

Reproduction Lab

By Krista Granieri

In today's lab, we will investigate various aspects of male and female reproductive physiology. We will study models, slides and diagrams of reproductive anatomy and we will simulate the spread of an STD with the population. In addition, we will watch a film on fetal development and you will have an opportunity to learn about various methods of contraception.

Activity 1: Reproductive Anatomy

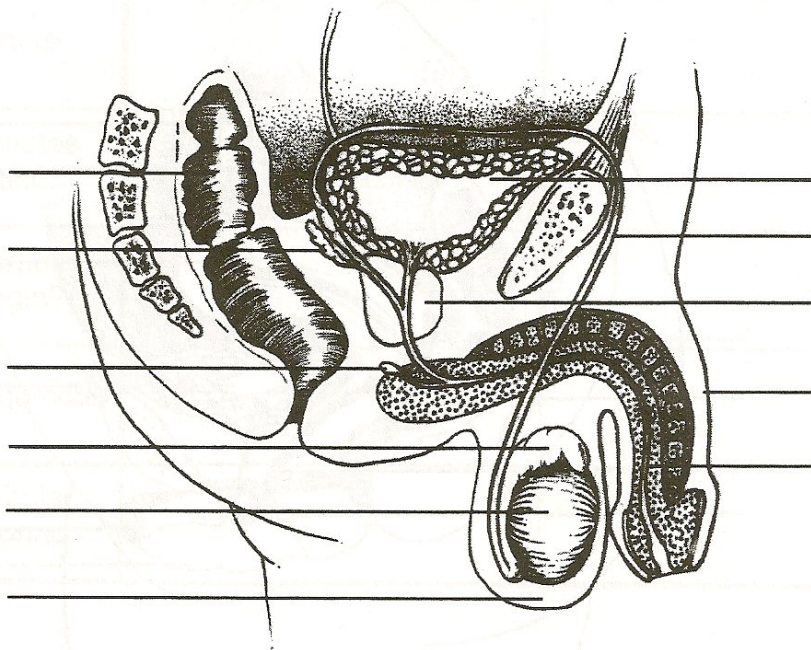
A. Label the diagram using the terms below. Use a highlighter to trace the path of sperm from the testes to the outside.

vas deferens
epididymis
large intestine

testis
urethra
prostate gland

penis
scrotum
urinary bladder

bulbourethral gland
seminal vesicle



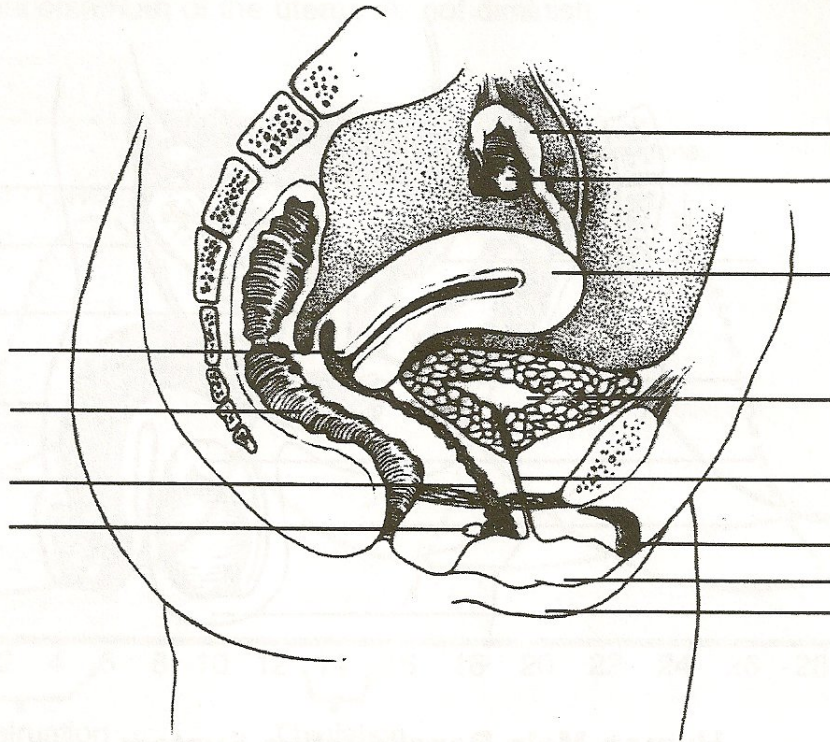
B. Label the diagram using the terms below. Use a highlighter to trace the path of ova from the ovaries to the outside.

cervix
clitoris
urinary bladder

ovary
vagina
labia majora

uterine tube(s)
rethra
labia minora

large intestine
uterus
Bartholin's gland



Describe two similarities between the male and female reproductive anatomy.

Describe two differences between the male and female reproductive anatomy.

C. Comparison of the human male and female reproduction systems

	Male	Female
Name and location of Gonad		
Name of Gamete		
Number of Gametes Made per month		
When does gamete production		
Relative size of Gamete		
Continuity of tubular system with gonads		

Activity 2: Epidemiology of Sexually Transmitted Infections

Have you ever heard the saying that goes *“when you kiss someone, you’re really kissing everyone they’ve ever kissed and everyone all those people have ever kissed and so on”*?

