon diligent use; may increase risk of urinary tract infections and toxic shock syndrome
<b>Typical effectiveness</b>	84%		
<b>How it works</b>	Blocks sperm from reaching egg; spermicide inactivates sperm		
<b>Advantages</b>	Used only when needed; no side effects or contraindications (latex allergies are rare); can be inserted up to 6 hours ahead of time; can be left in place for 48 hours; not sized or personally fitted; reusable	<b>Availability</b>	Not available over-the-counter or online
		<b>Comments</b>	Should remain in place 8 hours after last intercourse

(continues)

**Table 5.4** Comparisons: Contraceptive Options (*continued*)

Male Condom			
<b>“Perfect use” effectiveness</b>	98%	<b>Disadvantages</b>	Can be used for only one act of intercourse; can tear or slip during use; may decrease sexual pleasure; may interrupt lovemaking; requires cooperation of male partner; latex allergies may require use of polyurethane condoms
<b>Typical effectiveness</b>	85%		
<b>How it works</b>	Provides a physical barrier between the penis and vagina; prevents sperm and ejaculate from entering vagina	<b>Availability</b>	Widely available over-the-counter and from online sources; available with lubricants and spermicides, in a variety of colors, textures, and flavors
<b>Advantages</b>	Inexpensive; provides strong protection against most STIs; no clinical visit, fitting, or prescription required; can be used with other methods; can be used as a backup method for other contraception; no hormonal or systemic effects	<b>Comments</b>	More effective when used with a spermicide; can degrade with heat, light, and oxidation so should be stored in a cool, dry place
Female Condom			
<b>“Perfect use” effectiveness</b>	95%	<b>Disadvantages</b>	More expensive than male condom; may feel awkward; tendency to be noisy; requires partner cooperation; can be used for only one act of intercourse; requires attention to details for woman and her partner
<b>Typical effectiveness</b>	79%		
<b>How it works</b>	Prevents sperm from entering vagina; provides best level of protection for women from STIs by covering vagina and perineal area	<b>Availability</b>	Widely available over-the-counter and from online sources
<b>Advantages</b>	Used only when needed; no hormonal or systemic effects; empowering to women; clinical visit, fitting, or prescription not needed	<b>Comments</b>	More effective when used with a spermicide
Female Sterilization			
<b>“Perfect use” effectiveness</b>	99%	<b>Disadvantages</b>	Expensive one-time fee; no protection from STIs; surgical risks; not reliably reversible
<b>Typical effectiveness</b>	99%		
<b>How it works</b>	Prevents egg from traveling between ovaries and uterus	<b>Availability</b>	Widely available
<b>Advantages</b>	Permanent—lifelong freedom from contraception after procedure for the woman; no interruption of lovemaking; highly effective; no need for partner compliance	<b>Comments</b>	Even though actual risks with female sterilization are low, vasectomies pose far less risk to men; ideal option for women who do not desire more children
Male Sterilization			
<b>“Perfect use” effectiveness</b>	99%	<b>Disadvantages</b>	Expensive—one-time fee; not always reversible; surgical experience; no protection from STIs
<b>Typical effectiveness</b>	99%		
<b>How it works</b>	Prevents sperm from being in the ejaculate	<b>Availability</b>	Outpatient procedure
<b>Advantages</b>	Lifelong freedom from contraception worries for the male; no interruption of lovemaking; shared responsibility by the male	<b>Comments</b>	

**Table 5.5** Comparisons: Contraceptive Options (*continued*)

Lactation Amenorrhea Method (LAM)			
<b>“Perfect use” effectiveness</b>	Uncertain	<b>Disadvantages</b>	Only effective with direct breast feeding on demand, meeting all nutritional needs of baby; not effective when any menstrual bleeding returns or after 6 months postpartum
<b>Typical effectiveness</b>	80%		
<b>How it works</b>	Lactation suppresses ovulation		
<b>Advantages</b> nursing mother	No clinical visit; no costs; easy for	<b>Availability</b>	Only for nursing mothers
		<b>Comments</b>	Can be used with other forms of contraception
Intrauterine Device (IUD)			
<b>“Perfect use” effectiveness</b>	99%	<b>Disadvantages</b>	Clinical visit required; high insertion and removal costs; no STI protection; few days of mild cramping and light bleeding upon insertion
<b>Typical effectiveness</b>	99%		
<b>How it works</b>	Inhibits fertilization; thickens cervical mucous; inhibits sperm function; thins and suppresses the endometrium; copper ions may disrupt sperm motility	<b>Availability</b>	Dependent upon provider willingness and training for insertion; generally available
<b>Advantages</b>	Highly effective; does not interfere with sexual activity; no hormonal impact; long-acting; nothing to remember; decreased risk of endometrial cancer; reduced menstrual flow; reversible	<b>Comments</b>	IUDs are the most widely used reversible form of contraception in the world—used by 12% of women; are much less common in the United States
No Method			
<b>“Perfect use” effectiveness</b>	15%	<b>Disadvantages</b>	Risky for unwanted pregnancy; no protection against pregnancy or STIs
<b>Typical effectiveness</b>	15%		
<b>How it works</b>	Dependent upon good luck	<b>Availability</b>	
<b>Advantages</b>	No clinical visit; no costs	<b>Comments</b>	Couples using no method of contraception should plan on a pregnancy

