i-base
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HIV testing and risks of sexual transmission

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3rd edition

HIV i-Base
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Watch for out-of-date information

Contents

This guide was written and compiled by Simon Collins and Charlotte Walker for HIV i-Base.

Thanks to the community and healthcare professional advisory groups for comments. Contributors are listed online together with references.

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Cover: Untitled, 1984 (c) Keith Haring Foundation. Used with permission.

"I don't have time to read books about science or medicine ... I just want to know how to stay safe and protect my partners..."

HIV in the UK [1]

- More than 110,000 people in the UK are HIV positive. 90,000 are diagnosed and 20,000 do not know they have HIV.

  Over 80% of people who are diagnosed are on treatment which makes HIV difficult to transmit.

- 1.5 million people take an HIV test each year. Half are in a sexual health setting and half in pregnancy screening. More than 99% of all results are negative.

- Of the roughly 6,500 people who test positive each year (less than 0.5% of all tests), half are heterosexual and half are gay men.

- Half of diagnoses are late: ie in people who are likely to have been HIV positive for many years.

- Late diagnosis causes half of all HIV-related deaths. These could be prevented with earlier testing.

1. HIV in the UK, PHE 2015 report.
https://www.gov.uk/government/statistics/hiv-in-the-united-kingdom

Introduction

This booklet is about sexual transmission of HIV and HIV testing.

It includes information on:

- How HIV risk is more than just about condoms.
- How and when different HIV tests can be used.
- What test results mean, especially in relation to the time since your last potential risk.
- The importance of making your own decisions about your sexual health.

This guide is written for people who want to have sex.

Condoms are excellent protection against HIV. But people still become HIV positive each year for complex reasons. The main reason condoms don't always work is because they are not used every time.

This booklet doesn't talk about safer sex. Instead, it focuses on different risks for transmission that are more than just whether or not you use a condom.

But sex is complicated. Even when being careful, some people will still become HIV positive.

If this happens, there is little to gain from looking back. Treatment, when used correctly, is very effective.

If you do find you are HIV positive, i-Base and other organisations can help.

If you are positive it does not have to stop you leading a full, active and happy life.

Changes to the third edition

Since the previous edition there have been major advances in relation to HIV prevention.

Firstly, the PARTNER study has reported no linked HIV transmissions when viral load was undetectable. This was after couples had sex more than 58,000 without condoms.

Secondly, PrEP is now established as a highly effective way to protect against HIV. PrEP is when an HIV negative person uses HIV drugs to prevent infection. When used correctly PrEP reduces the risk of transmission by more than 95%.

These sections have been rewritten based on this latest evidence.

HIV basics

Fear of HIV testing

HIV is not an easy virus to catch sexually. Compared to the numbers of people who have sex each year, only a tiny percentage of people will become HIV positive.

The chance of not getting HIV is always much higher than getting HIV. This is the case even when one partner is HIV positive and the other is HIV negative.

However, it also only takes one exposure for an infection to occur. An exposure is any situation where there would be a risk of transmission if one partner was HIV positive.

Many new infections, perhaps most, come from people who do not know their HIV status.

Someone who is very recently infected (within the last month or two) is likely to think they are still HIV negative.

But this is the time when someone is also at their most infectious because in the first few months the amount of virus is at its highest.

In nearly every country, 25-50% of HIV positive people have not been diagnosed. This percentage will only be reduced when HIV testing becomes a normal, routine part of health care.

HIV, sex and risk

This book is about sexual transmission of HIV. Although most people know what is high or low risk there is less confidence about the middle ground in between these extremes.

If one person has sex without a condom they are unlikely to become HIV positive. But if 10,000 people have sex without condoms, it is very likely that some will become HIV positive. Even if they all have exactly the same type of sexual risk.

A low single risk can end up affecting a lot of people if the group is large. A lot of people have sex and the majority of times this doesn't involve condoms.

Understanding risk is also not always easy and is something that is not really taught in school.

So we might worry most about things that are never likely to affect us, such as plane crashes and bird flu.

On the one hand we convince ourselves that things we enjoy are low risk ("it will never happen to me").

On the other hand, some very low risk things are so scary that we can worry out of all proportion to the likelihood that it will happen ("I'm sure I am HIV positive").

This is how our brains work. No wonder HIV is so tricky to get your head around.

Which body fluids are infectious?

The risk of HIV transmission is related to different factors. These include:

- Which body fluids are infectious.
- How infection occurs - often called the 'routes of infection'.
- Other risk factors including viral load, type of sex, genetics etc.

Only some bodily fluids have the potential to be infectious.

These include:

- Sexual fluids (semen and vaginal fluid).
- Mucus from the vagina and anus.
- Blood.
- Breastmilk is infectious to a baby but is unlikely to be infectious to an adult.
- Tears may be infectious but this is more a theoretical caution than a likely route of actual transmission.

Saliva, spit, urine and faeces are **not** infectious for HIV.

What are the routes of infection?

Common routes include:

- Contact with the mucous membranes of genital or anal tissue. A mucous membrane is a type of tissue that is a less effective barrier than skin. The inner foreskin is also a mucous membrane.
- Ulcers, sores, tears or tiny abrasions (ie that are too small to see) on genital tissue (to the vagina, penis or anal lining).
- Any direct route into the bloodstream including cuts in your mouth. Sharing needles and injecting equipment has one of the highest risks of transmitting HIV. This is because there is a direct blood-to-blood route.

The section on skin, mucous membranes and HIV transmission on pages 46 to 47 shows the different types of cell structure for skin and mucous membranes.

These drawings show the different biology for penile, vaginal and anal sex. They show why some risks are higher than others and why anal sex has an especially high risk.

They show why an uncircumcised man has higher risk for some activities compared to a circumcised man.

Ways that HIV is not transmitted

HIV is not transmitted by day-to-day activities or by contact with objects, food or clothes.

The following list includes just a few examples of questions we get from people worried about catching HIV.

