HIV and Pregnancy

HIV Testing and Pregnancy
Mother-to-Child Transmission of HIV
Anti-HIV Medications for Use in Pregnancy
Safety of Anti-HIV Medications During Pregnancy
Preventing Transmission of HIV During Labor and Delivery
Women Infected with HIV and Their Babies After Birth
HIV and Pregnancy

These fact sheets on HIV and pregnancy are intended for women infected with HIV who are pregnant or thinking about becoming pregnant. The fact sheets include information to help women infected with HIV stay healthy during pregnancy and reduce the risk of transmitting HIV to their babies.


These fact sheets are not intended as a substitute for the expert advice and care of medical professionals. For individualized treatment, pregnant women infected with HIV should consult with a health care provider experienced in managing HIV during pregnancy.

Table of Contents

1. HIV Testing and Pregnancy
2. Mother-to-Child Transmission of HIV
3. Anti-HIV Medications for Use in Pregnancy
4. Safety of Anti-HIV Medications During Pregnancy
5. Preventing Transmission of HIV During Labor and Delivery
6. Women Infected with HIV and Their Babies After Birth

I am pregnant. Will I be tested for HIV?

HIV testing is recommended for all pregnant women. HIV testing is provided to pregnant women in two ways: opt-in or opt-out testing. In areas with opt-in testing, women may be offered HIV testing. Women who accept testing will need to sign an HIV testing consent form. In areas with opt-out testing, HIV testing is automatically included as part of routine prenatal care. With opt-out testing, women must specifically ask not to be tested and sign a form refusing HIV testing. The Centers for Disease Control and Prevention (CDC) recommends that opt-out testing be provided to all pregnant women.

Ask your health care provider about HIV testing in your area. If HIV opt-out testing is not available, ask to be tested for HIV.

What are the benefits of HIV testing for pregnant women?

A mother who knows early in her pregnancy that she is HIV infected has more time to make important decisions. She and her health care provider will have more time to decide on effective ways to protect her health and prevent mother-to-child transmission of HIV. She can also take steps to prevent passing HIV to her partner. (See the Preventing HIV Transmission fact sheet.)

How will I be tested for HIV?

The most common HIV test is the HIV antibody test. HIV antibodies are a type of protein the body produces in response to HIV infection. An HIV antibody test looks for HIV antibodies in a person's blood, urine, or fluids from the mouth. When a person has a positive result from an HIV antibody test, a second and different type of antibody test is done to confirm that the person is indeed infected with HIV. The second test is called a confirmatory HIV test. To be diagnosed with HIV, a person's confirmatory HIV test must also be positive. (For more information, see the Testing for HIV fact sheet.)

Getting results from an HIV antibody blood test generally takes only a few days. (Results from some tests that use fluids from the mouth are ready within an hour.) Getting results from a confirmatory HIV test can take longer—from a few days to a few weeks after the test. People generally receive their results during a follow-up visit with a health care provider. It is important to keep your appointment for your HIV test results.

Terms Used in This Fact Sheet:

Mother-to-child transmission of HIV: the passing of HIV from a woman infected with HIV to her baby during pregnancy, during labor and delivery, or by breastfeeding.

HIV antibody test: an HIV test that checks for HIV antibodies in a person's blood, urine, or fluids from the mouth. When the body is infected with HIV, the immune system (the system of the body that fights off infections) produces HIV antibodies.

Pregnant women who test positive for HIV have many options to stay healthy and protect their babies from becoming HIV infected. Health care providers recommend that women infected with HIV take anti-HIV medications to prevent mother-to-child transmission of HIV and, if needed, for their own health.

If you are diagnosed with HIV, your health care provider will answer your questions about HIV and discuss ways to help you and your baby stay healthy. Together you can make decisions about HIV care during your pregnancy.

What happens if I ask not to be tested for HIV?

