

Human Sexual Anatomy

IF YOU ARE TO UNDERSTAND SEXUAL RELATIONS between individuals, you need to be aware of both the anatomy and physiology of sex and the attitudes and emotions that shape people's feelings about their own sexuality and that of others. In Appendix A we will consider the first of these elements, the anatomy and physiology of sex. We will look at female and male sexual anatomy and describe the genitalia, or external reproductive parts, and then the internal reproductive systems of each sex.

■ Female Genital Structures ■

The external genitalia of a woman are technically referred to as the **vulva**. The vulva is composed of the following structures:

- the **mons veneris**, or pubic mound: an area of fatty tissue above the pubic bone
- the **labia majora** (Latin for “greater lips”): two rounded folds of skin and, within them, the **labia minora** (or “lesser lips”)
- the **prepuce**, or clitoral hood: a fold of skin that covers the clitoris when it is not erect and is formed where the labia minora join
- the **clitoris**, which consists of an internal shaft composed of **erectile tissue**—tissue that

becomes engorged with blood during arousal, causing it to increase in size—and a **glans**, a highly sensitive tip, about the size of a pea

- the **urethra**, the opening through which urine passes from the bladder to the outside
- the **vestibule**, or entryway to the vagina
- the **perineum**, the area between the vestibule and the anus (the opening from the rectum and bowel)
- the **hymen**, a ring of tissue that partially covers the vaginal opening. The hymen contains small blood vessels that may bleed the first time the tissue is broken: at first intercourse, first insertion of a tampon, during masturbation, or as a result of some accidental injury. The main internal structures of the female reproductive system are the vagina, the cervix, the uterus, the fallopian tubes, and the ovaries (see Figure A.1).

The **vagina** is the passageway from the uterus to the external genitalia. It is a potential space within a woman's body. Usually, the vaginal walls touch one another, but the vagina is elastic and capable of opening wide enough to allow a baby to pass through during birth. Such stretching would be extremely painful if the vagina had the same number of nerve endings as many of the structures of the vulva. Therefore, the vagina is not so sensitive to feeling.

At the top of the vagina is the **cervix**: the neck of the uterus (*cervix* means “neck” in Latin). The **uterus**,

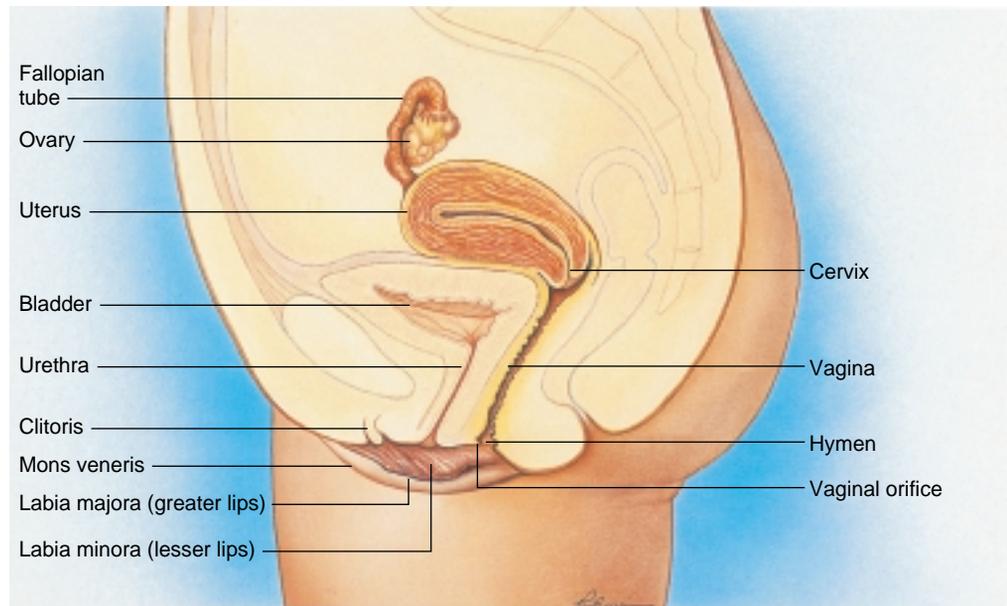


FIGURE A.1

Female urogenital system

or womb, is a cavity whose purpose is to cradle a fetus until birth. Leading from the uterus are two passageways, called **fallopian tubes**, that connect a woman's uterus to her ovaries.

Ovaries are female **gonads**, or sex glands. Women have two ovaries, one on each side of their bodies. They produce reproductive cells (**ova**, or eggs) and two female sex hormones: estrogen and progesterone. Ordinarily, the ovaries alternate in producing one **ovum** per month, in a process called **ovulation**.¹

The egg released in ovulation then travels along the fallopian tubes to the uterus.

In preparing to receive the egg, the lining of the uterus, called the **endometrium**, thickens with a layer of tissue and blood (see Figure A.2). This tissue can nourish an embryo during the early stages of pregnancy if the egg becomes fertilized during its passage from the ovaries. When fertilization does not occur, the egg and the unused endometrial tissue and blood are discarded during **menstruation**.²

1. Sometimes, women produce more than one egg at a time. This is one way that twins or higher multiples are conceived.

2. Menstruation occurs in monthly cycles, ranging from about twenty-one to thirty-five days. Travel, anxiety, illness, extreme athletic activity, or change in diet can make menstrual periods more or less frequent.

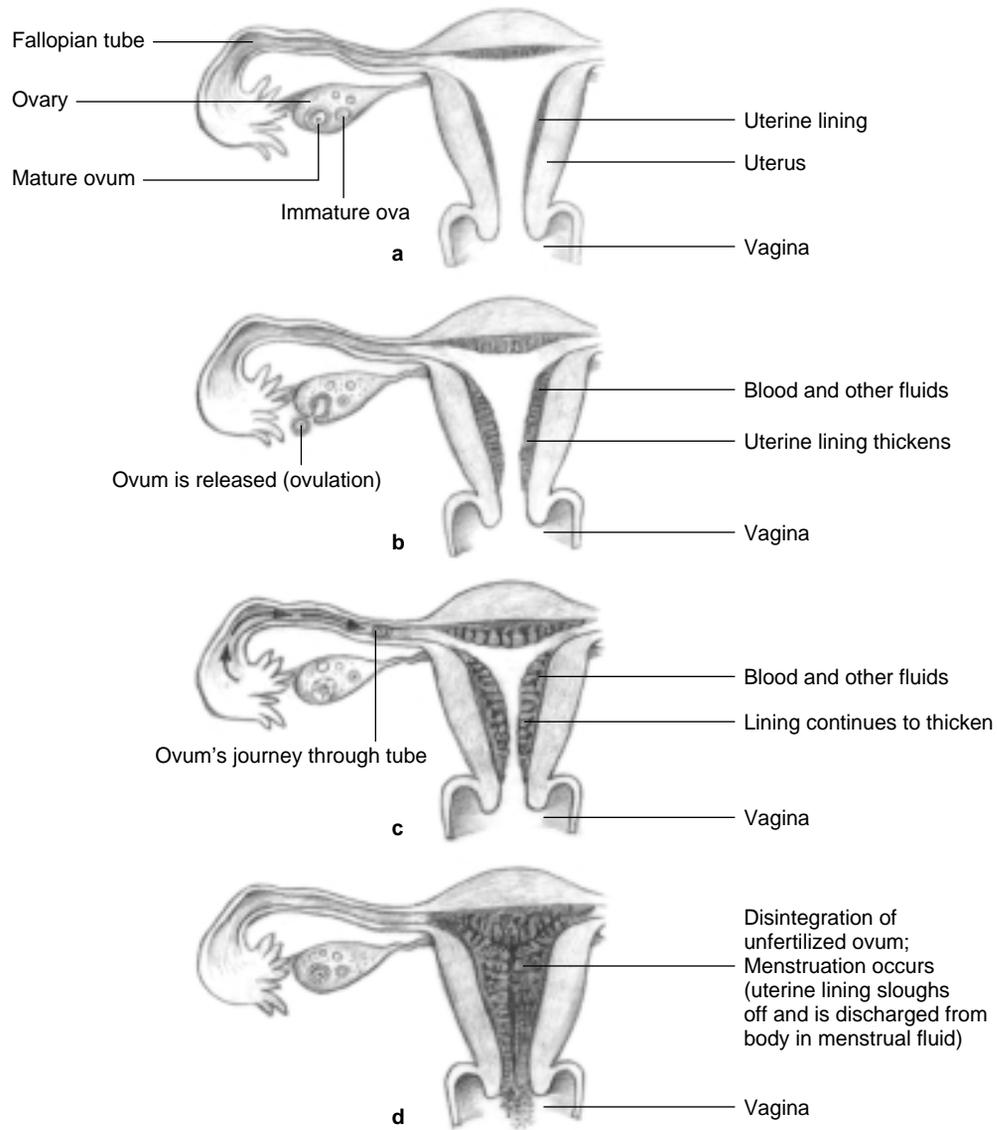


FIGURE A.2

The menstrual cycle: (a) During the early part of the cycle, an ovum matures in an ovary; the endometrium, or uterine lining, begins to thicken. (b) About fourteen days after the onset of the last menstruation, a mature ovum is released; the endometrium is thick and spongy. (c) The ovum travels through one of the fallopian tubes; blood and other fluids engorge the uterine lining. (d) If the ovum is not fertilized, the endometrium breaks down and sloughs off in a form of bleeding (menstruation).

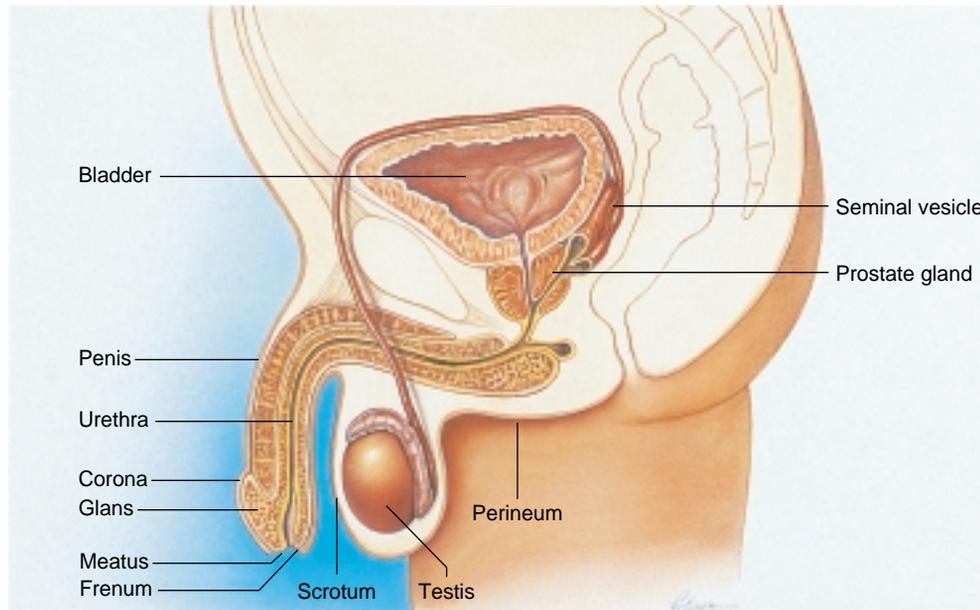


FIGURE A.3

Male urogenital system

■ Male Genital Structures ■

The external male genitalia are the **penis** and the **scrotum** (see Figure A.3). Like the female clitoris, the penis is composed of an erectile shaft and a sensitive tip, or **glans**. The glans is especially sensitive to touch at the **corona**: a crownlike ridge at its base. If a male has not been circumcised, the glans is covered by a thin membrane, the **foreskin**, when his penis is not erect. In **circumcision**, this foreskin is removed.³ On the side of

the penis, which rests against the scrotum, is the **frenum**, the place where the foreskin is or was connected to the penis. The frenum, even more than the corona, is sensitive to tactile stimulation.

When a man is not sexually aroused, his penis is flaccid. When erect, penises vary somewhat in size and are usually about six inches in length and about an inch and a half in diameter. The **urethra** runs through the penis and carries male reproductive cells and urine, though never at the same time.⁴ This open-

3. In the United States, circumcision is commonly performed and the procedure is done shortly after a male baby's birth. For some—particularly Jews and Muslims—circumcision is an important religious or cultural ritual.

Conclusions about whether there are significant health or hygiene benefits to circumcision have varied over the years (Haas and Haas 1993, p. 99; Greenberg, Bruess, and Haffner 2002, pp. 143–145). Current thinking is that “the medical benefits aren’t as compelling as once believed” (Blecher 2001). Also, beginning in the 1970s, the circumcision of male babies has been challenged by those who argue—with some research evidence—that there is enough pain to pose a psychological trauma to the infant (Greenberg et al. 2002, pp. 142–145; Blecher 2001).

In 1999 the American Academy of Pediatrics ceased recommending circumcision as a medically advantageous routine procedure. Instead, it is AAP policy that parents should determine what is in the best interest of the child. Parents should be given accurate information and then make an individual decision based on their

assessment of the advantages and disadvantages of circumcision. “It is legitimate for the parents to take into account cultural, religious, and ethnic traditions, in addition to medical factors, when making this choice” (American Academy of Pediatrics 1999).

As circumcision has become less routine, rates have declined. In 1999, only 65 percent of male infants were circumcised, compared to 90 percent in the 1970s. White rates, which had been much higher than those of other racial/ethnic groups, have almost converged with black rates now (66% of white baby boys and 64% of black babies were circumcised in 1999). Circumcision is less common for Latino or Asian babies (Blecher 2001; Rubin 2001; U.S. National Center for Health Statistics 2002). Some Jews have adopted a substitute circumcision ritual in which there is no actual surgery performed (Blecher 2001).

4. A man's urethra cannot carry urine while his penis is erect because erection automatically blocks the opening from his bladder to his urethra.

ing at the tip of the penis is called the **meatus**, Latin for “passage.”

Behind the penis hangs a sac, the **scrotum**, which holds the two male gonads, the **testicles**. One testicle is usually lower than the other. Testicles, sometimes called *testes*, are the male counterpart to the female ovaries. They produce the male reproductive cells, called **sperm**, as well as male hormones such as testosterone. Unlike ovaries, however, testicles are external structures. That is because they must be maintained at a temperature lower than the body temperature in order to produce living sperm. Between the scrotum and the anal opening is an area called the **perineum**. As in women, this area is sensitive to the touch.

The internal male reproductive structures are also shown in Figure A.3. Above the testicles, near the internal surface of the rectal walls, are two glands, the **seminal vesicles** and the **prostate**. These glands produce **semen**, the milky fluid that carries the sperm

through the urethra and out the meatus. There are usually between 200 million and 500 million sperm in a teaspoonful of semen. Sperm are ejaculated, or ejected, during the rhythmic contractions of **orgasm**.

If they are ejected into a woman’s vagina, sperm move toward her fallopian tubes. Sperm can live in the fallopian tubes from two to five days. If a sperm cell fuses with a female’s egg, fertilization occurs, and a fetus is conceived. There are a number of methods that may be used to prevent conception, and these are discussed in Appendix F.

The structures described above make up the male and female reproductive systems. Their reproductive functions are discussed in Appendix E. Appendix B describes the physiology of human sexual response and sexual expression. (See also The Boston Women’s Health Book Collective. *Our Bodies, Ourselves for the New Century*. New York: Simon and Schuster, 1998.)

Human Sexual Response

APPENDIX A DESCRIBES HUMAN SEXUAL anatomy; here we examine the physiology of sexual response.

The Four Stages of Human Sexual Response

Through carefully controlled laboratory observation over a period of eleven years, sex researchers William Masters and Virginia Johnson (1966) recorded in detail the bodily changes that take place as a consequence of **sexual arousal**: the awakening, stirring up, or excitement of sexual desires and feelings in either ourselves or others. Masters and Johnson described four phases of human sexual response: excitement, plateau, orgasm, and resolution. These phases characterize both men's and women's responses and take place in sex with partners of the same or the opposite sex. Specific stimulation and sexual movements may vary with the presence or absence of a partner and the sex of the partner, as well as with individual preference and spontaneity on any given occasion. However, the underlying physiological response is the same.

Excitement

When people begin to feel sexually aroused, they enter the **excitement phase** of sexual response. Many forms

of stimuli—fantasy, sights, sounds, smells, touches—can cause sexual excitement.¹ Women and men share several responses during the excitement phase, including an increase in blood pressure and pulse rate and faster breathing. There is a heightened feeling in and awareness of the genitals. This is caused by engorgement, or **congestion**, of the genital blood vessels, which causes the affected tissue to swell and, often, coloration to deepen. Another effect of excitement is **mytonia**: increased muscle tension, especially in the abdominal region and in the long muscles of the arms and legs. A measleslike rash, called a **sex flush**, appears on the abdomen and chest in about 75 percent of sexually excited women and 25 percent of aroused men.

In women, sexual excitement is marked by the onset of vaginal lubrication, or “sweating” of fluid from the inner walls of the vagina. In men, sexual excitement is characterized by erection of the penis, caused by congestion.

The excitement phase can be stopped intentionally by removing the sexual stimulus. It can also be stopped or interrupted unintentionally through distractions, such as babies crying, phones ringing, changes in lighting and temperature, or feelings of anxiety or guilt. Once interrupted, the excitement phase can be resumed.

1. For a detailed review of men's and women's responses to sexual stimulation, see the Boston Women's Health Book Collective (1998).

Plateau

The **plateau phase** involves an intensification of processes begun during the excitement phase, with several marked bodily changes. The color of the penile glans and the labia minora becomes a deeper red or reddish-purple. There is increased tension in both involuntary and voluntary muscles. Pelvic thrusting, which begins voluntarily, grows more rapid and becomes involuntary, especially among men. Heart rates may nearly double, and blood pressure continues to rise. If the sex flush appeared on a woman during the excitement phase, much of her body will now be flushed. A man may now show the first signs of a sex flush, which begins under his rib cage and spreads over his chest, neck, and face.

In men, the corona becomes more swollen. Several drops of fluid, which is not semen but which may contain some sperm cells, may emerge from the meatus.² Late in this phase, a woman's clitoris pulls deeply underneath the clitoral hood. This, along with the marked change in color in the labia minora, is evidence of her impending orgasm.