Most of these questions come from a combination of fear and ignorance. They come from a lack of confidence in understanding HIV transmission.

You can NOT catch HIV from:

- Eating any food, cooked or uncooked, with blood on it.
- From a sterile needle at a clinic or other health centre.
- From a human bite.
- From an insect bite including a mosquito bite.
- From an animal.
- From living in the same house as someone who is HIV positive.
- From a sewing needle if you stab your finger.
- From blood on a bus seat that went through your underwear.
- Cleaning nail clippers.
- Using a knife/fork/spoon/cup/plate that an HIV positive person may have used.
- Getting sexual fluid on skin.
- Getting sexual fluid on a cut that has already healed over. A cut has to be open to be a risk of HIV.

Effective barriers against HIV

There are many effective barriers that prevent infection.

Skin: Skin is an excellent barrier against HIV, unless there is an open cut or open wound. Infectious fluid on skin is NOT a route for infection.

Mucous membranes in the mouth, throat and stomach: These membranes are good barriers against HIV infection, so long as there are not cuts, ulcers or sores.

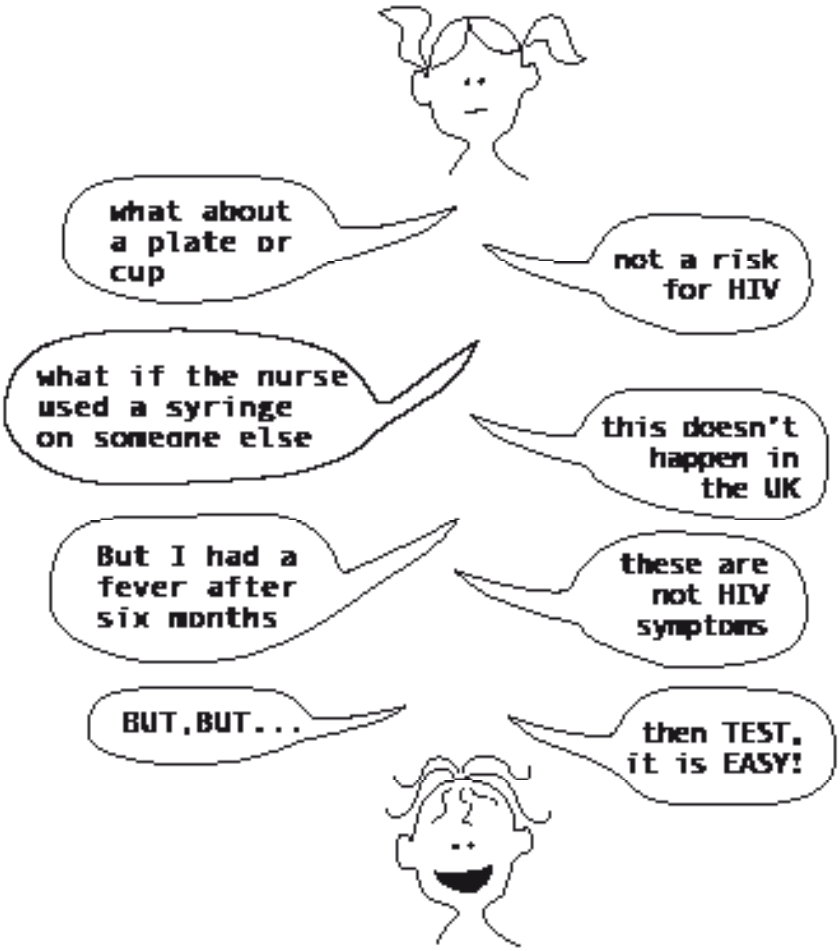
Saliva: Saliva contains proteins and a low salt content that actively reduce its infectiousness. Even when HIV is detected there is too little to cause infection. HIV is not transmitted by kissing including deep kissing. Spit cannot transmit HIV.

Air: HIV is not transmitted by air.

Latex and rubber: Condoms prevent infection from HIV and many other sexually transmitted infections.

Many sexual situations have no risk of transmitting HIV.

These include masturbation (by yourself or with a partner), kissing and deep kissing, receiving oral sex and vaginal or anal sex using a condom correctly.


what about a plate or cup
not a risk for HIV
what if the nurse used a syringe on someone else
this doesn't happen in the UK
But I had a fever after six months
these are not HIV symptoms
BUT,BUT...
then TEST, it is EASY!

Risks for transmission

Between 100% safety and 100% risk

Whether HIV transmission takes place or not is related to many different factors. The most important of these are listed in Figure 1 on page 11.

This is not just about you and your partners' HIV status or what you do with or without a condom. It includes viral load, type of sex, genetics, circumcision etc.