You will not be tested for HIV. However, your health care provider will likely re-emphasize the importance of HIV testing. You may be offered counseling on how HIV is spread and ways to prevent HIV transmission. Throughout your pregnancy, your health care provider may encourage you to reconsider your decision not to be tested.

Where can I find information on HIV testing in my state?

The U.S. Department of Health and Human Services (HHS) offers information on HIV testing for each state. Contact HHS at 1–877–696–6775 or 1–202–619–0257. You can also find information on your state health department website.

For more information:

Contact an AIDSinfo health information specialist at 1–800–448–0440 or visit http://aidsinfo.nih.gov. See your health care provider for medical advice.
How is HIV transmitted?
HIV is transmitted (passed) from one person to another through specific body fluids—blood, semen, genital fluids, and breast milk. Having unprotected sex or sharing needles with a person infected with HIV are the most common ways HIV is transmitted.

Mother-to-child transmission of HIV is when a woman infected with HIV transmits HIV to her baby during pregnancy, during labor and delivery, or by breastfeeding. Because HIV can be transmitted through breast milk, women infected with HIV should not breastfeed their babies. In the United States, baby formula is a safe and healthy alternative to breast milk.

Although the risk is very low, HIV can also be transmitted to a baby through food that was previously chewed (pre-chewed) by a mother or caretaker infected with HIV. To be safe, babies should not be fed pre-chewed food.

HIV cannot be transmitted through casual contact, such as hugging and closed-mouth kissing. HIV also cannot be transmitted by items such as toilet seats, door knobs, or dishes used by a person infected with HIV.

When are anti-HIV medications used to prevent mother-to-child transmission of HIV?
Anti-HIV medications are used at the following times to reduce the risk of mother-to-child transmission of HIV:

• During pregnancy, pregnant women infected with HIV receive a regimen (combination) of at least three different anti-HIV medications.
• During labor and delivery, pregnant women infected with HIV receive intravenous (IV) AZT and continue to take the medications in their regimens by mouth.
• After birth, babies born to women infected with HIV receive liquid AZT for 6 weeks. (Babies of mothers who did not receive anti-HIV medications during pregnancy may be given other anti-HIV medications in addition to AZT.)

In addition to taking anti-HIV medications to reduce the risk of mother-to-child transmission of HIV, a pregnant woman infected with HIV may also need anti-HIV medications for her own health. Some women may already be on a regimen before becoming pregnant. However, because during pregnancy some anti-HIV medications may not be safe to use or may be absorbed differently by the body, the medications in a woman’s regimen may change.

How do anti-HIV medications help prevent mother-to-child transmission of HIV?
Taking anti-HIV medications during pregnancy reduces the amount of HIV in an infected mother's body. Having less HIV in the body reduces the risk of mother-to-child transmission of HIV.

Some anti-HIV medications also pass from the pregnant mother to her unborn baby through the placenta (also called the afterbirth). The anti-HIV medication in the baby’s body helps protect the baby from HIV infection. This is especially important during delivery when the baby may be exposed to HIV in the mother's genital fluids or blood.

After birth, babies born to women infected with HIV receive anti-HIV medication. The medication reduces the risk of infection from HIV that may have entered the babies’ bodies during delivery.

For information on what anti-HIV medications to take during pregnancy, see the Anti-HIV Medications for Use in Pregnancy fact sheet.

For more information:
Contact an AIDSinfo health information specialist at 1–800–448–0440 or visit http://aidsinfo.nih.gov. See your health care provider for medical advice.


Reviewed
February 2012
I am HIV infected and pregnant. When should I start taking anti-HIV medications?

When to start taking anti-HIV medications depends on your health, how much HIV has affected your body, and how far along you are in your pregnancy. In general, people infected with HIV who are not pregnant begin taking anti-HIV medications when their CD4 counts fall below 500 cells/mm³ or if they develop certain other infections. (See the When to Start Anti-HIV Medications fact sheet.) Pregnant women infected with HIV must also consider whether they need anti-HIV medications for their own health or only to prevent mother-to-child transmission of HIV.