The plateau phase may be intentionally prolonged by decreasing the stimulation, returning to the excitement phase, and then increasing stimulation. If stimulation is withdrawn and not restored, sexual tensions will decrease only very gradually. This can be an uncomfortable process, with feelings of fullness and pressure in the pelvis, cramps, lower back pain (Masters and Johnson 1973, p. 119), and general physical and emotional frustration.

Orgasm

In **orgasm**, or climax, sexual tension reaches its peak and is suddenly discharged. This extremely pleasurable and totally involuntary response, the **orgasmic phase**, lasts a few seconds and is accompanied by pronounced physiological changes. Heart and pulse rates peak. Breathing becomes deeper and faster than in the

plateau phase, so an individual may sometimes momentarily experience a shortage of oxygen. The senses of smell, taste, hearing, sight, and feeling (except for genital sensation) are temporarily diminished. The sex flush is brightest at this point. Muscles in the neck, legs, arms, buttocks, and abdomen may contract spasmodically, and hand and foot muscles often contract strongly. Involuntary rhythmic contractions in the vagina and penis also occur, though their strength varies from person to person and from orgasm to orgasm. In adult men, orgasm is almost always accompanied by **ejaculation**, the rhythmic discharge of seminal fluid containing sperm. Once these contractions begin, a man cannot voluntarily stop ejaculation. Men normally experience a single orgasm; however, women can be **multiorgasmic**, experiencing several orgasms successively during one sexual encounter. About 15 percent of women regularly have multiple orgasms (McCary 1979, p. 109). In women who experience multiple orgasms, each successive orgasm is often more intense than the preceding one.

Resolution

During the **resolution phase** of sexual activity, partners' bodies return to their unstimulated state. The genitals resume normal size and color, the sex flush disappears, muscles relax, and erect nipples soften. Heart rate, blood pressure, and respiratory rates revert to normal.

Return of the penis to its flaccid state begins quickly, then proceeds more slowly. During this stage, men experience a **refractory period**: a time during which they cannot become sexually aroused. The refractory period usually lasts at least twenty minutes and may be considerably longer, particularly as a man grows older. For women, the resolution phase lasts about ten to fifteen minutes and occasionally as long as a half hour. During this time, women may remain sexually aroused and, with continued or renewed stimulation, can experience subsequent orgasms.

2. If this fluid is discharged while the penis is in the vagina, a woman can be impregnated. Thus, interrupting intercourse before ejaculation (*coitus interruptus*) is not a reliable birth control method.

Sexually Transmitted Diseases

BECAUSE AIDS HAS TAKEN CENTER stage, we sometimes overlook other **sexually transmitted diseases (STDs)** and **sexually related diseases (SRDs)**¹ that also threaten comfort, health, reproductive capacity, and sometimes life. Public health officials have become very aware in recent years of the serious impact of some STDs that were previously unknown or thought to be relatively trivial. The effects of STDs may extend to infants born to infected mothers. Not including AIDS, around nineteen million Americans become infected with a sexually transmitted disease each year; almost half are youth between the ages of fifteen and twenty-four (U.S. Centers for Disease Control and Prevention 2004i).

STDs are named according to the bacterium or virus (e.g., syphilis or herpes) that produces them, or they may be defined by their symptomatic effects. Such terms as vaginitis and pelvic inflammatory disease, for example, refer to inflammations or infections of the vagina or reproductive organs in the abdomen.

We'll first describe some common sexually transmitted diseases (not including AIDS); then talk about protective practices; and conclude by discussing the connections between AIDS and other sexually transmitted diseases.

Common Sexually Transmitted Diseases

Table C.1 describes the nature, symptoms, complications, and treatment of STDs other than AIDS. These include: syphilis, gonorrhea, chlamydia, human papillomavirus (HPV), genital herpes, cytomegalovirus (CMV), chancroid, Hepatitis B, pelvic inflammatory disease (PID), and bacterial vaginosis and trichomoniasis.

Rates of *syphilis*, a bacterial disease, peaked in 1990 and then began to decline. By 2000 they had fallen 90 percent. In 2001 syphilis rates began to increase again, but only among men. There have been outbreaks of syphilis among men who have sex with men, and syphilis in that population is often associated with HIV infection (U.S. Centers for Disease Control 2004k).

Gonorrhea is also a bacterial disease. Rates have undergone a long decline; the 2003 rate was the lowest ever reported. Rates vary widely by state, ranging from 5 cases per 100,000 people in Idaho to 264 per 100,000 in Louisiana. Gonorrhea rates vary by race and ethnic-

1. *Sexually related diseases* are "diseases of the reproductive tract that occur in both sexually active and sexually abstinent individuals. These can be caused by organisms that live in the healthy body but under certain conditions, such as stress, diabetes, drug use, and other health-related problems, affect the delicate chemical balance of the body and cause disease conditions of the sexual organs. . . . A sexually related disease can sometimes be transmitted to a sexual partner" (Greenberg, Bruess, and Hafner 2002, p. 462). *Bacterial vaginosis* is an example of a sexually related disease.

Sexually related diseases are often grouped with and discussed as sexually transmitted diseases—as we have done here—in order to inform sexually active individuals about disease conditions associated with sexual activity. When tissue becomes irritated or broken or germs are transferred from their normal site in the body to elsewhere in the reproductive, urinary, or digestive systems, an infection can occur that is not strictly speaking a sexually transmitted disease, but which is produced by or related to sexual activity.

Table C.1

Sexually Transmitted Diseases		
DISEASE	NATURE, SYMPTOMS, AND COMPLICATIONS	TREATMENT
Chancroid	Bacterial infection that causes genital ulcers sometimes accompanied by enlarged, painful lymph nodes in the groin. Screening for chancroid is technically difficult, but the disease has now become relatively rare.	Antibiotics
Chlamydia	Genitourinary tract bacterial infection. Chlamydia can cause pelvic inflammatory disease in women, which can lead to infertility and is potentially life-threatening. Can also lead to infertility in men. Can cause prematurity, eye disease, and pneumonia in infants born to infected mothers. Frequently asymptomatic, so screening is important. Screening is recommended for women under the age of twenty-six and for older women who are with a new partner or who have multiple sexual partners.	Antibiotics
Cytomegalovirus (CMV)	A virus that is part of the herpes family. It produces mononucleosis-like symptoms in an active infection. CMV can be transmitted through sexual contact, but in other ways as well. This virus is present in a majority of the American population, but is usually latent; that is, no symptoms are manifested. For people with impaired immunological systems, the effects of CMV are more severe and include gastrointestinal problems or blindness. When a newly acquired infection is transferred to a fetus during pregnancy, especially when it is a first infection for the mother, a possible result is retardation or death.	Contact CDC for latest developments. Immunosuppressed adults with serious symptoms are treated with antiviral drugs. Drug use is being tried with infants on an experimental basis.
Genital Herpes	A viral disease that produces lesions on the genitals that are similar to cold sores that appear on the mouth. May be asymptomatic, but symptoms often take the form of a general malaise (tiredness, depression, low energy, not feeling right). Frequently recurs, but the first episode is usually the worst. Genital herpes can be transmitted to sex partners or infants even when symptomless. Can cause blindness, hearing problems, or death of infants born to infected mothers, although this last is a rare occurrence.	Antiviral drugs such as acyclovir can control outbreaks of symptoms, although the infection cannot be cured. Taking care of general health and avoiding stress may help prevent outbreaks.
Gonorrhea	Gonorrhea is a bacterial disease, transmitted through sexual contact, including oral contact. It can also be transmitted from mother to child during delivery. Symptoms include genital irritation, discharge, and painful urination, although gonorrhea in women may be symptomless. Gonorrhea can lead to pelvic inflammatory disease in women, which can, in turn, lead to infertility. Infertility is possible in men also. Newborns of infected, untreated mothers are at risk of serious complications. In adults gonorrhea may spread to the blood and joints and become life threatening.	Penicillin or other antibiotics. There are now penicillin-resistant strains, making gonorrhea riskier than it had been and turning treatment into a search for the right antibiotic. At risk people should be tested routinely, and certainly if they detect possible symptoms.

continued

Table C.1 continued

Sexually Transmitted Diseases		
DISEASE	NATURE, SYMPTOMS, AND COMPLICATIONS	TREATMENT
Hepatitis B (HBV)	This viral disease, contracted primarily through sexual contact or infected blood or needles, is a liver disease similar to other forms of hepatitis. Symptoms are general, such as nausea, vomiting, pain, malaise, loss of appetite, and jaundice, but HBV can be asymptomatic. HBV can cause short-term liver inflammation that subsides after the active phase, or chronic infections that can lead to such life-threatening conditions as cirrhosis and liver cancer. It can also be passed from mother to child during birth.	Treatment consists of certain medications used to prevent or retard liver damage. There is now a vaccine for hepatitis B, recommended for individuals at high risk in terms of their sexual behavior or exposure to the disease in their household or work and routinely given to children. Also recommended for overseas travelers to countries where HBV is prevalent.
Human Papillomavirus (HPV)	Also termed <i>genital warts</i> because one possible symptom of this viral disease is warts—sometimes painful—on genital organs or rectum. Can increase the risk for cervical cancer, and more rarely for penile and anal cancer.	HPV is often symptomless, and this viral infection usually resolves on its own. But serious complications are possible, notably cervical cancer. Pap smears can detect precancerous or cancerous lesions caused by HPV, and these can be treated. Genital warts can be removed surgically, chemically, or cryogenically (freezing of tissue).
Pelvic Inflammatory Disease (PID)	A condition that may develop when other STDs go untreated. Can result in chronic pelvic pain in women and/or harm to the reproductive organs—such as damage to the fallopian tubes—which causes infertility.	Treat the causal STD with antibiotics before PID develops. Sex partners should be treated as well to prevent reinfection.
Syphilis	A bacterial disease that is transmitted through vaginal, anal, or oral sex; transmission through oral sex is increasingly common. Syphilis develops in stages. In the first stage, a genital sore appears. It disappears but is followed in a few weeks by fever, swollen lymph nodes, and rash, which also recede. May be in remission for some years, but arrival of the last stage involves damage to heart, nervous system, brain, and other organs. In infected pregnant women, can cause stillbirth or birth defects.	Syphilis is diagnosed by a blood test. Early diagnosis is important because syphilis can be cured by antibiotics if caught early enough. Syphilis can sometimes be asymptomatic, so it is important that people at risk be regularly screened. Later-stage syphilis cannot be successfully treated.
Trichomoniasis, Bacterial Vaginosis, and Vaginitis	Bacteria, fungi, and other infectious organisms, allergens, or physical irritation can cause inflammation, discharge, and itching of the vagina and genital area. <i>Trichomoniasis</i> is caused by a microscopic parasite, while <i>bacterial vaginosis</i> is not sexually transmitted, although it is associated with sexual intercourse. <i>Vaginitis</i> is the term used for nonspecific vaginal and genital irritations of uncertain cause. Male sex partners may develop urethritis (inflammation of the urinary tract) or penile lesions. Vaginitis from some causes can result in an oral infection in newborn infants and trichomoniasis and bacterial vaginosis are associated with premature or low-birth-weight babies.	Various prescription and over-the-counter medications are used to treat these common—and often persistent—conditions. Male sex partners—who may be asymptomatic—also need to be treated to avoid reinfection. Women’s health books such as <i>Our Bodies, Ourselves for the New Century</i> (Boston Women’s Health Book Collective 1998) provide useful advice on diet, clothing, hygiene, and so on, which can help prevent some forms of vaginitis or prevent recurrences.

Sources: Greenberg, Bruess, and Haffner 2002, Chapter 14; Rosenthal 2003; “Syphilis through Oral Sex” 2004; U.S. Centers for Disease Control and Prevention 2002; 2004a; 2004b; 2004c; 2004d; 2004e; 2004f; 2004i; 2004j; 2004k; 2004m.

ity, with African American rates much higher than those of other groups. Men and women are equally likely to have gonorrhea. A current concern is the growing resistance of gonorrhea to antibiotic drugs that were previously effective in curing the disease (U.S. Centers for Disease Control and Prevention 2004j; 2004l).

While syphilis and gonorrhea have long been known and regarded as serious health threats, some more recently identified STDs, *chlamydia* and *human papillomavirus (HPV)*, are the most commonly occurring STDs today. Reported cases of chlamydia have increased in recent years, but some of the apparent increase is due to better reporting after screening programs were introduced in the 1980s. Chlamydia is a risk factor for pelvic inflammatory disease, a significant cause of infertility, and PID can be life-threatening as well. Chlamydia is asymptomatic and often not recognized. Thus, it is important for sexually active women under twenty-six and older women at risk—those with new or multiple partners—to be tested periodically (U.S. Centers for Control and Prevention 2004b; 2004j; 2004l).

Human Papillomavirus (HPV) affects at least 50 percent of sexually active men and women at some point in their lives. Most will not have symptoms, and in many instances the disease will recede on its own. But HPV is a family of viruses. Some strains are “high risk,” implicated as a causal factor in cancer of the cervix and, more rarely, other cancers of the genital area. “Low risk” HPV viruses can produce genital warts (U.S. Centers for Disease Control 2004d). Researchers are experimenting with vaccines that might prevent development of cervical cancer, the most serious complication of HPV (Grady 2002).

Genital Herpes is a viral disease transmitted through genital or oral sex. Genital herpes increased 30 percent from the 1970s to the 1990s, but declined 17 percent in the 1990s, perhaps as a consequence of the decline in risky sexual behavior among teens. Still, approximately 20 percent of American adolescents and adults are infected. Women have slightly higher rates of infection, while African Americans have rates of genital herpes that are substantially higher than those of whites. In part, this has to do with differential reporting. But part of the difference is real, attributed to poverty, drug use, sexual networks in which STDs are prevalent, as well as less access to health care (Altman

2004a; Rosenthal 2003; U.S. Centers for Disease Control and Prevention 2001c; 2004c).

Chancroid is a bacterial STD similar to genital herpes, found primarily in men. However, from a high point of around 5,000 cases in 1987, chancroid has declined to almost the point of extinction; only 54 cases were reported in 2003 (Rosenthal 2003; U.S. Centers for Disease Control and Prevention 2004j).

Cytomegalovirus (CMV) is a viral STD that infects a majority of adults by the time they reach age forty. Symptoms of active CMV resemble mononucleosis. In most individuals the disease is latent, with no symptoms or health effects. However, immunosuppressed adults and infants exposed during their mother’s pregnancy are at risk of serious health damage if they become infected with CMV (U.S. Centers for Disease Control and Prevention 2002).

Hepatitis B is a liver disease caused by infection with the hepatitis B virus (HBV). It is spread from one person to another by contact with blood, semen, or vaginal fluids, most commonly through vaginal, oral, or anal sexual contact. There is now a vaccine for HBV that is routinely administered to children. New infections have decreased from about a quarter of a million annually in the 1980s to fewer than 80,000 today.

Pelvic Inflammatory Disease (PID) is an infection of the reproductive organs (uterus or fallopian tubes) that symptomatically causes abdominal pain, but may also be symptomless. PID often occurs as a complication of such sexually transmitted diseases as chlamydia or gonorrhea, although it may also be caused by other infections that invade the reproductive organs through the vagina and cervix. More than a million women have an episode of pelvic inflammatory disease each year, and 100,000 cases of infertility are attributed to PID annually (U.S. Centers for Disease Control 2004i).

Trichomoniasis, Bacterial Vaginosis, and Vaginitis are grouped together because their symptoms are similar—vaginal discharge and itching—and so are their complications. These diseases increase the risk of transmission of HIV and other sexually transmitted diseases, and they are associated with premature delivery and low birth rate babies. But they do differ as to nature and cause.

Bacterial vaginosis is a sexually related disease of women that results from a disruption of the normal balance of bacteria in the vagina. The specific cause of bacterial vaginosis is not well understood. It may or

As We Make Choices



HIV/AIDS—Some Precautions

AIDS has changed the context of sex, relationships, and life choices. Readers will want to keep updating their information, but here are some precautions that at present seem reasonable:

1. **“Safer sex”** (no precautions can make sex completely risk-free). For sexually active individuals who are not in long-term, securely monogamous relationships, this means the use of latex condoms (or plastic condoms for those who are allergic to latex, but *do not use* animal skin because it is permeable and will permit transmission of the HIV virus).

“Unless it is possible to know with *absolute certainty* that neither you nor your sexual partner is carrying the HIV/AIDS virus you must use protective behavior. *Absolute certainty* means not only that you and your partner have maintained a mutually faithful monogamous sexual relationship, but it means that neither you nor your partner has used illegal intravenous drugs” (Koop n.d., p. 16).

2. For heterosexuals as well as those in the gay community, “safer sex” also means the limiting of partners in number and selectivity. It would be prudent to confine sexual activity and relationships to those worth the risk. This can mean decisions about individuals, or it can mean categorical decisions about multiple partners or sex with members of high-risk groups such as men who have sex with men,

individuals who have multiple partners, intravenous drug users, or people known to have AIDS or HIV.

Inquiring about a potential sex partner’s health, HIV status, and previous partners is useful. However, it is entirely possible that a prospective partner will not be honest. “Large proportions of men and women with HIV have sex without telling partners that they are infected” (“Large Proportions” 2003, p. 235). Many people are unaware and untested (Altman 2002) It is also the case that antibodies to HIV do not develop for up to six months or longer after infection with the virus, so an infected person may appear virus-free in early tests and may report the possibly erroneous results in good faith. Consequently, experts argue that the use of latex or plastic condoms with any partner is the most protective approach.

3. Deciding to take risks may involve others: your current or future sex partners, your children, and your family. A responsible sexually active individual concerned about risk to others will be voluntarily tested and, if the test is positive, will either refrain from sex or inform the partner beforehand and use latex or plastic condoms during sex. Responsible sex also includes telling prospective sex partners about past sexual activity with infected or high-risk individuals.