Well, of course, the same holds true for other types of sexual activities. The saying is essentially true since every time you are intimate enough with someone to **exchange body fluids** (such as saliva or semen), you are inoculating yourself with their germs and inoculating them with your germs.

Not all germs (microbes) cause disease, in fact many are considered “normal flora”. These are microbes that live on us in a mutualistic relationship (we will learn more about that in another lab). Some microbes do cause diseases and those that are spread exclusively by sexual contact (and not by casual contact) are called Sexually Transmitted Infections. In the past, these types of diseases have been called VD (venereal disease) and STD (sexually transmitted diseases).

Sexually Transmitted Infections can be caused by bacteria, viruses, protists and arthropods. Bacterial infections such as **Chlamydia, Syphilis and Gonorrhea** are usually curable with antibiotics. Untreated infections can cause permanent damage to the reproductive systems and other organs. Antibiotics will kill the

bacteria, but cannot reverse the damage caused by the infection. If left untreated, Chlamydia and Gonorrhea can lead to an infection called **PID (pelvic inflammatory disease)** in women. This is a leading cause of infertility in the United States. Untreated syphilis will cause neurological damage and can damage the heart and other organs.

Common viral STI's include Genital Herpes, Human Papilloma Virus and HIV. Viral diseases are not typically curable (e.g. the common cold). They either go away on their own, come and go in cycles or progress steadily causing increasing symptoms.

Other common STI's include, *Trichomonas*, an extremely common infection caused by a protozoan parasite as well as pubic lice, an arthropod that lives in the pubic hair.

A. Study the information about the various STI's discussed in class and answer the following questions.

Which STI's, in general, are curable using antibiotics? Give some specific examples.

Which are not curable? Give some examples.

Which infections can lead to PID and infertility in women? Explain how this occurs.

Which infection causes a painful rash to break out every few weeks or months?

Which infection is caused by a protozoan parasite and has a characteristic "sulfury" odor associated with its presence?

Which infection is really an infestation? (hint: It is caused by an arthropod)

B. In this activity, we will be simulating the spread of an STD using “body fluid’ in a test tube. Obtain a test tube and a plastic pipet from the teacher’s desk. Return to your desk and wait for instructions.

Swap #1 name _____ tube # _____ desk # _____

Swap #2 name _____ tube # _____ desk # _____

Swap #3 name _____ tube # _____ desk # _____

After you have completed all three swaps and recorded the information from each partner, return to your desk. Your instructor will come to your desk and conduct an STI test to determine which students are infected.

How many students at your table are infected? _____

How many on the class? _____

How many students were infected to start with? _____

What does this indicate about the ease of spreading of STI's?

Activity 3: Contraception Methods

Contraception is frequently referred to as “birth control”; however, this term can be misleading. In reality, there are two purposes for contraception. One is to prevent pregnancy and the other is to prevent the spread of sexually transmitted infections. There are many different kinds of contraception. These include **barrier methods** such as condoms and diaphragms as well as hormonal methods such as the pill or the patch. Some methods work for both purposes and others only prevent pregnancy.

Study the information about the various contraception methods discussed in class and answer the following questions. Consider what type of contraception might be best for what situations. Consider factor such as health status of the users, type and duration of relationships and whether or not the users are okay with getting pregnant by “accident”.

Which general type of contraception methods can sometimes prevent sexually transmitted infections as well as preventing pregnancy? Give a few specific examples.

Which two of the above methods are the best at preventing the transmission of infections?

For whom and under what circumstances might this type of contraception be the best choice for a couple considering intimacy?

Give two examples of the above methods that do not protect individuals from catching and spreading STI's?

Which general type of contraception has an excellent success rate of preventing pregnancy, but has no ability to prevent the transmission of infections? Give a couple examples.

For whom and under what circumstances might this type of contraception be the best choice for a couple considering intimacy?

What types of contraception have no ability to prevent the spread of STI's and has only a moderate success rate for preventing pregnancy?

For whom and under what circumstances might this type of contraception be the best choice for a couple considering intimacy?

Activity 4: Film on Fetal Development “Inside Animals”

Sexual reproduction and fetal development occur very similarly in all vertebrates. In the film, reproduction and development in several different kinds of animals is discussed. While you watch the film, take notes and answer the questions below.

What are the benefits and drawbacks to sexual reproduction?

What are the benefits and drawbacks to asexual reproduction?

Which group of animals first produced eggs that had a shell? _____

What factor determines whether alligator eggs become male or female alligators?

Why is this not possible for a “warm-blooded” animal like an elephant?

How long is the gestation period for an elephant? _____

What happens to a penguin chick if one parent does not return from a feeding journey?

CLEAN UP YOUR WORK AREA!



PUT AWAY ALL THE LAB EQUIPMENT YOU HAVE USED IN THE SAME MANNER YOU FOUND IT.