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# OUR BODIES, OURSELVES

The Boston Women's Health Book Collective


A TOUCHSTONE BOOK
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# CHAPTER 1



Learning about our sexual anatomy and observing and exploring our bodies are good ways to become more comfortable with ourselves and our sexuality. These are also good ways to learn what is normal for each of us and to become aware of changes and potential problems. Understanding the way our sexual and reproductive systems work, how they interact with other body functions, and how they are influenced by our lifestyle, environment, and general well-being can help us enhance sexual pleasure, reduce the risk of some health problems, and make informed reproductive decisions.

We are often far less familiar with the appearance and function of our sexual and reproductive organs than we are with other parts of our bodies. This chapter aims to change this.

The first part discusses female sexual anatomy, including reproductive and sexual organs both inside and outside the body.* It names the body parts and explains where they are and what they do.

The second part of the chapter covers menstruation and fertility awareness. It explains how the menstrual cycle works; the commonalities, differences, and variations in women's cycles; and the physical and emotional changes some women experience. It also addresses how reproduction occurs.

## SEXUAL AND REPRODUCTIVE ORGANS: ANATOMY (STRUCTURE) AND PHYSIOLOGY (FUNCTION)

The following descriptions will be much clearer if you look at your genitals with a hand mirror while you read the text and look at the diagrams. Make sure you have enough time and privacy to feel relaxed. Try squatting on the floor and putting the mirror between your feet. If you are uncomfortable in that position, sit as far forward on the edge of a chair as you comfortably can, separate your legs, and put the mirror between them. If you're having a hard time seeing, try aiming a flashlight at your genitals or at the mirror.

The appearance, shape, and size of genitals vary from person to person as much as the shape and size of other body parts. There is a wide range of what is considered normal. By observing your own body, you will learn what is normal for you.

First, you will see your vulva—all the female external organs you can see outside your body. The vulva includes the mons pubis (Latin for "pubic mound"), labia majora (outer lips), labia minora (inner lips), clitoris, and the external openings of the urethra and vagina. People often confuse the vulva with the vagina. The vagina, also known as the birth canal, is on the inside of your body. Only the opening of the vagina (introitus) can be seen from the outside.

Unless you shave or wax around your vulva, the most obvious feature you will see is the pubic hair, the first wisps of which are one of the early signs of puberty. After menopause, the hair thins out. Pubic hair covers the soft fatty tissue called the mons (also mons veneris, mound of Venus, or mons pubis).† The mons lies over the pubic symphysis. This is the joint of the pubic bones, which are part of the pelvis, or hip girdle. You can feel the pubic bones beneath the mons pubis.

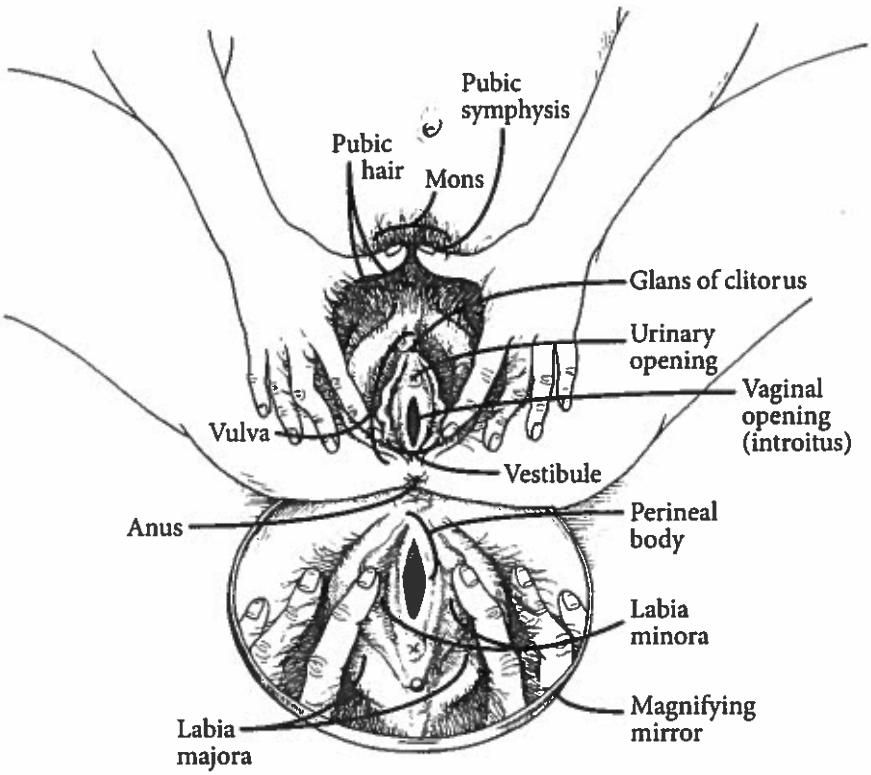
As you spread your legs, you can see in the mirror that the hair continues between your legs and probably around your anus. The anus is the outside opening of the rectum (the end of the large intestine, or colon).

The fatty tissue of the mons pubis also continues between your legs to form two labia majora, the outer lips of the vulva. You can feel that the hair-covered labia majora are also fatty, like the mons. The size and appearance of the labia majora differ considerably among women. In some, the skin of the outer lips is darker. The labia majora surround the labia minora (the inner lips of the vulva). The labia minora are hairless and very sensitive to touch.

As you gently spread apart the inner lips, you can see that they protect a delicate area between them. This is the vestibule. Look more closely at it. Starting from the front, right below the mons you will see the inner lips joining to form a soft fold of skin, or hood, over and cover-

* This chapter describes female sexual anatomy, but some of us who identify as women do not have this anatomy. Some of us have parts of both male and female anatomy, and some with female anatomy identify as men or as neither sex. For more information, see "Disorders of Sexual Development," p. 14, and Chapter 4, "Gender Identity and Sexual Orientation."

† The formal medical term is given in parentheses if it is different from the English or more familiar term.

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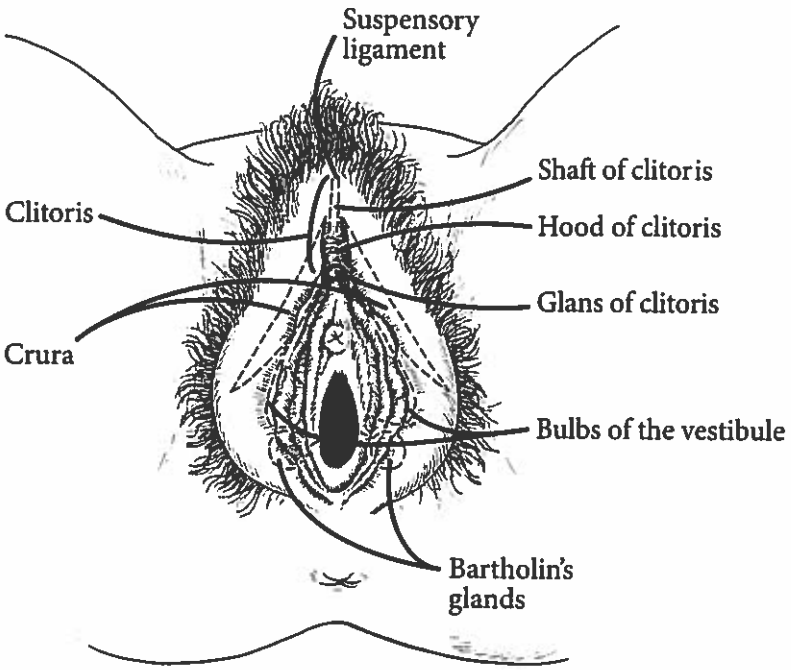
**THE VULVA**

ing the glans, or tip of the clitoris. Gently pull up the hood to see the glans. The glans is the spot most sensitive to sexual stimulation. Many people confuse the glans with the entire clitoris, but it is simply the most visible part. Let the hood slide back, and extending from the hood up to the pubic symphysis, you can now feel a hardish, rubbery, movable rod right under the skin. It is sometimes sexually stimulating when touched. This is the body or shaft of the clitoris. It is connected to the bone by a suspensory ligament. You cannot feel this ligament or the next few organs described, but they are all important in sexual arousal and orgasm.

At the point where you no longer feel the shaft of the clitoris, it divides into two parts, spreading out wishbone fashion but at a much wider angle, to form the crura (singular: crus), the two anchoring wing tips of erectile tissue that attach to the pelvic bones. The crura of the clitoris are about 3 inches long. Starting from where the shaft and crura meet, and continuing down along the sides of the vestibule, are two bundles of erectile tissue called the bulbs of the vestibule.

The bulbs, along with the whole clitoris (glans, shaft, crura), become firm and filled with blood during sexual arousal, as do the walls of the vagina. Both the crura of the clitoris and the bulbs of the vestibule are covered in muscle tissue. This muscle helps to create tension and fullness during arousal and contracts during orgasm, playing an important role in the invol-

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**DETAILS OF THE CLITORIS**

(Dotted lines indicate areas inside the body.)

untary spasms felt at that time. The clitoris and vestibular bulbs are the only organs in the body solely for sexual sensation and arousal.