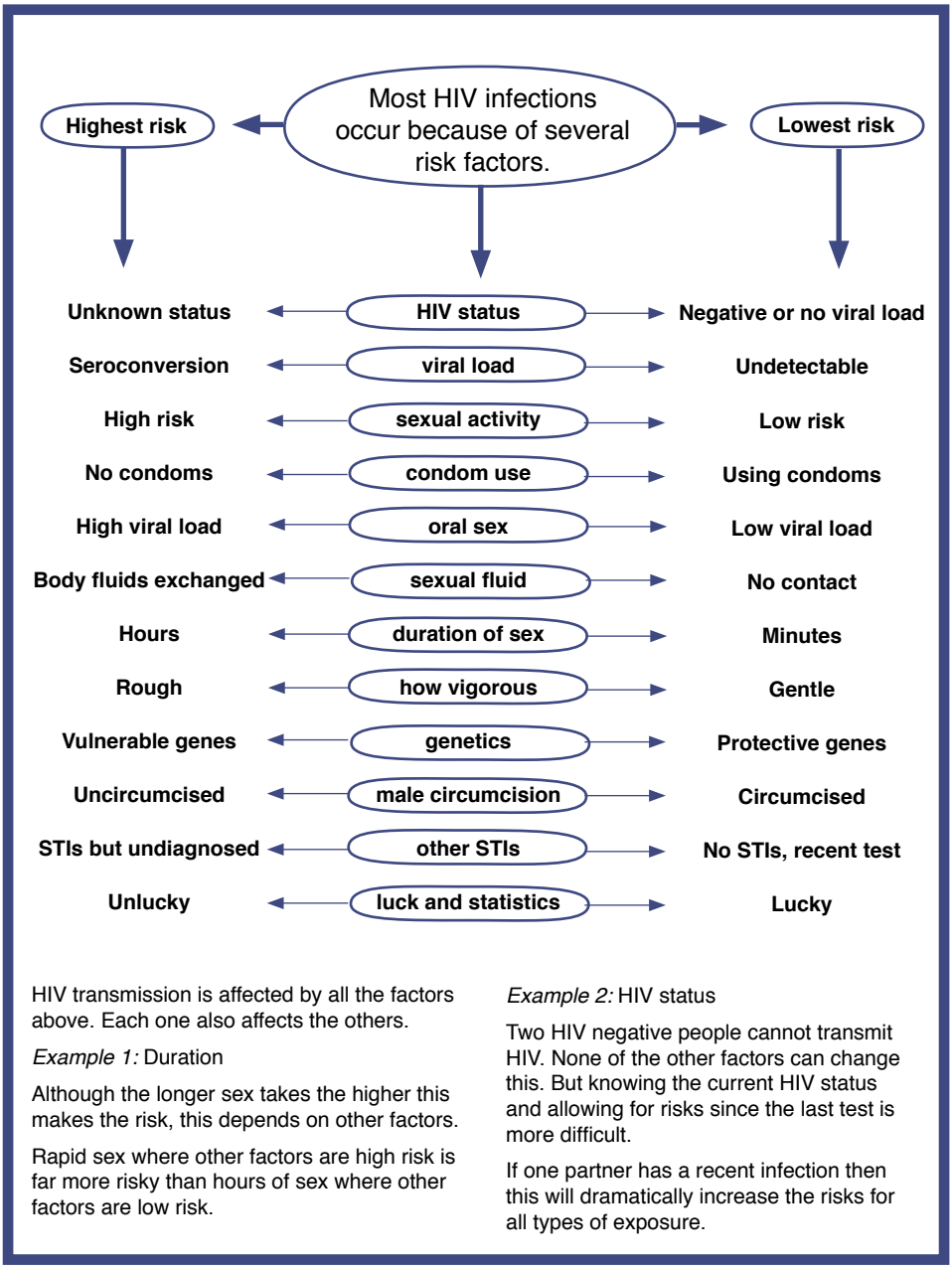
Very few activities have a 100% risk or 100% safety. The risk for any single exposure is usually somewhere in between these extremes.

The risk from each of these factors may be anywhere between highest and zero. These all affect how safe or risky an activity might be and they also interact with and impact on other risk factors.

If you are worried that you may be HIV positive, the only way to know your HIV status is to take an HIV test.

The next pages discuss each of these risks in more detail.

Figure 1: Common risks for transmission



HIV transmission is affected by all the factors above. Each one also affects the others.

Example 1: Duration

Although the longer sex takes the higher this makes the risk, this depends on other factors.

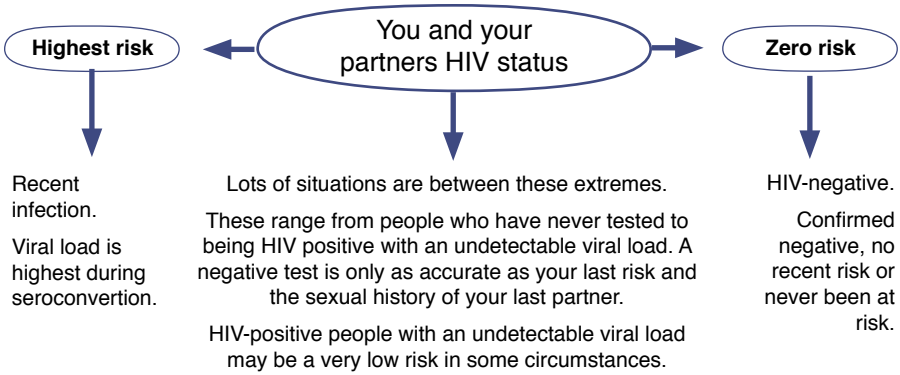
Rapid sex where other factors are high risk is far more risky than hours of sex where other factors are low risk.

Example 2: HIV status

Two HIV negative people cannot transmit HIV. None of the other factors can change this. But knowing the current HIV status and allowing for risks since the last test is more difficult.

If one partner has a recent infection then this will dramatically increase the risks for all types of exposure.

Your and your partners HIV status



When both partners are negative

HIV has to be present for any risk of transmission. If both partners are HIV negative, then transmission cannot occur.

This involves knowing the current HIV status of both you and your partner. This is not the same as knowing their status last year, or the last time either of you tested. Two partners having sex without a condom need to trust that neither partner could catch HIV outside the relationship.

Not all monogamous relationships are monogamous all of the time.

When relationships change or breakdown this often involves other sexual partners.

Sometimes it might be easier to continue using condoms than raising these issues of trust.

HIV negative people do not need to use condoms with each other if:

- They are both HIV negative (confirmed test and no risks since).
- They have had no risks in the three months before their last HIV test and no risks afterwards.
- There is no concern about pregnancy.
- There is no worry about STIs.

GLOSSARY • HIV reinfection: when an HIV positive person gets reinfected with a different strain of HIV • Drug resistance: when HIV changes in a way that stops a drug from working • Undetectable viral load: when a person has a level of HIV in their blood that is too low to be detected in routine tests.

If you don't know your or your partners HIV status

If you are negative and don't know your partners status, it is always better to assume they are positive.

If you don't know your HIV status, assume you are positive (in terms of not putting anyone at risk yourself).

If you do this - rather than assuming your partners are negative - you will not take risks that you are not happy with.

