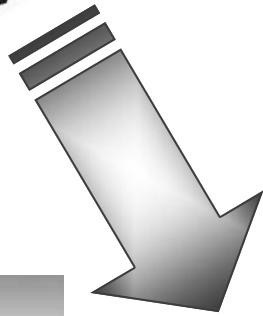
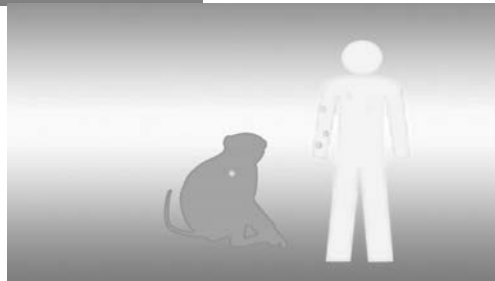


**WHY US?**  
LEFT BEHIND AND DYING

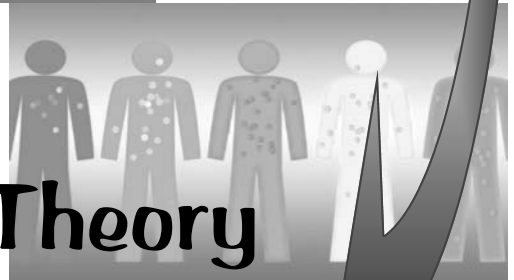


**Video Curriculum Modules**



**Lessons 18:**

**HIV – Serial Passage Theory**



**LEARNING WAS NEVER LIKE THIS**

## Lesson 18: Serial Passage Theory

### Standards:

#### Health:

- 1.12.2
- 1.12.3
- 2.12.2
- 2.12.10
- 3.12.1
- 3.12.2
- 5.12.2
- 5.12.4

#### Science:

- 1.2
- 2.1
- 2.2
- 2.4
- 2.5
- 8.1
- 8.2
- 8.3

#### Skills Practiced and Gained:

- 1.1—1.7

### Overview

Serial passage is a technique used to develop a mutated form of a virus—hopefully a weaker strain of a virus so that it may be used to create a vaccine. Louis Pasteur developed the serial passage technique— infecting an organism with a virus, allowing it to incubate and perhaps mutate, and then another organism is infected with the incubated virus. This infection-incubation process is repeated accordingly. Pasteur used the serial passage technique to produce vaccines for example a rabies vaccine.

The Serial Passage Theory is named after this technique because the theory asserts that SIV mutated to HIV through unintended consequences of a vaccination program that allowed for the infection-incubation process to occur.

### Key Concepts

- Transfer of viruses
- Scientific Method

### Procedure

#### *Part I*

View the video module for Serial Passage Theory. Use the following questions to facilitate group discussion or give the questions as prompts for journal entries.

#### *Discussion/Journal Questions*

- 1) What new information did you gather from the video module?
- 2) Do you think “serial passage” is a possible way in which HIV emerged? What factors of “serial passage” make you think it is possible? What factors of “serial passage” make you think it is not possible?
- 3) What other questions or comments do you have?



## Procedure

### *Part II*

Use the Scientific Method to examine Serial Passage Theory. Either have students/clients discuss their examination of the Serial Passage Theory or assign as a writing exercise.

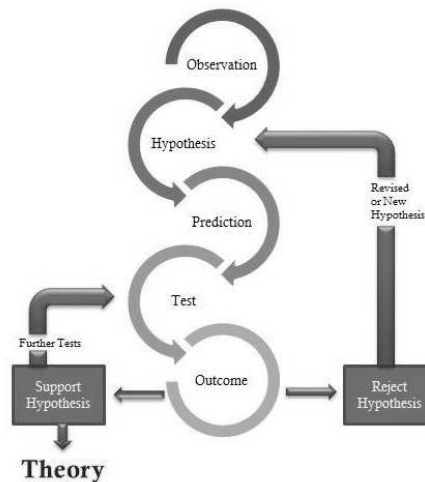
Ask your students/clients:

Do you think “serial passage” is a theory or a hypothesis?

### *Questions to Consider:*

- Do your students/clients think that they have enough information from the video module to answer the question above?
- Have enough successful tests been conducted to establish “serial passage” as a theory?
- Will your students/clients have to research “serial passage” before answering the question?
- Review all parts of the scientific method. How does the information that you have gathered fit into the process steps of the scientific method?

Reminder, the scientific method is:





*Reminder, steps in the process of the Scientific Method:*

In the Scientific Method,

- ☑ make observations of a phenomenon
- ☑ formulate conjectures about the observations
- ☑ use the conjectures to develop one or more hypotheses to explain the phenomenon
- ☑ make predictions from your hypotheses
- ☑ you should be able to test your hypotheses and predictions
- ☑ conduct an experiment to test your hypotheses and predictions
  - ☑ an experiment can be more observations (perhaps in a different setting); it can be collecting historical data; it can be a traditional laboratory experiment with treatment and control groups
- ☑ review your findings and outcomes; the results should either support or reject the hypothesis
  - ☑ if the hypothesis is supported, then it's theoretical value increases and is further tested
  - ☑ if the hypothesis is rejected, then it is revised or you abandon it and start all over again

When a hypothesis has sufficient support, meaning many successful tests must occur, only then will the hypothesis possibly be accepted as a theory.