The clitoris is similar in origin and function to the penis. All female and male organs, including sexual and reproductive organs, are developed from the same embryonic tissue. In fact, female and male fetuses are identical during the first six weeks of development. The glans of the clitoris corresponds to the glans of the penis, and the labia majora correspond to the scrotum.

In some cultures, there is a practice of female genital cutting—removing a girl's clitoris and sometimes even sewing the labia together. For more information, see "Female Genital Cutting," p. 793.

The Bartholin's glands are two small rounded bodies on either side of the vaginal opening near the bottom of the vestibule. They secrete a small amount of fluid during arousal. Usually you cannot see or feel them.

If you keep the inner lips spread and pull the hood of the clitoris back again, you will notice that the inner lips attach to the underside of the clitoris. Right below this attachment you will see a small dot or slit. This is the urinary opening, the outer opening of the urethra, a short (about an inch and a half), thin tube leading to your bladder. Below the opening of the urethra is the vaginal opening (introitus).

Around the vaginal opening you may be able to see the remains of the hymen, also known as the vaginal corona. This is a thin membrane just inside the vaginal opening, partially blocking the opening but almost never covering it completely. Vaginal coronas come in widely varying

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## VAGINAL CORONA (OR WHAT YOU MAY KNOW AS THE HYMEN)*

© Nina Reimer

The vaginal corona—generally known as the hymen but renamed by a Swedish sexual rights group in an attempt to dispel many of the myths surrounding hymens—is made up of thin, elastic folds of mucous membrane located just inside the entrance to the vagina. The vaginal corona has no known function; it is probably a remnant of fetal development.

Many people wrongly believe that the vaginal corona is a thick membrane that entirely covers a woman's vaginal opening and ruptures when you have intercourse or any kind of insertive vaginal sex the first time. The myth goes like this: If a bride doesn't bleed from a ruptured hymen on her wedding night, this means that she has had sex and isn't a "virgin." This is not true.

* Content is adapted from *The Vaginal Corona*, a booklet created by the Swedish Association for Sexuality Education, rfsu.se/en/Engelska/Sex-and-Politics/Hymen-renamed-vaginal-corona.

The mucous membrane that makes up the vaginal corona may be tightly or more loosely folded. It may be slightly pink, almost transparent, but if it is thicker it may look a little paler or whitish. The vaginal corona may resemble the petals of a flower, or it may look like a jigsaw piece or a half-moon. It may be insignificant or even completely absent at birth.

The vaginal corona may tear or thin out during exercise, masturbation, tampon use, or any other form of vaginal penetration. Because of this, no one can look at a woman's vaginal corona and know whether she has had vaginal intercourse, or even whether she has masturbated.

In rare cases, the hymen covers the entire vaginal opening. This is called an imperforate or microperforate hymen. Young women with an imperforate hymen will experience monthly cramping and discomfort without the appearance of menstrual blood. In these cases, the hymen can be surgically opened to release accumulated menstrual fluid and to permit tampon insertion or other forms of vaginal penetration. More commonly, a hymen band may be present across the vaginal opening, allowing menstruation but preventing tampon insertion. If the opening is very small or partially obstructed, minor surgery can correct this.

Since the vaginal corona isn't a brittle membrane, the sensation when you first stretch out the mucous tissue folds—whether you're inserting a tampon, masturbating, or having insertive sex—is a highly individual experience. Some women feel no pain at all, while others,

with a thicker or more extensive vaginal corona, have some pain. There may be minor tears in the mucous folds that hurt, and sometimes there may be a little bleeding.

The Swedish Association for Sexuality Education (RFSU), the sexual rights group that coined the term vaginal corona, notes, "The mythical status of the hymen has caused far too much harm for far too long," and the hymen has wrongly been "portrayed as the boundary between guilt and innocence."[1] For more information, see "Virginity," p. 141.

sizes and shapes. For most women they stretch easily—by a tampon, as well as a finger, a penis, or a dildo. Even after the hymen has been stretched, little folds of tissue remain.

If you're comfortable doing so, slowly put a finger or two inside your vagina. If it hurts or you have trouble, take a deep breath and relax. You may be pushing at an awkward angle, your vagina may be dry, or you may be unconsciously tensing the muscles owing to fear of discomfort. Try shifting positions and using a lubricant such as olive or almond oil (not perfumed body lotion). Notice how the vaginal walls, which were touching each other, spread around your fingers and hug them. Feel the soft folds of mucous membrane. These folds allow the vagina to stretch and to mold itself around what might be inside it: fingers, a tampon, a penis, or a baby during childbirth.

© Hazel Hankin

The walls of the vagina may vary from almost dry to very wet. Some women naturally have wetter or drier vaginas. Wetness increases with sexual arousal. How wet your vagina is also changes during different parts of your menstrual cycle and over your lifetime. The vagina is likely to be drier before puberty, during breastfeeding, and after menopause, as well as during that part of the menstrual cycle right before and after the flow. Wetter times occur around ovulation, during pregnancy, and during sexual arousal.

Push gently all around against the walls of the vagina and notice where the walls feel particularly sensitive to touch. For some women this sensitivity occurs only in the area closest to the vaginal opening; in others it occurs in most or all of the vagina. About a third of the way up from the vaginal opening, on the anterior (front) wall of the vagina (the side toward your abdomen), is an area known as the Gräfenberg spot, or G-spot. Many women experience intensely pleasurable sensations when this area is stimulated. There are differences of opinion over whether the G-spot is a distinct anatomical structure or whether the pleasure some women feel when the area is stimulated is due to its closeness to the bulbs of the clitoris. (For more information, see "The G-Spot," p. 159.)

Now put your finger halfway in and try to grip your finger with your vagina. You are contracting the pelvic floor muscles. These muscles hold the pelvic organs in place and provide support for your other organs all the way up to your diaphragm, which is stretched across the bottom of your rib cage. Some women do Kegel exercises to strengthen the pelvic floor muscles (to learn more, see "How to Do Kegel Exercises," p. 643).

Only a thin wall of mucous membrane and connective tissue separates the vagina from the rectum, so you may be able to feel bumps on the back side of your vagina if you have some stool in the rectum.

Now slide your middle finger as far back into your vagina as you can. Notice that your finger goes in toward the small of your back at an angle, not straight up the middle of your body. If you were standing, your vagina would be at about a 45-degree angle to the floor. With your finger you may be able to just feel the deep end of your vagina. This part of the vagina is called the fornix. (Not everyone can reach this; it may help if you bring your knees and chest closer together so your finger can slide in farther.)

A little before the end of the vagina you can feel your cervix. The cervix feels like a nose with a small dimple in its center. The cervix is the part of the uterus, or womb, that extends into the vagina. It is sensitive to pressure but has no nerve endings on the surface. The uterus changes position, color, and shape during the menstrual cycle as well as during puberty and menopause, so you may feel the cervix in a different place from one day to the next. Some days you can barely reach it. The vagina also lengthens slightly during sexual arousal, carrying the cervix deeper into the body.

The dimple in the cervix is the os, or opening into the uterus. The entrance is very small. Normally, only menstrual fluid leaving the uterus, or seminal fluid entering the uterus, passes through the cervix. No tampon, finger, or penis can go up through it, although it is capable of expanding enormously for a baby during labor and birth.

### WHERE TO BUY A SPECULUM

Plastic speculums are relatively inexpensive and easy to buy online. The Feminist Women's Health Center (fwhc.org/sale3.htm) sells a self-exam kit for $25 that includes a clear plastic speculum, handheld mirror, small flashlight, lubricant, and "Get the Inside Information" brochure.

## CERVIX SELF-EXAM

If you want to see your cervix, find a private, comfortable place with good lighting and gather these supplies: a flashlight, a speculum (a metal or plastic tool used to hold apart the walls of the vagina; see "Where to Buy a Speculum," above), a lubricant such as such as olive or almond oil, and a hand mirror. Wash your hands, then sit back on a couch, a comfortable chair, or the floor, with pillows behind your back for support. Bend your knees and place your feet wide apart.

Familiarize yourself with the speculum. Different styles work slightly differently. All have two bills and a handle. Use the lever to open the bills until the lock clicks. Be sure you figure out how to release the lock before you insert it.

Put some lubricant on the speculum or your vulva. Hold the speculum in a closed position (with the bills together) with the handle pointing upward. Slide it in gently as far as it will comfortably go. If it hurts, stop. Pull it out and try in-

serting it into the vagina sideways, then turn it. Experiment to see what feels most comfortable for you. Keep in mind that your vagina is angled toward your back, not up toward your head. You can put your finger in your vagina to feel where your cervix is and how to direct the speculum.