You will feel in control during sex and you will not feel anxious or worried afterwards.

Your HIV status is only as accurate as your last test result, plus the risks you have taken since.

If one partner is positive and one is negative

If one of you is HIV positive and one of you is HIV negative, you need to be careful to reduce the risk of transmission.

This involves learning about which activities have a risk and which are most safe.

If the HIV positive person has an undetectable viral load on treatment then the risk of transmitting HIV is close to zero - even without a condom.

If the HIV negative person is taking PrEP then the risk of transmission is also close to zero - even without using a condom.

PrEP is when HIV drugs are taken by an HIV negative person before and after sex to reduce the chance of infection.

Condoms, if used correctly, protect against HIV, so most sero-different couples become very good at using condoms.

There are lots of couples where HIV status is different. You can have a full and active sex life without the negative partner ever catching HIV.

See pages 16 to 17 on viral load, pages 18 to 19 on condoms and page 35 on PrEP.

"We are both HIV positive and not using condoms is a special part of our relationship. We are both on treatment and have no resistance. We don't usually have other partners so there is no risk of STIs - but we agree to use condoms if this was to happen..."

Steve, Manchester

"I am positive and so is my partner. I am happier to continue using condoms. This is because I feel better to be in control of this part of my life. At least I don't have to worry about my health if he decides to have other partners..."

Paula, London

When both partners are positive: what about reinfection?

Many HIV positive people have sexual partners who are also positive.

If both partners are positive this removes the anxiety of worrying about HIV, even when risks are low.

There are not a great number of benefits from being HIV positive, but for many people, this is one of them.

Knowing about reinfection is important. If either partner has drug resistance or a different type of resistance this can be transmitted.

How often reinfection occurs is not known. The risk is probably at least as low as catching HIV the first time. This will be higher if viral load is detectable and dramatically less for someone on effective treatment.

The implications for your health if reinfection occurs will depend on how serious the resistance is.

We mainly know about reinfection because of cases where the new infection has caused treatment to fail.

This means knowing about both your and your partners treatment history.

If neither of you have resistance, or if you both have the same resistance, then there is unlikely to be a problem from not using condoms (other than STIs or pregnancy).

But if one of you has resistance, especially with a detectable viral load, then reinfection would stop the chance to use these drugs.

Risk of catching HIV when your partner is positive

An early study before ART looked at the transmission rates in over 250 monogamous heterosexual couples where one partner was HIV positive. When condoms were used every time (for over 15,000 sexual contacts) there were no transmissions.

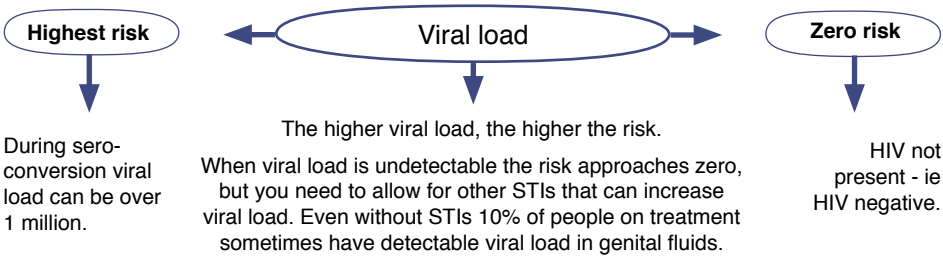
However, 121 couples did not use condoms every time and half of these couples never used condoms. The infection rate in this group was about 5% per year. Over 18 months the risks in this group ranged from 7% to 50% depending on how ill their partners were (ie their likely viral load).

This early study, from before there was effective treatment, showed how effective condoms can be.

It also showed that HIV is not easily transmitted with higher risk sex even when one partner is HIV positive.

(Ref: deVincenzi V et al. NEJM,1994.)

Viral load



Viral load as a factor is more important than condom use.

Viral load determines how infectious bodily fluids are. Levels are highest in someone who is recently infected (up to 40 million copies in a millilitre of blood). By comparison, someone on treatment with an undetectable viral load has less than 50 copies/mL (see page 17 for Figures 2 and 3). [3]

When viral load is very high, normally low risk activities like giving oral sex become a higher risk.

The risk of transmission from sex without a condom is dramatically reduced when an HIV positive person has an undetectable viral load.

Several studies have reported the risk to drop by more than 92% [1, 2].

The single transmission in each study occurred when the positive partner had only just started treatment when their viral load was still high.

in 2016, the PARTNER study reported no linked HIV transmissions when viral load was undetectable.

This was in 900 couples who had sex more than 58,000 times without using condoms. [4]

Importantly, this study included gay couples and anal sex (gay and straight).

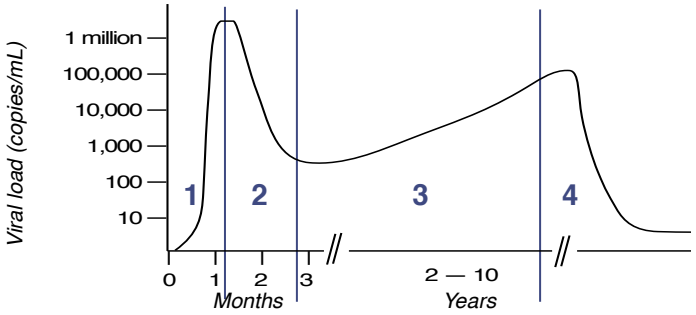
It also included periods when viral load was likely to blip between tests and times when there were other documented STIs.

References

1. Donnell D and others. ART and risk of heterosexual HIV-1 transmission in HIV-1 serodiscordant African couples. 17th CROI, 2010. Oral abstract 136.
2. Cohen M and others. Prevent of HIV-1 infection with early antiretroviral therapy. New England Journal of Medicine, 2011; 365:493-505.
3. Quinn TC and others. Viral load and heterosexual transmission of HIV type 1. Rakai Project Study Group. New England Journal of Medicine 2000; 342: 921-929.
4. Rodger AJ et al for the PARTNER study group. Sexual activity without condoms and risk of HIV transmission in serodifferent couples when the HIV-positive partner is using suppressive antiretroviral therapy. JAMA, 2016: 316(2):1-11. (Free online).

