Lesson 12: Anatomy & Physiology (Part 1)
Puberty, Hygiene, & Male Bodies

OBJECTIVES

1. Students will find a common language with which to openly talk about issues of sex, gender and development.
2. Students will be able to list at least 5 changes that usually occur during puberty, and describe the changes that typically happen in male and female bodies.
3. Students will be able to correctly label and describe the functions of the internal and external male sexual organs, including their role in reproduction and generating sexual pleasure.
4. Students will be able to define intersex.
5. Students will recognize that there is a wide variation in appearance of external organs associated with sex and reproduction.

AGENDA

5 minutes  Do Now
45 minutes  Anatomy & Physiology (part 1): PowerPoint Presentation & Worksheet Completion
15-25 minutes (OPTIONAL) Brown Bag Activity
Homework  Care for Down There: Male Bodies

MATERIALS

- Vocabulary Reference List
- Anatomy & Physiology (part 1): PowerPoint Presentation
- Anatomy & Physiology (part 1): PowerPoint Notes
- Worksheet: Internal Male Anatomy
- Worksheet: External Male Anatomy
- Homework: Care for Down There: Male Bodies

OPTIONAL ACTIVITY MATERIALS

- 4-8 bags filled with fruit, household objects, and office supplies.
- 4-8 outlines of a torso on butcher paper

CALIFORNIA HEALTH EDUCATION STANDARDS

1.1.G Describe physical, social, and emotional changes associated with being a young adult.
1.10.G Recognize that there are individual difference in growth, development, physical appearance, gender roles, and sexual orientation.

Be Real. Be Ready.
DO NOW ACTIVITY 5 minutes

Materials

- Every student needs a notebook, journal, or paper and a pen
- Flipchart or whiteboard and markers
- PowerPoint slides #1 – 2

Activity

Write on board and have students complete the following questions.

What are 3 changes that happen to all bodies during puberty? What are 3 changes that happen only to male bodies? What are 3 changes that happen only to female bodies?

Ask a few students to read their answers. Correct any misconceptions.

POWERPOINT SLIDES 45 minutes

Materials

- PowerPoint slides #3 – 32
- PowerPoint notes
- Worksheet: Internal Male Anatomy
- Worksheet: External Male Anatomy

Activity

Let students know that you will be reviewing information about sexual anatomy and physiology, human development, and puberty. Let students know that in the slides there will be pictures of genitals. The pictures are line drawings, not photographs, and they are designed to assist in learning about bodies. Remind students that in this lesson they will be learning about biological sex and body parts, and that this is different from gender.

Suggested Script:

Today we will be learning about the human body – specifically sexual and reproductive body parts and the functions of those parts. There are pictures in the slides so that we can learn about these parts. The pictures are line drawings, not photographs. We will be discussing biological sex, not gender, in these classes. Remember, biological sex refers to body parts, while gender refers to how someone feels and identifies.

The PowerPoint slides contain notes to assist you in presenting this material. Please refer to the notes in the slides for more information about the topics presented. The slides cover various topics. Here is the breakdown for topics, slide numbers, and approximately how long to spend on each topic.

Be Real. Be Ready.
Lesson 12: Anatomy & Physiology (part 1)

<table>
<thead>
<tr>
<th>Topic</th>
<th>Slides</th>
<th>Time</th>
</tr>
</thead>
<tbody>
<tr>
<td>Human Development</td>
<td>3-6</td>
<td>10 min.</td>
</tr>
<tr>
<td>Puberty &amp; Hygiene</td>
<td>7-11</td>
<td>10 min.</td>
</tr>
<tr>
<td>Male Sexual Anatomy &amp; Physiology</td>
<td>12-32</td>
<td>25 min.</td>
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</tbody>
</table>

**Human Variation**

Explain to students that you will now be discussing how humans develop male and female bodies.

**Suggested Script:**
In our upcoming lessons, we’re going to be talking about male and female bodies. Before we do that, though, let’s review how sex is determined in human beings.

**Puberty & Hygiene**

Explain to students that you will now be reviewing puberty and what teens and adults need to do to keep themselves clean and healthy.

**Male Sexual Anatomy & Physiology**

Explain to students that you will now be discussing sexual anatomy and physiology. Information about male bodies will be covered first, and then female bodies. Pass out the worksheets for internal and external male anatomy. Have students follow along by filling out the worksheets as you go through the presentation.

**Suggested Script:**
Knowledge is an important part of communication. If we are comfortable talking about our bodies, it can be easier to take care of our sexual health and communicate our desires and boundaries to potential partners.

