THE SPREAD OF DISEASE (HIV TRANSMISSION) LAB

Most contagious diseases are caused by pathogens such as bacteria, viruses, or protozoa. Spread of these diseases is by direct contact with someone who is infected or by indirect contact, as with water or objects contaminated by an infected person’s body fluids or wastes (blood, saliva, feces).

The dangerously rapid spread of Acquired Immune Deficiency Syndrome (AIDS) has caused a great deal of concern. Human Immunodeficiency Virus (HIV), the virus that causes AIDS, attacks and weakens the immune system.

Although recent studies indicate that the number of newly infected people in the United States is on the decline, AIDS continues to be the “Number 1” killer among young people ages 20-25, especially young women. The spread of HIV, which is transmitted from one person to another by the exchange of body fluids (blood, semen, vaginal secretions, mothers milk) has slowed among the homosexual community but, the rate of infection among heterosexuals is alarmingly high.

In this exercise, we will explore how contagious diseases spread so rapidly and attempt to understand other factors which may put us at greater risk of contracting HIV or other contagious diseases.

RULES OF THE ACTIVITY

1. Each student gets a cup filled with a small amount of fluid. The fluid represents body fluids (for, example, blood, semen, or vaginal secretions). One of the vials contains fluid infected with the “HIV virus” (a special simulation chemical) and the rest contain uninfected body fluids (water).
2. Mating is unisex. You will have 5-10 minutes to mate with as many OR as few people you choose.
3. When you exchange body fluids, use pour a small amount of your fluid into the cup of another person. You should receive back an equal amount of their fluid. This is the simulation of having shared body fluids (having sex or sharing needles)
4. You must ask the other person for permission to exchange fluids. You may NOT tell the other person how many times you have or have not exchanged fluid.
5. You must keep track of who you exchanged body fluids with. Write your history in the table on the next page.
7. After the mating time has ended, it will be time to “get tested for HIV.”
8. The teacher will assume the role of a doctor who will administer an “AIDS test” to each student.
SAFETY PRECAUTIONS:

- DO NOT DRINK FROM THE CUPS.
- Rinse hands well with plain water if "bodily fluid" liquid spills on you.

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Add more columns if you need to; you DO NOT have to mate 7 times

SUMMARY QUESTIONS

1. Did you test positive for HIV?

2. Were you able to trace the route of infection back to its original source

3. Who brought the virus into the group?

4. What percentage of the entire group was affected?

5. What contributed to the large or small amount affected?

6. What was your behavioral role? Did you mate a lot compared to others?

7. What was the behavioral role of the person who started the infection in the community?
8. Why is HIV so successful in infecting humans?

9. Why did animals have to evolve an immune system?

10. Name 4 different ways the human body protects itself.

11. Explain what antibodies do to fight off pathogens.

12. Explain what vaccines are and how they work in the body to protect you from diseases.

13. Higher Order Thinking: Would a vaccine work to fight off HIV? Why or why not?