GLOSSARY: mL (millilitre) one thousandth of a litre.

Figure 2 - Viral load levels as HIV infection progresses



1. A few weeks after infection, HIV viral load increases to very high levels. This can be many millions of copies/mL. This makes someone extremely infectious.

2. As the immune system fights back, viral load usually drops to lower levels.

3. Over 2-10 years, viral load increases. It is usually between 50,000-100,000 when HIV treatment is started.

4. Treatment should reduce viral load to less than 50 copies/mL within 3 months. All body fluids become dramatically less infectious.

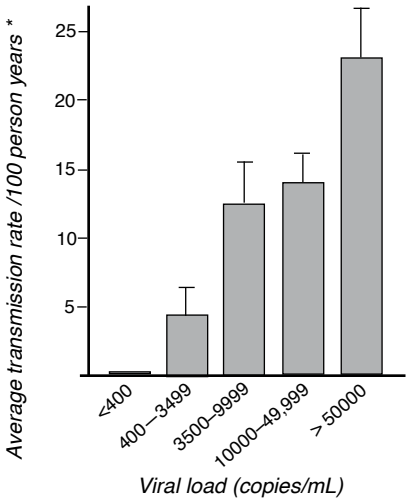
Figure 3 - The relationship between viral load and HIV transmission in Rakai Study [4]

HIV viral load is directly related to the risk of HIV transmission.

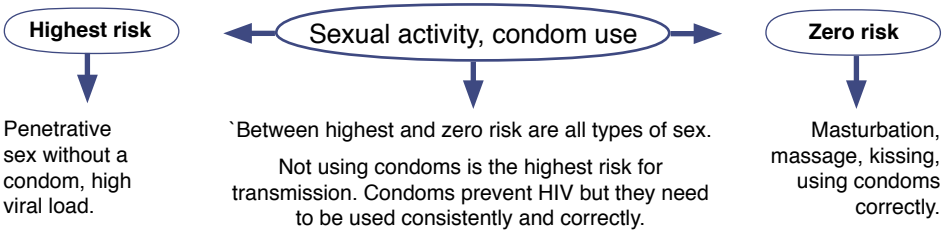
This graph is from a study of over 400 heterosexual couples in Uganda where one partner was HIV positive and the other was HIV negative.

Over 30 months, annual HIV infection rates were 22% when viral load was higher than 50,000 but only 5% when viral load was between 400 and 4000. There were no transmissions when viral load was less than 400 copies/mL.

* A 'person year' in research refers to 12 months of time in a study, ie 100 person years could be 100 people followed for a year or 200 people all followed for 6 months.



Sexual activity and condom use



The type of sex you have (anal, oral or vaginal) and whether or not you use a condom are both related to the risk of getting HIV.

Oral sex is generally a lower risk. Penetrative (anal and vaginal sex) without a condom is generally a higher risk. The risk is highest for the receptive partner in vaginal and anal sex than for an insertive man.

Condoms used correctly protect 100% against HIV transmission and some other STIs. Proper use includes applying lubrication where required to avoid tears and checking it is in place (see Figures 4 and 5).

When research reports that condoms are only 85-95% effective, this is because people who use condoms do not use them every time.

Figure 4 - Using a female condom

Follow the same advice for use, lube, care and disposal as for male condoms (Figure 5).

An inner ring at the smaller end of the female condom should sit deep in the vagina or anus.

Although not approved or marketed for anal sex they are often used for anal sex.

The female condom can be worn on the penis or inserted first into the anus, keeping the large ring outside. The small ring can be removed for anal sex if this is more comfortable.

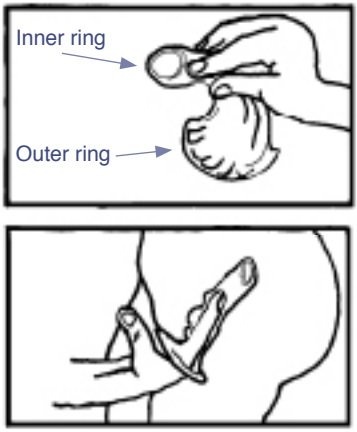


Figure 5 - How to use a male condom

- A condom used carefully will stop HIV. Check the date, open carefully - not with your teeth.
- Check you have the condom the right way round by seeing which way it unrolls.
- Condoms have a teat to collect the semen (cum). Pinch the top (teat) so that air is not trapped inside.
- If you rushed to get the condom out of the packet the teat sometimes gets pushed the wrong way, so always check before starting to put it on.
- Unroll the condom down the length of the penis.

  Put on the condom before you have sex, when your penis is hard.
- Use water-based (not oil-based) lube. Oil breaks down the protection of a latex condom by making the condom porous. This also makes them easier to break.

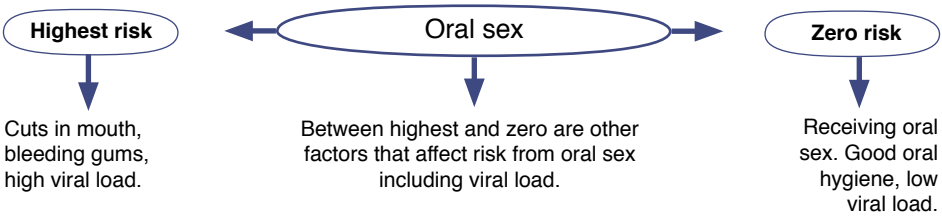
  You can use lube inside as well as outside. But too much lube inside a condom can make it slip off.
- During sex, check the condom is still in place. If sex lasts a long time, also check that it is not broken during sex.
- After cumming, taking the condom off carefully. Hold the condom against your penis as you withdraw. This is to make sure the cum stays inside the condom.
- If you tie the condom in a knot the semen will stay inside.