Women who need anti-HIV medications for their own health:
- may be taking anti-HIV medications before becoming pregnant; or
- may start taking anti-HIV medications when they become pregnant.

Women who need anti-HIV medications only to prevent mother-to-child transmission of HIV can consider waiting until after the first trimester of pregnancy to take anti-HIV medications. However, starting medications earlier may be more effective at reducing the risk of mother-to-child transmission of HIV.

All pregnant women infected with HIV should be taking anti-HIV medications by the second trimester of pregnancy. Women diagnosed with HIV later in pregnancy should start taking anti-HIV medications as soon as possible.

What anti-HIV medications should I use during my pregnancy?

All pregnant women infected with HIV should take a regimen (combination) of at least three anti-HIV medications. However, the specific medications in your regimen will depend on your individual needs. To select a regimen, your health care provider will review your medical history and order blood tests to assess your health and the stage of your HIV infection. Your health care provider will also consider:
- why you need anti-HIV medications—for your own health or only to prevent transmitting HIV to your baby;
- changes in how your body may absorb medications during pregnancy; and
- the potential of anti-HIV medications to harm your baby or cause birth defects.

I am currently taking anti-HIV medications and just learned I’m pregnant. What should I do?

Continue taking your anti-HIV medications until you talk to your health care provider. Stopping treatment could harm both you and your baby.

If you are in the first trimester of pregnancy, tell your health care provider right away if you are taking Sustiva (or Atripla, an anti-HIV medication that contains Sustiva). Sustiva alone or in Atripla may cause birth defects that develop during the first few months of pregnancy. Your health care provider may recommend safe alternatives for these medications. After the first trimester, Sustiva or Atripla can be used safely.

Terms Used in This Fact Sheet:

**CD4 count:** CD4 cells, also called T cells or CD4+ T cells, are white blood cells that fight infection. HIV destroys CD4 cells, making it harder for the body to fight infections. A CD4 count is the number of CD4 cells in a sample of blood. A CD4 count measures how well your immune system is working.

**Mother-to-child transmission of HIV:** the passing of HIV from a woman infected with HIV to her baby during pregnancy, during labor and delivery, or by breastfeeding.

**Regimen:** Anti-HIV medications are grouped into “classes” according to how they fight HIV. A regimen is a combination of three or more anti-HIV medications from at least two different classes.

**Sustiva:** an anti-HIV medication in the NNRTI class. Sustiva is also called efavirenz or EFV.

**Atripla:** a combination of three anti-HIV medications in one pill—Sustiva (also called efavirenz or EFV), Emtriva (also called emtricitabine or FTC), and Viread (also called tenofovir or TDF).

**Viral load:** the amount of HIV in a sample of blood. Viral load measures how much virus you have in your body and how well anti-HIV medications are controlling the infection.

**Drug-resistance testing:** a blood test to identify which, if any, antiretroviral (ARV) drugs will not be effective against a person’s specific strain of HIV. Resistance testing is done using a sample of blood.
Talk to your health care provider about the anti-HIV medications in your regimen. Because pregnancy can affect how the body absorbs medications, the doses of some medications you take may change later in pregnancy.

If you are taking anti-HIV medications and your **viral load** is more than 500 copies/mL, your current regimen may not be effective at suppressing HIV. Your health care provider will recommend a test to see if the medications are still working against HIV (**drug-resistance testing**) and use the test results to find more effective anti-HIV medications.

**I used to take anti-HIV medications, but I don’t anymore. What should I do?**

Talk to your health care provider about all anti-HIV medications you have used, the results of past drug-resistance testing, and why you no longer take anti-HIV medications. Your medical history, past drug-resistance test results, and additional drug-resistance testing will help you and your health care provider select a new regimen that is safe for use during pregnancy.

Whether you were on anti-HIV medications before becoming pregnant or are just starting a regimen, your health care provider will:

- explain the risks and benefits of using anti-HIV medications during pregnancy;
- stress the importance of taking anti-HIV medications exactly as directed; and
- arrange for additional medical or social support you may need to help you have a healthy pregnancy.

