What the Male Reproductive System Does

• The male reproductive system works to produce sperm and deliver it to the female reproductive system.

• **Sperm** are sex cells that are produced by the testes and are needed to fertilize an egg.
What the Male Reproductive System Does

• **Eggs** or **ova** are sex cells produced by the female reproductive organs, called **ovaries**.

• **Fertilization** is the process by which a sperm and an egg and their genetic material join to create a new human life.
How the Male Reproductive System Works

- The **testes (testicles)** are the male reproductive organs that produce sperm and testosterone.
- **Testosterone** is the major male sex hormone. It regulates body changes during puberty and influences sperm production.
- The **scrotum** is a sac containing the testes. Muscles in the scrotum move the testes closer to or further from the body to regulate temperature.
How the Male Reproductive System Works

• The **penis** is the male reproductive organ that removes urine from the body and can deliver sperm to the female reproductive system.
• Urine or sperm passes through the penis in the urethra.
• Sperm from the testes travel through the epididymis and the vas deferens. In the vas deferens, sperm mixed with fluids to make semen.
Chapter 18

Section 1 Male Reproductive System

- Pubic bone
- Vas deferens
- Prostate gland
- Bladder
- Seminal vesicle
- Rectum
- Anus
- Urethra
- Epididymis
- Testis
- Bulbourethral (Cowper's) gland
- Scrotum
- Penis

Sperm
### Problems of the Male Reproductive System

<table>
<thead>
<tr>
<th>Problem</th>
<th>What is it?</th>
<th>Symptoms</th>
<th>Treatment</th>
</tr>
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<tbody>
<tr>
<td>Jock itch</td>
<td>fungal infection of groin area; exposure to moisture and heat increases the risk of jock itch</td>
<td>itchy rash in groin</td>
<td>keeping area cool and dry; over-the-counter antifungal creams</td>
</tr>
<tr>
<td>Cystitis (bladder infection)</td>
<td>inflammation of the urinary bladder; usually due to a bacterial infection</td>
<td>inflammation of the bladder, burning during urination, blood in urine, strong-smelling urine, and fever</td>
<td>antibiotics prescribed by a doctor</td>
</tr>
<tr>
<td>Prostatitis</td>
<td>bacterial infection of the prostate; may be related to a sexually transmitted disease</td>
<td>inflammation of the prostate, fever, pain in the pelvis, abdomen, testes, or lower back, and discomfort with urination</td>
<td>antibiotics prescribed by a doctor</td>
</tr>
<tr>
<td>Inguinal hernia</td>
<td>bulging of portion of the intestines or other structure through a weakness in the abdominal wall</td>
<td>abnormal bulge in the abdomen, groin, or scrotum; can cause a sense of heaviness, fullness, or pain</td>
<td>immediate medical care; surgery</td>
</tr>
</tbody>
</table>
# Problems of the Male Reproductive System

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<tr>
<td>Testicular torsion</td>
<td>twisting of a testis on the nerves and blood vessels attached to it; can happen during athletic or other physical activities</td>
<td>elevation of a testis, swelling and tenderness of the scrotum, or abdominal pain accompanied by nausea or vomiting</td>
<td>immediate medical care; surgical removal of the affected testis may be necessary if not treated immediately</td>
</tr>
<tr>
<td>Undescended testes</td>
<td>failure of one or both testes to move from the abdomen to the scrotum during fetal development</td>
<td>one or no testes in the scrotum</td>
<td>surgery or hormone therapy</td>
</tr>
<tr>
<td>Prostate cancer</td>
<td>abnormal division of cells in the prostate; may be hereditary</td>
<td>difficulty urinating or defecating, burning during urination, or blood in urine</td>
<td>surgery, radiation, and/or chemotherapy</td>
</tr>
<tr>
<td>Testicular cancer</td>
<td>abnormal division of cells in the testes; may be hereditary</td>
<td>lump on testes, enlargement of testes, or sense of heaviness or fullness in the scrotum</td>
<td>surgery, radiation, and/or chemotherapy</td>
</tr>
</tbody>
</table>
Six Ways to Keep Healthy