4. Women planning to become pregnant or not taking precautions against pregnancy should be sure that they are free of HIV by being tested and perhaps retested over a six-month period of time. If they are infected and become pregnant, they should seek medical help; with that, they are likely to prevent passage of the HIV virus to their child.
5. Health care workers should take the precautions recommended by guidelines for their occupation.
6. Citizens should support sex education designed to prevent the spread of AIDS. Appropriate AIDS education should be encouraged for children (because even young children can be exposed to AIDS through sexual abuse), as well as for teenagers and adults. Videotapes intended for home viewing are available from schools, libraries, public health departments, and commercial sources.

Keep yourself informed by consulting your local public health department, physicians, clinics, reproductive health services, student health services, churches, gay/lesbian activist groups, and/or media sources. A good source for comprehensive and updated information and links to other websites is the National Library of Medicine information website: <http://sis.nlm.nih.gov/HIV>. The Centers for Disease Control and Prevention website is also an important resource: www.cdc.gov.

may not be associated with sexual activity, but having a new partner or multiple partners does seem to increase the risk. Trichomoniasis is clearly a sexually transmitted disease, caused by parasites. Both men and women can get trichomoniasis, though it is more common among women, and the itching/discharge symptomology is more pronounced in women. Vaginitis is a nonspecific irritation or infection of the female genital tract.

Protective Practices

Because many STDs can be asymptomatic—that is, have no visible symptoms to indicate the presence of the disease—it is important for people at risk to have frequent screening for STDs. “At risk” in this context includes anyone with multiple sex partners or a partner who has a history of multiple partners. Individuals whose general health makes them vulnerable to infection are also at risk. In truth, any sexual relationship that is not long term and not known to be monogamous should be considered risky. Sexually active individuals, particularly women who have regular gynecological checkups, might wish to make *STD screening* a normal part of their health care.

*Latex condoms*² provide some but not absolute protection from STDs. Condoms are clearly effective in the prevention of HIV infection, gonorrhea, chlamydia, and trichomoniasis. These are “discharge STDs,” spread by the discharge of semen or vaginal secretions, and condoms prevent these fluids from entering the body. Condoms provide some unknown degree of protection from genital herpes, syphilis, and chancroid (all “genital ulcer” STDs) and human papillomavirus. Those STDs are transmitted by contact with skin and mucous membranes, and condoms do not cover all of the vulnerable areas (U.S. Centers for Disease Control and Protection 2003). Vaccines exist for Hepatitis B (U.S. Centers for Disease Control and Protection 2004f). Efforts are under way to develop vaccines for some other STDs.

To be effective, condoms must be used always, and used correctly. A survey of 1,155 adults eighteen through thirty-five years old conducted by the American Social Health Association found that one-quarter

of single, sexually active individuals said they never use condoms in vaginal sex; 71 percent in oral sex (Oglesby 2004).

Many mistakes are made by users. A study of 158 male students at Indiana University found that 43 percent waited too long, putting the condom on after sex began; 30 percent put the condom on upside down, and 15 percent removed it before the sex act was completed. Broken or slipped condoms were also reported (Webster 2002). A study of almost 800 sexually active young women between the ages of eighteen and twenty-four found that 44 percent of the women who used condoms in a sexual encounter waited too long (after first penetration) and 19 percent reported slippage or broken condoms (Brody 2003c). Condom users should check condoms for intactness and currency (not past expiration date) and should carefully read directions about usage, best done beforehand.

Early treatment can often prevent the most severe outcomes of STDs. CDC guidelines recommend these principles regardless of the STD being treated:

1. Refrain from sex while infectious and while under treatment.
2. Inform sex partners so they can be treated.
3. Continue treatment as long as recommended and return for follow-up visits.
4. Use condoms to minimize future transmission, as many STDs tend to recur. Successful treatment of STDs may require a great deal of trial and error on the physician’s part and considerable patience from the patient.
5. Seek the advice of a physician before becoming pregnant.

AIDS and Other Sexually Transmitted Diseases

Sexually transmitted diseases other than HIV/AIDS are important health risks in their own right. But many STDs are also significant risk factors for transmission of HIV/AIDS. Genital ulcers (open sores) or other bodily vulnerabilities produced by STDs make infection by the HIV virus much more likely. In fact, many HIV-infected people are found to have other STDs as well (Kaiser Family Foundation 2003).

While HIV/AIDS is in a class by itself in terms of threat to life and health, precautionary guidelines against the risk of HIV/AIDS are also useful for sexu-

2. Polyurethane (plastic) condoms are available for people allergic to latex, but they have not been tested for effectiveness against STDs. Condoms made out of lambskin, or other “natural” materials, are known to be ineffective (Brody 2003c).

ally active individuals who wish to avoid other sexually transmitted diseases. See “As We Make Choices: HIV/AIDS—Some Precautions.”

The Division of Sexually Transmitted Diseases at the Centers for Disease Control and Prevention (CDC) in Atlanta is a central resource for information and research on HIV/AIDS and other STDs. The STD hotline number is 1-800-227-8922 and the AIDS

hotline number is 1-800-342-2437. The CDC website is: <http://www.cdc.gov>. You can find material on sexually transmitted diseases by clicking on the “diseases and conditions” link on the home page and then choosing “HIV/AIDS” or “Sexually Transmitted Diseases.” Alternatively, go to Health Topics A–Z, and find “HIV/AIDS” and “Sexually Transmitted Diseases” or search for a particular STD.

Sexual Dysfunctions and Therapy

ASEXUAL DYSFUNCTION MAY BE DEFINED as “a specific chronic disorder involving sexual performance” (Greenberg et al. 2002, p. 515). But the concept of sexual dysfunction has been rethought in recent years, to give priority to whether or not an individual or couple finds a particular condition or situation to be troublesome. In these terms, a sexual dysfunction is a “chronic inability to respond sexually in a way one finds satisfying” (p. 515). Research indicates that 43 percent of women and 32 percent of men report that they experience sexual problems (Laumann, Paik, and Rosen 1999).

Sex experts identify these dysfunctions: premature ejaculation, retarded ejaculation, and erectile dysfunction in men; female sexual arousal disorder, female orgasmic dysfunction, and vaginismus among women; and dyspareunia as a sexual dysfunction that may be experienced by either men or women (Kaplan 1974; Greenberg et al. 2002). See Table D.1 for an outline of common sexual dysfunctions, their symptoms, and treatment.¹

In addition, there are situations of absent or minimal sexual desire that are not considered sexual dysfunctions per se, but that mean a sexual life that an individual is not happy with and wishes to change.

Technical terms are *inhibited sexual desire*, *dissatisfaction with sexual activity frequency*, and *sexual aversion*.

Inhibited sexual desire may occur only in the context of particular relationships or situations (such as lack of privacy). Dissatisfaction with sexual frequency is very common. Partners as individuals often differ in their preferences, and men typically prefer more frequent sexual activity than do women.

Sexual aversion refers to a distaste for sex that can have quite different origins: parents who were very negative about sex; a traumatic experience of rape or abuse; too much pressure from partners; or gender confusion (Kaplan 1995; Greenberg et al. 2002).

It may be hard to determine in measurable terms whether or not a person has a sexual dysfunction. For one thing, virtually all sexually active people will have some instances of unsatisfactory sexual experience or nonperformance. And couples and individuals vary in their expectations of sex. It is for this reason that therapists would rather rely on the individual’s or couple’s definition of the situation in considering the need for treatment (Greenberg et al. 2002).

Sexual dysfunctions, along with the more general situation of decreased sexual desire, may result from certain physical disabilities and chronic diseases. Thus, the first step in sexual therapy needs to be a medical review and examination. Some surgical and chemotherapy treatments for cancer can cause sexual dysfunction. Various medications are related to sexual difficulties: drugs for hypertension and some heart conditions, antidepressants, anti-anxiety drugs, and street narcotics, for example (Kaplan 1974; Forman 1996; Hellstrom 1997).

1. By and large, general information on sexual dysfunction is presented in most sources in the context of heterosexual relationships, often presuming marriage.

Table D.1

Common Sexual Dysfunctions		
DYSFUNCTIONS	SYMPTOMS	USUAL TREATMENT
Premature Ejaculation	Inability of a man to control ejaculatory reflex or if one or both partners are dissatisfied.	Repeated stimulation to the point just before ejaculation.
Retarded Ejaculation	Inability of a man to trigger orgasm; may be situational or a general dysfunction.	Sexual exercises combined with therapeutic counseling; temporary avoidance of intercourse and use of other means to elicit ejaculation.
Erectile Dysfunction	Inability of a man to produce or maintain an erection.	For medical conditions or other erectile dysfunction, pills such as Viagra, Levitra, or Cialis stimulate erection (new drugs may come on the market after this book goes to press). Alternatives include another drug, which is injected into the penis, or penile implant or vacuum pump. For psychosocial factors, sexual exercises combined with therapeutic counseling, with focus shifted away from performance aspect of sexual interaction.
Female Sexual Arousal Disorder	Sexual unresponsiveness: inability of a woman to derive erotic pleasure from sexual stimulation.	Education about arousal techniques, creation of relaxed, sensuous environment free from pressure to have intercourse. Efforts to find a pharmaceutical treatment for female sexual arousal disorder or other female sexual dysfunction has thus far proven unsuccessful.
Female Orgasmic Dysfunction	Difficulty of a woman in reaching orgasm.	Focus on helping woman learn to reach climax by herself, then with partner in sexual exercises not initially aimed at intercourse.
Vaginismus	Involuntary contraction of vaginal walls that prevents intercourse.	Correction of possible physical conditions; counseling plus exercises to recondition muscles.
Dyspareunia	Painful sexual intercourse.	Treatment of any relevant medical conditions; education about hygiene. For women, education of self/partner about stimulation in foreplay, similar to therapy for orgasmic difficulties.

Sources: Kaplan 1974, 1995; Greenberg et al. 2002.

Note: Treatment is preceded by a complete physical examination to identify any physiological causes for the disturbance.

Some 40 percent to 90 percent of sexual problems have psychological aspects—if that term is broadly defined to include relational and cultural issues (Greenberg et al. 2002, pp. 515; 529). Women with female sexual arousal disorder and men with erectile dysfunction, for example, were more likely to be generally unhappy with their lives than those not reporting sexual problems. Of course, what is cause and what is effect are often unclear (Laumann et al. 1999); sex-

ual difficulties would be likely to dampen one's life satisfaction.

The general state of a couple's relationship will interact with their sexual relations. Typically, women's sexual problems are more closely tied to relationship issues than men's (Bancroft, Loftus, and Long 2003). Married men and women have fewer sexual problems than nonmarried individuals. The highly educated have fewer sexual problems, and people experience

more sexual dysfunction or disinterest as they age (Laumann et al. 1999).

The cultural climate regarding sex is relevant to sexual attitudes and experiences. Women in a culture that maintains a double standard may be less free sexually, while men's gender-related cultural issues would typically center on performance pressure (Greenberg et al. 2002, p. 527).

■ Premature Ejaculation ■

Premature ejaculation, the inability to control the ejaculatory reflex, is one of the most common male sexual complaints, reported by around 30 percent of men (Laumann et al. 1999). A man might ejaculate after several minutes of foreplay or just after entering his partner's vagina. In contrast, a man who has good ejaculatory control can continue to engage in sex play while in a highly aroused state.

The expectations of the man and woman play a role in defining whether or not there is a premature ejaculation problem. Some sexual experts, especially in the past, would look at the actual time a man can maintain sexual thrusting without ejaculation. More recently, partners' satisfaction is used as a diagnostic criterion by some therapists, while others would focus on the man's inability to control ejaculation. One way therapists deal with premature ejaculation is to teach a couple an exercise through which the man can gradually learn to control his orgasm. Therapists report that, in most cases they have treated, premature ejaculation eventually ceases to be a problem (Mulcahy 1997).

■ Retarded Ejaculation ■

A man afflicted with **retarded ejaculation**, or ejaculatory inhibition, cannot trigger orgasm. Less than 10 percent of men report this dysfunction (Laumann et al. 1999), although it may be more prevalent as an occasional experience. In mild form, ejaculatory inhibition is confined to specific anxiety-producing situations, such as when a man is with a new partner or when he feels guilty about the sexual encounter. In more severe cases, a man may seldom experience orgasm during intercourse but may be able to achieve it by masturbation or by a partner's fondling or oral stimulation.

Once physical or drug-related causes are ruled out, treatment consists of couple counseling sessions along with a series of progressive sexual exercises designed to relieve the man of his latent fears about intercourse. The rate of success with therapy is fairly high (Mulcahy 1997; Hellstrom 1997).

■ Erectile Dysfunction ■

A man suffering from **erectile dysfunction** is unable to produce or maintain an erection.² Although he may become aroused in a sexual encounter and want to have intercourse, he cannot. Virtually all men of whatever age occasionally experience an episode of erectile dysfunction—perhaps in response to over consumption of alcohol or circumstances in which either the environment or feelings about the partner are not conducive to good sex. As a more chronic condition, estimates are that some thirty million American men experience erectile dysfunction, a problem that increases with age: 7 percent of men aged eighteen through twenty-nine, 9 percent of men in their forties, and 40 percent of men in their eighties experience erectile dysfunction.

Physicians estimate that 70 percent to 80 percent of the erectile dysfunction cases they see have at least partial physical causes. Diabetes, certain medications, spinal cord injury, and nerve damage from prostate cancer or other surgery are just few of the many health conditions that may affect a man's erection (Greenberg et al. 2002). Today, there are several medical treatments for chronic erectile dysfunction, including Viagra and other medications designed to sustain an erection. Surgical insertion of an inflatable implant into the penis is another option (Leland 1997), though somewhat displaced now by pharmaceutical treatment. Newer drugs have been developed to assist men who do not respond well to Viagra.

Nonmedical factors that may affect erectile function are usually situational rather than deeper psychological problems: fear of sexual failure, pressures created by an excessively demanding partner, or guilt. Because our society tends to equate the capacity to have an erection with adult masculinity, even transient

2. "Impotence" is the term by which erectile dysfunction was known until very recently. Sex therapists now reject the term because of its implication of a more general powerlessness.

impotence may cause a man to feel anxious. As with other sexual dysfunctions, the anxiety produced by one otherwise insignificant and transitory failure may initiate a downward spiral in which anxiety retards sexual responsiveness, leading to more anxiety about performance, less sexual success, and so on.

Depression or relationship discord may accompany erectile dysfunction, and, if so, these symptoms must be at least somewhat relieved before a therapist can treat the sexual dysfunction itself. Therefore, therapists combine sexual exercises at home with therapeutic counseling. The exercises are designed to free the man from pressures to perform and let him simply enjoy his sexual feelings. Essentially, the couple is instructed to caress each other during sexual play but not to have intercourse. Permission to enjoy himself without having to perform allows the man to relax without worrying whether his body will respond. Paradoxically, the more he relaxes, the more likely his body is to respond. This same philosophy lies behind much of the treatment for female sexual dysfunction.

Female Sexual Arousal Disorder

Women who experience **female sexual arousal disorder**³ derive little if any erotic pleasure from sexual stimulation and do not evidence such physiological responses as vaginal lubrication. About 30 percent of women (compared to 15 percent of men) report that they lack interest in sex (Laumann et al. 1999). Some women have never experienced erotic pleasure; others have at one time but no longer do. Often they enjoyed petting before marriage but became unable to respond when intercourse was the expected goal of sex.

Besides giving the couple basic information, therapists encourage them to create a relaxed, sensuous atmosphere at home, one that allows for the natural unfolding of sexual responses. In one exercise, the individuals take turns caressing each other, but they do not progress to sexual intercourse and orgasm. Freed from the pressure to have intercourse, a woman can

often experience erotic sensations, and the couple can gradually build on this sensation of pleasure until they are eventually ready for intercourse.

Female Orgasmic Dysfunction

About a quarter of women have difficulty in reaching orgasm, termed **female orgasmic dysfunction** (Laumann et al. 1999). A few women cannot reach a climax under any circumstances. More often, a woman can reach orgasm, but only under specific conditions. Many women with this dysfunction enjoy sex; they just “get stuck” at the plateau phase and cannot proceed to a climax (Masters and Johnson 1970; Masters, Johnson, and Kolodny 1994). As in erectile dysfunction, anxiety about performance may feed back to further inhibit a woman’s sexual responsiveness. Only about 5 percent of orgasmic dysfunction is believed to have organic causes (Greenberg et al. 2002).

Treatment for women who have never experienced orgasm usually begins by focusing on the woman. The therapist asks her to masturbate at home alone, stressing that the environment should be free from distractions and interruptions. Another approach for women who have never experienced orgasm is group education. Women meet together to learn about their bodies; they are then encouraged to masturbate at home until they become familiar and confident with their own response cycles (Masters, Johnson, and Kolodny 1994). Research confirms the effectiveness of both masturbation and various forms of talk therapy, including general couple therapy (Konner 1990; Kaplan 1974; 1995).

Once a woman can stimulate herself to climax, her partner enters the treatment program. The couple is told to make love as usual, except that after the man ejaculates, he stimulates his partner to orgasm. The woman is told to be utterly selfish, not to monitor her progress toward orgasm but to simply enjoy her sensations. Women are cautioned that watching one’s own response to see if it’s “right”—that is, headed toward orgasm—tends to inhibit physical responsiveness and to contribute to tension that sometimes develops into long-term sexual problems (Masters and Johnson 1970; Masters, Johnson, and Kolodny 1994). Instead, each partner is to enjoy the pleasurable sensations produced by the caresses of the partner.

3. “Frigidity” has been replaced as a term for female sexual dysfunction because of its negative aura and the implication that a woman who has a sexual response problem is emotionally “cold” or hostile to her partner.

This treatment is helpful in letting couples see beyond the myth of the simultaneous orgasm—the erroneous idea that true love or really great sex means that both partners must always reach orgasm at the same time. Sometimes partners do climax simultaneously, but not usually. The belief that they *should* can leave the woman, who is typically slower to become aroused, frustrated; it may even encourage her to fake it. It may be better to take turns in being pleased to orgasm.

Direct Clitoral Versus Vaginal Stimulation

One reason that it may be better to take turns is that many women report they do not reach orgasm through vaginal stimulation in intercourse. As Appendix A points out, there is a much greater concentration of nerve endings in the clitoris than in the vagina itself. One possible pattern is for the husband to stimulate his wife's clitoris until she reaches orgasm and then to enter her vagina to attain his own climax.