## Web Sites

Association of Reproductive Health Professionals:  
<http://www.arhp.org>

Center for Reproductive Rights: <http://www.crlp.org>

The Emergency Contraception Website:  
<http://ec.princeton.edu>

EngenderHealth: <http://www.engenderhealth.org>

Guttmacher Institute: <http://www.guttmacher.org>

International Planned Parenthood Federation:  
<http://www.ippf.org>

The Henry J. Kaiser Family Foundation: <http://www.kff.org>

NARAL Pro-Choice America: <http://www.naral.org>

Planned Parenthood Federation of America:  
<http://www.plannedparenthood.org>

Public Agenda Issues Guide on Abortion:  
<http://www.publicagenda.org>

## Profiles of Remarkable Women



### Margaret Sanger (1879–1966) and Mary Coffin Dennett (1872–1947)

Margaret Sanger and Mary Coffin Dennett were pioneers in the birth control movement.

Margaret Sanger began her career by attending the nursing program at White Plains Hospital in New York in 1900. She and her husband became involved in the pre-war radical bohemian culture in New York City and spent time with intellectuals, activists, and artists of the era. Sanger also joined the Women's Committee of the New York Socialist Party and took part in labor actions led by the Industrial Workers of the World.

As a nurse, Sanger focused on women's health and sex education. In 1912, she wrote a column on sex education for a New York publication, which was censored when she wrote about venereal disease. Upon seeing poor women suffering from miscarriages, abortions, and lack of effective birth control, Sanger began promoting the need to free women from unwanted pregnancies. Sanger published *Family Limitation*, a pamphlet that provided clear and frank descriptions of birth control methods and devices. The distribution of diaphragms and her publication were hampered by the Comstock Laws, which Congress enacted in 1873 to restrict the circulation of obscene materials—specifically birth control information—in the mail.

In 1916, Sanger opened the first birth control clinic in Brooklyn, New York. Although the clinic was raided and the staff was arrested shortly after its opening, the publicity brought supporters who helped to build a movement for birth control reform. Sanger founded the American Birth Control League (ABCL) in 1921 to promote the establishment of birth control clinics and the cause of fertility control. The ABCL set up its own clinic and dispensed diaphragms and lactic acid jelly for contraception. In 1942, the ABCL became the Planned Parenthood Federation of America.

Sanger continued fighting for the right to legally disseminate contraceptives. She met with much opposition due to her focus on radical feminism; in fact, she was even viewed as too radical for the birth control movement that she had launched. Ultimately, Sanger resigned from her position with ABCL and took respite from the birth control movement for many years.

After World War II, Sanger worked with family planning leaders in Europe and Asia to help establish the International Planned Parenthood Federation in 1952. She served as the organization's president until 1959. During this time, Sanger was instrumental in securing funding that helped make the development of birth control possible. Sanger died a few months after the Supreme Court decision *Griswold v. Connecticut* made birth control legal for married couples.

Mary Coffin Dennett attended the school of the Boston Museum of Fine Arts and taught design at Drexel University in Philadelphia from 1894 to 1897. Her interest in the suffrage movement began when Dennett worked first for the Massachusetts Woman Suffrage Association from 1903 to 1910 and then for the National American Woman Suffrage Association from 1910 to 1914. She advocated for pacifist beliefs and became a co-founder of the People's Council, an antiwar organization.

Dennett also became dedicated to reforming birth control laws. Opposing the radical, confrontational tactics espoused by Margaret Sanger, she focused on lobbying for legislative reform that would allow for the transmission of contraceptive information. Through her efforts to challenge the definition of legal obscenity, Dennett became one of the nation's most effective defenders of civil liberties. Along the way, she established the Voluntary Parenthood League. Unlike Sanger, who promoted the diaphragm, which only physicians could prescribe, Dennett stressed that ordinary people should be able to get birth control information without having to rely on medical experts.

Dennett was arrested during her career for mailing publications that were deemed obscene by the postal service. Throughout her life, she continued to press for women to become informed consumers and to gain direct access to birth control information. Dennett published a newspaper called the *Birth Control Herald* from 1922 to 1925 and several books, including *Birth Control Laws* (1926), *Who's Obscene* (1930), and *The Sex Education of Children* (1931).

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