People use different types of language to talk about sex and sexual organs: slang, polite, childhood, medical. There is no right or wrong language, however, in class we will use medical terms because these terms are the most specific and this way we are all using the same terms so we can understand each other. We will first learn the terms for male bodies, and then we will learn the terms for female bodies.

**OPTIONAL: BROWN BAG ACTIVITY**

**15-25 minutes**

**Materials**
- 4-8 bags filled with fruit, household objects, and office supplies.
- 4-8 outlines of a torso on butcher paper
- Students’ completed worksheets on internal and external male anatomy

**Activity**

Be Real. Be Ready.
This activity is an interactive way to learn more about human sexual anatomy and physiology – what our sexual body parts are – inside and out, what they are for and how they work.

Divide the class into 4-8 groups. Give each group labeled anatomy/physiology handouts, and outline of a torso, and a “brown bag.” Assign each group one of the following to model, using brown bag supplies, the male sexual system. Have the students create the male sexual system using the materials in the brown bag. Encourage students to get creative; there is no right or wrong way to complete this activity!

When groups have finished, have them present their models to the whole class, explaining what each part is and what it does. Correct any misconceptions and provide interesting facts about the anatomy and physiology. Or, if time is limited, when the groups have completed their model have the students walk around and view each other's creations.

**HOMEWORK**

*Care for Down There: Male Bodies*
### Lesson 12: Vocabulary

1. **Anatomy**: The parts of the body.

2. **Circumcision**: The removal of the foreskin at the head of the penis. This is usually done for religious or cultural reasons, often when the person is an infant.

3. **Ejaculation**: When semen (about 1-2 teaspoons) comes out of an erect penis. This usually occurs at the same time as an orgasm.

4. **Foreskin**: The skin that covers the head of the penis. Sometimes this is removed by a medical procedure called circumcision.

5. **Hygiene**: The ways a person can keep themselves and their body clean, in order to stay healthy.

6. **Intersex**: This describes a variety of conditions in which a person is born with reproductive or sexual anatomy, chromosomes, or hormones that don’t fit the typical definitions of male or female.

7. **Physiology**: The ways a person's body and body parts work together.

8. **Puberty**: The time during a person's adolescence when they become capable of sexual reproduction. Physical and emotional changes occur during this time.

9. **Pubic hair**: The hair that grows on the genitals. This typically starts to come in during puberty.

10. **Semen**: The fluid that comes out of the penis during ejaculation. It contains sperm and fluids from the seminal vesicle and prostate gland.

11. **Sperm**: The sex cell made by the testicles.

12. **Wet dream**: When the penis ejaculates while the person is asleep. Wet dreams can also be called **nocturnal emissions**.
Worksheet: External Male Anatomy

Name: __________________________________________ Period: ____________________

CIRCUMCISED

UNCIRCUMCISED

Directions: Write the Name and letter of each part on the correct box above.

A. Foreskin
   • Covers and protects the head of the penis
   • Lined with pleasure-sensitive nerve endings
   • Sometimes removed during circumcision

B. Glans
   • The head or tip of the penis
   • Typically the most sensitive part of the penis

C. Penis
   • Made of spongy tissue that fills up with blood when sexually excited
   • Lined with pleasure-sensitive nerve endings

D. Pubic Hair
   • Provides cushion against friction, helping protect the genitals from irritation

E. Scrotum
   • Holds the testicles, where sperm is made
   • Keeps testicles and sperm at a healthy temperature by hanging away from or pulling into the body
   • Lined with pleasure-sensitive nerve endings

Be Real. Be Ready.
Worksheet: Internal Male Anatomy

Directions: Write the Name and letter of each part on the correct box above.

A. Anus
- Opening to the rectum, through which feces (“poop”) exits the body
- Lined with pleasure-sensitive nerve endings

B. Cowper’s Gland
- Produces pre-ejaculate (“pre-cum”), a clear fluid that neutralizes traces of urine in the urethra, making it a safe place for sperm to travel

C. Epididymis
- Work as “nurseries” that hold sperm while they mature

D. Testicle
- Produces sperm and the hormone testosterone

E. Seminal Vesicle
- Produces between 50-70% of semen, the milky white fluid in which sperm swim

F. Prostate Gland
- Produces between 30-50% of semen, the milky white fluid in which sperm swim
- Helps expel semen during ejaculation

G. Urethra
- Tube through which urine and semen exit the body

H. Vas Deferens
- A long tube that carries sperm from the epididymis to the glands that make semen
Lesson 12: Anatomy & Physiology (part 1)

Homework:
Care for Down There: Male Bodies

Name:__________________________________________________________
Period:______________ Date:______________________

Directions: Answer the questions below using the information found on these websites:
  • http://www.plannedparenthood.org/health-info/men/testicular-cancer
  • http://www.mayoclinic.org/diseases-conditions/prostate-cancer/basics/definition/con-20029597

#1. What are three things a male-bodied person can do to take care of their body?