**For more information:**

I am HIV infected and pregnant. Is it safe to use anti-HIV medications during my pregnancy?

Women infected with HIV can safely use many anti-HIV medications during pregnancy to protect their health and to prevent transmitting HIV to their babies. However, some anti-HIV medications can cause problems when used during pregnancy. Knowing more about the safety of anti-HIV medications and pregnancy will help you and your health care provider decide what medications are right for you.

Is my baby at risk from anti-HIV medications I take during pregnancy?

It’s not known if babies will have any long-term effects from the anti-HIV medications their mothers use during pregnancy. However, the risk of mother-to-child transmission of HIV is known. And the illness that results when HIV infection is passed from a mother to her child is very real. Because anti-HIV medications can greatly reduce the risk of passing HIV infection from a mother to her child during pregnancy, all pregnant women infected with HIV should take anti-HIV medications.

Information on the use of anti-HIV medications during pregnancy is limited. But enough information is known to make recommendations about the safety of the most commonly used medications from the three most commonly used classes of anti-HIV medications—protease inhibitors (PIs), non-nucleoside reverse transcriptase inhibitors (NNRTIs), and nucleoside reverse transcriptase inhibitors (NRTIs). (Not enough information is known to make recommendations about use during pregnancy of entry inhibitors and integrase inhibitors, two additional classes of anti-HIV medications.)

Protease inhibitors (PIs)

There may be a link between the use of some PIs and high blood sugar (hyperglycemia) or diabetes. For some women, the risk of hyperglycemia increases in pregnancy. It is unclear if taking PIs adds to this risk. Talk to your health care provider about the use of PIs during pregnancy and about when to have blood tests to check for hyperglycemia or diabetes.

Non-nucleoside reverse transcriptase inhibitors (NNRTIs)

Two NNRTIs, Sustiva and Viramune, should be used in pregnant women only under certain conditions.

- Sustiva may cause birth defects that develop during the first few months of pregnancy. Therefore, if possible, use of Sustiva should be avoided in the first trimester of pregnancy. Atripla, a combination pill that contains Sustiva,
should also be avoided in the first trimester of pregnancy. After the first trimester, Sustiva or Atripla can be used safely.

- Viramune increases the risk of very serious liver damage in women with **CD4 counts** greater than 250 cells/mm$^3$. Viramune should only be started in pregnant women with CD4 counts higher than 250 cells/mm$^3$ if the benefits very clearly outweigh the risks. Women who begin using Viramune during pregnancy are carefully monitored for early signs of liver damage. Women taking Viramune without problems before they become pregnant can safely continue to take the medication. Liver damage from Viramune use in pregnancy has not been seen in women already taking the medication without side effects.

**Nucleoside reverse transcriptase inhibitors (NRTIs)**

Using NRTIs can sometimes lead to **lactic acidosis**, a condition caused by the buildup of a specific acid in the blood. Women should not take the combination of **Zerit** and **Videx** during pregnancy because the combination has caused deaths from lactic acidosis and liver failure. Women taking NRTIs during pregnancy are watched carefully for signs of lactic acidosis.

Talk to your health care provider about the safety of anti-HIV medications during pregnancy. There are many anti-HIV medications to choose from that will keep you and your baby healthy.

**For more information:**

Contact an AIDSinfo health information specialist at 1-800-448-0440 or visit [http://aidsinfo.nih.gov](http://aidsinfo.nih.gov). See your health care provider for medical advice.

---

This information is based on the U.S. Department of Health and Human Services’ *Recommendations for Use of Antiretroviral Drugs in Pregnant HIV-1-Infected Women for Maternal Health and Interventions to Reduce Perinatal HIV Transmission in the United States* (available at [http://aidsinfo.nih.gov/guidelines](http://aidsinfo.nih.gov/guidelines)).

