

Mother-to-baby transmission

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HIV can be transmitted from an HIV-positive woman to her child either during pregnancy, or during labour and delivery, or by breastfeeding. In Europe and the USA, about 15 to 20% of babies born to HIV-positive women who are **not** taking anti-HIV drugs are infected.

In most cases, HIV is thought to be transmitted during the last weeks of pregnancy or during delivery.

However, the risks of mother-to-child transmission of HIV can be reduced to below 1% by the appropriate use of HIV treatment during pregnancy and labour; by having a caesarean delivery if you have a high detectable viral load; and (when safe alternatives are available) by not breastfeeding.

In 2010, a study showed that there were no cases of mother-to-child transmission when guidelines to prevent this were properly followed .

Factors that increase the risk

A child is more likely to contract HIV from its mother if:

- she has advanced HIV infection or AIDS;
- she has high viral load or a low CD4 count;
- her waters break at least four hours before delivery;
- she has a vaginal delivery if her viral load is high ;
- the labour is difficult, requiring episiotomy or forceps;
- she has a genital infection (e.g. a sexually transmitted infection, such as chlamydia);
- she uses illicit drugs during pregnancy;
- she breast-feeds.

Becoming infected with HIV during pregnancy is also likely to increase the risk.

Breastfeeding

The risk of infection is roughly 1 in 3 if the mother breastfeeds her child, although being on effective HIV treatment significantly reduces this risk. Women are advised not to breastfeed if there is a safe alternative to breast milk. In the UK it is safe to bottle-feed your newborn baby.

Treatments to prevent mother-to-baby transmission

If you have a good CD4 cell count, low HIV viral load and are not ill because of HIV infection, UK guidelines recommend that you start taking AZT (zidovudine) in the final three months (third trimester) of your pregnancy. You will also need to take an intravenous injection of AZT during delivery and have a caesarean, rather than vaginal, delivery. Another option is to take a short course of combination antiretroviral therapy during the last few months of pregnancy in order to get your **viral load** down to below 50 copies/ml. You may then have the option of a planned vaginal delivery.

Your baby will receive treatment with AZT syrup for four weeks after it is born.

If you are in good health at the beginning of your pregnancy but become ill because of HIV later in your pregnancy and have to start taking antiretroviral therapy, then the aim should be to reduce your viral load to an undetectable level. You should continue to take the HIV treatment after your baby has been delivered. Your baby will receive treatment with AZT syrup for four weeks after it is born.

If HIV has significantly damaged your immune system, or if you have a high viral load, then you are advised to take antiretroviral therapy, including two drugs from the nucleoside reverse transcriptase inhibitor class (NRTIs), ideally AZT and 3TC (lamivudine, *Epivir*), and either the non-nucleoside reverse transcriptase inhibitor (NNRTI) **nevirapine** (*Viramune*) or a boosted protease inhibitor. The higher your viral load, the earlier during your pregnancy you will need to start taking treatment. If you still have a detectable viral load before giving birth, then you need to have a caesarean

delivery, but if your viral load is below 50 copies/ml and there are no apparent problems with the pregnancy, you may be able to have a planned vaginal birth. Your baby will receive treatment with AZT syrup for four weeks after it is born.

If you become pregnant whilst taking effective antiretroviral therapy, you are recommended to continue taking this treatment. You will need to have a special anomaly scan between weeks 18 and 20 of your pregnancy to check your baby's development. Your baby will receive treatment with antiretroviral syrup (usually AZT) for four weeks after it is born.

If you become pregnant whilst taking antiretroviral therapy and your anti-HIV drugs are not suppressing your viral load to an undetectable level, then you should have a resistance test to determine your best drug options and then change to these anti-HIV drugs. The aim should be to get your viral load to an undetectable level by the time you deliver. You will need to have an anomaly scan between weeks 18 and 20. Your baby will receive treatment with an antiretroviral syrup (to which your virus is not resistant) for four weeks after it is born.

If you are diagnosed with HIV very late during pregnancy (32 weeks or later), then you will need to start taking antiretroviral therapy immediately. A blood test will be used to determine any resistance you have to anti retroviral therapy. The most common drugs used in this situation are AZT, 3TC and nevirapine as these drugs are able to rapidly pass over the placenta into your baby's body. Your baby will usually receive treatment with the same combination of three drugs (AZT, 3TC, and nevirapine) as syrups for four weeks after it is born.

If you are diagnosed HIV-positive during delivery, or just after, then you will usually be given a dose of AZT by injection and oral doses of 3TC and nevirapine. Your baby will also need to take a triple combination of anti-HIV drugs for four weeks.

Because of the risk of birth defects you should not take the anti-HIV drug **efavirenz** (*Sustiva*) during pregnancy or if you are thinking of becoming pregnant. However, research suggests that the risk of birth abnormalities associated with efavirenz therapy is no higher than the risk seen in the **general population**. If you are taking efavirenz and become pregnant you should talk to your doctor about your options.

Delivery

The risk of transmission is reduced by having an **appropriately managed delivery**. One options is a planned caesarean section, rather than by vaginal delivery. This is called an 'elective caesarean', and is scheduled for the 38th week of pregnancy, or performed sooner if labour begins early. Caesarean delivery itself can carry some risk for the mother.

If a woman is taking potent HIV treatment and has an undetectable, or very low, viral load at the time of delivery, she has the option of having a planned vaginal delivery.

Side-effects in the baby

Children born to mothers exposed to AZT in pregnancy show no increased risk of birth abnormalities or growth problems.

Some studies of pregnant women taking a protease inhibitor found a higher than average rate of premature births, a slightly increased risk of having a low birth-weight baby.

However, other studies have reported no increase in premature delivery.