Once the speculum is inserted, grasp the handle and squeeze the lever toward the handle to open the bills. Some women find that placing the speculum and finding the cervix take some effort. Breathe deeply and manipulate the speculum gently while looking into the mirror. You will be able to see the folds in the vaginal wall, which may look pink, bulbous, and wet. The cervix looks like a rounded or flattened knob about the size of a quarter. If you don't see it, allow the speculum to gently close and shift the angle of insertion before reopening it, or remove the speculum and reinsert it. Focus the light source on the mirror to help you see better. If you want, a friend or partner can help by holding the flashlight and/or the mirror. If you still can't see your cervix, wait a few days and then try again. The position of the cervix shifts during the menstrual cycle, so it may be easier to see at another time.

When you find your cervix, lock open the bills of the speculum. You will see some cervical and vaginal discharges. Depending on where you are in your menstrual cycle, your cervical fluid may range from pasty-white to a clear and stretchy egg-white texture. The cervix itself may be pink and smooth, or it might be uneven, rough, or splotchy. All of these are normal. If you are pregnant, your cervix might have a bluish tint; if you have reached menopause or are breastfeeding, it may be pale. If you are ovulating, the cervix will appear open with clear stretchy mucus sitting in it. The slit or opening in the center is the os, the opening to your uterus.

You may see small, yellow/white fluid-filled sacs on the cervix that look like little blisters. These are Nabothian cysts and are quite common and do not need any treatment. They are caused by a blockage in the fluid-producing glands of the cervix. Some women have them for years; in other women they come and go. You may also see polyps, pink outgrowths of cervical tissue that dangle on a stalk, looking like a little tongue sticking through the os.

When you are done exploring, unlock and remove the speculum. Some women prefer to remove it after the lock is released but while it's still open; others close the bills first. Clean it afterward with soap and water or rubbing alcohol (isopropyl alcohol) before storing for later use.

Observing the color, size, and shape of your cervix and the changes in your vaginal discharge and cervical fluid during the different stages of your menstrual cycles allows you to learn what is normal for you and can help you recognize when something is wrong. You can do cervical self-exams regularly or during certain phases of your fertility cycle—or maybe just once to check things out.

**Recommended Resource:** Beautiful Cervix Project (beautifulcervix.com) was founded by a twenty-five-year-old woman who took photos daily for a month to see how her cervix looked throughout the menstrual cycle. The site grew to include photos submitted by women from age twenty to past sixty. There are images of cervixes during pregnancy and after orgasm. You can also view photos of a Pap test in progress.

### *What's Not Normal*

It is normal to have vaginal and cervical fluid, or discharge. However, any of the following found during a self-exam may indicate an infection or another problem.

- Green, gray, or dark yellow discharge
- A significant change in the amount or consistency of discharge
- Any strong odor unusual for you
- Foamy discharge (from gas-producing organisms)

If you find anything that concerns you, see a health-care provider. (For more information, see Chapter 2, "Intro to Sexual Health.")

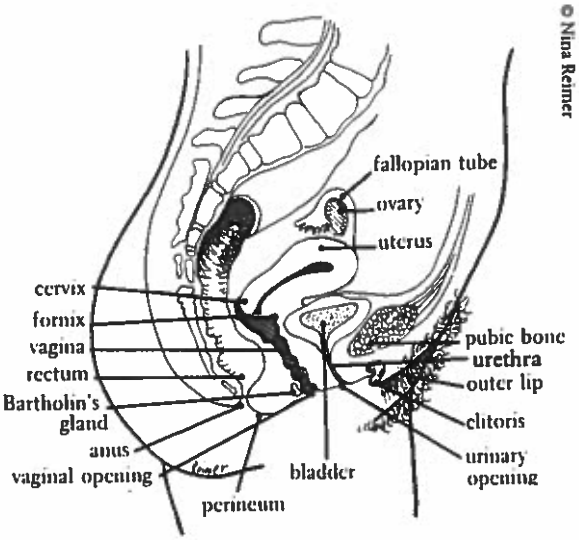
### Internal Organs

The nonpregnant uterus is about the size of a plum. Its thick walls are made of some of the most powerful muscles in the body. It is located between the bladder, which is beneath the abdominal wall, and the rectum, which is near the backbone. The inner walls of the uterus touch each other unless pushed apart by a growing fetus or an abnormal growth. The top of the uterus is called the fundus.

Extending outward and back from each side of the fundus are the two fallopian tubes (also called oviducts; literally, "egg tubes"). They are approximately 4 inches long and look like thin ram's horns facing backward. The connecting opening from the inside of the uterus to the fallopian tubes is as small as a fine needle. The outer end of each tube is fringed (fimbriated) and funnel shaped. The wide end of the funnel wraps partway around the ovary but does not actually attach to it. The fallopian tubes are held in place by connective tissue.

The ovaries are organs about the size and shape of unshelled almonds, located on either side of and somewhat behind the uterus. They are about 4 or 5 inches below your waist and are held in place by connective tissue. The ovaries have a twofold function: to produce germ cells (eggs) and to produce sex hormones (estrogen, progesterone, testosterone, and many others). The functions of these hormones are only partly understood. The small gap between the ovary and the end of the corresponding tube allows the egg to float freely in the abdominal cavity after it has been released from the ovary. The fingerlike ends (fimbria) of the fallopian tube sweep across the surface of the ovary and wave the egg into the tube after ovulation.

The uterus, fallopian tubes, and ovaries are draped in peritoneum, the thin membrane that lines the inside of the abdominal cavity.

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Female pelvic organs (side view)

## BREASTS

Our breasts make us mammals. Their extraordinary glands produce milk with an incredible capacity to nourish babies' oversize human brains and to fight infection and disease in newborns. Breasts are secondary sex characteristics, which are features that distinguish the sexes but are not directly related to reproduction. Most women think of them as a key component of our sexual selves.

Self-image is often affected by our own and others' reactions to our breasts. Our feelings, both positive and negative, are reinforced by society's obsessive fixation on breasts and the

## IN TRANSLATION: REDEFINING WOMEN'S BODIES

נשים לגופן המרأة وكيانها
Women and Their Bodies

The logo for Women and Their Bodies, OBOS's partner in Israel


The cover of a Japanese adaptation of *Our Bodies, Ourselves*

**Group:** Women and Their Bodies

**Country:** Israel

**Resource:** Materials based on *Our Bodies, Ourselves* in Arabic and Hebrew

**Website:** ourbodiesourselves.org/programs/network/foreign

**Group:** Shokado Women's Bookstore

**Country:** Japan

**Resource:** Materials based on *Our Bodies, Ourselves* in Japanese

**Website:** ourbodiesourselves.org/programs/network/foreign

In many cultures, the words and images used to describe female bodies and sexualities are negative, derogatory, and oppressive.

This negative discourse reinforces attitudes that endanger the health of women and girls and silences their voices. It also allows a community to justify or ignore practices that are disempowering and prevent women and girls from fully exercising their rights.

Many of Our Bodies Ourselves' global partners encounter this language problem. Here are two examples of women's organizations that effectively changed the tenor in their communities by coining vocabulary that honors women and girls and affirms their sexuality and life experiences.

The Jewish and Arab women who together founded Women and Their Bodies, OBOS's global partner in Israel, note that both cultures prize a woman's ability to bear children, and the end of fertility is often seen as bringing despair. Though this attitude has deep historical and po-

litical roots, Women and Their Bodies is concerned about the pressure it places on women to increase the size of their ethnic community by having children. The group is also concerned about social attitudes that affect women who are unable or choose not to have children or are past childbearing age.

Cultural values are often reflected in language. For example, common Hebrew terms for menopause translate to "age of wilting" or being "worn out," and an Arabic term means "years of despair." While developing the Hebrew and Arabic adaptations of *Our Bodies, Ourselves*, Women and Their Bodies was determined to use terms that are respectful and celebratory. With support and help from women in the community, the group ultimately settled on the Hebrew "Emtza Ha'hayim," or "midlife," and the Arabic "San' al Aman," which means "years of security or safety."

In Japanese, words for body parts like vulva, pubic hair, and pubic bone were written using Chinese characters that conveyed "shame" or "shadiness." Shokado Women's Bookstore, OBOS's partner in Japan, revised these negatively nuanced Chinese characters to create neutral or positive terms for the Japanese adaptation of *Our Bodies, Ourselves*.

Since publication, at least one of the terms, "seimo," which translates to "sexual hair," has been integrated into some of the latest Japanese dictionaries. There is also a growing tendency in Japanese society to avoid the Chinese characters that convey "shame" or "shadiness." Instead, the language now increasingly uses neutral characters or "katakana-go"—foreign words turned into Japanese—when talking about male and female bodies. The changes translate into a major improvement, in any language.

way they are used to sell everything from cars to whiskey. This may make it difficult to think about our breasts as functioning parts of our bodies, especially in a culture that heavily markets breast enlargement/augmentation.