  Wipe your penis so that cum doesn't get anywhere else.

  Bin the used condom, don't flush it. Think of surfers dude!
- If you have sex again, use a new condom each time.
- Practice will improve your confidence in using condoms.

  Try different sizes, makes and brands of condoms and different lubes to find the ones you and your partner prefer. Practice by yourself or with your partner.
- In the UK, condoms are free from GUM clinics and your GP. They are also sold at chemists, supermarkets, corner stores etc.

Oral sex



Oral sex is generally a low risk activity. It is likely to be zero or close to zero in most circumstances. This will be higher depending on these factors:

- **Whether you are receiving or giving oral sex?**

  Receiving oral sex (having someone's mouth on your genital organs) is likely to be zero or near zero risk. Saliva is not linked to HIV transmissions.

- **Whether you are giving oral sex to a man or a woman?**

  Giving oral sex to a woman is likely to be zero or close to zero risk. Cervical/vaginal fluid, even if infectious, is more difficult to get in your mouth compared to semen.

- **Whether cum or pre-cum or gets in the mouth?**

  If there is no cum or no pre-cum then the risk is zero. But it can sometimes be difficult to know this.

- **Oral hygiene of the person giving the oral sex.**

  The mouth is generally very resistant to infection, but cuts or sores, or bleeding gums, can be an easy route for infection.

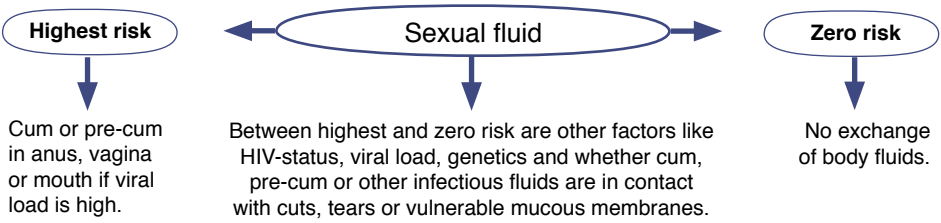
  Most cases reporting oral sex as a risk for HIV report mouth problems. Gum problems are common (perhaps in 10-50% of adults). If your gums bleed when you brush your teeth or floss this will be a route for HIV.

In practice, condoms are very rarely used for oral sex.

If you don't know your partners HIV status, or if they are HIV positive with a detectable viral load, then giving a man oral sex should be considered a risk for transmission. If you have poor oral health this risk may be high.

Up to 5% of HIV infections in gay men may be due to oral sex. These cases are likely to be explained by BOTH mouth/gum problems AND high viral load in the positive partner.

Sexual fluid

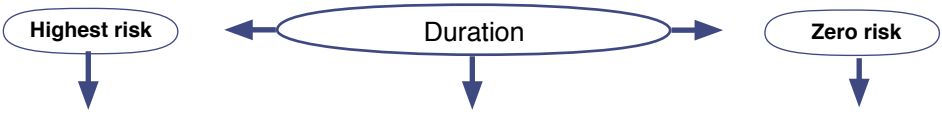


HIV is infectious in semen (cum) and pre-cum, in vaginal fluid and in rectal mucus.

Pre-cum has a lower risk because there is generally less of it. Some men can have more pre-cum than other men have cum. This risk is clearly related to other factors like viral load.

If there is no exchange of an infectious body fluid, HIV cannot be transmitted.

Duration of sex



Long duration.

The longer sex goes on the higher risk of contact with genital fluid and the higher risk of tissue damage (friction etc).

But other factors can make **safe sex for hours** a lower risk than **unsafe sex for seconds or minutes**.

Short duration.

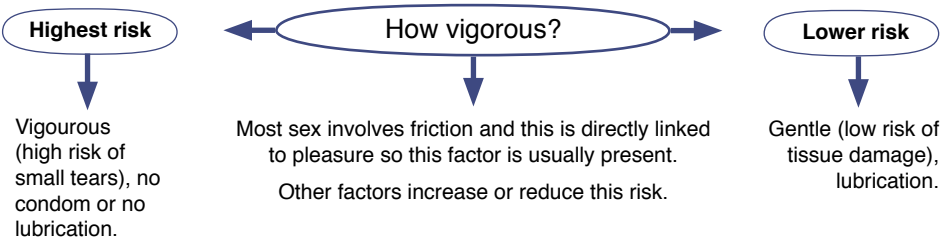
The longer the duration of sex, the higher this risk for transmission.

This is easy to understand. The longer mucous membranes are in contact with body fluids that contain HIV, the higher the chance that HIV may get though.

Sex lasting for longer can also increase the chance of friction causing tissue damage.

However, other factors are more important. **Quick sex without a condom is a higher risk than long slow sex using a condom!**

Vigorousness of sex



The inner surface of the anus and vagina and the surface of the penis are very sensitive and delicate.

The rougher or more vigorous the sex the more likely that microscopic abrasions and friction can damage the surface.

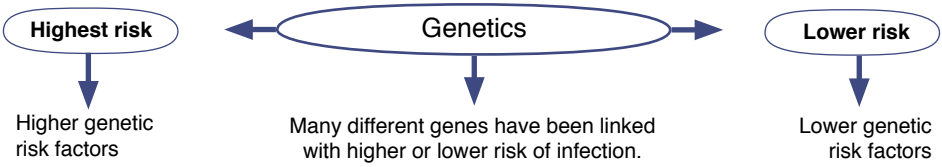
This damage is unlikely to be visible.

Any cuts or tears can act as entry points for HIV in infected genital fluids.

Lubrication can reduce the risk of this damage.

Slippery sex is much less likely to damage genital tissue.

Genetics



Genetics is also related to the risk of catching HIV. Some genes are protective and some genes increase the risk. The same genes affect how fast HIV progresses in an HIV positive person.

For example, a genetic mutation called a CCR5 delta-32 deletion, protects against some types of HIV. Less than 1% of people may have these genes but this is not something that is easy to test.