Research indicates that of those women who experience orgasm, only about 30 percent to 44 percent do so without clitoral stimulation (Greenberg et al. 2002, p. 522). Most experts and therapists see the need for direct clitoral stimulation as normal to female sexuality. The best strategy, it would seem, would be for the individual woman to be aware of and make her partner aware of her own response pattern.

Some women never achieve orgasm with a partner even with direct clitoral stimulation, although they are able to climax by masturbating. Typically, this situation reflects a woman's anxiety, ambivalence, or anger about the relationship. Treating this type of inorgasm typically involves individual or marital therapy or both.

■ Vaginismus ■

Vaginismus is relatively rare. A woman with this dysfunction is anatomically normal, but whenever her partner attempts to penetrate her vagina, the vaginal muscles involuntarily contract so that intercourse is impossible. Typically, vaginismic women are, at least unconsciously, afraid of vaginal penetration and intercourse.

After any physical conditions have been corrected, therapists treat vaginismus by seeking in counseling

sessions to uncover the basis for the woman's fear of vaginal entry. Then progressive exercises are used to recondition the muscles at the entrance to the vagina. The length of the treatment varies, but therapists report excellent results (Kaplan 1974).

■ Dyspareunia ■

Dyspareunia refers to recurrent pain that men or women may experience during sexual activity. For men, pain may localize in the penis or testes or be felt internally. For women, pain may take the form of burning or cramping felt in the vagina or pelvis. A little more than 20 percent of women aged eighteen through twenty-nine experience dyspareunia; rates decline as women get older.

There are a variety of possible physical causes for dyspareunia in either men or women, and these call for appropriate medical treatment or improved hygienic practices. Women may experience pain during intercourse if their vagina has not become sufficiently lubricated before penile insertion. Here the solution seems to be education about sexual anatomy and response, and changed practices regarding foreplay—as well as ensuring the most anxiety-free setting for intercourse. If relationship issues underlie problems in physical responsiveness, they need to be addressed.

In all of the dysfunctions we have described, a common thread is the emotional climate of a couple's relationship. As therapists help a couple to overcome their immediate sexual difficulties, they also try to help partners recognize and avoid alienating practices that may become obstacles to mutually pleasurable sex. Maintaining and enhancing the total couple relationship is an important part of the therapeutic process.

■ Sex Therapy ■

The number of people seeking treatment for sexual dysfunction has increased in recent years. This is probably due to increased openness about sexuality and willingness to admit a problem—perhaps former Senator Bob Dole has led the way in his acknowledgment of erectile difficulties in advertisements for Viagra (Hitt 2000). Viagra exemplifies the development of more effective sex therapies in recent years, whether

medical or involving new forms of psychological or relationship therapy (Greenberg et al. 2002).

In traditional approaches to treating sexual dysfunction, therapists looked for subtle and profound psychological sources, such as unresolved emotional conflicts from childhood or severe marital power struggles. These causes and therapies still exist, but today most therapists focus on more immediate and obvious reasons for the dysfunction. These include not only health conditions (in a population whose median age is increasing) but also anxieties about sexual failure or the partner's satisfaction. These fears can create various sexual defenses and inhibit people from abandoning themselves to the experience. One important feature of Masters and Johnson's therapy is its attempt to remove performance pressure by insisting that the couple not strive for orgasm or even have intercourse but rather focus on all-over body pleasure and pleasuring.

Masters and Johnson laid down some ground rules for sex therapy in their book *Human Sexual Inadequacy* (1970). They said that therapists should work in male–female teams and with both partners in the relationship. They stressed that the team should be comfortable with their own sexuality and nonjudgmental about the full range of human sexual activity. Since then, some respected therapists—Helen Singer Kaplan, for example—have successfully treated couples without a co-therapist (Kaplan 1974). Many contemporary therapists continue to follow the Masters and Johnson guidelines, however.

Therapy normally begins with a physical and psychological examination of both partners. The last decade has witnessed a significant return to a consideration of medical problems and physical treatments for male sexual dysfunction. New hormonal products are also envisioned for the treatment of female sexual dysfunction (Riordan 1999; Hitt 2000; Leland 2000).

A legitimate therapist will give a couple a clear picture of what to expect during treatment and will probably make a therapeutic contract with them that clearly establishes the couple's responsibility for their treatment. They will also scrupulously follow professional ethical guidelines that prohibit therapists' becoming sexually involved with clients. Sensitivity to racial/ethnic cultural differences and religiously based values is also important.

One way to check sex therapists' qualifications is to find out whether they belong to a professional asso-

ciation. An important national organization is the American Association of Sex Educators, Counselors, and Therapists. This group publishes the *Journal of Sex Education and Therapy* and maintains a web site that offers a state-by-state listing of certified sex therapists. A sex therapists' code of ethics is posted on the web site: <http://www.aasect.org>.

There are also regional professional associations. In the absence of membership in a professional association, therapists are more likely to be legitimate if they are accountable to a community agency, teaching hospital, medical school, or university. Some states license or certify therapeutic professionals of various kinds. One might also seek recommendations from trusted friends who have had experience with sex therapists.

A choice for couples is to recognize that sexual problems often reflect their relationship and to seek help from a qualified marriage or relationship counselor. Individuals might also address sexual problems in a general therapeutic context. A woman's group approach to sex therapy is another option (Barbach 1980, 1991 [1975]).

For more information, see Jerrold Greenberg et al., *Exploring the Dimensions of Human Sexuality* (2002); Kamal Hanash, *Perfect Lover: Understanding and Overcoming Sexual Dysfunction* (1994); Judith Heiman and Joseph Lopiccolo, *Becoming Orgasmic: A Sexual and Personal Growth Program for Women* (1992); Helen Singer Kaplan, *The Sexual Desire Disorders: Dysfunctional Regulation of Sexual Motivation* (1995); and Bernie Zilbergeld, *The New Male Sexuality* (1999). There are also books available in bookstores and libraries that address sexual dysfunctions associated with various health and disability conditions or that address sexual problems in gay and lesbian relationships. In evaluating books on sexual dysfunction, check the credentials and affiliation of the author as one would do in choosing a therapist.

■ The Medicalization of Sexuality ■

A sharp departure from the model of relationship-oriented sex therapy is a growing tendency to focus solely on medical solutions to sexual dysfunctions or sexual dissatisfaction. The acceptance of Viagra and its success in remedying many men's erectile dysfunction problems has set off a search for a pharmaceutical cure

for other sexual dysfunctions, including those affecting women.

Research and development for a female equivalent of Viagra to treat female sexual arousal disorder has been in progress for almost ten years—with little success, however. “Women, the maker of Viagra has found, are a lot more complicated than men. . . . The problem . . . is that men and women have a fundamentally different relationship between arousal and desire” (Harris 2004, p. C-1). “‘There is a disconnect in many women between genital changes and mental changes,’ said Mitra Boolel, leader of Pfizer’s sex research team” (p. C-1). Pfizer has given up on marketing Viagra to women because company researchers have found that when physiological arousal is stimulated by drugs, that does *not* lead to a woman’s desire, or even willingness to have sex. Viagra may, however, help women whose sexual desire levels were previously normal, but have fallen because of medications such as anti-depressant pills.

The Federal Drug Administration has refused to approve another approach, a testosterone patch, as presently too risky (Pollack 2004). Pfizer has begun to explore yet another approach—changing focus from “a woman’s genitals to her head,” i.e., drugs that might affect brain chemistry. As one professor of clinical medicine at Columbia University put it, facetiously, “What we need to do is to find a pill for engendering the perception of intimacy” (Harris 2004, p. C-1).

A “New View” of Female Sexual Disorder

The point is that women’s sexual feelings are very much connected to relationships and they are shaped by the cultural climate as well. Daily pressures are another factor affecting woman’s sexual desire: “[A]nyone affected by FSD [female sexual dysfunction] might do better to claim some leisure in her life and work on rekindling the romance” (Ehrenreich 2004, p. 154).

A more formal reconceptualization of female sexual dysfunction has been developed by a working group of psychiatrists, sex therapists, feminists, and social scientists. “A New View of Women’s Sexual Problems” (The Working Group on a New View of Women’s Sexual Problems; Karshak and Tiefer 2002)—their manifesto—categorizes female sexual dysfunction in terms of “socio-cultural, political, or economic factors”; “sexual problems relating to part-

ner and relationship”; “sexual problems due to psychological factors”; and “sexual problems due to medical factors.” The “New View” group is opposed to the assumptions behind the development of pharmaceutical treatments. They argue that this approach labels women as sexually deficient; does not address women’s real problems; and may pose medical risks besides.

This “new view” of female sexual issues is supported by current research on heterosexual women’s sexual response (Bancroft, Loftus, and Long 2003). John Bancroft, director of the Kinsey Institute, resists labeling women dysfunctional if they lack desire or fail to have orgasms. “‘Dysfunctional for whom?’ Bancroft asks. If a woman is stressed or has children and a job, she might put sex on the back burner for good reason. ‘It could be adaptive for her. . . . It doesn’t mean there’s anything wrong with her response system or that she’s dysfunctional’” (in Elias 2003, p. A-1).

Medicalization and Men

The assumption that most often men’s sexual problems and their solution are physiological has been widely accepted (Leland 1999). That model has given men Viagra. While Viagra is not effective for all men and has some drawbacks in terms of lack of spontaneity, newer drugs have been added to the pharmaceutical roster, and many men have seen their sex lives resume or improve. It is still the case that medical considerations prevent use of these erectile dysfunction drugs by some men, or that they are deterred by side effects.

Now some sexuality professionals and activists are beginning to question whether the new tight link between drugs and sexual performance has gone beyond remedying specific medical/sexual problems that have impaired sexual satisfaction toward redefining men’s sexuality in almost entirely physiological terms. “[T]here’s something deeply creepy about the medicalization of sexuality, male and female,” says social critic Barbara Ehrenreich (2004, p. 154). Concern has also been expressed that drugs intended for men who have sexual problems due to surgery or health conditions are being used by men who have no sexual dysfunction, but who believe the pills will enhance sexual experience, or perhaps provide insurance against the occasional failure to achieve erection. Some ads for erectile dysfunction drugs now emphasize their recreational use (Harris 2003; Kirby 2004).

There are several ways to think about this. Ehrenreich would prefer to see individual choice in the use of sex-enhancing erectile drugs rather than make a sharp distinction between recreational and therapeutic use—for that in essence requires labeling individuals as either sexually functional or dysfunctional.

Some sex therapists are concerned about the disappearance of the partner and of the psychological context of sexual expression when the focus is entirely on producing an erection. Physicians in the field of sexual medicine believe a trend that ignores the psy-

chological and relational factors that also enter into sexual satisfaction is not ultimately conducive to sexual happiness. “Individual psychology and couple factors remain important causes” [of sexual dysfunction or satisfaction] says an article, “Viagra and Broken Hearts,” in the *Canadian Family Physician* (quoted in Stamler 2004, p. 10).

We see that new issues have emerged out of the medicalization of sexual dysfunction, including that of the essential meaning of sex. Discussion appears to have just begun.

Conception, Pregnancy, *and* Childbirth

IN APPENDIX E, WE PRESENT SOME OF THE basic facts of conception, pregnancy, and childbirth, as well as some issues in the management of pregnancy and birth by parents and doctors. Appendix F discusses contraception, while Appendix G presents information on reproductive technology.

■ Conception ■

A woman's ovaries alternate in releasing one egg, or ovum, each month, in a process called **ovulation**. Ovulation takes place about fourteen days before a menstrual period; thus, a woman's most fertile time is usually midway between menstrual periods, when the ovum is traveling through the fallopian tubes to the uterus.

When sperm enter a female's vagina during coitus (sexual intercourse), they move into the fallopian tubes and can live there from two to five days. **Conception** takes place upon **fertilization**, or the joining of the sperm cell with the ovum. If this takes place in the fallopian tubes, the fertilized egg, or **zygote**, moves down to the uterus, where it embeds itself in the thickened lining, or endometrium (see Figure E.1), a process called **implantation**. Until an umbilical cord is formed during about the fifth week, the endometrial tissue provides nourishment for the developing fetus.

■ Pregnancy ■

The fertilization and implantation processes just described take place during the **germinal period**, or first two weeks of pregnancy.¹ During this early period, the woman usually isn't aware that she is pregnant. By the fourth week, however, she may begin to notice some changes.

The first signs a woman often notices are a cessation of menstruation (because the endometrial tissue will not be sloughed off), nausea (a physical reaction to the zygote's embedding itself in the uterine wall), changes in the size and fullness of the breasts, darkened coloration of the **areolae** around the nipples, fatigue, and frequency of urination, a result of pressure on the bladder from the expanding uterus. Not all of these signs, including nausea and cessation of menstruation, are always present, so a woman who suspects she is pregnant should have a pregnancy test even if she does not detect all of these indicators of pregnancy.

The Embryonic Stage

The **embryonic stage** of pregnancy lasts from the second until about the eighth week. During this stage, the

1. Pregnancy is often thought of in terms of three three-month trimesters that do not correspond to the germinal, embryonic, and fetal periods. The embryonic and germinal periods take place in the first trimester; the fetal period of development begins in the first trimester and continues through the second and third trimesters.

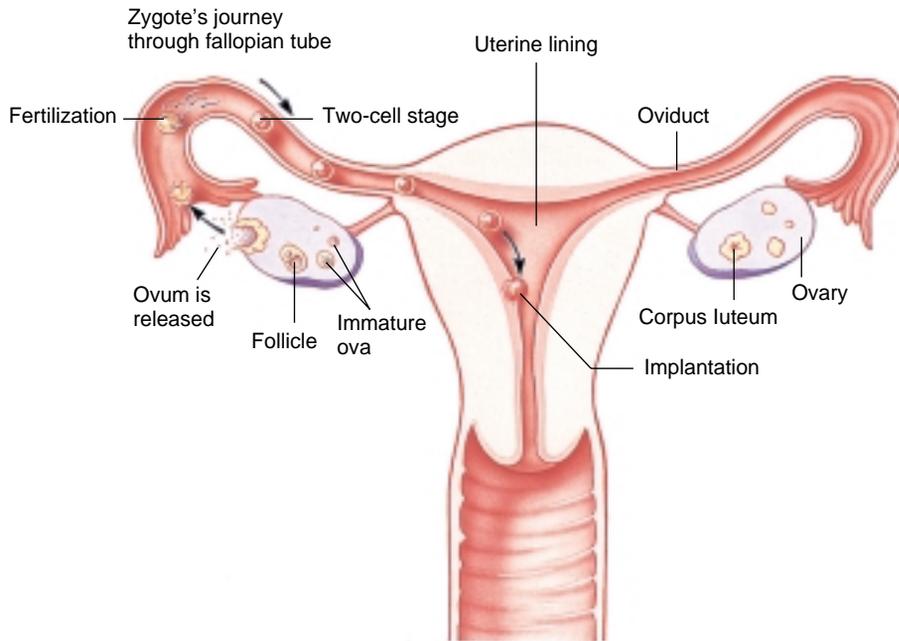


FIGURE E.1

Ovulation, fertilization, and the germinal period of pregnancy.

head, skeletal system, heart, and digestive system begin to form. Also during this time a sac of salty, watery fluid called **amniotic fluid** surrounds the fetus to cushion and protect it. In later stages of pregnancy, doctors can detect some fetal defects by withdrawing a tiny portion of this amniotic fluid through the mother's abdomen with a syringe and testing it in a laboratory. During this period, the **placenta** develops inside the uterus. It is an organ that holds the fetus in place and provides nourishment and oxygen through the **umbilical cord**, which links the fetus to the mother; waste is expelled through the cord. (The placenta will be discharged in the final stage of childbirth.)

The Fetal Stage

The **fetal period** of development lasts from about eight weeks until birth. During the fetal period, the organs and structural system that budded during the embryonic stage refine themselves and grow. Some of the changes that take place up to fifteen weeks are illustrated in Figure E.2.

In the third month, the facial features become differentiated. The lips take shape, the nose begins to

stand out, and the eyelids are formed, although they remain fused. The fingers and toes are well developed, and fingernails and toenails are forming.

During the fourth month, most of the fetus's bones have formed, although they are still soft cartilage and will not be completely hardened into bone until after birth.

In the fifth month, the fetal heartbeat can be heard through a stethoscope. Around this time, too, the **quickening**—the first fetal movements apparent to the mother herself—progresses from a mild fluttering to solid kicks against the side of the mother's abdomen. Any nausea that the mother may have experienced usually disappears by now, and she is in the most comfortable period of her pregnancy.