Look at your breasts in the mirror or feel them. Like fingerprints, no two breasts are alike, and there is no "perfect" pair. Breasts come in all sizes and shapes: large, small, firm, saggy, lumpy. Your breasts may be slightly different from each other in size or shape. Nipples may lie flat, stick out, or retract (be inverted). The areola (the area surrounding the nipple) may be large or small, darker or lighter, and it usually has little bumps just under the skin. These bumps are the sebaceous glands, which secrete a lubricant that protects the nipple during breastfeeding. Sometimes there are hairs near the edge of the areola. Some women have one breast noticeably bigger than the other. Breast size is not related to the sexual responsiveness of the breast or to the amount of milk you produce after giving birth; small-breasted women are able to breastfeed just fine. Weight gain and loss also affect breast size.

Breasts usually become droopier over the years as skin becomes less elastic and milk glands get smaller. This happens even faster after childbirth (when breastfeeding is completed) and again after menopause, when the milk glands are no longer stimulated to grow.

## DISORDERS OF SEXUAL DEVELOPMENT

Disorders of sexual development (or DSDs) are conditions in which a person is born with sex chromosomes, external genitals, or an internal reproductive system that is not clearly male or female. The clitoris may be larger than usual, or the vagina may be small, lack an external opening, or be absent altogether. DSDs are not always visible by looking at the outside genitals; for example, a person may be born with external female genitals but with male chromosomes and internal testes (male reproductive glands) rather than ovaries.

For many years, the term "intersex" has been used by and about people born with genital or reproductive anatomy that is not clearly or exclusively male or female. Recently, concerns about the stigma sometimes associated with the term "intersex," along with advances in treatment and diagnosis, have led to the use of the term "disorders of sexual development" in its place.*

When DSDs are detected in infants, most are surgically assigned a female or male sex at birth, and many discover that their internal organs are different only when they reach puberty. They may not mature physically in the way a typical girl or boy would at that age; for example, those assigned female may not menstruate.

*There is also some controversy over the choice of "disorder" rather than "difference" or "divergence." See, for example, Elizabeth Reis, "Divergence or Disorder? The Politics of Naming Intersex," *Perspectives in Biology and Medicine* 50 (2007): 535–43.

The traditional medical model of treatment for babies born with DSDs, developed in the 1950s, involves using surgery to alter a baby's genitals to look clearly male or female. This practice is based on the assumption that altering the genitals to look as typical as possible and keeping the condition hidden are the only way these babies (and their parents) can avoid emotional trauma and live a "normal" life.

There is growing controversy over the practice of surgically altering babies born with DSD. Often the surgeries themselves create health problems, impair sexual functioning later in life, and contribute to emotional trauma. Angela Moreno, author of the essay "In Amerika They Call Us Hermaphrodites," describes her experience.

*When I was twelve, I started to notice that my clitoris (that wonderful location of pleasure for which I had no name but to which I had grown quite attached) had grown more prominent. Exactly one month later, I was admitted to Children's Memorial Hospital in Chicago for surgery. They told me a little bit about the part where they were going to "remove my ovaries" because they suspected cancer or something like that. They didn't mention the part where they were going to slice off my clitoris. All of it. I guess the doctors assumed I was as horrified by my outsized clit as they were, and there was no need to discuss it with me. After a week's recovery in the hospital, we all went home and barely ever spoke of it again. I'm now twenty-four. I've spent the last ten years in a haze of disordered*

*eating and occasional depression. Four months ago, I finally got some of my medical records from Children's Memorial Hospital in Chicago. They are shocking. The surgeon who removed my clitoris summarized the outcome as "tolerated well."*[2]

Many people with DSDs and their advocates now believe that cosmetic genital surgery should be performed only when a child or young adult is old enough to make his or her own decisions. Organizations such as the Accord Alliance (accordalliance.org) and the Androgen Insensitivity Syndrome Support Group (aissg.org) are fighting to end the secrecy and shame around DSDs, to develop better approaches to health care, and to create support for healing emotionally from well-meaning but misguided or involuntary medical interventions.

One woman in her twenties talks about the healing this movement brought her.

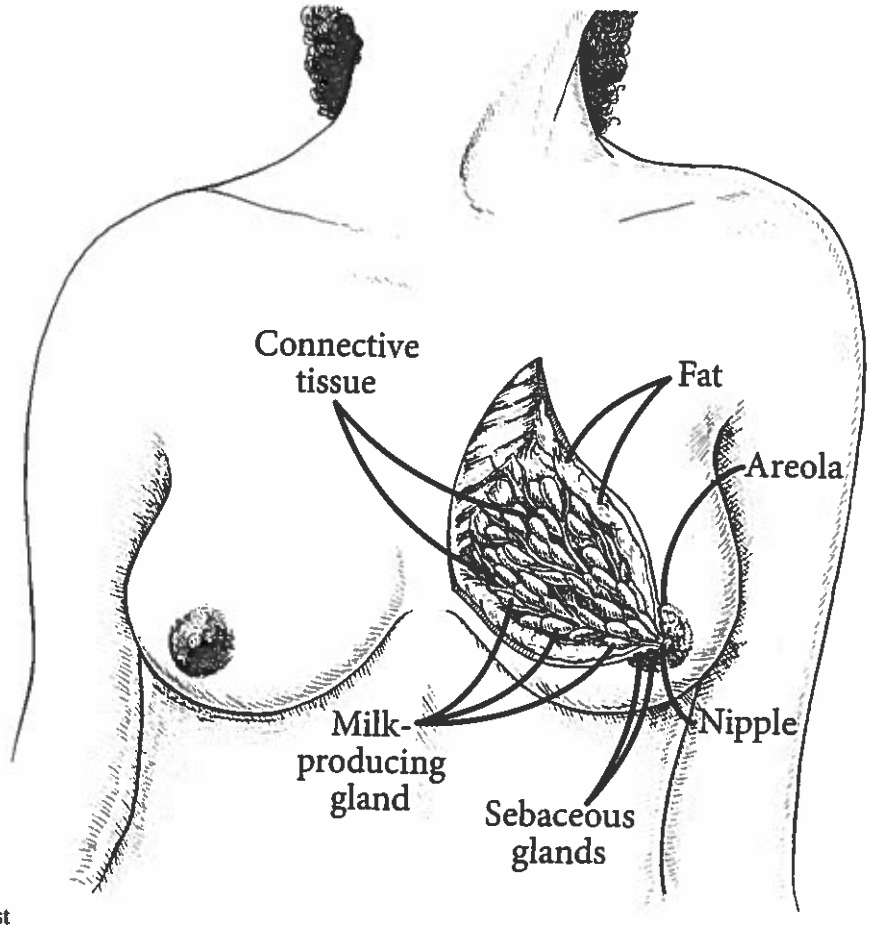
*At the age of eighteen, a workshop on intersex changed my life. I was finally able to get angry at the way I had been treated by doctors, about the assumptions that had been made about me and my body, and about the pressure put on me by doctors that I need to be "fixed." I made the decision that I would keep my body as it is and have finally learned to love and enjoy my sexuality again.*

*I really believe that the stigma or shame that is used to justify operating on intersex people is a result of this being kept such a secret. The idea that those of us outside the "norm" must conform to the status quo is absurd! If we were all raised with the understanding that not all people are male or female, it would not be so traumatic for those of us outside of the sex binary.*

Because breasts react to sex hormones produced by the ovaries, you may notice pronounced changes during the menstrual cycle—your breasts may be bigger and fuller right before you menstruate. This fullness can produce tenderness in some women and can be felt up into the armpit in the part of the breast called the tail. During pregnancy and breastfeeding, breasts often enlarge considerably. They may also swell during sexual arousal. Your breasts may have areas of hardness or softness, different textures, and varying areas of sensitivity.

In girls, around the time the ovaries begin producing estrogen (a year or two before menstrual periods start), the breasts respond by growing. At first, a firm mass develops directly behind the nipple. This is called the bud. As puberty progresses, the ductal tissue in the bud grows out into the fatty tissue, forming branches and lobules to make up the glandular portion of the breast. The fatty and fibrous tissues that support it (stroma) also increase during puberty. Most of this growth happens early, but slower growth continues during the teen years. One breast may develop more quickly than the other, and it's not uncommon for breasts to be different sizes.

With the great increase of sex hormones during adolescence, the milk-producing glands in each breast start to develop and increase in size. During the reproductive years, breast tissue consists of the glandular breast lobules, which are

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Parts of the breast

supported by connective tissue ligaments that anchor breast tissue to the skin and to the connective tissue covering the underlying muscles. Variable amounts of fat fill the spaces between the breast lobules and the supporting ligaments. After menopause, the glandular breast tissue is gradually replaced by fat. The amount of fat in the breast is determined partly by heredity. This fat causes breast size to vary.

### *Breast Self-Exams*

For years, experts advised women to perform monthly breast self examinations (BSEs), believing that doing so would allow women to find potentially cancerous lumps and get diagnosed and treated for breast cancer more quickly. Unfortunately, scientific studies designed to measure the efficacy of BSEs have *not* found that women who perform BSEs are any less likely to die of breast cancer than women who don't perform them. For this reason, many medical guidelines and health organizations no longer recommend monthly BSEs. However, exploring your breasts is a good way to get to know your body and become familiar with what is normal for you.