#2. What are two cancers that only affect male-bodied people? How are these detected?

#3. What are some things male-bodied people can do to protect themselves from testicular injuries?
**Lesson 12: Anatomy & Physiology Slide Notes**

<table>
<thead>
<tr>
<th>Slide 1: Reproductive Anatomy &amp; Physiology</th>
</tr>
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<tbody>
<tr>
<td>This presentation has three parts:</td>
</tr>
<tr>
<td>Human Variation (4 slides)</td>
</tr>
<tr>
<td>Puberty and Hygiene (5 slides)</td>
</tr>
<tr>
<td>Male Anatomy and Physiology (20 slides)</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Slide 2: DO NOW:</th>
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</thead>
<tbody>
<tr>
<td>Have students complete the do now.</td>
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</table>

<table>
<thead>
<tr>
<th>Slide 3: Sex Determination</th>
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<tbody>
<tr>
<td>Explain to students that you will now be discussing how human develop male and female bodies.</td>
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<tr>
<td><strong>Suggested Script:</strong></td>
</tr>
<tr>
<td><em>In our upcoming lessons, we’re going to be talking about male and female bodies. Before we do that, though, let’s review how sex is determined in human beings.</em></td>
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</tbody>
</table>
Humans have 46 chromosomes. Our chromosomes carry our genetic material, what makes us who we are. The female's egg carries 23 chromosomes and the male's sperm carries 23 chromosomes. This means that we get half of our chromosomes from our biological mother, half from our biological father.

Both sperm and egg carry one chromosome that determines sex (male or female). The sex chromosomes are called X and Y chromosomes.

The egg always has an X chromosome. The sperm can have either an X or a Y chromosome. This means that the sperm determines the sex (male/female).

Usually an XX = female, and XY = male.

Remember, sex is different than gender. Biological sex (male or female) depends on genetic make-up (usually XY or XX chromosomes), hormones, and genitals. Our sex is often assigned at birth. Gender is how we feel about ourselves, whether we identify as a man, woman, boy, girl, transgender, or some other identity. Gender is socially constructed and includes behaviors, attitudes, and attributes that a society considers appropriate for men and women.

TEACHER NOTE:
Like gender, intersex is a socially constructed category. Depending on how they define intersex, researchers estimate that anywhere from 1 in 100 to 1 in 2000 people are born Intersex.

To learn more about intersex people, visit the Intersex Society of North America at http://www.isna.org

Short videos about intersex people:
2-part video produced by the news show 20/20:
• Part 1: www.youtube.com/watch?v=xv1yk2Va9qc
• Part 2: www.youtube.com/watch?v=oHbBTEeayEU

Short video about a young British woman who considers herself 80% female & 20% male, but had surgery as an infant to make her appear male:
• http://www.youtube.com/watch?v=kLNL47KLLy8
Slide 6:

Intersex

- Sometimes, a person’s internal anatomy is intersex and isn’t exhibited until puberty or adulthood.
- Organizations like the Intersex Society of North America advise parents who have an intersex baby to wait until the child is old enough to make an informed decision about whether they want surgery on their genitalia.

Slide 7:

Explain to students that you will now be reviewing puberty and what teens and adults need to do to keep themselves clean and healthy.

Slide 8:

CHANGES IN EMOTIONS & RELATIONSHIPS DURING PUBERTY

- New feelings regarding romantic relationships & sex
- New opportunities for leadership at school and in the community
- Changes in responsibilities
- New pressures related to sexual activity
- New rules about how to dress and behave
- Changes in the amount of freedom allowed

Slide 9:

Body Changes

<table>
<thead>
<tr>
<th>Male Changes</th>
<th>Female Changes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Voice deepens</td>
<td>Breasts grow</td>
</tr>
<tr>
<td>Shoulders broaden</td>
<td>Hips widen</td>
</tr>
<tr>
<td>Sperm production begins</td>
<td>Begin ovulating</td>
</tr>
</tbody>
</table>
| Ejaculation “wet dreams” begin | Begin menstruating (“having periods”)

All Body Changes:

- Height changes
- Arms and legs grow longer
- Oilier skin
- Different perspiration
- Underarm hair
- Pubic hair
- Body hair
- Face lengthens
- Genitals grow larger
- More frequent emotions

If a student asks if it’s possible for a person not to go through puberty:

Experts recommend that parents consult a doctor if there are no signs of puberty at all in a girl by age 13 or a boy by age 15. Most often, it’s simply a pattern of growth and development in a family. A person’s parent, uncle, aunt, brothers, sisters, or cousins may have developed later than usual, too. In the rare cases where there is a problem, doctors can treat this by giving the person hormones to start puberty. Source: http://kidshealth.org/teen/sexual_health/changing_body/delayed_puberty.html
<table>
<thead>
<tr>
<th>Slide 10:</th>
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<tbody>
<tr>
<td>After puberty, most people have to pay more attention to hygiene. What is one thing you do regularly to stay clean?</td>
</tr>
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</table>

Ask students for some responses before showing the next slide.