Reviewed February 2012
I am HIV infected and pregnant. Will I need anti-HIV medications during labor and delivery?

Women infected with HIV take anti-HIV medications during labor and delivery to reduce the risk of mother-to-child transmission of HIV. (See the Mother-to-Child Transmission of HIV fact sheet.) During labor and delivery, women continue to take the anti-HIV medications they took throughout their pregnancies. They also receive an anti-HIV medication called AZT intravenously to protect their babies from HIV in the mother's genital fluids or blood during labor and delivery.

Talk to your health care provider about the use of anti-HIV medications during labor and delivery well before your due date.

Will I have a vaginal or a cesarean delivery?

The risk of mother-to-child transmission of HIV is low for women who take anti-HIV medications during pregnancy and have a viral load less than 1,000 copies/mL near the time of delivery.

For some HIV-infected mothers, a scheduled cesarean delivery (also called a C-section) at 38 weeks of pregnancy (2 weeks before the due date) can reduce the risk of mother-to-child transmission of HIV. A scheduled cesarean delivery is recommended for HIV-infected women who:

- have not received anti-HIV medications during pregnancy;
- have a viral load greater than 1,000 copies/mL or an unknown viral load near the time of delivery.

If, before her scheduled cesarean delivery, a woman's water breaks (also called rupture of membranes) or she goes into labor, a cesarean delivery may not reduce the risk of mother-to-child transmission of HIV. If there is not another pregnancy-related reason to have a cesarean delivery, the risks of going ahead with the scheduled cesarean delivery may be greater than the benefits. Depending on an individual woman's situation, a vaginal delivery may be the best alternative to a planned cesarean delivery.

What are the risks of delivery?

All deliveries have risks—even for mothers without HIV infection. In general, a cesarean delivery has greater risks than a vaginal delivery.

For the mother, the risk of infection or a blood clot in the legs or lungs is greater with a cesarean delivery than with a vaginal delivery. All women who have a cesarean delivery, including women infected with HIV, should receive antibiotics to prevent infection. For the infant, the risk of temporary breathing difficulties may be greater with a cesarean delivery.

Talk to your health care provider about the risks and benefits of each type of delivery early in your pregnancy.

For more information:

Contact an AIDSinfo health information specialist at 1–800–448–0440 or visit http://aidsinfo.nih.gov. See your health care provider for medical advice.

Terms Used in This Fact Sheet:

Mother-to-child transmission of HIV: the passing of HIV from a woman infected with HIV to her baby during pregnancy, during labor and delivery, or by breastfeeding.

AZT: an anti-HIV medication in the nucleoside reverse transcriptase inhibitor (NRTI) class. AZT is also called zidovudine, Retrovir, or ZDV.

Intravenously: giving a medication directly into a vein through a needle.

Viral load: the amount of HIV in a sample of blood.

Cesarean delivery (C-section): delivery of a baby by a surgical incision through the mother's abdominal wall and uterus.

Rupture of membranes: when the amniotic sac (“bag of waters”) holding the unborn baby bursts. Also called “water breaking.”

Preventing Transmission of HIV During Labor and Delivery

I am HIV infected and pregnant. What are the chances my baby will be born with HIV?

In the United States and Europe, fewer than 2 babies in 100 born to mothers infected with HIV are infected with the virus. This is because most women infected with HIV and their babies receive anti-HIV medications to prevent mother-to-child transmission of HIV and do not breastfeed. If you take anti-HIV medications during pregnancy and labor and delivery, if your baby receives anti-HIV medications after birth, and if you do not breastfeed your baby, the risk of passing HIV to your baby is very low.

Will my newborn baby receive anti-HIV medications?

Yes. Within 6 to 12 hours after delivery, babies born to women infected with HIV receive an anti-HIV medication called AZT. AZT helps prevent mother-to-child transmission of HIV. The babies receive AZT for 6 weeks. (In certain situations, some babies may receive other anti-HIV medications in addition to AZT.)

When will my baby be tested for HIV?

