

## Male Reproductive System

### What Is Reproduction?

Reproduction is the process by which organisms make more organisms like themselves. But even though the reproductive system is essential to keeping a species alive, unlike other body systems, it's not essential to keeping an individual alive.

In the human reproductive process, two kinds of sex cells, or **gametes** (pronounced: GAH-meetz), are involved. The male gamete, or sperm, and the female gamete, the egg or ovum, meet in the female's reproductive system. When sperm fertilizes (meets) an egg, this fertilized egg is called a **zygote** (pronounced: ZYE-goat). The zygote goes through a process of becoming an embryo and developing into a fetus.

The male reproductive system and the female reproductive system both are needed for reproduction.

Humans, like other organisms, pass some characteristics of themselves to the next generation. We do this through our genes, the special carriers of human traits. The genes that parents pass along are what make their children similar to others in their family, but also what make each child unique. These genes come from the male's sperm and the female's egg.

### What Is the Male Reproductive System?

The male has reproductive organs, or **genitals**, that are both inside and outside the pelvis. The male genitals include:

- the testicles (pronounced: TESS-tih-kulz)
- the duct system, which is made up of the epididymis and the vas deferens
- the accessory glands, which include the seminal vesicles and prostate gland
- the penis

In a guy who has reached sexual maturity, the two oval-shaped **testicles**, or **testes** (pronounced: TESS-teez) make and store millions of tiny sperm cells.

The testicles are also part of the endocrine system because they make hormones, including **testosterone** (pronounced: tess-TOSS-tuh-rone). Testosterone is a major part of puberty in guys. As a guy makes his way through puberty, his testicles produce more and more of it. Testosterone is the

hormone that causes boys to develop deeper voices, bigger muscles, and body and facial hair. It also stimulates the production of **sperm**.

Alongside the testicles are the epididymis and the vas deferens, which transport sperm. The **epididymis** (pronounced: ep-uh-DID-uh-miss) and the testicles hang in a pouch-like structure outside the pelvis called the **scrotum**. This bag of skin helps to regulate the temperature of testicles, which need to be kept cooler than body temperature to produce sperm. The scrotum changes size to maintain the right temperature. When the body is cold, the scrotum shrinks and becomes tighter to hold in body heat. When it's warm, it gets larger and floppier to get rid of extra heat. This happens without a guy ever having to think about it. The brain and the nervous system give the scrotum the cue to change size.

The **accessory glands**, including the **seminal vesicles** and the **prostate gland**, provide fluids that lubricate the duct system and nourish the sperm. The urethra (pronounced: yoo-REE-thruh) is the channel that carries the sperm (in fluid called semen) to the outside of the body through the penis. The urethra is also part of the urinary system because it is also the channel through which pee passes as it leaves the bladder and exits the body.

The **penis** is actually made up of two parts: the **shaft** and the **glans**. The shaft is the main part of the penis and the glans is the tip (sometimes called the head). At the end of the glans is a small slit or opening, which is where semen and pee exit the body through the urethra. The inside of the penis is made of a spongy tissue that can expand and contract.

All boys are born with a **foreskin**, a fold of skin at the end of the penis covering the glans. Some boys are circumcised, which means that a doctor or clergy member cuts away the foreskin. Circumcision is usually done during a baby boy's first few days of life. It's not medically necessary, but parents who choose to have their sons circumcised often do so based on religious beliefs, concerns about hygiene, or cultural or social reasons. Guys who have circumcised penises and those who don't are no different: All penises work and feel the same, regardless of whether the foreskin has been removed.

## How Does the Male Reproductive System Work?

The male reproductive system:

- makes semen (pronounced: SEE-mun)
- releases semen into the reproductive system of the female during sexual intercourse
- produces sex hormones, which help a boy develop into a sexually mature man during puberty

When a baby boy is born, he has all the parts of his reproductive system in place, but it isn't until puberty that he is able to reproduce. When puberty begins, usually between the ages of 9 and 15, the pituitary gland — located near the brain — secretes hormones that stimulate the testicles to produce testosterone. The production of testosterone brings about many physical changes.

Although the timing of these changes is different for every guy, the stages of puberty generally follow a set sequence:

- During the first stage of male puberty, the scrotum and testes grow larger.
- Next, the penis becomes longer and the seminal vesicles and prostate gland grow.
- Hair begins to grow in the pubic area and later on the face and underarms. During this time, the voice also deepens.
- Guys also have a growth spurt during puberty as they reach their adult height and weight.

## What Do Sperm Do?

A male who has reached puberty will produce millions of sperm cells every day. Each sperm is extremely small: only 1/600 of an inch (0.05 millimeters long). Sperm develop in the testicles within a system of tiny tubes called the **seminiferous tubules**. At birth, these tubules contain simple round cells. During puberty, testosterone and other hormones cause these cells to transform into sperm cells. The cells divide and change until they have a head and short tail, like tadpoles. The head contains genetic material (genes). The sperm move into the epididymis, where they complete their development.

The sperm then move to the **vas deferens** (pronounced: VAS DEF-uh-runz), or sperm duct. The seminal vesicles and prostate gland make a whitish fluid called seminal fluid, which mixes with sperm to form semen when a male is sexually stimulated. The penis, which usually hangs limp, becomes hard when a male is sexually excited. Tissues in the penis fill with blood and it becomes stiff and erect (an erection). The rigidity of the erect penis makes it easier to insert into the female's vagina during sex. When the erect penis is stimulated, muscles around the reproductive organs contract and force the semen through the duct system and urethra. Semen is pushed out of the male's body through his urethra — this process is called **ejaculation**. Each time a guy ejaculates, it can contain up to 500 million sperm.

## What Is Conception?

If semen is ejaculated into a female's vagina, millions of sperm "swim" up from the vagina through the cervix and uterus to meet the egg in the fallopian tube. It takes only one sperm to fertilize the egg.

This fertilized egg is now called a zygote and contains 46 chromosomes — half from the egg and half from the sperm. Genetic material from the male and female combine so that a new individual can be created. The zygote divides again and again as it grows in the female's uterus, maturing over the course of the pregnancy into an embryo, a fetus, and finally a newborn baby.

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