In the sixth month, the fetus grows to a foot in length and about twenty ounces in weight. The fetus now has eyelashes, it can open and close its eyes, and it may even learn to suck its thumb. By the end of this month, its essential anatomy and physiology are almost complete; further development consists largely of an increase in size and refinement and stabilization of the organs' functions. A fetus born or aborted at this time is likely to emerge alive and may live several

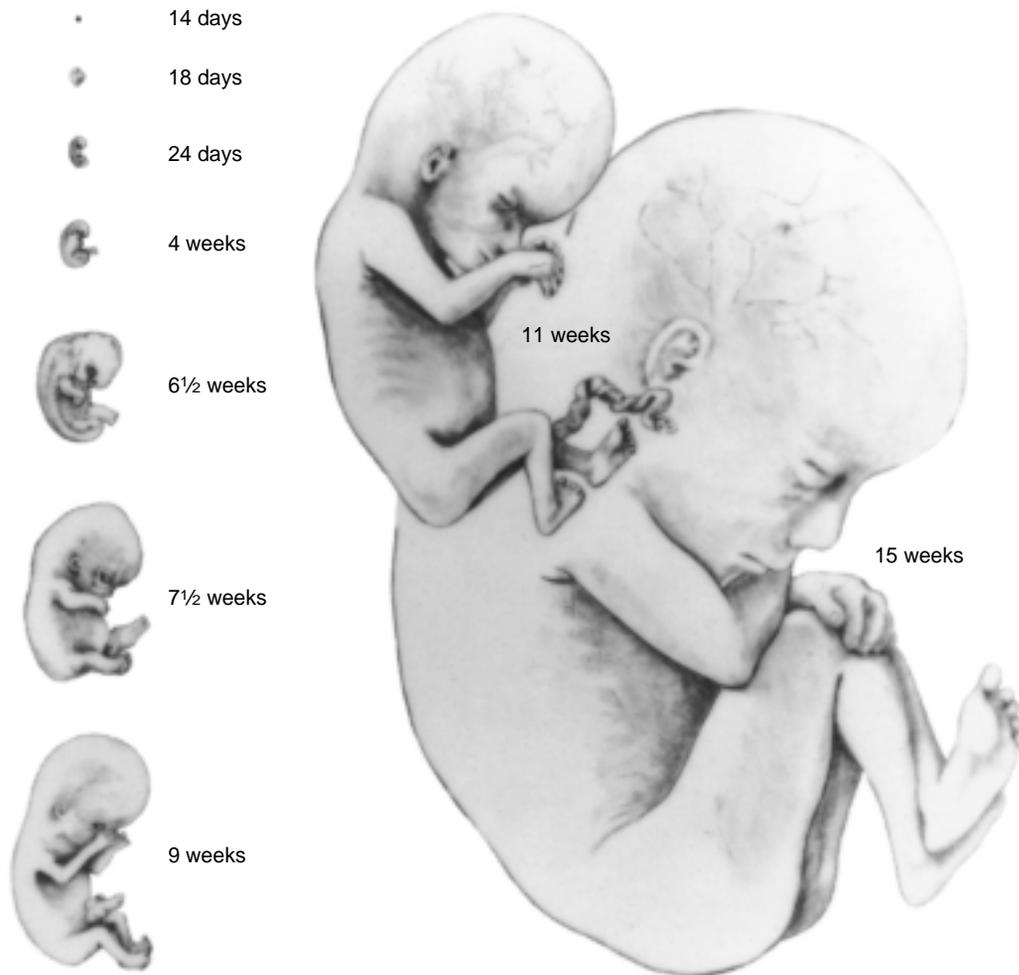


FIGURE E.2

Prenatal development.

hours. Survival beyond that will require constant medical attention, and the chances for survival are slim.²

By seven months, the fetus weighs about two and a half pounds. If born now, it will have a substantial chance of survival with the aid of specialized attention

and equipment. A baby born in the eighth month of pregnancy has a very good chance of survival because its development is virtually complete.

In the eighth and ninth months of pregnancy, the fetus grows very rapidly, gaining an average of a half pound per week. At this time, the mother is likely to feel generally healthy but may also be uncomfortable because of the crowding in her expanding uterus and because weight increases may disrupt her equilibrium and her ability to get around. Toward the end of pregnancy, the fetus usually changes its position so that the head is in the lower part of the uterus. This marks the beginning of preparation for birth. The normal length of **gestation**, or development of a pregnancy into a full-term baby, is forty weeks.

2. The survival of very small babies is not unknown and is becoming more common. An infant weighing only 8.6 ounces at birth is thought to be the smallest surviving baby. She was born in 2004 at Loyola Hospital in Chicago, which has cared for some 1,700 newborns weighing less than two pounds. Ninety percent of babies born at Loyola who are of twenty-eight weeks gestation have survived (normal length of pregnancy is forty weeks) ("World's Smallest Baby" 2004). Loyola's record is unusual, however, as 41 percent of babies who are premature at twenty-eight weeks or fewer do not survive the first year (Martin et al. 2003, p. 16).

Monitoring Fetal Development

Recent years have seen extraordinary scientific advances in monitoring fetal development. Here we look at several such advances—ultrasound, amniocentesis, chorionic villus sampling, and the newer blood screening techniques for assessing a fetus’s risk of abnormality.

Ultrasound

In ultrasound, sound waves are bounced off the abdomen of the pregnant woman to determine the shape and position of the fetus. Ultrasound is now widely and routinely used; ultrasound monitoring was used in the pregnancies of 68 percent of the women who gave birth in 2002 (Martin et al. 2003). Doctors say that it helps to predict the date of birth within two weeks, that it can detect twins 90 percent of the time, and that it shows whether the fetus is maturing as it should. Ultrasound can also reveal several different kinds of birth defects—especially malformations of the skeleton—early enough for a legal abortion if parents choose to have one. In other cases, defects or problems revealed by ultrasound have led to corrective surgery that takes place before birth (Jones 2001).

The use of ultrasound has implications beyond diagnosis, however. Sonograms permit prospective parents to do something they have never been able to do before—observe the fetus; they are often given pictures or videotapes of the fetus to take home. This technology is pushing back parental bonds to before birth: “You just feel like you already know him” (in Kempley 2003, p. C-01).³

Amniocentesis, Chorionic Villus Sampling, and Other Prenatal Testing

While ultrasound can assess the overall structural normality of a fetus, amniocentesis and other prenatal testing provide more information to parents about

their risk of having a child with a birth defect—that is, a condition substantially lowering the quality of life or leading to premature illness and death. Common concerns of parents are Down’s syndrome and spina bifida, a neural-tube defect in which the spinal covering fails to close, which may lead to severe mental and physical disability and early death. Cystic fibrosis is another health condition that is testable prenatally. The risk of genetically or gender-linked diseases such as Tay-Sachs disease or hemophilia may be assessed through such testing. In some cases, there is the potential of fetal surgery to correct problems discovered by prenatal testing.

In *amniocentesis*, a physician inserts a needle through the abdominal wall into the uterus, withdrawing a small amount of amniotic fluid. Cells and other substances that the fetus has cast off float in this fluid, which technicians can examine for clues to fetal health and the presence of the most common birth defects. When doctors suspect that a woman might give birth to a child with a particular disorder—often because she carries a recessive gene for this disorder or because she has already given birth to a child with the disorder—scientists can examine the fluid for those conditions, including nearly 100 rare genetic diseases. As women postpone child bearing to older ages, they have more concern about the risk of such birth defects as Down’s syndrome; the risk increases with age. Pregnant women over thirty-five are usually advised to have amniocentesis or chorionic villus sampling.

When performed by experienced medical personnel, amniocentesis appears reasonably safe, but the technique is not without risks. Hazards include spontaneous abortion and risk of premature birth, with fetal damage occurring in 0.5 percent of cases (“Amniocentesis” 2004)—a slight risk, but one that concerns parents. Moreover, amniocentesis cannot take place until the second trimester, when sufficient amniotic fluid is present. This timing is a major drawback. The prospect of a second-trimester abortion is more emotionally troubling, and a later abortion heightens the physical risk to the woman. Amniocentesis is also costly.

Chorionic villus sampling (CVS) can provide information earlier in pregnancy by testing tissue from the fetal membrane. This technique carries some risk and uncertainty as well. CVS seems to cause miscarriages in 0.5 percent to 1.0 percent of cases (“Chorionic Villus Sampling” 2004). Moreover, CVS cannot detect neural tube defects.

3. Some commercial firms now offer elective ultrasound, not for medical diagnosis but to provide an early baby picture for the parents. These firms use 3-D machines that produce very realistic images. This type of ultrasound is controversial, with the FDA (Federal Drug Administration) and some physician’s groups opposed to what they see as an unnecessary use of expensive technology that might carry some unknown risk. But the FDA has not prohibited these practices, and some doctors believe such ultrasounds are a harmless concession to those parents who want them (Lubell 2004).

The use of amniocentesis and CVS declined 50 percent between 1991 and 2002, as many women now have blood screening instead. This kind of testing can be performed in the first trimester for the detection of Down's syndrome and brain, spinal, or abdominal wall defects. Initial screening is done by combining tests for certain substances that reveal the presence of a fetal problem with a sonogram into a formula taking into account the mother's age. Only if tests suggest the possibility of a fetal deformity are CVS and amniocentesis done as a follow-up (Brody 2004b; Weise 2003).

Social scientists working in this field find parents to be troubled when testing reveals the likelihood of a serious problem. Virtually all testing programs include genetic counselors who can advise parents as to the significance of their test results and help them work through their decisions and their emotions. Because detection of an abnormal fetus gives prospective parents the chance to knowledgeably choose abortion, anti-abortion groups have objected strenuously to prenatal screening and genetic counseling. But some parents who would reject abortion under any circumstances have had prenatal screening done with the thought that should testing reveal an abnormality, they would have time to prepare to care for their infant. Prenatal testing and the accompanying abortion decision remain ethically and personally difficult choices. We turn now to the childbirth process.

■ Childbirth ■

The process of childbirth takes place in three stages: labor, delivery, and afterbirth (Figure E.3).

Labor

Labor is the process by which the baby is propelled from the mother's body through a series of contractions of the muscles of the uterus. Labor usually begins with mild contractions, at intervals of about fifteen to twenty minutes. The contractions increase steadily over the first phase of labor (usually from six to eighteen hours for the first birth, shorter for subsequent births). They also increase in intensity and duration until by the end of labor each contraction lasts a minute or more.

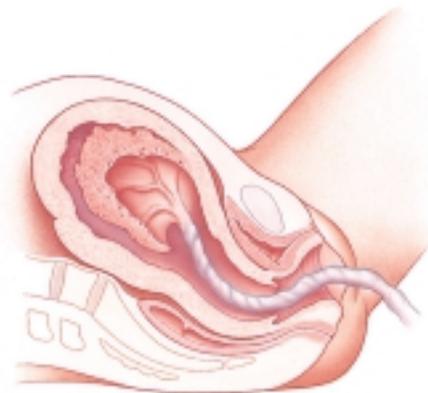
During labor, some other changes usually take place. The cervix dilates from its normal size (about



a



b



c

FIGURE E.3

Events in the childbirth process. (a) Early stages of labor: cervix is dilating; baby's head starts to turn. (b) Baby's head begins to emerge. (c) Afterbirth.

one-eighth inch) to approximately four inches in preparation for the baby's passage. A second occurrence is the expulsion of a bloody plug (sometimes called *show*) from the base of the uterus through the vagina. During pregnancy, the plug helped prevent infectious bacteria from entering the uterus through the cervix. And third, the amniotic membrane (often called the *bag of waters*) ruptures, and amniotic fluid flows from the vagina. Show and breakage of waters are usually signs of imminent delivery. Together with these, full dilation of the cervix marks the beginning of the second, or delivery, stage of childbirth.

Delivery

The second phase of childbirth is the **delivery** of the baby. This phase extends from the time the cervix is completely dilated until the fetus is expelled—a process that may last from fewer than twenty minutes to (rarely) more than ninety minutes.

The mother can often speed the birth process at this stage by tightening the muscles in her diaphragm, abdomen, and back so that the uterine muscles are aided in pushing the baby through the cervix. Her active participation at this point may also help reduce pain. Childbirth preparation classes, offered by many hospitals, provide information and practice in these techniques. What husbands or other birthing partners can do to support the mother during labor and delivery is typically a part of childbirth education.

When the baby appears at the vaginal opening (*crowning*), its head usually turns so that the back of its skull emerges first, as is shown in Figure E.3. After the head emerges, the infant usually turns again to find the path of least resistance. This kind of delivery, in which the baby's skull emerges first, occurs in about 95 percent of births. The remaining 5 percent of deliveries are more difficult: if the baby's buttocks, shoulder, foot, or face emerge first (**breech presentation**), the baby will not be able to take as compact a shape as it passes through the vagina.

Oversized babies (the average newborn weighs 7.5 pounds) can also cause problems because the baby's head must pass between the bones of the mother's pelvic arch. If the baby is too large, or if the mother's or baby's physical condition makes the stress of childbirth dangerous, a physician may decide to deliver the child by cesarean (or Caesarean) section, so called after Julius Caesar, who was supposedly born in this way.

A **cesarean section** is a surgical operation in which a physician makes an incision in the mother's abdomen and uterine wall to remove the infant.

Another source of complications may be weak uterine contractions (perhaps caused by anesthetics). If contractions are not strong enough to expel the baby, a physician may use forceps—tongs that fit around the baby's head—to draw the baby out through the vagina. However, this procedure is risky, for the inaccurate placement of forceps, along with the force necessary to pull the infant free, may cause disfigurement or brain damage. There is a newer process using vacuum-assisted delivery devices, which also carries some risk (Gilbert, 1998).

Afterbirth

The third and final stage of childbirth takes place between two and twenty minutes after delivery. It consists of the expulsion of the **afterbirth**: the placenta, the amniotic sac, and the remainder of the umbilical cord. The cord must be cut and tied to complete the baby's separation from the mother.

Issues in Pregnancy and Childbirth

Early prenatal care has become more widespread for pregnant women in the last ten years. Almost 85 percent of pregnant women had medical care in the first trimester of pregnancy in 2003, up from 76 percent in 1990. While black, American Indian, and Hispanic women are less likely than non-Hispanic white women or Asians to see a physician in the early months of pregnancy, there have been increases in early prenatal care for all racial/ethnic groups since the 1980s (Martin et al. 2003; Hamilton, Martin, and Sutton 2004). Tobacco use in pregnancy has declined, and alcohol use, while more difficult to measure, seems also to have declined.

Greater access to prenatal care, hospital delivery, and a doctor's assistance in childbirth contributed greatly to the sharp decrease in infant and maternal death during childbirth throughout the twentieth century. The overwhelming majority of babies (99 percent) are now born in hospitals. In 2002, 91 percent of births were attended by physicians; 8 percent by midwives (Martin et al. 2003).

Natural Childbirth

The reliance on hospitals and doctors that developed in the latter half of the twentieth century gave rise to a counter-trend toward natural childbirth. Reaction against the treatment of childbirth as a medical problem rather than a natural event (Rothman 1982, 1989) included criticism of the usual practices of mid-twentieth-century pregnancy and birth: heavy anesthesia, the authority of the doctor (not the mother) in management of pregnancy and birth, barring the father from the labor and delivery rooms, electronic fetal monitoring throughout labor, the limited contact of mothers with their newborn infants, and lack of encouragement for breastfeeding. Infants born under heavy sedation are less responsive and alert; they also have somewhat reduced chances for surviving a medical emergency. When infants are kept in sterile isolation, the parent–child bond is less easily established.

Things began to change as parents—and health care providers—came to value a more natural childbirth process. Beginning in the 1950s and gaining momentum in the 1960s and 1970s, the **natural childbirth** movement came to influence not only parents' preferences, but also physician and hospital practices regarding birth. The underlying philosophy of the movement was that natural methods of delivery are more emotionally satisfying to both mother and father and often better for the infant (Korte 1995).

Educational and support groups provide training for parents so that mothers might deliver with minimal anesthesia and fathers could assist them in the labor room. Physicians, nurses, and expectant mothers accepted a labor process that was not artificially hurried by incising vaginal tissues (*episiotomy*) or by the use of forceps, or by a too quick decision to do a cesarean section. In natural childbirth, the baby may be given to the mother for nursing or affectionate contact even before the umbilical cord is tied. These practices are now virtually standard practice in birthing, except that anaesthesia is not precluded.

Cesarean Section Births and Induced Labor

A related concern about the medicalization of childbirth is the trend toward more frequent delivery of babies by cesarean section. An unprecedented 25 percent of the nation's infants were born by cesarean section in 1988, compared to 5 percent in 1970 (Public Interest

1994). Reasons offered for this high rate include the now common practice of fetal monitoring (done in 85 percent of labors in 2002—Martin et al 2003, p. 14), which may trigger unnecessary intervention. Physicians' and hospitals' fears about liability, if they failed to intervene surgically and the infant suffered some damage, were also a factor in the increase (Gilbert 1998).

Of course, difficult births may require surgical intervention, and there is no question that cesareans are often lifesaving procedures for both mothers and infants. But experts express alarm at the high rates of cesarean births because they are riskier for mothers and infants. Moreover, a cesarean section also deprives a mother of the experience of normal childbirth. Cost is also a factor, as they cost much more than a normal vaginal delivery.⁴

Public health concerns led the Department of Health and Human Services to set a goal of reducing cesarean sections to no more than 15 percent of births by 2000 (Gilbert 1998). Cesareans did decline for a while, to 21 percent in 1996. Women who had had cesareans were encouraged to try a vaginal delivery in subsequent pregnancies (Stolberg 2001), and the increase in vaginal birth after cesarean (VBAC) accounted for a substantial portion of the decline in cesareans.⁵

But C-sections have recently increased again, and the goal was not reached. In 2003, 28 percent of births were by cesarean section (Hamilton, Martin, and Sutton 2004). A study suggests that at least one-quarter of the increase is due to cesareans in situations of no indicated medical risk (Declercq, Menacker, and MacDorman 2004).

Mothers and Medicalized Childbirth

Ironically, a major reason for the increase in cesareans has been a change in the views of pregnant women about how they want to do childbirth. Against the recommendations of the public health establishment and their own physicians, women are asserting a right to control over the birth process. What many women

4. While cesarean births are more expensive than uncomplicated vaginal births, lengthy vaginal deliveries are also costly.

5. Some research indicates that vaginal birth after cesarean (VBAC) is riskier than another cesarean (Stolberg 2001). The most recent research suggests that the risk is minimal (Rubin 2004). However, some hospitals will not accept patients who plan to have a VBAC, so those women do not have that option (Grady 2004). For whatever reason, vaginal births after cesarean have declined by 63 percent since 1996 (Hamilton, Martin, and Sutton 2004, p. 8).

seem to be demanding is a movement *away* from natural childbirth.

Birthing mothers are requesting more pain medication. In larger hospitals in the late 1990s, 66 percent of mothers giving birth received spinal or epidural injections—compared to 22 percent in 1980s (Chivers 1999; Talbot 1999). There are also more elective cesarean births and inductions of labor (that is, instead of waiting for birth to occur naturally, a woman is given a drug which will make labor begin). In 2002, 20 percent of births were induced, compared to 9 percent in 1989 (Martin et al. 2003, p. 14). “The latest trend is to book your induction or your caesarean months ahead, a strategy that seems just right . . . for two-career parents—and doctors—who don’t want nature to disrupt their busy schedules” (the comments of nurse-midwife Penny Simkin, summarized in Brockman 2000).