<table>
<thead>
<tr>
<th>Slide 11:</th>
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<tbody>
<tr>
<td><strong>Suggestions for Keeping It Clean</strong></td>
</tr>
<tr>
<td>- Wash face twice a day with soap</td>
</tr>
<tr>
<td>- Wash hair frequently</td>
</tr>
<tr>
<td>- Take shower or bath daily</td>
</tr>
<tr>
<td>- Consider using deodorant or antiperspirant</td>
</tr>
<tr>
<td>- Brush and floss teeth twice a day</td>
</tr>
<tr>
<td>- Wash genitals daily</td>
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Increased hormone levels stimulate the oil glands in the skin. These glands produce a substance that can block the pores and the result is blackheads and pimples. They also make hair oily.

<table>
<thead>
<tr>
<th>Slide 12:</th>
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<tbody>
<tr>
<td><strong>Male Anatomy and Physiology</strong></td>
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Explain to students that you will now be discussing sexual anatomy and physiology. Information about male bodes will be covered first, and then female bodies.

**Suggested Script:**

*Knowledge is an important part of communication. If we are comfortable talking about our bodies, it can be easier to take care of our sexual health and communicate our desires and boundaries to potential partners.

*People use different types of language to talk about sex and sexual organs: slang, polite, childhood, medical. There is no right or wrong language, however, in class we will use medical terms because these terms are the most specific and this way we are all using the same terms so we can understand each other. We will first learn the terms for male bodies, and then we will learn the terms for female bodies.*
Lesson 12: Anatomy & Physiology (part 1)

Slide 13:

Let student know that you will be reviewing the external parts of the male body. A picture will appear on the screen with an arrow pointing to a part of the body. Ask students to use their worksheet and follow along. Have students guess which part of the body for each slide before revealing the answer. Once the correct part has been identified, have students follow along by writing the name of the body part on their worksheet.

For each slide the picture of the body part will appear with a number that corresponds to the box on the student worksheet. Ask students what part they think is shown. Click to reveal the answer. The letter of the body part from the student worksheet word bank will appear next to the name of the body part.

Slide 14:

There is no medically necessary reason to remove pubic hair. For people who don’t like the look of pubic hair, they may find that cutting it short (carefully!) will create less risk of ingrown hairs or irritation than other methods of hair removal like shaving or waxing.

Scientists are still researching the reasons for pubic hair, but many believe it plays a role in human attraction by retaining pheromones or scent signals.

Slide 15:

Fun fact: Although people sometimes talk about “boners” there is no actual bone in the penis.

Slide 16:

Be Real. Be Ready.
### Slide 17:

**Fun facts:**

The scrotum moves closer or further away from the body to keep the testicles at the right temperature. If a person jumps into a freezing cold pool, the scrotum will tighten and pull the testicles closer to the body. When a person is in a hot shower, they may notice the scrotum will relax and the testicles will hang farther away from the body. The body does this on its own.

One side of the scrotum usually hangs a little lower than the other side. This is normal!

### Slide 18:

**What is Circumcision?**

Routinely performed on babies in the United States about 30 years ago. Today, circumcision is an elective procedure. Circumcision has become controversial in the U.S. Many groups claim that it is a form of mutilation similar to female circumcision. After evaluating numerous studies, the American Academy of Pediatrics recommended infant circumcision on the grounds that the health benefits of newborn male circumcision outweigh the risks. Identified benefits included prevention of the following: urinary tract infections, acquisition of HIV, transmission of some sexually transmitted infections (HPV), and penile cancer. The World Health Organization recommends circumcision be routine in countries where there is a high incidence of heterosexual HIV transmission.