HIV testing for babies born to women with known HIV infection is recommended at 14 to 21 days, at 1 to 2 months, and again at 4 to 6 months. Testing for babies is done using a virologic HIV test. Virologic HIV tests look directly for the presence of HIV in the blood.

- To be diagnosed with HIV, a baby must have positive results from two virologic HIV tests.
- To know for certain that a baby is not infected with HIV, the baby must have two negative virologic HIV tests, the first at 1 month of age or older, and the second at least 1 month later.

Babies who are HIV-infected receive a combination of anti-HIV medications to treat HIV. At 4 to 6 weeks of age, babies infected with HIV also start a medication called Bactrim. (Bactrim is also given as a precaution when it’s not known if a baby is HIV infected or not.) Bactrim helps prevent Pneumocystis jiroveci pneumonia (PCP), a type of pneumonia that can develop in people with advanced HIV.

What is the best way to feed my baby?

Because HIV can be transmitted through breast milk, women infected with HIV who live in the United States should not breastfeed. In the United States, infant formula is a safe and healthy alternative to breast milk. Although the risk is very low, HIV can be transmitted to a baby through food that was previously chewed (pre-chewed) by a mother or caretaker infected with HIV. To be safe, babies should not be fed pre-chewed food.

Will my anti-HIV medications change after I give birth?

After your baby is born, you and your health care provider may decide to stop or change your anti-HIV regimen. The decision to continue, change, or stop your anti-HIV medications will depend on several factors:

- current expert recommendations on the use of anti-HIV medications

Terms Used in This Fact Sheet:

- Mother-to-child transmission of HIV: the passing of HIV from a woman infected with HIV to her baby during pregnancy, during labor and delivery, or by breastfeeding.
- AZT: an anti-HIV medication in the nucleoside reverse transcriptase inhibitor (NRTI) class. AZT is also called zidovudine, Retrovir, or ZDV.
- Virologic HIV test: a laboratory test that measures the amount of HIV in a sample of blood.
- Bactrim: an antibiotic used to prevent and treat infection with Pneumocystis jiroveci pneumonia (PCP). Bactrim is also called Septra, Sulfatrim, Sulfamethoxazole/Trimethoprim, or TMP-SMX.
- Pneumocystis jiroveci pneumonia (PCP): a lung infection caused by a fungus that occurs in people with weakened immune systems.
- Regimen: Anti-HIV medications are grouped into “classes” according to how they fight HIV. A regimen is a combination of three or more anti-HIV medications from at least two different classes.
- CD4 count: CD4 cells, also called T cells or CD4+ T cells, are white blood cells that fight infection. HIV destroys CD4 cells, making it harder for the body to fight infections. A CD4 count is the number of CD4 cells in a sample of blood. A CD4 count measures how well the immune system is working.
- Viral load: the amount of HIV in the blood.
HIV and Pregnancy – Women Infected with HIV and Their Babies After Birth

- your CD4 count and viral load
- issues that make it hard to take medications exactly as directed
- whether or not your partner is infected with HIV
- the preferences of you and your health care provider

Don’t stop taking any of your anti-HIV medications without first talking to your health care provider. Stopping your medications may limit the number of anti-HIV medications that will work for you and may cause your HIV infection to worsen.

Having a new baby is exciting! However, caring for a new baby while dealing with the physical and emotional changes that follow childbirth can be stressful. It may be difficult to take your anti-HIV medications exactly as directed. If you feel sad or overwhelmed or have concerns about taking your medications, talk to your health care provider. Together you can make a plan to keep you and your baby healthy.

**For more information:**

This information is based on the U.S. Department of Health and Human Services’ *Recommendations for Use of Antiretroviral Drugs in Pregnant HIV-1-Infected Women for Maternal Health and Interventions to Reduce Perinatal HIV Transmission in the United States* (available at [http://aidsinfo.nih.gov/guidelines](http://aidsinfo.nih.gov/guidelines)).

Reviewed February 2012