

Understanding Fertility

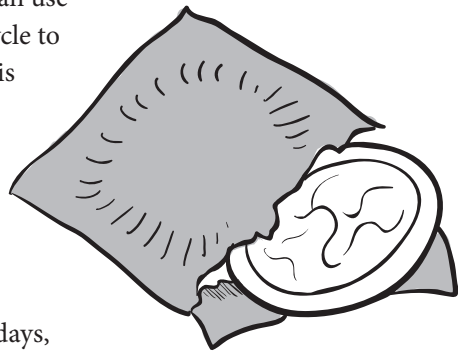
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INTRODUCTION

The word “fertile” means the ability to become pregnant or to cause pregnancy. Basic knowledge of both the male and female reproductive systems is important for understanding how pregnancy occurs.

Understanding fertility empowers both women and men to care for their own and others’ reproductive health. Everyone needs to know the time during the menstrual cycle when a woman can get pregnant and to know that a man can cause pregnancy at any time.

A woman who wants to become pregnant can use her understanding of her own menstrual cycle to plan sexual relations for the days when she is most likely to become pregnant. A woman who does not wish to become pregnant can avoid sex during her fertile time every month or use condoms during this time each month. Or, she may decide to use a contraceptive method that provides continuous protection from pregnancy for days, months, or years at a time.



Family planning counselors, other health care providers, and anyone who communicates with the public on health issues, need a clear understanding of male and female fertility and should look for opportunities to share this information. Parents, too, can educate their children about fertility and answer

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- 1** Every month a woman's reproductive system goes through a series of changes called the menstrual cycle. The typical menstrual cycle is about 28 days long; it begins on the first day of her monthly bleeding and ends on the day before the next monthly bleeding begins.
- 2** In the middle of the menstrual cycle and between monthly bleedings, a woman should assume that there are 12 days when she could become pregnant.
- 3** Women who are not breastfeeding or only partially breastfeeding can become fertile as early as 4 weeks after delivery and should start using a contraceptive method at that time.
- 4** Around the time of puberty, a girl's body changes as she develops into a woman. She gains the ability to become pregnant about two weeks before her first monthly bleeding begins.
- 5** Women in their 40s or older who have no monthly bleeding for 12 months in a row have reached menopause and can assume that they are no longer able to become pregnant.

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CHAPTER 6: UNDERSTANDING FERTILITY

their questions, but they may need support and information themselves. Educators who develop sex education courses or train teachers, and teachers themselves, also need to understand human fertility.

For women, fertility awareness also includes knowing the signs that indicate menopause, the time when a woman's fertility comes to an end and she can no longer become pregnant. This usually occurs between the ages of 45 and 55.



6 Around the time of puberty, a boy's body changes as he develops into a man. He becomes fertile and can cause a pregnancy.

7 A man is fertile throughout his life and may be able to cause a pregnancy every time he has unprotected sex with a woman.

SUPPORTING INFORMATION

FACT 1.

Every month a woman’s reproductive system goes through a series of changes called the menstrual cycle. The typical menstrual cycle is about 28 days long; it begins on the first day of her monthly bleeding and ends on the day before the next monthly bleeding begins.

Each month a woman’s reproductive system repeats a regular pattern of events that includes vaginal bleeding and is referred to as the menstrual cycle. On day 1 of the menstrual cycle the vaginal bleeding begins — this is also referred to as menstrual bleeding, or monthly bleeding, or a woman’s “period.” About two weeks later in the menstrual cycle, a woman’s ovaries release a mature egg into one of the uterine tubes, also called the fallopian tubes, which lead to the uterus (the womb). At the same time, every month a woman’s body builds up a fresh new lining in the uterus. This new uterine lining will nourish a fertilized egg.

If the newly released egg unites with a man’s sperm in the fallopian tube — a process called fertilization — the fertilized egg will travel to the uterus and may attach to the uterine lining. There the fertilized egg will grow and develop into a baby. In this case, the uterus will not shed the lining, and the woman will not have her monthly bleeding. If a sexually active woman does not have her monthly bleeding as expected, it is likely that she has become pregnant. However, some women do not have regular cycles, which make it harder for them to know when to expect monthly bleeding. If a woman who is 45 years old or older does not have monthly bleedings it could mean that she has reached menopause and is no longer at risk of pregnancy (see Fact 5 for more information).

If not fertilized, the egg travels to the uterus and dissolves. In this case the fresh new uterine lining is not needed to nourish a baby and is shed. The

uterine lining comes out of the uterus and through the vagina in the form of menstrual blood. This menstrual blood may be bright red, light pink, or brown. It indicates that the woman is not pregnant. A monthly bleeding usually lasts 3 to 5 days. The first day of the monthly bleeding marks the beginning of the woman's next menstrual cycle.

The length of a woman's menstrual cycle typically varies slightly from month to month. Also, the average length of a monthly cycle varies from one woman to the next. Women's cycle length can range from 24 to 37 days, but most women have monthly cycles of between 26 and 32 days, and the average is 28 days.

FACT 2.