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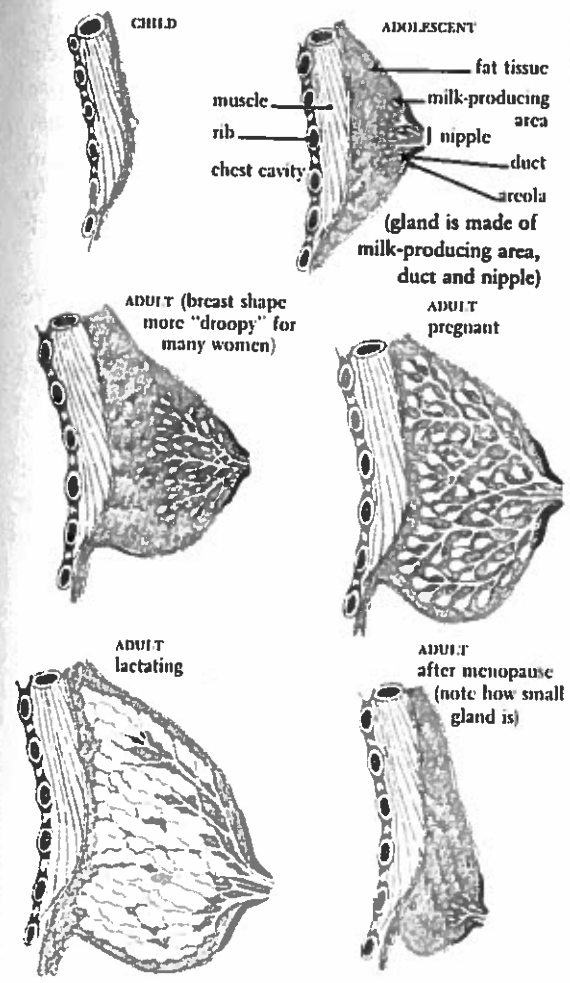


Breast changes over a lifetime

© Peggy Clark

## STAGES IN THE REPRODUCTIVE LIFE CYCLE

Puberty is the transition from childhood to physical maturity. In women, puberty is characterized by growth of the breasts and pubic and armpit (axillary) hair, and a growth spurt that results in increased height and weight, followed by the end of bone growth. Menstruation starts near the end of puberty, about two years after breast development, on average at about age twelve, though any age from nine to sixteen is normal.

Menstruation continues until age fifty-one on average, but stopping anytime between forty and fifty-five is normal. Menopause technically means the time of the last period, but because periods can be irregular in the last few years, menopause can be identified only retrospectively, after a year of no bleeding. The body changes that occur between the reproductive and postreproductive phases of our lives—a period of time called perimenopause—often take place over as many as fifteen years.

This entire reproductive process is regulated by hormones, chemicals in the bloodstream and in the brain that relay messages from one part of the body to another. The levels of sex hormones are low during childhood, increase tremendously during the reproductive years, and then become lower and differently balanced after menopause.

During the reproductive years, monthly hormonal rhythms determine the timing of ovulation and menstruation. This cycle, the menstrual cycle, regulates our fertility, allowing for the possibility of pregnancy a few days every month. Many women experience signs of this rhythm—changing emotions, changes in breasts, changes in sexual arousal, and even variation in foods we enjoy eating at different times over a month.

### MENSTRUATION AND THE REPRODUCTIVE CYCLE

My cycle. My red friend. The curse. Aunt Flo. On the rag. Many different terms—most commonly, my period—are used to describe menstruation. You may have created your own slang, known only to family or friends. This section covers the wide range of experiences with, and feelings about, menstruation.

## Menarche (First Period)

The first period may come as a surprise, and negative attitudes from friends or family can color the experience, but most of us find a way to cope and may even look back in humor.

*In class, I got up to go to the bathroom. Inside, I noticed that my panties had a funny discharge on them. Then suddenly it hit me: I'd gotten my period! I was so excited and could hardly wait to tell my friends.*

The beginning of menstruation is a major marker in the transition from girl to woman. The age of menarche (MEN-are-kee)—when a girl first begins to menstruate—varies, depending on many factors. Some factors are biological; for instance, body fat must be about one quarter of a girl's total weight in order for her to menstruate. Diet, weight, race, environment, and family history also affect when menstruation begins.[3] Women in different countries may have different average ages for entering puberty.

In the United States, the average age of girls' first period has fallen over the last century from around age sixteen to around age twelve, with some girls beginning to develop breasts as early as seven years old. The reasons girls are maturing earlier are not completely clear. Some pediatricians and other medical experts are convinced that childhood exposure to plastics, pesticides, and other environmental endocrine disruptors plays a role. (Endocrine disruptors are chemicals that often act like estrogen and interfere with genetic or hormonal signals, causing changes to the body's finely tuned hormonal system.)

Other possible causes include better nutrition than in the past, obesity, inactivity, premature birth, and formula feeding.[4] A major concern about early puberty in girls is that it increases the odds of developing breast cancer later in life, since longer exposure to sex hormones is a risk factor for breast cancer. Once a girl starts to menstruate, her estrogen levels rise and don't drop off until menopause. All other factors being equal, the more years a woman menstruates, the more years she is exposed to higher levels of estrogen, and the higher her risk of breast cancer.

Some medical conditions affect reproductive development, and not all women have periods. If you haven't seen signs of puberty by age thirteen, or haven't started your period by age sixteen, see a health-care provider.

A twenty-five-year-old woman who does not menstruate says she has discovered how much menstruation is connected with normality in people's minds.

*I don't menstruate, and have actually always felt kind of alienated by the way in which female experiences are sometimes centered around menstruation—the idea that menstruating makes someone a "real" woman, for example, or that menstruation is such a quintessential experience that if you haven't menstruated, you don't know what it's like to be a woman.*

## What Happens During the Menstrual Cycle

As you read this section, you may want to refer back to the drawings and descriptions of sexual anatomy in the first part of this chapter.

### *The Ovaries and Ovulation*

When a girl is born, her ovaries contain about 2 million balls of cells, each with an immature egg in the center. These are called follicles. The ovaries absorb more than half of these follicles during childhood. Of the 400,000 follicles still present at puberty, three hundred to five hundred will eventually develop into mature eggs.

During our reproductive years, follicles de-

velop throughout the cycle, but each month, under the influence of hormones, usually only one follicle develops fully. (Sometimes two or more follicles develop fully, in which case a twin or other multiple pregnancy can result.) Some of the cells in the developing follicle secrete the hormone estrogen. The follicle with the maturing egg inside moves toward the surface of the ovary. At ovulation, the follicle and the ovarian surface open, allowing the tiny egg to float out. About this time, some women feel a twinge or cramp in the lower abdomen or back (called mittelschmerz).

*I never knew the word "mittelschmerz" until I was in nursing school. I thought it was such a cool word but was sure I wasn't one of those women who actually experienced it. A year or so later I began tracking all of my fertility signs when I decided to try to get pregnant. I felt a funny cramp on my left side that was a familiar sensation but I had never put two and two together to recognize that it was my body ovulating. I actually exclaimed out loud, "Mittelschmerz!"*

A few women experience headaches, stomach pains, or sluggishness at the time of ovulation. Other women feel especially well.

### The Egg After Ovulation

After ovulation, the fingerlike ends (fimbria) of the nearby fallopian tube sweep the released egg into the tube's funnel-shaped end. Each tube is lined with microscopic hairlike projections (cilia) that constantly move back and forth. As the egg begins its several-day journey to the uterus, wavelike movements of the muscles in the tube (peristalsis) and the movements of the cilia help it along. If sperm enter the vagina, pass through the cervix, and travel through the uterus into the fallopian tubes, the cilia propel them toward the egg.

If the egg and sperm meet, they may join. (This is conception, or fertilization, when the sperm "fertilizes" the egg.) The fertilized egg then travels the rest of the way along the fallopian tube to the uterus. Whether or not fertilization takes place, the empty follicle that just released the egg from the ovary becomes a corpus luteum (Latin for "yellow body" because of its color). The corpus luteum continues to make estrogen and also begins making progesterone.

If a fertilized egg implants into the uterus, it sends a signal to the ovary to keep making progesterone, which will help sustain a pregnancy by keeping the uterine lining thick and nourishing. If no pregnancy occurs, the corpus luteum is reabsorbed into the ovary after two weeks and the hormone levels drop; this is the trigger that causes menstruation. (See "The Endometrium," p. 20.) The egg disintegrates or flows out with the vaginal secretions.

### The Cervix

The kind of mucus or fluid produced by your cervix changes throughout the cycle in response to fluctuations in estrogen and progesterone. While there are general patterns of fluid secretion, each woman's pattern is unique. (See "Fertility Awareness Method," p. 26, for more.)