Mothers seek control over the birth process now, not to enhance birthing as a life experience, but to get through it with minimal discomfort and inconvenience (Springen 2000b). They are rejecting what is seen to be an ideological invocation of pain as a moral experience or character test (Talbot 1999)—focusing on the parenthood that follows birth rather than the birthing experience. Moreover, some women who have been through childbirth argue that pain kept them from an awareness of the birth process anyway. Dr. Fredic Frigoletto, head of obstetrics at Massachusetts General Hospital, says: “I think there’s a trend away from the culture of a few years past, when natural childbirth was important to women. . . . [Now patients] don’t want pain with their baby” (quoted in Pan 1999, p. 106; also Brockman 2000).

There is some medical support for these choices. Some physicians are themselves coming to think that natural childbirth may have been over-sold. In part, anesthesia has now evolved so that dosage is much smaller and wears off quickly, so it has less effect on the newborn. There are medical arguments to be made for elective cesarean section. While the risk of an infection for mother or child is higher with a cesarean, as is the risk of death (though small), vaginal births carry a risk of damage to pelvic tissue that may compromise bladder control and sexual responsiveness and there is a risk of cerebral palsy for the child, however small (Gilbert 1998; Springen 2000). Some experts would argue that a vaginal delivery using vacuum extraction might not be superior to a cesarean section in its risks and effects.

The American College of Obstetricians and Gynecologists has declared that elective C-sections are

ethical if the best choice in the judgment of the physician. Reasons for an elective cesarean might be pragmatic, for example, a substantial distance from the patient’s home to the hospital or her tendency to deliver quickly, which would make it difficult to reach a hospital when labor begins. Or a physician may believe that she or he can do the best job when time of delivery is chosen rather than occurring in the middle of the night after a long day of medical practice.

Still, the risk-benefit balance is seen to favor vaginal birth where there is no apparent medical indication for a cesarean. There is much concern about the high cesarean rate and especially about elective C-sections (Brody 2003a; Stein 2003; Villarosa 2002a). “Obstetrics has become very consumer-driven,” commented one physician (in Brody 2003a, p. D-7).

Midwives

Paradoxically, at the same time that natural childbirth is receding in popularity and practice, the use of midwives is growing. Midwives delivered more than 8 percent of babies in 2002 compared to less than 1 percent in 1975 (Martin et al. 2003, p. 15). This trend seems also to be driven by the preferences of parents.

Midwives are birth attendants who are not physicians. They may be *nurse-midwives*—nurses with additional specialized training, who are credentialed as CNMs, or *certified nurse-midwives*. Or they may be *direct-entry midwives*, who are not nurses, but who may be *certified professional midwives* or *certified midwives* (Pew Health 1999). A third category is the *doula*, a birthing coach without medical claims, operating in a long folk tradition of lay women who assist at birth. Some women may combine a physician-managed pregnancy with the presence of a midwife or doula at birth. The legal status of these birthing choices and state supervision of these professions vary by state.^{6,7}

6. State laws vary as to the certification and training required, the physician affiliation required, the legal status of home births, etc. The American College of Nurse-Midwives maintains a web site (www.midwife.org) that provides information and a registry of approved nurse-midwives in each state.

The Midwives’ Alliance of North America site, www.mana.org, is sponsored by an organization of direct-entry midwives. The Doulas of North America web site is www.dona.org.

An important and comprehensive source of information on midwifery is *The Future of Midwifery*, a report of the Taskforce on Midwifery, a joint venture of the Pew Health Professions Commission and University of California-San Francisco Center for the Health Professions (Pew Health 1999): <http://futurehealth.ucsf.edu>.

7. Health plans vary in whether or not they will pay for a midwife-assisted delivery (Dower 1999).

Some women may have home births in conjunction with a midwifery approach to childbirth. The vast majority (97 percent) of certified nurse-midwife-attended births took place in hospitals in 2002, while 55 percent of births attended by other midwives took place in the home (Martin et al. 2003, Table 38).

Nurse-midwives attend births much more frequently in European countries—which have very low rates of maternal and infant mortality. Midwives provide emotional support as well as professional expertise, and they recognize that the baby belongs to the family, not the medical establishment (Korte 1995):

The midwifery model of care views childbirth and well-woman care as normal processes that do not require medical intervention unless there are signs of pathology or deviations from the normal. . . . The midwifery model of care includes observational (nontechnological) monitoring of the physical, psychological, and social well-being of the mother throughout the child-bearing cycle; providing the mother with individualized education . . . and prenatal care; continuous hands-on assistance during labor and delivery, and post-partum support; minimizing technological intervention; [but] referring women who require [a physician's] obstetrical attention. . . . This effective collaboration between the midwife and the physician, where the expertise of both professions is valued, is the key to ensuring optimal outcomes for women and their infants (Pew Health 1999, pp. 5–6).

To summarize this section regarding pregnancy and childbirth in the United States at the beginning of the twenty-first century, we see a dominant preference for medicalized childbirth, with a “vocal minority” (Dr. David Birnbach, in Chivers 1999) committed to natural childbirth and/or midwifery. Both groups are able to exercise more choice and control over the birthing process than in the past.

Some Concerns: Premature Births and Low Birth Weight Babies

There are some concerns about the welfare of babies despite the increased use of prenatal care and improved infant mortality. The rate of preterm births has risen since 1990. Premature birth (fewer than thirty-seven weeks gestation) is a leading cause of infant deaths and of almost half of congenital neurological disabilities such as cerebral palsy (Martin et al. 2003). Low birth weight (fewer than 2,500 grams or about five and a half pounds) is a related predictor of mortality and disability. There has been an increase in low birth weight babies, reaching the highest level in three decades. The reasons for these trends are not clear, save for the recent increase in multiple births, which are more likely to be premature and low birth weight (Martin et al. 2003).

Premature and low birth weight babies are at risk of physical and learning disability, but the latest research has found better than expected outcomes. Premature babies are almost as likely to complete high school as full-term babies. And they engage in *less* risky behavior in adolescence and young adulthood. Researchers have also found that the cognitive abilities of these at-risk children improve from infancy to middle childhood. It may be that worried parents become more involved with their children in a way that offsets their physiological disadvantage (Stolberg 2002; “Verbal and IQ Scores” 2003).

For a more detailed treatment of conception, pregnancy, and childbirth, see The Boston Women's Health Book Collective, *Our Bodies, Ourselves for the New Century*, 1998, Chapters 13–22, and Greenberg et al. 2002, Chapter 9.

Contraceptive Techniques

CONTRACEPTIVE USE IN THE UNITED States is virtually universal among women of reproductive age” (Mosher, Martinez, Chandra, Adma, and Willson 2004, p. 1). According to the 2002 cycle of the National Survey of Family Growth, more than 98 percent of a sample of 7,643 women who have ever been sexually active with a male have used at least one method.

Some sixty-two million women are in their child-bearing years (defined as fifteen through forty-four). Of all women of reproductive age, 31 percent do not need contraception because they are medically infertile, currently pregnant or post-partum, trying to become pregnant, or not sexually active. Of sexually active women of reproductive age who do not want to become pregnant, 89 percent are using some form of contraception, while 11 percent are not (Mosher et al. 2004, p. 7).

Contraceptives—techniques and methods to prevent conception—can be divided into four groups: chemical methods, barrier methods, surgical methods, and natural methods.^{1,2} Table F.1 describes some com-

monly used contraceptive methods and outlines the requirements for appropriate and successful use. It also advises against the use of certain methods for some women.

We provide information on contraception as educational background. But keep in mind that there are likely to be changes over time in what contraceptives are available and in medical assessment of particular contraceptive methods. Ours is just a brief sketch, not intended to be taken as medical advice on family planning for a particular woman. For that you should consult your personal physician or a family planning center in your community.

2. We have not included one means of controlling fertility: abortion. Abortion differs from the contraceptive methods to be discussed because it does not prevent conception but terminates the development of the fetus after conception.

Another form of fertility regulation termed *menstrual extraction* is difficult to classify as to whether it is contraception or abortion. In menstrual extraction, the contents of the uterus are suctioned and scooped out at about the time of the expected menstrual period, whether or not a pregnancy has occurred. If performed regularly and under the assumption that there is no pregnancy, it can be viewed as a measure for health or convenience (avoiding debilitating periods), not as abortion. However, it could abort a zygote if intercourse and fertilization have occurred, and menstrual extraction may be performed with that purpose in mind.

1. Much of the discussion of these four types of techniques is based on Weeks 2002, pp. 179–190, but with modifications and integration of information from other sources, primarily the Planned Parenthood Federation of America (2004a) and Information and Knowledge for Optimal Health (INFO) Project at Johns Hopkins University (2005).

Table F.1**Do You Know Your Family Planning Choices?^a****COMBINED ORAL CONTRACEPTIVES (ESTROGEN AND PROGESTIN)**

Effective and reversible.

Take every day for best protection.

Especially in the first few months, some users have side effects such as upset stomach, bleeding between periods or spotting, weight gain, mild headache, or moodiness. Not dangerous.

Safe for almost all women. Serious side effects are rare. Some research suggests increased risk of blood clots in legs especially for obese women.

Can be used by women of any age, whether or not they have children.

Help prevent certain cancers, anemia (low iron), menstrual cramps and irregular bleeding, and other medical conditions.

Can be used as emergency method after unprotected sex.

DMPA INJECTABLE CONTRACEPTIVE (DEPO-PROVERA)

Very effective and safe.

One injection every three months.

Bleeding changes are normal—spotting, light bleeding between periods, and, after one year, often no periods. Some weight gain or mild headaches can occur.

Private. Others cannot tell that a woman is using it.

Can be used by women of any age, whether or not they have children.

Women who stop using DMPA take an average of four months longer than usual to get pregnant.

Safe during breastfeeding, beginning at six weeks after childbirth.

Helps prevent uterine tumors and pregnancy outside the womb.

NORPLANT IMPLANTS

No longer available to new users in the United States, but women who are using Norplant may continue to do so.

Six small capsules placed under the skin of the upper arm.

Very effective for up to five years (and perhaps longer).

Can be used by women of any age, whether or not they have children.

A woman can have the capsules taken out any time.

A woman can get pregnant once the capsules are taken out.

Changes in vaginal bleeding are normal—light bleeding between periods, spotting, or no periods. Mild headaches can occur.

Safe during breastfeeding, beginning at six weeks after childbirth.

Help prevent anemia and pregnancy outside the womb.

PROGESTIN-ONLY ORAL CONTRACEPTIVES (POPS)

Good choice for nursing mothers who want pills, beginning at six weeks after childbirth. Very effective during breastfeeding.

If used when not breastfeeding, bleeding changes are normal—especially spotting and bleeding between periods.

Can be used as emergency method after unprotected sex.

CONDOMS

Can prevent some sexually transmitted infections (STIs),^b including AIDS, *and* prevent pregnancy.

When condoms are needed to prevent STIs/AIDS, many couples use them along with other family planning methods.

Easy to use with a little practice.

Effective if used correctly every time. However, usually only somewhat effective because some men do not use condoms all the time.

Some men object that condoms interrupt sex, reduce sensation, or embarrass them.

continued

Table F.1 *continued***Do You Know Your Family Planning Choices?^a****IUD (INTRAUTERINE DEVICE)**

Small device that a specially trained family planning provider places inside the womb.

Very effective, reversible, long-term method.

T 380A IUD lasts at least ten years.

Menstrual periods may be heavier and longer, especially at first. Brief discomfort after IUD is put in.

No effect on breastfeeding. A specially trained provider can put in an IUD after childbirth.

Pelvic infection is more likely if the user gets a sexually transmitted infection. Serious complications are rare.

Can come out, especially in first month, so checking for the strings is important.

VAGINAL METHODS

Spermicide, diaphragm, and cap—methods a woman controls and can use when needed.

Must be placed in the vagina each time before sex. Can do that ahead of time instead of interrupting sex.

Can be effective when used correctly every time. However, often not very effective because some women do not use them correctly every time.

Bladder infection is more likely.

FEMALE STERILIZATION

Permanent method for women who are sure that they will not want more children. Think carefully before deciding.

Safe, simple surgery. Usually done without putting the woman to sleep. Local anesthetic blocks pain.

Very effective.

No known long-term side effects. Brief discomfort after procedure. Serious complications of the procedure are rare.

No effect on sexual ability or feelings.

VASECTOMY

Permanent method for men who are sure that they will not want more children. Think carefully before deciding.

Safe, simple, convenient surgery. Done in a few minutes in a clinic or office. Local anesthetic blocks pain.

Very effective after at least twenty ejaculations or three months. Need another method until then. No known long-term side effects. Brief discomfort after procedure.

No effect on sexual ability or feelings.

FERTILITY AWARENESS-BASED METHODS

A woman learns to tell the fertile time of her monthly cycle.

Knowing this, a couple avoids vaginal sex, or they use condoms, a vaginal method, or withdrawal during the fertile time.

Can be effective if used correctly. Usually only somewhat effective, however.

Usually need close cooperation between sex partners. Avoiding sex for a long time can be difficult.

No physical side effects.

Certain methods may be hard to use during fever or vaginal infection, after childbirth, or while breastfeeding.

Table F.1 *continued*Do You Know Your Family Planning Choices?^a

SOME METHODS ARE NOT ADVISED FOR CERTAIN HEALTH CONDITIONS

CONDITION	METHODS NOT ADVISED
Smoker <i>and also</i> age thirty-five or older	Combined oral contraceptive pills (COCs) ^c
Known high blood pressure	COCs. If severe high blood pressure, DMPA ^d
Obese	COCs
Breastfeeding in first six months	COCs
Breastfeeding in first six weeks	DMPA, implants, progestin-only pills (POPs)
Certain uncommon serious diseases of the heart and blood vessels, and a few other uncommon diseases; certain active liver diseases.	COCs, POPs, DMPA, implants. Ask your provider.
Migraine headache—recurring severe head pain, often on one side or pulsating, that can cause nausea and often is made worse by light and noise or moving about.	COCs, but use of COCs is limited for only two categories of women: (1) women age thirty-five and older; and (2) women at any age if their vision is distorted or they have trouble speaking or moving before or during these headaches.
STI or pelvic inflammatory disease (PID)—now or in last three months. High STI risk—for example, you or your sex partner has any other partners.	IUD. Use condoms even if also using another method. (Unusual vaginal bleeding may be a sign of STIs.)
Certain uncommon conditions of female organs.	IUD. Ask your provider.
Known pregnancy	IUD. COCs in first twenty-one days after childbirth.

^a This table will not be accurate indefinitely, as new contraceptive methods enter the market periodically. Some current methods may be discontinued or new information about risks may become known. Consult your birth control provider when making your personal choice.

^b STI = Sexually transmitted infections—also termed sexually transmitted diseases (STDs).

^c Also applies to combined (monthly) injectables throughout.

^d DMPA = DMPA injectable (*Depo-Provera*); also applies to NET EN injectable (*Noristerat*) throughout.

Source: Adapted from *The Essentials of Contraceptive Technology* Wall Chart, with additional information from Planned Parenthood Federation of America 2002; 2004a,c and “Venous Thromboembolism” 2004.

The Wall Chart is a project of the Information & Knowledge for Optimal Health (INFO) Project, 111 Market Place, Suite 310, Baltimore, MD 21202. The Wall Chart was made possible through support from G/PHN/POP/CMT, Global, United States Agency for International Development, under the terms of Grant No. DPE-A-00-90-0014-00. Courtesy of the Information & Knowledge for Optimal Health (INFO) Project. Johns Hopkins University. Bloomberg School of Public Health. Center for Communication Programs. Accessed Jan. 4, 2005. www.infoforhealth.org.

■ Chemical Methods ■

One approach to contraception uses various chemical substances (hormones) to alter the body so that conception does not take place. Chemical means of contraception are very effective when used as directed (see Table F.2, which provides data on contraceptive effectiveness). Among these is the most popular nonsurgical form of birth control, “*the pill*.” Taken daily, it is a sequence or combination of the hormones—*estrogen* (which suppresses ovulation) and *progestin* (sometimes specified as *progesterone*)—that renders the uterine tissues unreceptive to implantation. There are also

progestin-only pills (POPs) or *mini-pills* that can even be safely used by nursing mothers six weeks after delivery.

In addition to the pill form, contraceptive hormones can also be delivered in *implants* (*Norplant*),³ *injectables* (*Depo Provera*), *patches* (*Ortho Evra*), *rings* (*NuvaRing*), and *IUDs* (*Paragard*, *Mirena*; see barrier methods). All these methods must be used on the required schedule, in advance of intercourse.

3. *Norplant* is no longer available for new users in the United States; current users may continue. A newer implant, *Lunelle*, was briefly available, but is no longer on the American market.

Table F.2**How Effective Are Contraceptive Methods?****PERCENTAGE OF WOMEN WHO BECOME PREGNANT DURING FIRST METHOD^{a,b} YEAR OF METHOD USE**

	Perfect Use ^c	Typical Use
No Method	85.0	85.0
Spermicide	15.0	29.0
Withdrawal	4.0	27.0
Fertility Awareness ^d	1.0/9.0	25.0
Female Condom	5.0	21.0
Cervical cap	9.0/26.0 ^e	16.0/32.0
Diaphragm	6.0	16.0
Condom (male)	2.0	15.0
Pill ^f	0.3	8.0
Injectable (Depo-Provera)	0.3	3.0
IUD		
Paragard Copper T 380A	0.6	0.8
Mirena	0.1	0.1
Female Sterilization	0.5	0.5
Vasectomy (male sterilization)	0.1	0.15
Implant (Norplant)	0.05	0.05

^a Data are for the method used alone. Methods are sometimes combined for greater effectiveness

^b Data on the effectiveness of hormonal contraceptive delivery by NuvaRing (ring) or Ortho Evra (patch) or the barrier methods Fem Cap and Lea's Shield are not adequate at present for inclusion in the table.

^c Theoretical effectiveness of the method. In reality, users sometimes forget, make mistakes in usage, or do not use the method consistently. Typical use is a more realistic estimate of the results that will be obtained with a particular method.

^d There are a variety of techniques grouped under this heading. Theoretical effectiveness ranges between 1 and 9 percent depending on the technique. The calendar method has a perfect use pregnancy rate of 9 pregnancies per 100 women, while the post ovulation method (1.0), symptothermal method (2.0), and cervical mucus (ovulation) method (3.0) are more effective when used by highly motivated couples.