In the middle of the menstrual cycle and between monthly bleedings, a woman should assume that there are 12 days when she could become pregnant.

During each menstrual cycle, there are about 6 days in a row when a woman is fertile and can become pregnant. These fertile days are difficult to predict exactly because a woman's menstrual cycles may vary slightly from month to month. However, these fertile days will be immediately before and around the time of ovulation, when an egg is released by an ovary into a fallopian tube.

If a woman has a 28-day menstrual cycle, ovulation will take place mid-way through her cycle — around day 14. Sperm can survive in her reproductive tract for up to 5 days, and the woman's egg can survive not more than 24 hours after ovulation. Thus, she could become pregnant if unprotected sex takes place either 5 days before ovulation or the day of ovulation. This is a 6-day interval that begins around day 9 and ends around day 14 of an average 28-day cycle (see illustration on the following page).

But the length of any woman's monthly cycle may vary from month to month, usually between 26 and 32 days. In addition, ovulation will not

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EXAMPLE OF A 28-DAY MENSTRUAL CYCLE: FERTILE DAYS

CALENDAR MONTH						
1 ●	2 ●	3 ●	4 ●	5 ●	6 ●	7
8	9	10	11	12	13	14 ★
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30	31				

● MONTHLY BLEEDING ★ OVULATION ■ INFERTILE DAYS ■ FERTILE DAYS

Menstrual cycle length and ovulation time vary from month to month; it is not possible to know the exact days a woman will be fertile. Women who want to prevent pregnancy must avoid unprotected sex for a full 12 days — from day 8 through day 19.

occur on the exact same day of every menstrual cycle even if they all are the same length.

Without knowing the exact day of ovulation, it is hard to identify the exact days when pregnancy will be possible. Therefore, a woman should assume there are not 6, but 12 days in the middle of her menstrual cycle when she could become pregnant. These 12 days account for the 6 fertile days that occur in the shortest as well as the longest menstrual cycles. Some women use this information to monitor their cycles and avoid sex or use condoms during the 12 days each month when they may become pregnant as a family planning method.

Several approaches have been developed and tested that use information about the fertile period to avoid pregnancy. These are typically referred to as “fertility awareness” family planning methods, which are described more fully in Chapter 7.

FACT 3.

Women who are not breastfeeding or only partially breastfeeding can become fertile as early as 4 weeks after delivery and should start using a contraceptive method at that time.

If a woman has had a baby, and is not breastfeeding or is only partially breastfeeding, it may take as little as 6 to 10 weeks for her monthly bleeding to return. However, even though her bleeding has not yet returned, she

A woman who is not breastfeeding her baby may become fertile as early as 4 to 6 weeks after childbirth.

can be fertile and able to become pregnant as soon as 4 to 6 weeks after childbirth. Just like a girl with her first monthly bleeding, a woman who has given birth may be fertile before her monthly bleeding returns because the egg is released approximately 2 weeks

before bleeding begins. The return of fertility following childbirth varies significantly from woman to woman.

In contrast, if a woman is breastfeeding, typically she will not have monthly bleedings for several months after childbirth. Women who feed their babies only breast milk until the baby reaches 6 months old will be protected from pregnancy as long as they do not resume their monthly bleeding. If they stop breastfeeding only or if their monthly bleeding returns, they should immediately begin another family planning method to prevent a pregnancy.

FACT 4.

Around the time of puberty, a girl's body changes as she develops into a woman. She gains the ability to become pregnant about two weeks before her first monthly bleeding begins.

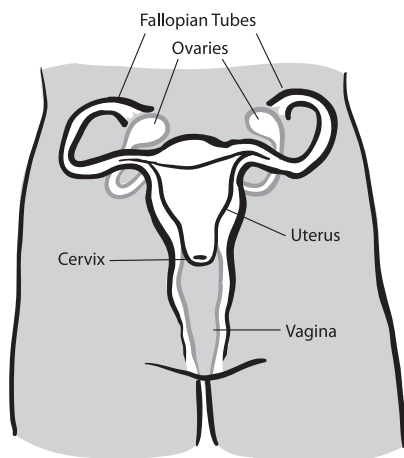
Puberty is when the bodies of girls and boys mature into those of adults. Between the ages of about 8 and 13, a girl's body begins to slowly change

in many ways. Over several years, she becomes taller, her breasts grow and change, and hair grows under her arms and in the genital area. Also, she develops sexual feelings, starts having cervical secretions (wet feeling in the vagina), and her menstrual cycles begin.

A girl's first vaginal bleeding is a clear sign that her menstrual cycles have started and she may now become pregnant. Every month the ovary releases an egg about two weeks before the monthly bleeding begins — *including before her very first period*. This means a girl may be able to get pregnant even before her first monthly bleeding. A sexually active girl going through puberty should use contraception to prevent unplanned pregnancy even if she has not yet had her first period.

Just because a girl has started her periods and she is able to become pregnant does not mean that her body is fully developed and ready to have a baby. In fact, a girl's body usually is not fully ready for pregnancy until she is at least 18 years old. Pregnancy before that age increases the risk of physical complications that can affect the health and well-being of the young mother and her baby. Harmful emotional, economic, and social consequences are also likely to occur if she becomes pregnant or has a baby before 18 years of age.