Tests are expensive and only available in research studies.

Also, up to 10% of new infections are with a type of HIV (called CXCR4) that overcomes this protection.

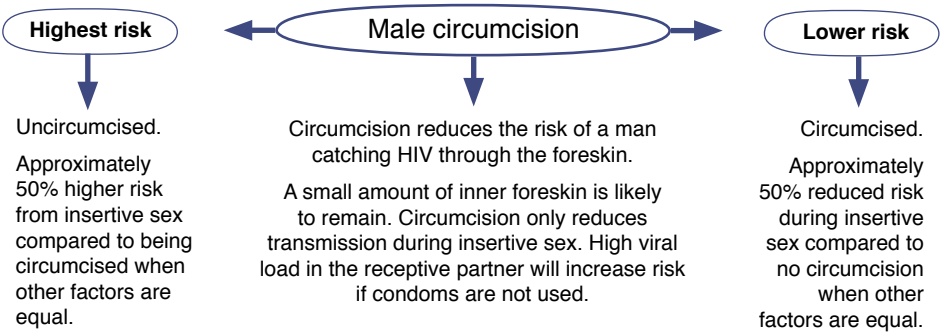
Most people who think they are protected because of their genetics have actually just been lucky.

Just as genetics can protect against infection, genetics can also increase the risk. You or your partner will have different genetics and this is not possible to test.

Although some viruses can be more infectious, individual immune responses have a bigger impact on HIV transmission.

You cannot change your genes (or your immune system) so this is both an unknown and fixed risk factor.

Male circumcision



In heterosexual sex, a circumcised man has a 50% lower chance of becoming infected compared to a man who is not circumcised.

Male circumcision does not reduce the risk of *transmitting* the virus. It does not protect from other routes of infection.

This protection may be because the glans (penis head) in uncircumcised men may contain a higher proportion of HIV target cells than in circumcised men.

The inner foreskin of the penis is a membrane that HIV can easily penetrate.

It is also more delicate and more sensitive to damage than skin. So contact between the inner foreskin and genital fluids (vaginal secretions, semen or rectal mucus) is a way to catch HIV.

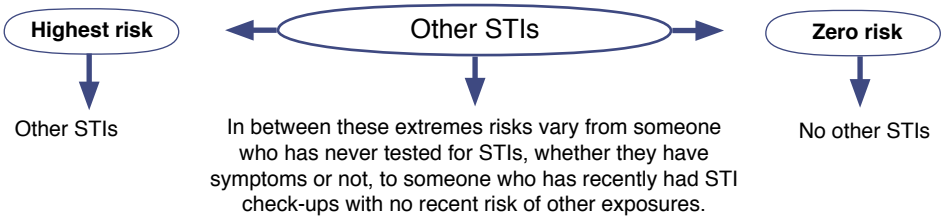
The longer the contact the more time HIV has to overcome this barrier.

The reason similar protection has not been seen in studies of gay men is likely because most gay men enjoy both active and passive sex.

So gay men who are exclusively insertive may have a similar level of protection, but only for insertive sex.

So far studies have not been able to show this.

Other sexually transmitted infections (STIs)



Other STIs in either the HIV negative or HIV positive partner can increase the risk of HIV transmission. STIs include:

- Chlamydia.
- Genital warts (HPV - human pappiloma virus).
- Gonorrhea.
- Syphilis.
- Herpes.
- LGV (lymphogranuloma venereum).
- Hepatitis A and B.
- Hepatitis C (for HIV positive gay men).
- Trichomoniasis.

STIs can reduce immune protection against other infections in HIV negative people.

An HIV negative person with an STI has an activated immune system. This increases the number of cells that HIV needs to infect. So HIV has a better chance of finding one of these cells. See page 47 (Fig 11 c).

With herpes, for example, HIV target cells stay at much higher levels even weeks after a sore has cleared up.

This is why HIV negative people with herpes, are at higher risk of catching HIV, even when they have no current sores.

Any STI that causes a sore makes an easy way for HIV to enter the body.

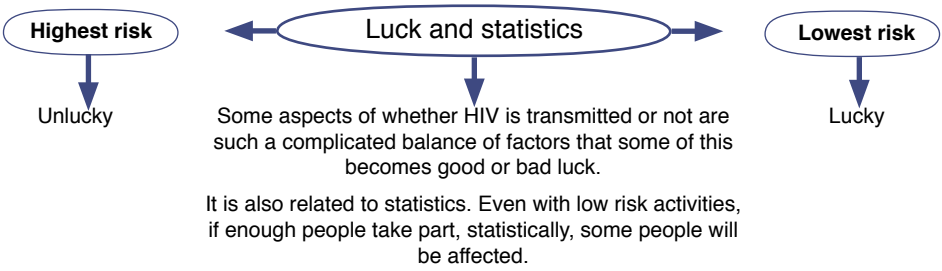
An HIV positive person with an STI may be more infectious for HIV. This may also cause their undetectable viral load in blood to be at higher levels in genital fluid.

HIV positive people may also be at greater risk of catching STIs. For example, hepatitis C (HCV) is sexually transmitted for HIV positive gay men but rarely by heterosexual sex.

The reasons for this are not clear.

HCV is usually transmitted by contact with infected blood.

Luck and statistics



Luck and statistics are really important.

One person might become HIV positive after one exposure. Another person might have many exposures over years and still not become HIV positive.

In many circumstances we cannot explain this. Life is not always fair.

It might be that the risks that are difficult to measure are higher when infections occur. When they don't occur, the same difficult-to-measure risk factors may all be lower.

As these can't be measured or changed, this gets put down to good or bad luck.

Some researchers also emphasise the role of statistics.

Even when one partner is HIV positive and another is HIV negative, the risk from not using a condom one time, might be 1 in 500 (0.2%).

This will be a bit higher for anal sex than vaginal sex, and a bit lower for insertive compared to receptive sex (but remember circumcision). In general these are low single risks.