^e Method effectiveness varies according to whether or not the woman has borne a child previously. It is less effective for women who have had children already than for those who have not.

^f Data include the progesterone only pill (POP).

Source: Adapted from Planned Parenthood Federation of America 2004b.

There are also *emergency contraceptive pills*,⁴ which are simply larger dosages of regular contraceptives that are taken within 72-120 hours (preferably even earlier) after coitus to prevent conception. Emergency contraception can be used when birth control was inadequate (condom broke; pill wasn't taken; withdrawal didn't happen; no birth control was used) or when a woman has been raped (Planned Parenthood Federation of America 2004a).

Chemical methods of contraception also include *spermicides*: chemicals that kill sperm before they can fertilize an ovum. They are delivered in the form of foam, cream, jelly, film, or suppositories inserted into the vagina before intercourse. They are often used in conjunction with other contraceptive methods, notably the diaphragm. While not so effective alone, the combination of spermicides with a diaphragm is quite effective (Weeks 2002).

■ Barrier Methods ■

Barrier methods of contraception are mechanical devices that place a barrier between sperm and ovum. The (male) *condom* (placed over the erect penis) is a barrier method, as are the *diaphragm*, *cervical cap*,⁵ *female condom*, and *sponge*⁶—devices that cover a woman's cervix to prevent sperm and ovum from making contact. Some barrier methods—notably male and female condoms—have the advantage of providing some protection against STDs as well as pregnancy. Use of the male condom has increased since the 1980s, while the newer female condom has yet to see widespread use.

The *IUD (intrauterine device)* is a small device that is inserted into the uterus by a health care professional. By some unknown mechanism, the IUD prevents pregnancy. As a foreign object, it may prevent implan-

4. The currently available brand is *Plan B*. Plan B is available only by prescription, and this means a woman who needs it may not be able to arrange to get it in time. Family planning advocates had hoped that it would be approved for over-the-counter purchase in 2004. But the Federal Drug Administration declined to act favorably on its professional advisory panel's recommendation for such approval. Another alternative for those seeking emergency contraception is timely insertion of a copper IUD (Brody 2004c).

5. Newer versions are *FemCap* and *Lea's Shield*, both made of silicone (Planned Parenthood Federation of America 2004a).

6. The *Today Sponge* returned to the American market in 2003, having been discontinued in 1995 by its manufacturer (Zernike 2003a).

tation, destroy the egg, or prevent egg and sperm from connecting. The IUD's developing popularity, beginning in the 1960s and continuing into the 1970s, was cut short by the dangers posed by one brand—the Dalkon Shield—which caused infections and some deaths. The Dalkon Shield was removed from the market in 1975. Lawsuits and potential liability, however, discouraged other manufacturers, and by 1986 no IUDs remained on the market (Weeks 2002, p. 181). In recent years several new types of IUDs have become available (*Paragard* and *Mirena*). These newer IUDs contain hormones, thus are chemical as well as barrier methods.

Spermicides may be considered a barrier as well as chemical method. They are often used in conjunction with male or female barrier methods.

■ Surgical Methods ■

A third method of contraception is the *surgical sterilization* of either the male (vasectomy) or the female (usually by tubal ligation). A **vasectomy** involves tying the tubes between the testicles (where sperm is produced) and the penis (through which the seminal fluid is ejaculated). The procedure can be done in a doctor's office and is safe. Following a vasectomy, the male will be able to have erections, enjoy sex, and ejaculate as before the sterilization, but he will not be able to cause pregnancies because there will be no sperm in his ejaculate.⁷

A **tubal ligation** involves cutting, scarring, or otherwise blocking the fallopian tubes between a woman's ovaries and her uterus so that eggs cannot pass through the tubes to be fertilized. Tubal ligation must be done in a hospital and is more expensive than a vasectomy, but it is also safe.⁸ Sterilization is a one-time procedure that is virtually 100-percent effective and usually permanent. It has become the most-used form

of birth control; surgical sterilization is the contraceptive method of choice of almost 30 percent of U.S. women.

Unlike many other contraceptive techniques, sterilization is virtually irreversible. Microsurgical techniques to restore fertility have been developed but are not always successful. Individuals should be certain about their decision to give up the capacity to have children before undergoing sterilization. One study of women who underwent sterilization in the 1980s found that only 7 percent had regrets; 2 percent requested reversal. Women were more likely to regret sterilization if they were under twenty at the time of the procedure; if their husband or partner had wanted the procedure more than they; or if they were in a conflicted relationship at the time (“Five Years After” 2002).

Family planning experts note that women now spend a greater part of their lives outside of marriage and so may make the decision about sterilization on their own. One thing to consider is that the single (or cohabiting) situation may change. A woman who does not want to become pregnant now might enter a marriage or relationship later and wish to have children then (Godecker, Thomson, and Bumpass 2001); men might change their minds as well.

■ Natural Methods ■

The fourth type of contraception avoids all surgery, chemicals, and devices and is instead “natural” in its approach to controlling fertility. It is based on controlling sexual behavior in conjunction with the timing of ovulation. One such method, the *fertility awareness method* (sometimes called periodic abstinence or natural family planning), relies on the couple's awareness of the woman's ovulation cycle and on avoidance of intercourse during the fertile period—several days before and after the woman ovulates.

The effectiveness of this technique depends on how correctly and diligently it is used. An old joke—“What do you call users of ‘rhythm?’” Answer: “parents”—is now outdated. The calendar method to which this joke referred involved a simple count of days elapsed since the last menstrual period and was often wrong about the time of ovulation. Now ovulation can be more precisely ascertained by tracking basal body temperature or by monitoring changes in genital mucous, or—for greatest accuracy—both,

7. A new method of surgical sterilization for men has just been developed—*VasClip*. This is a device the size of a grain of rice which is installed in the testes to block sperm delivery (“The Quest Is On” 2004).

8. Another method of female sterilization developed recently is *Essure*, a springlike device placed in the fallopian tube. It expands, and tissue grows around it that will block the tube after about three months. (A woman must use another form of birth control until blockage is confirmed.) An advantage of this method is that *Essure* can be inserted through the vagina and the uterus, so no incision is necessary (Berger 2002).

termed the *symptothermal method* (Weeks 2002). Physicians are not always aware of the potential effectiveness of fertility awareness or of the instructional programs essential to effective use of the method (“Feel Like” 2000). Prospective users need to be resourceful in seeking help.

Fertility awareness may be used with some effectiveness by a motivated couple. It probably works best to space births, not to limit them. For couples whose religious teachings preclude other forms of birth control, it is the only option—and one they are usually quite committed to. Home urine tests to detect the occurrence of ovulation are available in Europe but not in the United States (Weeks 2002, p. 188).

Another natural method, *withdrawal*, was of some importance in the historic fertility decline in the West at a time when modern forms of contraception did not exist. It depends on the male’s withdrawing his penis from the woman’s vagina before he experiences orgasm. This technique is not very effective for several reasons: the male is tempted not to withdraw, and even if he does, the few drops of seminal fluid that are emitted before orgasm may contain sperm, making it possible for the woman to become pregnant. In modern societies where there are other choices, withdrawal is not recommended.

Another natural method is *Lactational Amenorrhea Method (LAM)*, or breastfeeding. Like withdrawal, breastfeeding, which can delay the return of ovulation, can have an impact on fertility rates in a large population. Moreover, it was added to the list of modern contraceptive methods by a conference of experts in the 1980s. However, to be effective contraceptively, breastfeeding must take place within certain parameters: breast milk is the only food taken in by the infant, and nursing occurs on demand around the clock. Few American mothers are likely to attain effective control over conception in this way, and we do not maintain it on our roster of contraceptive methods. Moreover, the outer limit of effectiveness even under perfect conditions is about six months after childbirth (Population Information Program 1999; Weeks 2002, p. 186).

Finally, reported as theoretically possible methods—but difficult in reality—are complete *abstinence* from sexual activity and “*outercourse*”—a term coined to refer to sex play without vaginal intercourse. Even here, pregnancy is possible if sperm is accidentally spilled into the vagina (Planned Parenthood Federation of America 2002). Of course, the sexual rela-

tions of gay and lesbian couples or the oral or anal sexual contacts of heterosexual couples do not lead to conception.

We have covered all natural methods in the interest of a comprehensive and historically accurate picture of contraceptive activity. But the only one of the natural methods considered to be a reasonable choice in the twenty-first century is fertility awareness.

■ Choosing Methods of Birth Control ■

In order to choose which alternative or alternatives to use, people need to consider how each method works, how effective it is, its advantages and disadvantages, its side effects, its health implications, its long-term effects on the ability to have children, and its moral and philosophical acceptableness to the user.

Also of importance in choosing a method is the social and relationship context of the sexually active person. For a couple who is dedicated to natural family planning—and highly motivated religiously—the sexual abstinence required for part of the month can be managed. In fact, a belief structure has grown up around this form of contraception that supports the choice. Women claim that it gives them more control over sex in the relationship than they might otherwise have if sex could take place at any time. On the other hand, a partner relationship may limit contraceptive choice if a woman is uncomfortable communicating with her partner about birth control or if the woman’s preference is not accepted by her partner. Moreover, “[e]conomic inequalities, violence, and power imbalances in many sexual partnerships restrict women’s abilities to negotiate male condom use” (Minnis and Padian 2001, p. 28).

One interesting study of low-income women in Miami explored women’s ease of communication and their choice of methods. Hispanic women were less comfortable discussing the topics of sex and condom use, but also had high confidence in their condom negotiating skills. They were more likely to reach joint decisions with their partners. Hispanic women, along with African American women, were more likely to consistently use condoms as a birth control method than were non-Hispanic white women (Soler et al. 2000).

Attitudes or religious beliefs can constrain choices. Yet many Catholics do not accept church teachings on contraception. A 1995 survey found that 68 percent of Catholic women fifteen through forty-four chose sterilization or the pill as their birth control method—both prohibited—while only 3 percent used the natural family planning method accepted by the church (Febring and Schmidt 2001). Moreover, women whose religion prevents them from using the pill as an intentional contraceptive have sometimes found medical reasons to take it regularly.

Women who are reluctant to acknowledge that they are sexually active or may have sexual intercourse find it difficult to use methods that must be used in advance—most of the effective methods. Compliance with a chosen contraceptive regime is often imperfect. Many women find it difficult to be regular in taking the pill—and when not used regularly, this method is ineffective. A study of women using barrier methods found that one-third report not using their method every time they have intercourse (Alan Guttmacher Institute 2000). Newer means of delivering hormonal contraceptives that require only infrequent maintenance—e.g., Depo-Provera injections, the ring, or IUDs—would solve that problem. But they are not widely used.

Table F.3 shows the contraceptive choices that Americans, in fact, make.⁹ You can see that sterilization—for those who consider that they have completed their childbearing—and the pill are the most commonly used contraceptive methods. Taken together, users of these two methods are a majority of those who are contracepting. Choice of methods varies by age, with female sterilization a less significant method for younger women (under thirty) but used by 50 percent of women in their forties. The pill, on the other hand, is the method used by more than 50 percent of women twenty through twenty-four and almost 40 percent of women twenty-five through twenty-nine. A male partner's vasectomy is the contraceptive method relied upon by about 20 percent of women in their late thirties and forties but is minimally relevant to the sexual lives of younger women (Mosher et al. 2004, Table 6 and Figures 6 and 7).

9. The table is titled "What Contraceptives Do American Women Use?" Women are surveyed about contraceptive use much more often and extensively than men. Moreover, women could be using methods of which a male partner is not aware. Generally experts rely on surveys of women in compiling statistical profiles related to fertility and contraception.

Table F.3

What Contraceptives Do American Women Use? ^{a,b}	
METHOD	PERCENTAGE OF USERS
Pill	30.6
Female sterilization	27.0
Condom (male)	18.3
Male sterilization (vasectomy)	9.2
Three-month injectable (<i>Depo-Provera</i>)	5.3
Withdrawal	4.0
Intrauterine device (IUD)	2.0
Fertility awareness	1.6
Implant or patch	1.2
Other ^c	0.9
Diaphragm	0.3

^a These data are based on women surveyed about contraceptive use by self or partner. Some of the contraceptive methods are male methods.

^b Based on the 62 percent of American women currently using contraception. Thirty-one percent of American women fifteen through forty-four are not using contraception because they are sterile, pregnant or post-partum, seeking pregnancy, or not sexually active. Another 7.5 percent are sexually active, but not using contraception.

^c Includes the *Today Sponge*, cervical cap, female condom, and other methods.

Source: Mosher et al. 2004, Tables 4 and 5.

The remainder of women use a variety of other methods. Some quite effective methods of contraception—injectables and IUDs—have few users. Barrier methods are important, especially the male condom (approaching 20 percent), favored as a means of protection against sexual transmission of diseases as well as pregnancy. But the female condom and diaphragm are used by fewer than 1 percent of women, and the IUD by only 2 percent. Finally, male withdrawal (not effective) and fertility awareness (can be effective) are natural methods that are used by fewer than 5 percent of women surveyed.

New Developments in Contraception

Still newer forms of contraception—directed toward males as well as females—are bound to be developed and on the market in the future. Various experimental

male contraceptives—primarily injections—have shown promise in animal research. But aside from the still formidable technical problems remaining, there may be strong psychological barriers to their use by both men and women. Men may be uneasy at hormonal effects that they may take as threats to masculinity, or simply not willing to take injections on a regular basis. Women may be afraid to trust the responsibility of contraception entirely to men, especially if not in a marriage or strongly committed relationship (Berger

2002; “Male Contraceptive” 2003; “The Quest Is On” 2004; Szabo 2004).

Updated information may be obtained from the Planned Parenthood Federation of America web site: www.plannedparenthood.org or the companion Alan Guttmacher Institute website: www.gi-usa.org. Also see Weeks (2002, pp. 79–190) for general background and Greenberg et al. (2002, Chapter 8) for details about features and uses of various methods of contraception as of that book’s publication date.

High-Tech Fertility

TECHNOLOGY HAS COME TO CONCEPTION and pregnancy, as modern science continues to develop new techniques to enable couples or individuals to have biological children. About 2 percent of American women used infertility services in one year, 13 percent over a lifetime, according to a 1995 survey (U.S. Center for Chronic Disease Prevention and Health Promotion 2003). Among the less dramatic and more common infertility interventions are microscopic surgical procedures to repair fallopian tubes. Fertility drugs—which stimulate ovulation—have been used by about 3 percent of American women (U.S. Census Bureau 2000, Table 101).

More dramatic and widely publicized are the **assisted reproductive technologies (ART)** such as artificial insemination, in vitro fertilization, surrogate motherhood, and embryo transfers. Women older than thirty, who are married, and who are college graduates are the most frequent users of ART (U.S. Census Bureau 2000, Table 101). Use of assisted reproductive technologies has increased 66 percent between 1996 and 2001. The live birth success rate has also increased (U.S. Center for Chronic Disease Prevention and Health Promotion 2003).

Infertility and its treatment, as well as the ethical, legal, relational, and social implications of assisted reproductive technologies, are discussed in Chapter 10. Here we describe the technologies.

■ Artificial Insemination ■

This procedure may be indicated when a woman is presumably fertile but her husband or male partner is

not. In **artificial insemination**, a physician injects sperm into a woman's vagina when she is ovulating.

Artificial Insemination by Husband (AIH)

In cases in which the husband's sperm count is low, the physician may accumulate several of the husband's ejaculations (which are preserved by refrigeration) so that a greater quantity of semen introduced into the vagina overcomes the low sperm count.

Artificial Insemination by Donor (DI)

Should AIH fail, or when no husband or male partner is involved, sperm from a donor may be obtained. When donor sperm is used and the woman is married, the physician may attempt to match the donor's physical characteristics with those of the husband. The husband's sperm may be mixed with the donor's, which means the woman's egg could be fertilized by her husband's sperm—a possibility that may be psychologically important to the couple.

The artificial insemination procedure is relatively simple (compared to those described below) and can even be done by an individual or couple themselves. Single women or lesbian couples have increasingly used donor insemination to create families. Sometimes that insemination takes place at home, using donor sperm that has been supplied by a known donor or purchased. There are now sperm banks specifically for a lesbian clientele (Bergstein 2002).

Donor insemination involving a sperm bank has always been treated as an anonymous process. But in 1983, a sperm bank in San Francisco began to ask donors if they would be willing to have their biological child(ren) make contact with them after twenty years.

Such contacts have begun to occur, and some clinics now offer “open sperm donation.” The donor will be known and is willing to provide family medical history information or perhaps even to meet with the resulting child (Bergstein 2002; Talbot 2001).

■ In Vitro Fertilization ■

The first in vitro baby was born in England in 1978 and the first American baby in 1981. There are now some variations on in vitro fertilization.

In Vitro Fertilization

With **in vitro fertilization (IVF)**, an embryo is conceived outside a woman’s body (in a laboratory dish or jar) but is then placed within a woman’s uterus to develop. The process can be used when a woman with diseased or blocked fallopian tubes wants to give birth. An egg is surgically removed and fertilized in the laboratory with sperm from her husband or male partner. If he is infertile, sperm from a donor is used. The fertilized egg or eggs (usually multiple eggs) are implanted in her uterus after two days as multi-celled embryos. Pregnancy and childbirth follow the natural pattern.

Fertilized embryos can be frozen in liquid nitrogen for implantation later if the couple anticipates wanting to have more children. Excess frozen embryos are sometimes donated to infertile couples.

The success rate of in vitro fertilization was 33 percent in 2001 (“success” being a live birth after transfer of the frozen embryo to the woman’s uterus). Success rates vary by whether the egg is fresh or frozen, is the woman’s or a donor’s egg, and by the age of the mother-to-be (Wright et al. 2004). The cost is now \$12,500 to \$25,000 for a single cycle of IVF using the woman’s egg; for IVF with a donor’s eggs, the cost ranges from \$20,000 to \$35,000. These costs are for the urban Northeast; costs vary by geographic area and by fertility center (Kolata 2004).

GIFT

In an IVF process known as **gamete intrafallopian transfer (GIFT)**, eggs are collected from the ovaries and put into a catheter outside the body. Sperm are put into the same catheter but are kept apart from the eggs by an air bubble. The eggs and sperm are then placed

in the woman’s fallopian tubes. If fertilization subsequently occurs, the fertilized egg then travels to the uterus, as is the case in a natural pregnancy.