The cervical fluid is a kind of gatekeeper for the uterus. At ovulation, the cervical fluid becomes slippery and thin, like egg white. It coats the vagina and protects sperm from the vagina's relatively acidic environment. The cervical fluid also nourishes the sperm and changes their structure to prepare them to fertilize an egg. Sperm can live up to five days in midcycle cervical fluid. After ovulation, as progesterone levels increase, cervical fluid thickens into a kind of plug that makes it difficult for sperm to enter the uterus. The vagina gradually becomes drier, too.

If you look at your cervix with a speculum or

feel it with your fingers, you may notice that at about the time of ovulation, the cervix is pulled up high into the vagina. It may also enlarge and soften, and the os (the opening to the uterus) may open a little.

### *The Endometrium: Lining of the Uterus*

The lining of the uterus, called the endometrium, thickens and then thins over the course of a menstrual cycle and thickens considerably during pregnancy. Embedded in this lining are glands that can secrete a fluid that will help nourish a pregnancy until a placenta is formed. In a typical menstrual cycle, estrogen made by the maturing ovarian follicle causes the glands to grow and the endometrium to thicken (partly through an increased blood supply). This thickening of the uterine lining is called the proliferative phase of the menstrual cycle. It can vary in length, generally lasting between six and twenty days. Progesterone, made by the corpus luteum (ruptured follicle) after the egg is released, stimulates the glands in the endometrium to begin secreting their nourishing substance. This is the secretory phase of the cycle and is the only time when a fertilized egg can implant in the lining. In women who have irregular periods, it is the proliferative phase that is variable; for example, a woman with twenty-eight-day cycles ovulates on day fourteen, while a woman with thirty-five-day cycles ovulates on day twenty-one.

If conception does not occur, the corpus luteum produces estrogen and progesterone for about twelve days, with the amount lessening in the last few days. As the estrogen and progesterone levels drop, the tiny arteries bringing blood supply to the endometrium close off. The lining, deprived of nourishment and oxygen, collapses and breaks off starting about fourteen days after ovulation. This is menstruation: the menstrual period or flow.

During menstruation, most of the lining is shed, but the bottom third remains to form a new lining. Then, as a new follicle starts growing and secreting estrogen, the uterine lining thickens, and the cycle begins again.

It is possible to have what may appear to be a menstrual period even if you haven't ovulated that month. These are called anovulatory cycles and they are common when menstruation starts and your cycles are getting established. Anovulatory cycles become more common again as menopause approaches.

### Menstrual Periods

Women's menstrual cycles vary widely. Counting from the first day of one period to the first day of the next, most cycles last between twenty-three and thirty-six days. For teens the variation can be even broader, from twenty-one to forty-five days. Often we think of periods as occurring once per month (in fact, the word "menstruation" is from the Latin word *mensis*, for "month"). While some women have periods that do occur exactly every month, other women have cycles that are longer or shorter. Some women have consistently regular cycles (bleeding every twenty-eight or thirty-five days, for instance), while other women's cycles vary in length from one cycle to the next. Hormonal contraceptives or breastfeeding may alter the length of our cycles or even stop them altogether. After we have been pregnant—whether we have an abortion, a miscarriage, or give birth—our cycles may change.

Most women's periods last between two and eight days, with four to six days being the average. The flow stops and starts, though this is not always noticeable.

### WHAT MENSTRUAL CYCLES REVEAL ABOUT YOUR HEALTH

Your menstrual cycle provides important information about your sexual and reproductive health. For example, if you suddenly stop getting your periods (but are not pregnant), have much heavier bleeding, or experience very irregular spotting, those symptoms may indicate a gynecological problem.

The menstrual cycle also provides important information about a woman's overall health. Just as blood pressure and heart and respiratory rates are described as "vital signs" key to the diagnosis of potentially serious health conditions, recognizing menstrual patterns may also provide information that leads to the early identification of possible health concerns. Marked changes in menstrual cycles may signal problems with the blood's ability to clot, significant weight change, emotional stress, thyroid disease, autoimmune conditions, hormonal imbalance, diabetes, Cushing's disease, primary ovarian insufficiency (POI), late-onset congenital adrenal hyperplasia (CAH), or even cancer. Menstrual changes can also indicate pregnancy or perimenopause (the years leading up to the final menstrual period). Throughout our reproductive years, when we have medical concerns, the evaluation of the menstrual cycle should be included along with an assessment of our other vital signs.

### *Menstrual Fluid*

The fluid that flows from the vagina during the menstrual period includes much of the uterine lining that has built up during that cycle. In addition to blood (sometimes clotted) and endometrial cells, menstrual fluid contains cervical fluid and vaginal secretions. This mixed content is not obvious, since the blood colors the fluid red or brown. A usual discharge for a menstrual period is about two to five tablespoons, though it often looks like more.

### *What to Do with the Menstrual Flow*

Across time and cultures, women have used and continue to use a variety of products for catching menstrual flow. The choice often comes down to comfort, availability, convenience, and price. You might find the perfect match right away, or you might try different options, looking for more comfort or a better fit.

#### TAMPONS AND PADS

Many women use commercial tampons or pads (also called sanitary napkins) to catch menstrual blood. These are the products most easily available. Whether you use a product worn outside your body (such as a pad) or a product worn inside your body (such as a tampon) is a personal choice.

#### COMMON QUESTIONS ABOUT TAMPONS

*Will a tampon get lost inside me?* No, absolutely not. The vagina is a closed space, and the opening of the cervix is far too small for the tampon to get inside. It is true, though, that a tampon can be forgotten and may slip into a vaginal fold, becoming difficult to find and remove. This can result in a strong odor and brown discharge after a few days. If you have trouble finding the string, you can squat down and reach the tampon with your fingers. For a

funny and informative video about this, see "The Lost Tampon" at docgurley.com.

*Will tampons make me sick?* No. You may have heard that tampons cause toxic shock syndrome (TSS). TSS is a serious but rare condition caused by bacteria. Keeping tampons in longer than eight hours can increase the risk of TSS. If used according to the directions on the package and changed regularly, though, tampons are safe.

*If I use a tampon, does that affect my virginity?* No again. Virginity generally refers to whether or not someone has had sexual intercourse, not to menstruation or tampons. Tampon use may be one of the factors that play a role in the disintegration of your hymen, but whether you have a visible hymen says nothing about whether you have had sex. For more information on hymens and virginity, see p. 7 and "Virginity," p. 141.

### MORE OPTIONS

For many reasons, including comfort, environmental concerns such as a preference for reusable products, and worries about chemical residues, many of us use modified or alternative products to collect menstrual blood. These include all-cotton (sometimes organic) chlorine-free tampons, chlorine-free disposable pads, washable cloth pads, and devices that collect rather than absorb the menstrual fluid. All-cotton and all-organic cotton, chlorine-free tampons are often sold in health food stores and online, and increasingly at some drug and grocery stores. Also, you can make your own cloth pads. There are make-your-own sites online, showing very economical alternatives.

Some women use natural sea sponges that work like tampons. These are also available in health food stores and online. They are reusable and relatively inexpensive. Unfortunately, many pollutants are dumped into oceans and it's possible that sponges may absorb some of these pollutants and cause problems. Therefore, some users boil a sponge for five to ten minutes before using it for the first time and between uses. Doing so, however, shrinks and toughens the sponge and reduces its lifetime.

Some women prefer products that collect rather than absorb the menstrual fluid. The Keeper, the DivaCup, and the Mooncup are three examples of menstrual cups—elongated cups made of rubber or medical-grade silicone that are held in place by suction in the vagina. They can be worn during swimming and other physical activities but not during intercourse or other insertive sex. Some women use a diaphragm or a cervical cap in the same way as a cup. A disposable device called Instead is worn in the upper vagina to collect menstrual flow. The rim softens in response to body temperature and creates a seal to protect against leakage and slipping. (For more information on these products, see youngwomenshealth.org/alternative_menstrual.html.)

## It's Your Period—How Do You Own It?

In mainstream Western culture, menstruation is largely taboo. We may hear jokes about it on television, or we may see advertisements for menstrual products, but rarely is menstruation talked about in honest terms. When's the last time you heard menstrual blood even mentioned? Being "fresh" or "clean" is emphasized, and the fact that we menstruate is hidden. Until recently, most menstrual product advertisements tried to be subtle, showing women staying fresh and wearing white while practicing yoga or dancing on the beach. Kotex came out with an ad campaign in 2010 making fun of the genre—to which Kotex readily acknowledged contributing. (Older ads used to include a strange blue liquid representing menstrual blood.) But honesty could go only so far, as none

### BLOOD IN THE BOARDROOM

*i ask her if she's got a tampon i could use*
*she says*
*oh honey, what a hassle for you*
*sure I do*
*you know i do*
*I say*
*it ain't no hassle, no, it ain't no mess*
*right now it's the only power*
*that i possess*
*these businessmen got the money*
*they got the instruments of death*
*but i can make life*
*i can make breath*

–Ani DiFranco,
"Blood in the Boardroom"[5]

of the three major television networks would allow the word "vagina" to be used.