1. Wear appropriate protective gear (a “cup”) when playing contact sports.

2. Avoid wearing tight clothing.

3. Wash the penis and scrotum every day, and dry yourself carefully after showering.

4. If you are not circumcised, wash underneath the foreskin.

5. Perform a monthly testicular self-exam.

6. Have an annual checkup with a doctor.
Keeping the Male Reproductive System Healthy

- Know the symptoms of testicular cancer. Look for unusual lumps, swelling, or a feeling of heaviness, pain or discomfort in your scrotum or abdomen.
- If you notice any of these symptoms, tell your parents and see a doctor right away.
What the Female Reproductive System Does

• The function of the female reproductive system is to produce eggs and to provide a place to support and nourish a developing human.
How the Female Reproductive System Works

• **Ovaries** are the female reproductive organs that produce eggs and the hormones estrogen and progesterone.

• All of the eggs a female will ever had are already formed in her ovaries when she is born.
How the Female Reproductive System Works

- Estrogen regulates body changes during puberty.
- Both estrogen and progesterone are involved in regulating monthly cycles and in the changes that take place in the body during pregnancy.
How the Female Reproductive System Works

- The **vagina** is the female reproductive organ that connects the outside of the body to the uterus and receives sperm during reproduction. It is also part of the birth canal through which a baby is delivered.

- The **urethra** carries urine out of the body from the bladder. It is above and separate from the vagina.
How the Female Reproductive System Works

- The uterus is the female reproductive organ that provides a place to support a developing human.
- Eggs travel from the ovaries to the uterus through the fallopian tubes.
Ovulation and the Female Reproductive Anatomy

- Fallopian tube
- Egg
- Ovary
- Uterus
- Cervix
- Vagina

Photo – ©Professors P.M. Motta & J. Van Blerkom/SPL/Photo Researchers, Inc.
How the Menstrual Cycle Works

- Prior to ovulation (the release of an egg), the lining of the uterus thickens to prepare to support a growing human during pregnancy.
- **Menstruation** is the breakdown and discharge of the uterine lining out of the vagina. This occurs if a released egg is not fertilized. Menstruation lasts on average 3 to 7 days.
- The average menstrual cycle lasts 28 days. Ovulation usually occurs on the 14th day. However, this length can vary.
Chapter 18

Section 2 Female Reproductive System

Menstrual Cycle

<table>
<thead>
<tr>
<th>Day</th>
<th>0</th>
<th>2</th>
<th>4</th>
<th>6</th>
<th>8</th>
<th>10</th>
<th>12</th>
<th>14</th>
<th>16</th>
<th>18</th>
<th>20</th>
<th>22</th>
<th>24</th>
<th>26</th>
<th>28</th>
</tr>
</thead>
</table>