To learn more about the reasoning behind all of these stances, see:

- American Academy of Pediatrics
  [http://pediatrics.aappublications.org/content/130/3/e756.full?sid=bd9574fb-4575-4d35-a46e-a63394e68331](http://pediatrics.aappublications.org/content/130/3/e756.full?sid=bd9574fb-4575-4d35-a46e-a63394e68331)
- World Health Organization
  [http://www.who.int/hiv/topics/malecircumcision/en/](http://www.who.int/hiv/topics/malecircumcision/en/)
- Doctors Opposing Circumcision:
- To read various arguments, pro and con:
Slide 20:

Sperm, Semen & Ejaculation

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Slide 21:

What is Sperm?
- The male sex cell
- Looks like a tadpole under a microscope
- When sperm fertilizes a mature egg from a female, pregnancy can result
- Sperm production starts during puberty

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Slide 22:

What is Semen?
- Semen is the fluid that comes out of the penis during ejaculation
- Semen contains sperm and fluids from the Cowper’s gland, vas deferens, seminal vesicle and prostate gland
- Each healthy ejaculation contains between 200 to 500 million sperm.

Semen is usually white and/or clear in color.

There are a lot of sperm in one ejaculation – between 200-500 million. For comparison, there are about 314 million people currently living in the United States.

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Slide 23:

What is Ejaculation?
- Ejaculation is when semen, usually about 1-2 teaspoons, comes out of an erect penis
- Most males have an orgasm at the same time that they ejaculate

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Slide 24:

Let student know that you will be reviewing the internal parts of the male body. A picture will appear on the screen with an arrow pointing to a part of the body. Ask students to use their worksheet and follow along. Have students guess which part of the body for each slide before revealing the answer. Once the correct part has been identified, have students follow along by writing the name of the body part on their worksheet.

Slide 25:

NOTE: TESTICULAR SELF EXAM (TSE) IS NO LONGER RECOMMENDED! However, it is still important to be aware of your body. Know what is normal for you so you can notice if any changes occur. If you are ever concerned with a change with your genitals, it is recommended to talk to a doctor, parent/guardian, or trusted adult.

At one time, doctors recommended that young men (up to age 35) check their testicles regularly for changes to prevent testicular cancer. However, in 2004, the United States Preventive Services Task Force stopped recommending that men perform routine self-testicular exam. Rationale: The USPSTF found no new evidence that screening with clinical examination or testicular self-examination is effective in reducing mortality from testicular cancer. Even in the absence of screening, the current treatment interventions provide very favorable health outcomes. Given the low prevalence of testicular cancer, limited accuracy of screening tests, and no evidence for the incremental benefits of screening, the USPSTF concluded that the harms of screening exceed any potential benefits.

For more information:
http://www.uspreventiveservicestaskforce.org/3rduspsft/testicular/testiculrs.htm

Slide 26:

Epididymis (C)
- Work as “nurse” that hold sperm while they mature
- Each consists of one coiled tube that if stretched end to end would be about 26 ft long

Be Real. Be Ready.
Slide 27:

Vas Deferens (H)
- A long tube that carries sperm from the epididymis to the glands that make semen
- For permanent birth control, the tube can be cut or blocked in a vasectomy
- Males who’ve had a vasectomy still ejaculate semen, but it contains no sperm

Slide 28:

Seminal Vesicle (E)
- Produces between 50-70% of the fluid that contributes to semen.

Slide 29:

Prostate Gland (D)
- Contracts to add 30-40% of semen, the milky white fluid in which sperm swim
- Helps protect semen during ejaculation and from acidic environments
- Some males enjoy sexual stimulation of the prostate

A flap in the prostate closes off bladder during ejaculation so that there is NO urine when a male ejaculates. In a healthy male, it would not be possible to urinate (pee) and ejaculate (cum) at the same time.

Slide 30:

Cowper’s Gland (B)
- Produces pre-ejaculate (“pre-cum”)
- This clear fluid neutralizes traces of urine in the urethra, making it a safe place for sperm
- The fluid from the Cowper’s gland doesn’t contain sperm, but it can carry sperm that was in the urethra from a previous ejaculation

It is possible that there can be sperm in pre-cum. This is one reason why, for some people, the withdrawal (pull-out) method does not work as a birth control method. Even if a person pulls out before ejaculation, there could still be sperm from pre-cum. Most males do not feel when they release pre-cum.
### Slide 31:

**Urethra (G)**
- Tube through which urine and semen exit the body
- The penis CANNOT release urine and semen at the same time!

### Slide 32:

**The Anus (A)**
- Opening to the rectum, through which feces (“poop”) exits the body
- Lined with pleasure-sensitive nerve endings

If students ask about anal sex, you can acknowledge that some people enjoy anal sex. It’s important to remember that anal sex is considered more risky for STI/HIV transmission than vaginal or oral sex, because the tissue in the rectum can tear or abrade easily. Using condoms and lubricant can reduce this risk.