"Fem-care advertising is so sterilized and so removed from what a period is," Elissa Stein, coauthor (with Susan Kim) of *Flow: The Cultural Story of Menstruation*, told the *New York Times*. "You never see a bathroom, you never see a woman using a product. They never show someone having cramps or her face breaking out or tearful—it's always happy, playful, sporty women."[6]

Indeed, we often feel obligated to apologize when discussing menstruation. For many women, there is much more to the menstrual experience than bleeding. Our experiences, both physical and emotional, range widely and sometimes are connected to our religion or culture.

We may have certain traditions around menstruation, passed down through our families—even if the tradition is as simple as what kind of product to use or how best to wash out a bloodstain.

*I don't have any bad feelings about it or get upset when I get my period. It's a sign that I'm not pregnant, which makes me happy, because I'm in college right now and I'm not at the stage where I want any kids yet.*

## Physical and Emotional Changes Through the Menstrual Cycle

The menstrual cycle is governed by hormones that rise and fall in rhythmic patterns. These hormones influence the physical and emotional changes you may experience during your cycles. Some women notice few changes; some experience increased energy and creativity; others experience mood changes (some positive, some negative) and body changes (swollen breasts, for example). Some women have cramps, while others do not. One woman reports happily:

*I wasn't the biggest fan of my period, but then I discovered that I have the most incredible orgasms while I'm menstruating!*

### *Premenstrual Changes*

Women can have a variety of physical sensations and emotional experiences for several days before menstruation and sometimes during the first few days of menstrual flow. These are caused by the normal hormone fluctuations of the menstrual cycle and are not a sign of a hormone imbalance. Among the more negative changes are mood swings, fatigue, depression, bloating, breast tenderness, and headaches. Sometimes these premenstrual experiences are mild, but sometimes they disrupt our lives significantly.

#### PREMENSTRUAL MOOD CHANGES AND DEPRESSION

*I get upset—sad about simple things—when I get my period.*

Some of us experience mood changes before our periods, including some level of depression

and emotional irritability. Some of us find that issues that have been with us all along become more pronounced at this time. Others see our moods as authentic expressions of feelings we don't usually feel able, comfortable enough, or secure enough to show. Some women are able to cope with premenstrual mood changes, while others find the intensity of the symptoms and frustrations intolerable.

For some women, certain self-care and nonmedical techniques can help with mood changes. Approaches that have proved useful in a few studies include exercise, calcium, vitamin $B_6$ supplementation (although too much $B_6$ can have serious side effects), and the herb *Vitex agnus-castus* (chasteberry). Approaches that have worked for some women and are still under study include dietary changes such as limiting salt, sugar, caffeine (especially coffee), red meat, and alcohol; massage; reflexology; chiropractic manipulation; biofeedback; yoga; guided imagery; photic stimulation; acupuncture; and bright light therapy.[7]

A small but significant number of women do experience extreme premenstrual depression that interferes with work, social interactions, and general well-being. In these instances, recognition and care are critical. If premenstrual depression interferes noticeably with your daily life (you don't want to get out of bed, you miss work, or you have suicidal thoughts) and nonmedical approaches are not helpful, seek advice from your primary care provider, your ob-gyn, or a mental health professional.

Medical treatments for premenstrual depression include using hormonal contraception continuously, so that there is no menstruation, or taking antidepressant medications called SSRIs. However, there are questions about the effectiveness and safety of SSRIs. (For more information, see "Depression and Other Mental Health Challenges During Pregnancy," p. 389.)

### *Severe Cramps (Dysmenorrhea)*

Women experience many different levels of menstrual-related cramping, from no cramps to severe ones. A particular constellation of symptoms, including cramping and often nausea and diarrhea, may be caused by excess production and release of prostaglandins.[8] (One form of prostaglandins, which are hormonelike chemicals found throughout the body, causes contractions of both the uterine and the intestinal muscles.) With too many prostaglandins, the usually painless rhythmic contractions of the uterus during menstruation become longer and tighter at the tightening phase, keeping oxygen from the muscles. It is this lack of oxygen that we experience as pain. Anticipation often worsens the pain by making us tense up. It's not clear why some women have more uterine prostaglandins than others, but this sort of menstrual cramping is actually a sign of normal hormone cycling and ovulation.

*I've always had cramps during my period and sometimes they made me pretty miserable. When my periods returned after I gave birth, my attitude toward cramps changed. Having felt labor contractions, I had an awareness that the cramping was actually just my muscle contracting. I still have moments when menstrual cramps suck (yay for ibuprofen), but I also have moments when I feel them, tune in, breathe, and feel powerful.*

There are two types of dysmenorrhea (dis-men-or-EE-yah): primary dysmenorrhea is painful cramping (with or without nausea and diarrhea) not associated with any other pelvic disorder; secondary dysmenorrhea is pain associated with another pelvic problem such as endometriosis, pelvic inflammatory disease, or fibroids. Primary dysmenorrhea is more common and typically starts in the teen years; the pain resolves after a few days of bleeding.

### TERMS FOR PREMENSTRUAL CHANGES

The term "PMS," which stands for premenstrual syndrome, is often used with words like "symptoms" and "treatments," as though premenstrual changes are an illness. Some women do experience debilitating discomfort, pain, or mood changes in the days before menstruation. But the label PMS suggests that most women must suffer a "syndrome" each month. This does not reflect the real and significant variation in women's experiences.

Similarly, there is debate about the term and diagnosis "premenstrual dysphoric disorder" (PMDD), which is used to describe a severe form of premenstrual depression. Some critics argue that the term, created by the American Psychiatric Association in 1993, pathologizes menstrual changes by giving women the label of a specific psychiatric "disorder," and reinforces the idea that women are "crazy" once a month and should not be in positions involving great authority or stress.

"When you start calling PMDD—and by extension PMS—a psychiatric disorder, what are you saying about the women of this world?" asks Nada Stotland, a past president of the American Psychiatric Association and professor of psychiatry at Rush Medical College in Chicago. "This reinforces prejudices people already have about women being moody and unreliable." According to Stotland, the majority of women who go to PMS clinics have symptoms that are not, in fact, related to their periods. "Most suffer from depression every day. Others have anxiety and personality disorders. Some are in psychological pain because they are being abused."

Severe premenstrual depression is rare. Pharmaceutical companies whose medications are approved by the FDA for anyone with a PMDD diagnosis sometimes create marketing materials that encourage overuse of this diagnosis. The Bayer pharmaceutical company had to run corrective advertisements to make up for ads that implied that simple irritability and other common premenstrual discomforts were PMDD and should be treated with its birth control pill, Yaz.[9] Its corrective ads explained that PMDD is both rare and severe. In another instance of the possible overuse of a PMDD diagnosis, the European Medicines Evaluation Agency refused to approve drugs for PMDD, raising concerns that women "with less severe premenstrual symptoms might erroneously receive a diagnosis of PMDD resulting in widespread inappropriate short- and long-term use of fluoxitine [Prozac]."[10]

Nonmedical approaches that help some women include Chinese herbs provided by an experienced practitioner of Chinese medicine, applying wet or dry heat over the abdomen, taking omega-3 fatty acids, learning to self-apply acupressure points, and taking ginger supplements.[11] If these methods do not work, consider seeing your health-care provider. Prescription-

strength nonsteroidal anti-inflammatory drugs (NSAIDS) such as ibuprofen, birth control pills, other forms of hormonal contraceptives, and the Mirena intrauterine device can diminish severe menstrual cramps for most women.

### *Very Heavy Periods (Menorrhagia) and/or Irregular Bleeding*

You may experience a very heavy period if you did not ovulate during a cycle. This happens to all women occasionally and occurs more often in the teen years, during perimenopause, during times of stress, and after any pregnancy. Heavy periods can also occur if you have fibroids, are using certain IUDs for birth control (the Mirena IUD actually reduces cramps and bleeding), or have an inherited bleeding disorder. The most common inherited bleeding disorder, von Willebrand disease (VWD), affects about 1 to 2 percent of the U.S. population and runs in families. While it is often difficult to diagnose, and there is no cure, VWD can be treated. (For more information, see "Von Willebrand Disease," p. 613.)

Irregular bleeding—off-schedule menstrual flow—can also be caused by recurrently not ovulating, which can be age-related (again, more common in early teens and perimenopause) or from some health problems or severe stress. Bleeding in early pregnancy, which may or may not progress to miscarriage, can sometimes be confused with a menstrual period and can be light or heavy.

If you have heavy periods and/or irregular bleeding, it's a good idea to talk with a healthcare provider, because these can signal serious health problems. (See "What Menstrual Cycles Reveal About Your Health," p. 21.) Keeping a menstrual calendar can help you develop awareness of what a typical flow is for you. (See "Charting Your Menstrual Cycles," below.)