Menstruation

Ovulation
<table>
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<tbody>
<tr>
<td>Cystitis</td>
<td>inflammation of the urinary bladder; usually due to a bacterial infection</td>
<td>burning during urination, strong-smelling urine, fever, or blood in urine</td>
<td>antibiotics prescribed by a doctor</td>
</tr>
<tr>
<td>Vaginitis</td>
<td>vaginal infection by fungus, bacteria, or protozoa; may also be from an STD</td>
<td>irritation or itching around the vagina, vaginal secretions of unusual color and/or unpleasant odor</td>
<td>over-the-counter vaginal cream or medication prescribed by a doctor</td>
</tr>
<tr>
<td>Delayed puberty</td>
<td>late puberty due to anorexia, endocrine problems, excessive weight loss, and/or overexercise</td>
<td>no breast development and/or no menstrual periods</td>
<td>determined by a doctor</td>
</tr>
<tr>
<td>Menstrual cramps</td>
<td>cramps due to prostaglandin (hormone-like substance) production during menstruation</td>
<td>contractions of uterine muscles, lower abdominal pain, and occasional nausea and vomiting</td>
<td>over-the-counter medications and a warm bath; further treatment provided by a doctor</td>
</tr>
<tr>
<td>Problem</td>
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<td>Treatment</td>
</tr>
<tr>
<td>-------------------------------</td>
<td>---------------------------------------------------------------------------</td>
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<td>-----------------------------------------------</td>
</tr>
<tr>
<td>Premenstrual syndrome (PMS)</td>
<td>▶ mental and physical changes related to menstrual cycle, but not completely understood</td>
<td>▶ irritability, mood swings, depression, abdominal bloating, and breast tenderness</td>
<td>▶ determined by a doctor</td>
</tr>
<tr>
<td>Toxic shock syndrome (TSS)</td>
<td>▶ poisoning of body from bacteria in vagina; often related to tampon use</td>
<td>▶ fever, chills, weakness, and rash on palms of hands</td>
<td>▶ antibiotics and immediate medical treatment</td>
</tr>
<tr>
<td>Endometriosis</td>
<td>▶ growth of tissue from uterine lining outside the uterus</td>
<td>▶ severe cramping and pain in lower abdominal area or pelvis</td>
<td>▶ determined by a doctor; hormone therapy or surgery may be required</td>
</tr>
<tr>
<td>Ovarian cyst</td>
<td>▶ failure of follicle in ovary to rupture and release an egg; may also be from growths or cancer</td>
<td>▶ pain in lower abdomen or pelvis for a month</td>
<td>▶ determined by a doctor; cysts often go away on their own but sometimes require surgery</td>
</tr>
<tr>
<td>Cervical cancer</td>
<td>▶ abnormal division of cells in the cervix; may also be from an STD</td>
<td>▶ vaginal bleeding, discharge, or pelvic pain; may not be any symptoms</td>
<td>▶ surgery, radiation, and/or chemotherapy</td>
</tr>
</tbody>
</table>
Seven Ways to Keep Healthy

1. Exercise regularly, and maintain a balanced diet.

2. Gently wash the genital area every day with warm water and mild soap. Do not use feminine hygiene sprays and powders.

3. Wipe the vaginal opening from front to back after urination.

4. Change sanitary napkins or tampons every 4 to 6 hours when menstruating.

5. Avoid wearing tight clothing that can cause discomfort.

6. Have an annual pelvic exam with a doctor.

7. Do a breast self-exam each month.
Keeping the Female Reproductive System Healthy

- Know the signs of breast cancer. Be aware of any unusual lumps in your breasts.
- If you detect any lumps, tell your parents and see a doctor right away.
How Life Begins

• **Sexual intercourse** is the reproductive process in which the penis is inserted into the vagina and through which a new human life may begin.

• From the vagina, sperm travel through the uterus and into the fallopian tubes, where fertilization normally occurs.
How Life Begins

• After fertilization, the **zygote** travels to the uterus and embeds in the uterine wall.

• The developing human in the first 8 weeks of development is called an **embryo**.
How a Baby Develops

- The **placenta** is an organ that develops in the uterus. The placenta provide a developing baby with nutrients and removes waste. The **umbilical cord** connects the embryo to the placenta.
How a Baby Develops

• In the first trimester (first 3 months) the embryo grows rapidly. By week 4, the heart starts beating, arm and leg buds appear, and the eyes and brain start to develop.