ZIFT

A related process is **zygote intrafallopian transfer (ZIFT)**. In this procedure, the fertilized egg is implanted in the woman’s fallopian tubes after only one day, as a zygote (still a single cell) (U.S. Center for Chronic Disease Prevention and Health Promotion 2003).

Donor Egg IVF

In vitro fertilization with a female **donor egg** has become an option, used for women who have experienced early menopause; whose eggs are damaged; or who are known to be carriers of a serious hereditary disease. In this procedure, either a woman or a fertility clinic finds another woman willing to donate her eggs, which are then fertilized and placed in the uterus of the woman who wants to become pregnant. Donor eggs are also used by lesbian couples. One member of the couple may donate an egg while the other is the birth mother; thus, both will have a biological connection to the child. We are beginning to see the use of donor eggs by older postmenopausal women (“Donor-egg Pregnancies” 2002).

■ Surrogate Motherhood ■

When a woman cannot carry a child to term and her husband is fertile and wants a child biologically his own, they can turn to a **surrogate mother**. Here a husband fathers a child with another woman by artificial insemination. This woman, the surrogate mother, carries the child to term and then turns the baby over to the couple. Note that the term *surrogate*, or substitute, is inaccurate because she is in fact the child’s biological mother.

Embryo Transfers

In addition to this form of regular surrogacy, in which the surrogate mother is also the genetic mother of the child, there is the newer gestational surrogacy, involving women who contribute no egg but carry the infant to term. Here an **embryo** or **ovum transfer** occurs, in

which fertilized eggs (not the receiving woman's) are transferred into the uterus of the woman who will be the **gestational mother**. Embryo transfer may occur when a woman who will rear the child cannot herself carry it to term. Her fertilized eggs are transferred to the uterus of a gestational surrogate mother, who will bear and deliver the baby, then relinquish it to the social parents.

Embryo transfer may also occur when the mother who will carry the infant and plans to keep and rear it does not have healthy eggs or does not want to use her own eggs because of a genetically transmitted disease. In that case a pregnancy is generated by her receipt of the fertilized egg of another woman.

■ New Developments ■

We will tell you now about a few promising new developments, some only experimental at this point.

Microsurgery for Male Infertility

For the 40 percent of infertility attributed to male problems, doctors now have some solutions. Sperm count may be affected by *varicoeles* (varicose veins) in the scrotum. Scar tissue from various common sexually transmitted diseases (notably chlamydia and gonorrhea) or hernia surgery may cause damage or blockages of the *epididymis* (the organ where sperm is stored in the testes) or *vas deferens* (the tube which carries the sperm into the man's penis). Microsurgery can remove these impediments and restore or improve sperm count and thus fertility (Ehrenfeld 2002).

Intracytoplasmic Sperm Injection (ICSI)

With this technique, sperm are directly injected into the center of the egg to fertilize it. The benefit is that with this procedure, a man with a low sperm count may successfully fertilize his partner's egg. There is some risk of minor genetic malformations.

Ovary Transplant

An American woman began ovulating and then became pregnant after receiving a transplant of ovarian tissue from her twin sister. An ovary transplant between sisters in China was also successful (Vig 2003;

Wittenauer 2004). While few women will have the close genetic match a twin will offer, future work may be able to expand the use of ovary transplantation beyond close relatives.

An ovary self-transplant may be done using the woman's own ovary when a woman has to undergo chemotherapy or has another health condition or treatment that will damage fertility. The ovary may be removed in advance and then reimplanted. A Belgian woman had an ovary removed and frozen and successfully transferred back after the five-year mark of recovery from her lymphoma. Two years later she gave birth to the first baby conceived after an ovary transplant (Wittenauer 2004).

Oocyte Cryopreservation

Oocyte cryopreservation simply means egg freezing. This procedure has usually been limited to research settings involving young women who need chemotherapy or have some other fertility-damaging condition. Now, however, commercial services offer oocyte cryopreservation to women who are simply hopeful of becoming mothers when they meet Mr. Right at whatever age.

Unlike sperm, which can easily be frozen, defrosted, and used to inseminate, eggs are technically difficult to preserve. A spokesman for the American Society of Reproductive Medicine stated that ASRM "feels it's premature to openly market this now, but these technologies are quickly evolving and the limited body of evidence we have is encouraging" (in Wadyka 2004, p. D-5). Researchers report a 20 percent success rate, though the number of cases is small. About 100 babies have been born using oocyte cryopreservation world wide, the majority in Italy. This procedure is expensive: about \$13,000 for the initial egg harvest and \$40 a month for storage.

In Vitro Fertilization Innovations

In some IVF procedures, transfer of the newly created embryo may be deferred until the *blastocyst* stage (five to seven days after fertilization, when the embryo has about 100 undifferentiated cells). This has the advantage of permitting careful selection of the most promising embryos, although it also seems to generate multiple births—considered undesirable because of the risk of higher mortality or other problems.

There are some improvements in the technique for drawing eggs out of the ovary and in the medium

for culturing embryos. Researchers and clinicians have also experimented with removing some eggs before they have matured and maturing them in the laboratory. This permits more eggs to be harvested without requiring the woman to take fertility drugs to stimulate egg maturation. Reproductive medical science now offers the possibility of *preimplantation genetic diagnosis*, or PGM, to search for abnormalities and eliminate those embryos which seem likely to produce unsuccessful pregnancies, i.e., miscarriages. Of course, this is also a technique that is ethically troubling in that it suggests the selection of embryos according to perceived social value or gender (Duenwald 2003).

Nuclear Transfer

To address the problem of healthy eggs for older women who wish to have biological children, reproductive scientists have experimented with *nuclear transfer*. This refers to the process of taking a cell from an older woman (over forty, that is) from a non-reproductive part of the body, perhaps a skin cell, and placing it into the nucleus of an egg of a younger woman, after removing that woman's DNA. Experimentation with nuclear transfer has halted for the moment, as the FDA has decided to regulate this process. It is also very costly, perhaps not commercially viable.

A reverse process, *cytoplasmic transfer*, involves taking some cytoplasm from a younger woman's egg and

placing it into the older woman's egg to see if that will give her egg more youthful qualities (Duenwald 2003).

Development of assisted reproductive technology is ongoing, and there are bound to be new forms of infertility treatment that become available after publication of *Marriages and Families*, 9th edition. These are usually reported in the media, and interested parties may consult their physician or infertility clinic about the possibilities. Some new developments may raise troubling ethical questions; for example, experimental work has produced embryos of mixed gender (Weiss 2003b). Prospective users of reproductive technology may want to consult religious or other ethical advisers as well as medical specialists.

For more detailed treatment of assisted reproductive technology as presently available, see *Our Bodies, Ourselves for the New Century*, by The Boston Women's Health Book Collective, 1998, Chapter 18. For background, and for reports on usage of assisted reproductive technology and on success rates of fertility clinics, see the Centers for Disease Control and Prevention website (go to www.cdc.gov and search *reproductive health* or *assisted reproductive technology*). Anthropologist Gay Becker's book *The Elusive Embryo* (Berkeley: University of California Press, 2000) is a useful portrayal of couples' experiences as they go through infertility treatment. It offers a great deal of detail about the procedures from the patient's point of view.

Marriage *and* Close Relationship Counseling

MARRIAGE AND CLOSE RELATIONSHIP counseling is a professional service dedicated to helping individuals, couples, and families gain insight into the actually or potentially troublesome dynamics of their relationship(s) and to teaching clients more effective and supportive communication techniques (Gladding 2004). Experts have suggested that couples or families should visit a counselor when communication is typically hostile or conflict goes unresolved, when they cannot figure out how to resolve difficulties themselves, when a partner is thinking of leaving a committed relationship, or when a problem in the relationship appears to be linked to a personality disorder in one or more family members (such as chronic drinking, drug abuse, severe depression, or deep feelings of insecurity and inadequacy). But counseling is also appropriate—and perhaps more effective—as a preventive technique, undertaken at the onset of a family crisis or when a couple or family sees a potentially troublesome transition ahead. Today people go to counselors for help in working through premarital and engagement issues, as well as same-sex-couple, cohabitation, marriage, divorce, remarriage, and stepfamily issues (Gladding 2004; Long and Serovich 2003; Means-Christensen, Snyder, and Negy 2003).

Qualifications of Counselors

The qualifications of marriage counselors vary. A counselor who is a member of the American Association for Marital and Family Therapy (AAMFT) has a graduate degree (in either medicine, law, social work, psychiatry, psychology, human development and family studies, or the ministry) in addition to special training in marriage or family therapy or both and at least three years of clinical training and experience under a senior counselor's supervision.

Not all those who practice counseling are so well qualified, however, and some have, in fact, taken on the responsibility of training themselves. The majority of states—but not all—license marriage counselors. Some states require counselors to pass oral and written tests in order to practice. The safest way to choose a qualified counselor is to select one who belongs to the AAMFT. To do so, check the organization's website: <http://www.aamft.org>. Personal references from family members and/or friends may also be helpful.

It is important to have a counselor you like, trust, and feel is sympathetic to you. It is also important that the counselor respect your religious and personal values. If after three or four sessions you do not feel comfortable with the counselor or don't believe she or he is effective, it might be a good idea to try someone else (Ambroz 1995).

Marriage Counseling Approaches

Marriage/close relationship counseling may be either a short- or long-term arrangement. A difficulty might be cleared up in a few weekly sessions. In other cases, counseling might last a year or more. Or a couple or family might work through a problem in a few visits, then quit with the understanding that they'll return if conflicts once more begin to go unresolved. In all cases, counseling should have definite goals and should aim at termination instead of becoming an indefinite program.

Qualified counselors have widely varying approaches to their work (Gladding 2004). For example, counselors whose primary training is in psychiatry or psychoanalysis may view problems in relationships as the result of at least one family member's personal neurosis. Such counselors would believe that restoring each individual to emotional health is the first and most important step in improving the relationship and so would probably suggest seeing each family member individually. Other approaches include choice therapy (Glaser 2001) and cognitive-behavior therapy (Freeman and Carlson 2004). People would do well to inquire about various techniques before engaging a counselor.

A widely accepted approach to marriage counseling is conjoint marital or relationship counseling, according to which the counselor sees the partners together. In such an approach, counselors help the couple learn to interact more constructively. A related approach is family systems therapy, in which as many family members as possible—sometimes even extended kin—are engaged together in therapy.

Despite its substantiated benefits, the extent to which counseling “saves” a union that is headed for a divorce or break-up is difficult to measure (Corliss and Steptoe 2004; Sprenkle 2002). For one thing, all we've

said about counseling is based on the presumption that partners are willing to cooperate. It is entirely possible, however, that one's partner may not be willing. No counselor can or will attempt to change a person to a partner's liking without active cooperation from all involved (Ambroz 1995).

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Managing *a* Family Budget

Americans think of their spending power in terms of how much money they make. But many Americans can considerably increase their real income—the amount of goods and services their money will buy—just by planning (Brock 2005; Rich 2004).

Steps in Planning a Budget

Here are some general tips for planning a budget. You may adapt them to your own interests and needs.

1. Assess the situation. You must first know where you stand. Prepare a balance sheet showing all of your financial assets and liabilities.
2. Set your goals. Decide on your priorities and goals, whether they may be paying off your college loan in two years, saving for a house down payment, or simply paying off your credit-card debt.
3. Estimate your income. Make as accurate an estimate as you can, including such income as salaries, gifts, commissions, and bonuses. Don't be overly optimistic about raises or projected commissions and profits. Unrealistic estimates can result in overspending.
4. Compile a spending inventory. To get an accurate picture of current expenses, keep track of everything you spend for at least a week. Your spending habits—and knowledge of them—may surprise you. If you're skeptical and don't see a reason to keep track, be aware that some overweight people insist they never eat; when they keep a daily record of the calories they take in, they are amazed. In a similar fashion, you may find, for example, that you spend \$35 on lunches, not the \$20 you had thought.
5. Prepare the budget. You might create a budget from various worksheets that you can find on the Internet. Two helpful sources are the Economic Policy Institute (http://www.epinet.org/content.dfm/datazone_fambud_budget) and the University of Florida Extension Service (<http://edis.ifas.ufl.edu>). These web sites offer guidelines for spending as well as free worksheets for creating a budget. (If you go to the University of Florida web site, search on the site for "Show Me the Money Lesson.")
6. Follow through. This involves keeping daily records of expenditures in a convenient notebook or in an account book bought for that purpose. At the end of each month, you should total daily expenditure figures for each item, then compare them with the amounts planned in Step 4. If January had more food expenditures than were budgeted, either this expenditure would have to be cut back in February or more money allocated for food by taking it from some other category. If excessive expenses show up in successive months, you may decide to eliminate some expensive purchases. If expenditures for one account consistently fall below what was planned, the budget may be revised.

About Saving

Being able to save regularly is highly unlikely (if not impossible) for low-income and poverty-level families. But middle-income people need to consider it seriously (Turner 2001, Lesson 5). Financial advisers recommend regularly saving 10 percent of your gross income. If that seems too difficult, start with less—even just 1 percent—and work up. Employed people can usually save automatically by setting up payroll deduction plans at work. In this case, a fixed percentage of your salary is regularly deposited into a credit union or bank savings account. The value here is that the amount is deducted before you receive your check so that after a few paychecks you may not miss it. Another way to save automatically is to have your bank regularly withdraw a fixed amount from your checking account and deposit it into a savings account (Toohey and Toohey 2001).

About Credit

In our country, credit cards and time purchases have become a way of life in recent years. Yet credit costs money, and it should be considered a purchase in its own right. The late financial writer Sylvia Porter (1976) offered some right and wrong reasons for borrowing. Right reasons include establishing a household or beginning a family, making major purchases, taking advantage of seasonal sales, financing college or other educational expenses, and genuine emergencies (Sander 2003).

Wrong reasons include buying to boost morale, to increase one's status, or on impulse. People misuse credit when they use it to maintain an adequate cash reserve. Another misuse is financing purchases against an uncertain but hoped-for raise or future financial windfall (Porter 1976; Sander 2003).

SOURCES OF CREDIT People borrow money from many different sources. Some turn to their parents or, less often, to brothers and sisters; in such cases, interest is likely to be low. Sometimes, relatives help each other by putting up security or cosigning bank loans. Family borrowers need to consider psychological as well as monetary costs of intrafamilial transactions.

Another source of credit is public lending agencies: credit unions, banks, finance companies, and pawnshops. Interest rates vary widely among the different types of agencies. One of the most highly adver-

tised sources of credit is the small loan company, which specializes in lending to borrowers who have little or no security. These sources serve a purpose, for without them many people with no security or poor credit ratings could not legally borrow money. But because of the risk small loan companies take, they charge extremely high interest rates and are best avoided in favor of other sources of credit.

Another way to borrow money is by arranging retail installment financing, in which people contract with a dealer to pay for major purchases over a period of time. The dealer receives the markup on the merchandise and the interest on the unpaid balance. When making major purchases, people should study installment contracts with care and ask questions about anything they don't understand. Find out how much the item will really cost—that is, the price of the item plus the hidden cost of financing. Compare interest rates and consider whether a personal bank loan would be a less expensive way of paying for the item (Turner 2001, Lesson 3).

It is important to shop for credit as carefully as for any other major purchase. Furthermore, people should try to pay off one installment obligation before taking on a new one. Moreover, consumers need to remember that using credit cards is the same as borrowing money, and credit-card purchases need to be budgeted the same way cash purchases are. Statistics on credit misuse are high. A good rule is to limit borrowing so that debt payments, excluding mortgage payments, account for no more than 15 percent to 20 percent of take-home pay.

FINANCIAL OVEREXTENSION AND WHAT TO DO ABOUT IT Optimally, families pay their installment and other loans monthly, along with other regular expenses, and set some money aside for savings. Some advisers suggest that a family is overextended if it has less than three months' take-home pay in savings for emergencies.

If an individual or a couple is financially overextended, the first step in solving the problem is to make a conscious choice to change things. Plan a budget jointly with a spouse or other family member who shares the budget responsibility (Hunt 2003). Look for places to cut expenses. Resolve not to use credit cards or take out new loans until your situation has improved.

If necessary, cut up all your credit cards—the first action credit counselors take for many of their clients.

Ask your creditors if they will agree to spread payments over a longer period. Usually, they will be willing to work out some temporary arrangement.

If you feel it's necessary, consult a credit-counseling service, but be careful as some of these charge high rates for their "advice" and may offer you their own high-interest loans, an extremely unwise "solution" to your problems. To begin your search for a trustworthy service, check the web site of the National Foundation for Credit Counseling (www.nfcc.org). In general you will be better able to trust the advice and information that you find on government (suffix=.gov) or educational (suffix=.edu) institutions.

Budgeting Resources

You can find a variety of budgeting resources in your local library, by browsing in your local bookstore, by searching online, and/or by investigating computer software. Resources range from those that present the basics of financial management and budgeting (for example, Jason Rich's e-book, *Make Your Paycheck Last: How to Create a Budget You Can Live With*, 2004), to those that stress saving and investing (for example, the e-book *Budget & Save: Six Steps to Help You Make the Most of Your Income*, 2003), to those that focus on recovering from debt (for example, David and Debbie Bragonier's *Getting Your Financial House in Order*, 2003), to those that address living on reduced income due to circumstances beyond one's control (for example, Michelle Eagles' *From Heaven to Earth: Soft Landing Your Family Budget: 14 Steps to Manage Downsizing Family Finances in Downsizing Times*, 2002), to books that place budgeting within the marriage and family context (for example, Mary Hunt's *Debt-Proof Your Marriage*, 2003, or Bill and Mary Toohey's *The Average Family's Guide to Financial Freedom*, 2001).

. . . . In addition to the online sources mentioned earlier, there are various online sources that charge a fee. For example, for a monthly fee *Personal Mvelopes: the Simple, Smarter Budgeting System* (<http://www.mvelopes.com>) offers online access to budget infor-

mation and planning as well as ways to track your spending. Software available online or at your local computer store offers a similar service.

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