### *No Periods and Very Light or Skipped Periods*

Primary amenorrhea is the condition of never having had a period by the latest age at which menstruation usually starts (sixteen). Secondary amenorrhea is missing periods after having had at least one. Oligomenorrhea is infrequent, erratic periods. Some causes of amenorrhea and oligomenorrhea are pregnancy; menopause; breastfeeding; heavy athletic training; emotional factors; stress; current or recent use of hormonal birth control methods; excessive dieting, anorexia, or starvation; use of some medications, including chemotherapy; obstruction or malformation of the genital tract; hormone imbalance; cysts or tumors; chronic illness; and chromosomal conditions. Sometimes amenorrhea or oligomenorrhea is caused by a combination of several of these factors.

## CHARTING YOUR MENSTRUAL CYCLES

Many women find it helpful to keep a menstrual calendar or a special fertility awareness chart. By doing so, we can get to know our bodies, learn what is normal for us, and become advocates for and authorities about our own health. You can use a print or online calendar or diary to chart when you bleed, whether and when you have vaginal secretions, and whether you have a range of physical or emotional experiences (including pain or cramps, heavier or lighter flow, or changes in sexual desire, energy level or mood, breasts, or general physical health). You can find menstrual charts online at the Taking Care of Your Fertility website, tcoyf.com.

### Fertility Awareness Method

One way of charting your menstrual cycles is to use the fertility awareness method (FAM).

In addition to being a good tool to assess your gynecological health, FAM is a scientifically validated method of natural birth control and pregnancy achievement. It is based on observing and charting body signs such as changes in the cervical fluid and in the color, size, and shape of the cervix that reflect whether a woman is fertile on any given day.

### *FAM Is Based on the Following Scientific Principles:*

- Your menstrual cycle can basically be divided into three phases: the preovulatory infertile phase, the fertile phase, and the postovulatory infertile phase. You can determine which phase you are in by observing the three primary fertility signs: early morning (waking, or basal body) temperature, cervical fluid, and cervical position.
- The menstrual cycle is under the direct influence of estrogen and progesterone, and the body provides daily signs about the status of these hormones. Estrogen dominates the first part of the cycle; progesterone dominates the latter. Another hormone, called luteinizing hormone (LH), is the catalyst that propels the ovary to release the egg. LH is the hormone measured in ovulation predictor kits.
- Ovulation (the release of an egg) occurs once per cycle. During ovulation, one or more eggs are released. An egg can survive for twelve to twenty-four hours. If a second egg is released in one cycle (as in the case of fraternal twins), it will be released within twenty-four hours of the first.
- The time from a woman's period until ovulation varies, but it is often about two weeks.
- Sperm can live in fertile-quality cervical fluid for up to five days, though typically they live only about two days.

### *The Primary Fertility Signs*

#### WAKING OR BASAL BODY TEMPERATURE (BBT)

Before ovulation, early morning temperatures typically range from about 97° to 97.5°F (36.11° to 36.38°C), and after ovulation, they usually rise to about 97.6° to 98.6°F (36.44° to 37°C). It's helpful to use a special basal or digital thermometer to get readings that are precise enough to track such small changes. After ovulation, your temperature usually remains elevated until your next period, about two weeks later. But if you become pregnant, it remains high for more than eighteen days.

The important concept to understand is your *pattern* of low and high temperatures. Your temperatures before ovulation fluctuate in a low range, and the temperatures after ovulation fluctuate in a higher range. The trick is to see the whole and not to focus so much on the day-to-day changes. Temperatures typically rise within a day or so after ovulation, indicating that ovulation has already occurred.

A sustained rise in waking temperature almost always indicates that ovulation has occurred. It does not reveal impending ovulation, though, as do the other two fertility signs (cervical fluid and cervical position). After charting a few cycles, if your cycles are consistent, you should be able to see how these three signs interact. It is often believed that most women ovulate at the lowest point of the temperature graph, but this is true for only a minority of women. It's more common for ovulation to occur the day before the temperature rises.

Factors that may disrupt your morning temperature:

- Fever
- Alcohol consumption the night before
- Fewer than three consecutive hours of sleep before taking temperature

## USING THE FERTILITY AWARENESS METHOD TO HELP YOU CONCEIVE

By charting your fertility signs every day, you can use the fertility awareness method (FAM) to avoid or to achieve pregnancy. (For more information on using FAM for birth control, see "Fertility Awareness Method and Other Natural Methods," p. 248.) Below is some basic information on using FAM to increase your chances of getting pregnant.* In order to use FAM effectively, you need more information than this book provides. You can take a class or get a book that teaches you specifically how to identify your fertility on a day-to-day basis and provides you with a special FAM chart on which to record. One excellent resource is the book *Taking Charge of Your Fertility* by Toni Weschler.

To use FAM to help you get pregnant, the two most important points to remember are:

1. **Determine whether you are ovulating.** By taking your waking or basal body temperature, you should notice a pattern of low temperatures before ovulation, followed by about twelve to sixteen days of high temperatures. If you don't see an obvious pattern, or if your high temperatures after ovulation last fewer than ten days, consider a medical consultation to make sure that you are ovulating and that the latter phase of your cycle is long enough to sustain a pregnancy.

   You can also determine whether you are ovulating by using ovulation predictor kits, which test urine for luteinizing hormone (LH). Between twenty-four and forty-eight hours prior to ovulation, women experience a short surge of LH. Ovulation predictor kits measure LH and let you know that ovulation is about to happen.

2. **Have intercourse or inseminate on all days of wet, slippery cervical fluid.** The most fertile day of your cycle will be the last day that you have this slippery cervical fluid. So, for example, if you have wet cervical fluid on Monday, Tuesday, and Wednesday, you should ideally have intercourse or inseminate on each of those days. That Wednesday, though, will be your most fertile day, since it is the closest day to ovulation. (If your partner's sperm count is marginal or low, you should have intercourse or inseminate every other day that you have wet cervical fluid. If the sperm has morphology [shape] problems, every day is better.)

If you conceive, your temperatures following ovulation should remain high, and you won't have a period.

Women are traditionally told to wait a full year before seeking a medical evaluation if they haven't conceived naturally. But you and your partner should both consider doing so after six cycles, if you are timing intercourse or insemination perfectly each cycle according to the steps above and still have not gotten pregnant. If you are over forty, fertility evaluation is recommended after three cycles.

* Most women don't need to be this scientific in order to get pregnant—with ejaculation or insemination into the vagina every day or two midcycle, most women conceive within six months.

- Eating or drinking before taking an oral temperature
- Taking temperature at a substantially different time than usual
- Heating your body, as with an electric blanket
- Thyroid conditions

CERVICAL FLUID (CF)

Cervical fluid is the secretion produced around ovulation that allows sperm to reach the egg. In essence, fertile cervical fluid functions like seminal fluid: It provides an alkaline medium to protect the sperm in an otherwise acidic vagina. In addition, it provides nourishment for the sperm, acts as a filtering mechanism, and functions as a medium in which to move. Cervical fluid also capacitates the sperm; this process removes the tip of the head, preparing it to fertilize the egg.

After your period and directly under the influence of rising estrogen, your cervical fluid typically starts to become wetter as you approach ovulation. After your period ends, you may have several days of nothing, followed by cervical fluid that evolves from sticky to creamy and finally to clear, slippery, and stretchy (also known as spinnbarkeit), similar to raw egg white. The most noticeable feature of this fertile cervical fluid is its lubricating quality.

After estrogen has peaked and dropped, the cervical fluid abruptly dries, often within a few hours. This is due to the surge of progesterone following ovulation. The absence of wet cervical fluid usually lasts the duration of the cycle.

A trick to help you identify the quality of the cervical fluid at your vaginal opening is to notice what it feels like to run a tissue (or your finger) across your vaginal lips. Does it feel dry? Is it smooth? Does it glide across? When you are dry, the tissue won't pass smoothly across your vaginal lips. But as you approach ovulation, your cervical fluid gets progressively wetter, and the tissue or your finger should glide easily.

As with temperature, certain factors may mask or interfere with cervical fluid:

- Vaginal infection
- Semen (from recent sexual intercourse)
- Arousal fluid
- Spermicides and lubricants
- Antihistamines (which can dry out or decrease fluid)
- Guaifenesin cough medicine (which can increase fluid)

In addition, if you have recently stopped taking birth control pills, you may notice one of two very different patterns: Either you may not produce much cervical fluid at all, or you may tend to have what appears to be continuous creamy cervical fluid for several months.

CERVICAL POSITION

In addition to emitting cervical fluid, your cervix goes through changes throughout your cycle. These changes can sometimes be felt by inserting a clean finger into your vagina (your middle finger is usually easiest, since it's the longest).

The cervix is normally firm, like the tip of your nose, and becomes soft and rather mushy, like your lips, as you approach ovulation. In addition, it is normally fairly low and closed, and rises and opens only in response to the high levels of estrogen around ovulation. The angle of the cervix also changes around ovulation, becoming straighter when estrogen levels are high. (For more on the cervix, see p. 9.)

### *Secondary Fertility Signs*

Secondary fertility signs around ovulation may include pain or achiness near an ovary, increased sexual feelings, and abdominal bloating. Secondary fertility signs do not occur in all women, or in every cycle in individual women. Still, these signs, when apparent, can offer additional information to help identify fertile and infertile phases.