• By the end of the first trimester, all the major body parts and organs have formed.
How a Baby Develops

- Beyond the first trimester, the developing baby is called a **fetus**.
- In the second trimester, the organs continue to develop. By 4 months, the mother can feel the fetus move or kick.
How a Baby Develops

- By the end of the second trimester, facial features are apparent, and you can tell if the fetus is male or female.
- In the third trimester, the fetus gains most of its weight. At the end of 9 months, the baby is born.
Keeping Healthy Before and During Pregnancy

• Some ways to stay healthy before and during pregnancy include:
  • Avoid alcohol, tobacco, caffeine, and other drugs.
  • Maintain a nutritious diet.
  • Take prenatal vitamins prescribed by a doctor.
Keeping Healthy Before and During Pregnancy

- Some ways to stay healthy before and during pregnancy also include:
  - Get regular, moderate amounts of exercise.
  - Have medical conditions evaluated by a doctor.
  - Schedule prenatal care visits throughout the pregnancy.
## Problems During Pregnancy

<table>
<thead>
<tr>
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<th>Treatment or prevention</th>
</tr>
</thead>
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<tr>
<td><strong>Fetal alcohol syndrome (FAS)</strong></td>
<td>▶ a set of birth defects that affect a fetus that has been exposed to alcohol during pregnancy</td>
<td>▶ physical and mental problems, such as mental retardation, growth deficiency, and hyperactivity in newborn baby</td>
<td>▶ none; prevented by a woman completely avoiding alcohol during her pregnancy</td>
</tr>
<tr>
<td><strong>Miscarriage (spontaneous abortion)</strong></td>
<td>▶ death of fetus from natural complications before the 20th week of pregnancy</td>
<td>▶ vaginal bleeding or pregnancy tissue expelled from uterus</td>
<td>▶ treatment determined by a doctor</td>
</tr>
<tr>
<td><strong>Ectopic (tubal) pregnancy</strong></td>
<td>▶ implantation of the fertilized egg in the fallopian tube</td>
<td>▶ abdominal pain early in the pregnancy, weakness, and faintness</td>
<td>▶ surgery or medical treatment is required immediately</td>
</tr>
</tbody>
</table>
### Problems During Pregnancy

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</thead>
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<td>Toxemia (preeclampsia)</td>
<td>medical problem with unknown cause, but common in pregnant teens; may be related to the placenta or hormones</td>
<td>swelling of face and ankles, high blood pressure, and protein in urine of mother; convulsions if severe</td>
<td>medications, frequent checkups, and, in some cases, early delivery of baby; may be prevented with good prenatal care</td>
</tr>
<tr>
<td>Gestational diabetes</td>
<td>diabetes during pregnancy</td>
<td>high blood sugar levels in mother</td>
<td>change in diet, medication, and, in some cases, early delivery of baby</td>
</tr>
<tr>
<td>Rh incompatibility</td>
<td>a condition in which mother’s immune system reacts against the fetus’s blood due to an incompatibility in blood cell type</td>
<td>anemia (low red blood cell count) in fetus or fetal death</td>
<td>immunization of mother before and after pregnancy prevents this condition; monitoring of health of fetus</td>
</tr>
<tr>
<td>Premature birth</td>
<td>early birth of baby due to abnormal uterus, bleeding behind placenta, STD, multiple pregnancy, or other causes</td>
<td>delivery of baby before 38th week</td>
<td>good postnatal care in hospital’s premature baby nursery</td>
</tr>
</tbody>
</table>
Stages of Childbirth

**Before childbirth** The fetus usually drops to a lower position in the mother’s uterus about 1 month before childbirth.

**First stage: Dilation** During the dilation stage, the mother’s cervix dilates and the membranes surrounding the baby rupture.
Stages of Childbirth

Second stage: Expulsion  During the expulsion stage, the baby’s head emerges from the birth canal (vagina) and the shoulders rotate.

Third stage: Placental  During the placental stage, the placenta and the umbilical cord are expelled after the baby is born.
Early Child Development

• The first year is the fastest period of physical growth after birth. By the end of one year, most babies begin walking and talking.

• In the second and third years, babies become more socially independent, may have temper tantrums, and become toilet trained.
Early Child Development

- By age 5 or 6, children are ready to begin school.
- The late childhood years, from 6 to 12, involve dramatic intellectual, psychological, and social development.