

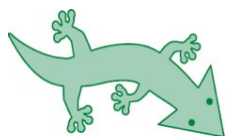
Student Activity: Adherence to HIV Treatment



Important notes

This activity takes **10 days to complete**.

In this activity, you simulate taking HIV antiretroviral drugs by using tic tac mints and Kool-Aid packets. If you have allergies or dietary restrictions that prohibit the consumption of sugar or other ingredients listed on the packaging, you should not eat or drink the simulated “medicine.” Instead, you should discard the “medicine” at the time you would ingest it. Participation in this activity does not require eating or drinking anything.



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HIV and antiretroviral therapy

HIV (human immunodeficiency virus) infection is incurable; no treatment can eradicate the virus from the body. It is not a lethal disease by itself, but if untreated, HIV can gradually weaken the immune system until it is no longer functional. At this point, the patient has AIDS (acquired immune deficiency syndrome), and other types of infections can easily occur.

HIV antiretroviral drug therapy can suppress HIV and delay the onset of AIDS for many years.

Because HIV has a high mutation rate, treating a patient with only one drug can inadvertently select for a mutant drug-resistant strain of HIV. Multi-drug therapies are prescribed so that even if a mutant strain resistant to one drug arises, it will still be suppressed by the other drugs.

What is adherence? Why is it important?

Adherence is the measure of how well a patient sticks to a treatment program.

In HIV antiretroviral therapy, it is very important to adhere to the treatment program to keep the virus suppressed. If

the drug treatment is interrupted for any reason, there is a risk that the number of viruses in the body will rebound and include drug-resistant strains. Therefore, in the long run, poorly adhering to treatment may be worse than not being treated at all.

Activity instructions

In this activity, you will participate in a simulation of HIV antiretroviral drug therapy. You will experience firsthand how easy or difficult it is to fully adhere to a treatment program.

You have been assigned one of three treatment protocols of varying complexity. One aim of the study is to see if students adhere better to simpler treatment protocols.

Check the enclosed activity data sheet for your protocol assignment. Instead of actual retroviral drugs, you will use substitutes: Kool-Aid packets and tic tac mints. Follow the protocol for 10 days and take the simulated “medicine” at appropriate times.

On the activity data sheet, record the time and the date each time you take a dose of “medicine.” Keep the record honestly and accurately. This is not a contest to see who’s best at adhering to the treatment protocol.

Contact your teacher or program coordinator about how to report your data.

Remember, you do not have to ingest the “medicine” to participate in this activity. If you prefer not to ingest anything, simply discard the dose but note the time and the date as if you have taken the “medicine.”

Protocol 1



Fuzeon (Kool-Aid): Mix a packet with 8 oz of water, let stand for 10 minutes, and then drink it. Take it every 12 hours.

Kaletra (spearmints tic tac): Take one tablet every 12 hours.

Combivir (cinnamon tic tac): Take one tablet every 12 hours.

If you forget to take a dose at the scheduled time, take it as soon as you remember, unless you are scheduled to take your next dose in 6 hours or less. If so, skip the dose, and record it as missed. In either case, take the next scheduled dose at its regular time.

Protocol 2



Truvada (citrus twist tic tac): Take one tablet once a day with or without food.

Reyataz (orange tic tac): Take two tablets once a day with food.

Norvir (wintergreen tic tac): Take one tablet once a day with Reyataz®.

If you forget to take a dose at the scheduled time, take it as soon as you remember, unless you are scheduled to take your next dose in 12 hours or less. If so, skip the dose, and record it as missed. In either case, take the next scheduled dose at its regular time.

Protocol 3



Atripla (orange tic tac): Take at bedtime once a day on an empty stomach.

If you miss taking the dose at bedtime, record it as missed. Then take the next scheduled dose at its regular time.

Reporting your results

Keep a careful record of when you take your “medicine” on the enclosed data sheet. After finishing the activity, report your data by submitting the data sheet. Contact your teacher or program coordinator about how to submit your data sheet.

About the Holiday Lectures on Science and BioInteractive®

As part of its mission to strengthen science education, HHMI presents the Holiday Lectures on Science, an annual series that brings the latest developments in a rapidly moving field of research into the classroom. The lectures are given by HHMI investigators and other leading scientists. The 2007 Holiday Lectures, *AIDS: Evolution of an Epidemic*, are the fifteenth in the series. To complement the Holiday Lectures and enhance their usefulness in the classroom, HHMI produces a variety of free science education materials, available from www.holidaylecture.org. DVDs and CD-ROMs can be ordered through HHMI's Online Catalog at <http://catalog.hhmi.org>. The BioInteractive website (www.biointeractive.org) features virtual labs, animations, and other engaging instructional materials. They can be used to supplement the lecture topics or help learn about important concepts in the biomedical sciences.

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The Howard Hughes Medical Institute is a nonprofit medical research organization that employs hundreds of leading biomedical scientists working at the forefront of their fields. In addition, through its grants program and other activities, HHMI is helping enhance science education at all levels and maintain the vigor of biomedical science worldwide. Headquartered in Chevy Chase, Maryland, HHMI is one of the world's largest philanthropies, with laboratories across the United States and grants programs throughout the world.

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