FEMALE REPRODUCTIVE TRACT



When a girl is approaching puberty, she must be taught about her menstrual cycle, bleeding, and hygiene. A menstruating girl needs pads, tampons, clean cloths, toilet tissue, and soap and clean water so that bleeding will not interfere with going to school or other daily activities. Support from parents, schools, and the community helps girls get through the time when their bodies are growing and changing and allows them to continue their education. Ideally, by the time a young girl has her first monthly bleeding, she knows what it is and understands that it is normal and a part of growing up.

FACT 5.

Women in their 40s or older who have no monthly bleeding for 12 months in a row have reached menopause and can assume that they are no longer able to become pregnant.

Women's monthly bleeding cycles, which begin during puberty, end at menopause. Menopause happens to most women between the ages of 45 and 55. As a woman nears menopause, she begins to have fewer and less regular monthly bleedings. After a few years she stops having monthly bleeding altogether. When a woman has not had her monthly bleeding for 12 months in a row, she has reached menopause and can assume that she is no longer able to become pregnant.

To avoid an unplanned pregnancy when a woman approaches menopause, a couple should use a contraceptive method until she has had no monthly bleeding for 12 months in a row.

Although a woman cannot get pregnant after menopause, she can still get and pass on an STI, including HIV. Women should be advised to continue to use a male or female condom if they are at risk.

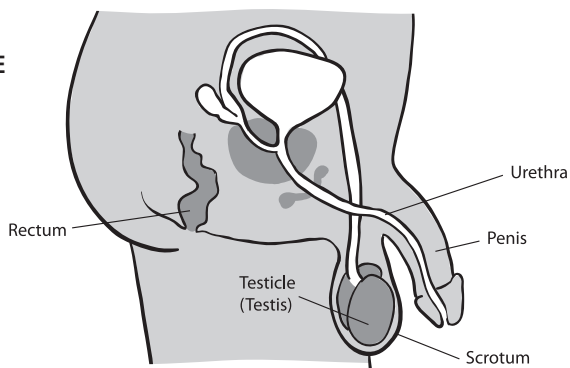
FACT 6.

Around the time of puberty, a boy's body changes as he develops into a man. He becomes fertile and can cause a pregnancy.

When a boy is 9 to 15 years old, his body begins to change. He grows taller and his voice becomes deeper. His penis, scrotum, and testicles become larger. Hair grows on his face, under the arms, and in the genital area. A boy also starts having sexual feelings and sometimes wet dreams, where during sleep his penis gets hard and ejects a thick secretion called semen. This is called ejaculation. The semen contains millions of sperm. Beginning with the first ejaculation, a young man is fertile. Barring certain illnesses and medical conditions, for the rest of his life he will be able to cause pregnancy.

When a man is sexually aroused his penis becomes larger and stiff — this is called an erection. Erection almost always precedes ejaculation. However, men do not need to ejaculate semen each time they have an erection. Not ejaculating semen during an erection does not cause any harm to his body or to his emotional well-being. Ejaculation into a woman's vagina during sexual intercourse may lead to pregnancy.

Although boys become physically able to cause pregnancy, they are not ready to be fathers. Both men and women have a responsibility to care for their children. Bringing a child into the world is a big responsibility, and both parents' maturity is very important.

**MALE
REPRODUCTIVE
TRACT**

FACT 7.

A man is fertile throughout his life and may be able to cause a pregnancy every time he has unprotected sex with a woman.

MAN'S SPERM DETERMINES SEX OF A BABY

The sex of a baby is determined by two chromosomes that come from the woman's egg and man's sperm. Chromosomes are tiny structures that contain all biological characteristics that are passed to a baby, including the sex of the baby. The chromosomes that determine a baby's sex are called the "X" and "Y" chromosomes. A baby gets one sex chromosome from the mother and one from the father. A woman's egg carries two "X" chromosomes, which are the "girl" chromosomes. The father has one X chromosome and one Y chromosome. If the fertilized egg gets the father's Y chromosome, the baby will be a boy; if the egg gets the father's X chromosome, the baby will be a girl. Thus, the man's sperm, not the woman's egg, determines the baby's sex.

Most men can father a child from the time they have their first ejaculation at puberty and for the rest of their lives, although their fertility may diminish somewhat with age. Also, men are fertile without interruption throughout the month. In contrast, a woman can become pregnant only on certain days of each menstrual cycle.

The man's sperm — not the woman's egg — determines whether the child will be a boy or a girl (see box). Those discussing family planning messages should note this fact because of the potential blame that women face when they do not produce a male offspring. This blaming can lead to dramatic actions such as divorce or violence.

Another message to communicate is that some men are not able to cause pregnancy due to medical conditions that result in very low amount of sperm in the semen. This is important because when a woman does not get pregnant, it is not necessarily her fault. Researchers estimate that infertility in couples may be caused by the man 30% to 50% of the time, depending on the country.