



# CHOOSING SEIZURE DRUGS FOR PEOPLE WITH HIV/AIDS

This information sheet may help you understand the risks of combining certain seizure drugs with certain HIV/AIDS drugs. It is a service of the American Academy of Neurology (AAN) and the International League Against Epilepsy (ILAE).

Neurologists from the AAN are doctors who identify and treat diseases of the brain and nervous system. The following evidence-based information\* is provided by experts who carefully reviewed all available scientific studies on the risks of combining seizure drugs with HIV/AIDS drugs in people with HIV/AIDS.

It is important for people with HIV/AIDS who suffer from seizures to understand the risks of combining certain drugs. There may be serious risks from some combinations of seizure drugs and HIV/AIDS drugs. One or more of the combined drugs may become less effective or more toxic. Health care providers may need to check and adjust drug doses.

## What is a seizure? Do people with HIV/AIDS have seizures?

Seizures are events caused by abnormal firing of neurons (brain cells). Brain cells use electrical energy to “fire” messages to one another. When a seizure happens, the cells fire abnormally. This causes a surge of electrical activity in the brain. For some people, a seizure is a onetime event. Other people may have recurrent seizures. These may occur the same day or over longer periods of time.

Having a seizure can be frightening. The person may become confused and lose the ability to communicate. The person’s muscles may contract repeatedly. In some cases, the person may lose consciousness (black out). Injuries may result from muscle spasms or from falls. In very rare cases, death may occur. But usually seizures are brief events, and the person recovers completely.

Seizures and seizure disorders can occur in people with HIV/AIDS. Research shows nearly 11 percent of people with HIV/AIDS may have a seizure at some time in their lives. There are drugs available to help prevent seizures.

## I am HIV positive and take HIV/AIDS drugs for treatment. I have had seizures. Can I treat my seizures if I also take HIV/AIDS drugs?

Several drugs are available to treat seizures. These drugs are known as antiepileptic drugs (AEDs). Seizure drugs can be taken with HIV/AIDS drugs. However, certain seizure drugs may interact with certain HIV/AIDS drugs. Talk with your health care provider about which seizure drugs are right for you. More information on seizure drugs is available from [the AAN](#) and [the ILAE](#).

For someone with HIV/AIDS, it is important to be sure that the health care provider prescribing drugs knows about all the other drugs the person is taking. This includes the person’s HIV/AIDS and seizure drugs.

## I am HIV positive, and I have seizures. Does taking HIV/AIDS drugs and seizure drugs together make the drugs more toxic?

Some seizure drugs raise the blood levels of some HIV/AIDS drugs. Likewise, some HIV/AIDS drugs raise the blood levels of some seizure drugs. When seizure drugs and HIV/AIDS drugs are taken together, one or more of those drugs may become more toxic. This may happen when the HIV/AIDS drug zidovudine is combined with the seizure drug valproic acid. Weak evidence shows that this drug combination may make zidovudine blood levels rise. This may make zidovudine more toxic, so the dosage may need to be lowered.

There is weak evidence that the following drugs may not interact when combined:

- Seizure drug valproic acid may not affect the blood levels of HIV/AIDS drug efavirenz (no need to adjust efavirenz dosage)
- HIV/AIDS drug raltegravir may not affect the blood levels of seizure drug midazolam (no need to adjust midazolam dosage)
- HIV/AIDS drug raltegravir may not affect the blood levels of seizure drug lamotrigine (no need to adjust lamotrigine dosage)
- HIV/AIDS drug atazanavir may not affect the blood levels of seizure drug lamotrigine (no need to adjust lamotrigine dosage)

However, there is not enough evidence to be certain if any given drug combination will be toxic. Experts do not know if drug dosages should be adjusted when any other seizure drugs and HIV/AIDS drugs are combined.

## I am HIV positive, and I would like to treat my seizures. Will my HIV/AIDS drugs make my seizure drugs stop working?

Some combinations of seizure drugs and HIV/AIDS drugs may make the seizure drugs less effective. The seizure drug lamotrigine may be less effective when combined with the HIV/AIDS drug ritonavir/atazanavir. Weak evidence shows that this drug combination may make blood levels of lamotrigine drop. Blood levels of lamotrigine may need to be checked if ritonavir/atazanavir is also prescribed. The lamotrigine dosage may need to be raised by 50 percent to maintain effective drug levels.

## I am HIV positive, and I have seizures. Will taking a seizure drug make my HIV/AIDS drugs stop working?

Some combinations of seizure drugs and HIV/AIDS drugs may make the HIV/AIDS drugs less effective. When these drugs are less effective, the virus may become resistant to them. The HIV/AIDS drug lopinavir/ritonavir may be less effective when combined with the seizure drug phenytoin. Weak evidence shows that this drug combination may make blood levels of lopinavir/ritonavir drop. The lopinavir/ritonavir dosage may need to be boosted by 50 percent to maintain effective drug levels.

In addition, weak evidence shows enzyme-inducing seizure drugs (EI-AEDs) also may lower blood levels of some types of HIV/AIDS drugs. EI-AEDs make certain liver enzymes more active. People taking these drugs may develop drug resistance, and their disease may get worse. They also may pass on the disease more readily to others. Thus, it may be important for people with HIV/AIDS to avoid taking EI-AEDs. The seizure drugs phenytoin, phenobarbital, and carbamazepine are EI-AEDs.

People with HIV/AIDS may need many types of drugs for treatment, including seizure drugs. However, serious risks are linked to the possible drug interactions described here. Thus, it is important that people with HIV/AIDS fully understand which drugs they are taking. They also should share this information with all of their health care providers.

Stopping a seizure drug or HIV/AIDS drug can be dangerous. It is very important not to stop taking these drugs without first talking with the prescribing health care providers.

More research on possible interactions between seizure drugs and HIV/AIDS drugs is needed. Studies of higher quality would help to understand the risks better. Research is especially needed on drug combinations prescribed in developing countries. This may help improve HIV/AIDS management and seizure control in these countries.

This statement is provided as an educational service of the American Academy of Neurology. It is based on an assessment of current scientific and clinical information. It is not intended to include all possible proper methods of care for a particular neurologic problem or all legitimate criteria for choosing to use a specific procedure. Neither is it intended to exclude any reasonable alternative methodologies. The AAN recognizes that specific patient care decisions are the prerogative of the patient and the physician caring for the patient, based on all of the circumstances involved.

\*After the experts review all of the published research studies, they describe the strength of the evidence supporting each recommendation:

*Strong evidence* = more than one high-quality scientific study

*Moderate evidence* = at least one high-quality scientific study or two or more studies of a lesser quality

*Weak evidence* = the studies, while supportive, are weak in design or strength of the findings

*Not enough evidence* = either different studies have come to conflicting results or there are no studies of reasonable quality

