



# OPPORTUNISTIC INFECTIONS

## WHAT ARE OPPORTUNISTIC INFECTIONS?

In our bodies, we carry many germs — bacteria, protozoa, fungi, and viruses. When our immune system is working, it controls these germs. But when the immune system is weakened by HIV disease or by some medications, these germs can get out of control and cause health problems.

Infections that take advantage of weakness in the immune defenses are called “opportunistic.” The phrase “opportunistic infection” is often shortened to “OI.”

## TESTING FOR OIs

You can be infected with an OI, and “test positive” for it, even though you don’t have the disease. For example, almost everyone with HIV tests positive for Cytomegalovirus (CMV). But it is very rare for CMV disease to develop unless the CD4 cell count drops below 50, a sign of serious damage to the immune system.

To see if you’re infected with an OI, your blood might be tested for antigens (pieces of the germ that causes the OI) or for antibodies (proteins made by the immune system to fight the germs). If the antigens are found, it means you’re infected. If the antibodies are found, you’ve been exposed to the infection. You may have been immunized against the infection, or your immune system may have “cleared” the infection, or you may be infected. If you are infected with a germ that causes an OI, and if your CD4 cells are low enough to allow that OI to develop, your health care provider will look for signs of active disease. These are different for the different OIs.

## OIs AND AIDS

People who aren’t HIV-infected can develop OIs if their immune systems are damaged. For example, many drugs used to treat cancer suppress the immune system. Some people who get cancer treatments can develop OIs.

HIV weakens the immune system so that opportunistic infections can develop. If you are HIV-infected and develop

opportunistic infections, you might have AIDS. In the US, the Center for Disease Control (CDC) is responsible for deciding who has AIDS. The CDC has developed a list of about 24 opportunistic infections. If you have HIV and one or more of these “official” OIs, then you have AIDS. The list is available at <http://www.aidsmeds.com/lessons/StartHere8.htm>

## WHAT ARE THE MOST COMMON OIs?

In the early years of the AIDS epidemic, OIs caused a lot of sickness and deaths. Once people started taking strong antiretroviral therapy (ART), however, a lot fewer people got OIs. It’s not clear how many people with HIV will get a specific OI.

In women, health problems in the vaginal area may be early signs of HIV. These can include pelvic inflammatory disease and bacterial vaginosis, among others. See fact sheet 610 for more information.

The most common OIs are listed here, along with the disease they usually cause, and the CD4 cell count when the disease becomes active:

- **Candidiasis** (Thrush) is a fungal infection of the mouth, throat, or vagina. CD4 cell range: can occur even with fairly high CD4 cells. See Fact Sheet 501.
- **Cytomegalovirus** (CMV) is a viral infection that causes eye disease that can lead to blindness. CD4 cell range: under 50. See Fact Sheet 504.
- **Herpes simplex viruses** can cause oral herpes (cold sores) or genital herpes. These are fairly common infections, but if you have HIV, the outbreaks can be much more frequent and more severe. They can occur at any CD4 cell count. See Fact Sheet 508.
- **Malaria** is common in the developing world. It is more common and more severe in people with HIV infection.
- **Mycobacterium avium complex** (MAC or MAI) is a bacterial infection that can cause recurring fevers, general sick feelings, problems with

digestion, and serious weight loss. CD4 cell range: under 75. See Fact Sheet 514.

- **Pneumocystis pneumonia** (PCP) is a fungal infection that can cause a fatal pneumonia. CD4 cell range: under 200. See Fact Sheet 515. Unfortunately, this is still a fairly common OI in people who have not been tested or treated for HIV.
- **Toxoplasmosis** (Toxo) is a protozoal infection of the brain. CD4 cell range: under 100. See Fact Sheet 517.
- **Tuberculosis** (TB) is a bacterial infection that attacks the lungs, and can cause meningitis. CD4 cell range: Everyone with HIV who tests positive for exposure to TB should be treated. See Fact Sheet 518.

## PREVENTING OIs

Most of the germs that cause OIs are quite common, and you may already be carrying several of these infections. You can reduce the risk of new infections by keeping clean and avoiding known sources of the germs that cause OIs.

Even if you’re infected with some OIs, you can take medications that will prevent the development of active disease. This is called prophylaxis. The best way to prevent OIs is to take strong ART. See Fact Sheet 403 for more information on ART.

The Fact Sheets for each OI have more information on avoiding infection or preventing the development of active disease.

## TREATING OIs

For each OI, there are specific drugs, or combinations of drugs, that seem to work best. Refer to the fact sheets for each OI to learn more about how they are treated.

Strong antiretroviral drugs can allow a damaged immune system to recover and do a better job of fighting OIs. Fact Sheet 481 on Immune Restoration has more information on this topic.

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