But new infections occur because it only takes one exposure to transmit HIV.

So if 500 people have sex without a condom, one person might become positive. But if 500,000 people do the same thing, then 1000 people would become HIV positive.

Luck, or chance, or unmeasurable factors are related to time and the number of exposures.

Statistically, most people will be lucky once, but the chance of being lucky 10, or 100 or 500 times gets increasingly slim.

For someone who takes 50 risks, the previous example with odds of 0.2% increases to 9.5%.

This figure comes from mutiplying the risk of not becoming positive 50 times (0.98 x 0.98 x 0.98 etc (50 times) = 90.47) and subtracting the result from 100% (i.e. 90.47 = 9.53%).

HIV testing: feelings of fear, anxiety and guilt

Taking an HIV test can be stressful. It focuses your mind on the real risk, however small, that you might be HIV positive.

Even though 99% of tests in a sexual health clinic in the UK are negative, the worry is still real.

It is also stressful because if the risk was recent it will take time to know if you caught HIV. A test at four weeks gives you a pretty good answer until you get the final test after 12 weeks.

This stress is usually still manageable. But, for a few people, HIV can become an unhealthy obsession that is out of all proportion to their level of risk.

This is often made worse by feelings of guilt related to the circumstances of the risk.

For example:

- If you usually use a condom but didn't on one occasion, or the condom broke.
- If these are your first sexual experiences, whatever your age.
- If you have tried new experiences. For example if you are usually a straight man and had sex with another man.
- If you are in a relationship, gay or straight, and have had sex outside your main relationship.
- If you paid for sex or were paid to have sex.
- If you were sexually assaulted.

An obsessive focus on HIV risk can lead to psychological problems unconnected with the real level of risk.

There is also a concern for current sexual partners. If the risk was from a sexual experience outside your main relationship, this may involve changes to your sex life at home to protect your partner until you have your test results.

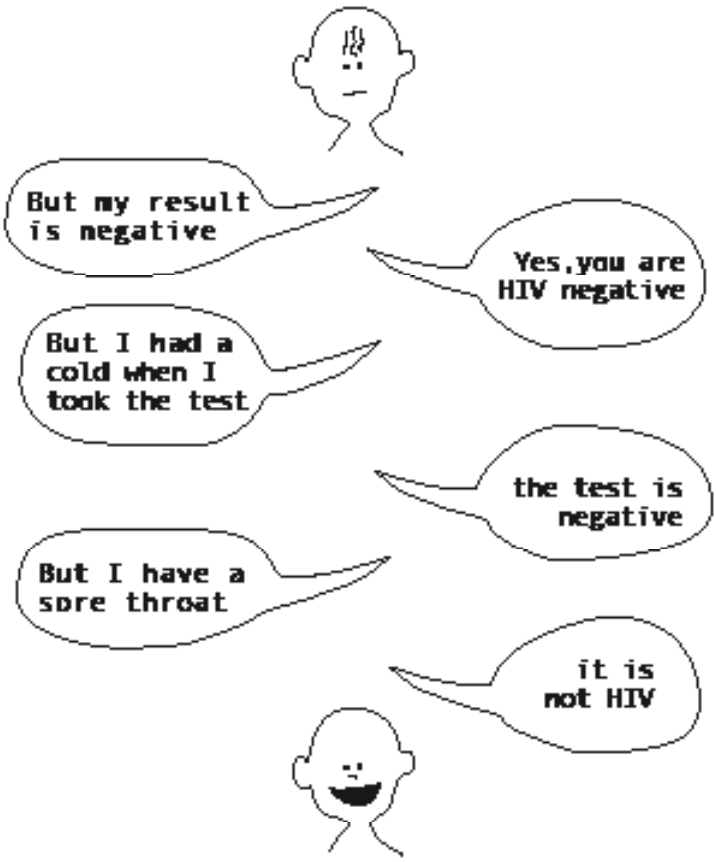
Worry and stress can cause symptoms that people then assume is HIV, especially if the worry has stopped you sleeping.

A health advisor can talk you through this. You also have to fight the urge to believe that the worst outcome is going to happen.

Life is complicated and it is common over a lifetime to do things that you are not always happy with afterwards.

However, if your test result does turn out to be positive, there is a lot you can do. A tiny virus will complicate your life but most people still have the health and the life they had before.

Life expectancy for people who have access to treatment is now close to that of an HIV negative person.


But my result is negative
Yes,you are HIV negative
But I had a cold when I took the test
the test is negative
But I have a sore throat
it is not HIV

Frequently Asked Questions (FAQs)

We are often asked similar questions regarding HIV transmission.

Here are a few of the answers.

Q: Do I have HIV?

A: The only way for you to know this is for you to take an HIV test.

We can provide information about risk, but unless your risk is zero, which is sometimes the case, you need to test to find out.

Testing is easy and free or cheap.

If you are worried that you have been at risk, like millions of other people, just take a test.

Q: What is my risk of HIV?

A: We get many questions about different risks and the likelihood of having caught HIV.

General risks are not very helpful for individual circumstances for two reasons.

1) If you have had any risk that is, for example, 1 in 500, you still need to test to know your result. This remains true whether the risk was much higher (1 in 10) or much lower (1 in 20,000).

2) Because a general risk of 1 in 500 (sometimes quoted for unprotected insertive sex) is meaningless without considering other factors.

   You need to know the chance that your partner is HIV positive, whether they are on treatment, if so, what is their viral load? Some things you won't be able to test for, like genetics.

   Even these few factors could change the same risk of 1 in 500 to as high as 1 in 10 or as low as 1 in 20,000 - or even to zero.

Q: Do I need an HIV test?

A: The only way you can know your HIV status is by taking an HIV test.

If you are sexually active, then it is better for you and your partner(s) to know your HIV status.

HIV testing should be a routine part of looking after your sexual health. As is repeating the test every 6-12 months – or as appropriate – depending on your level of sexual activity and risk. This is important in case you are exposed to HIV in the future.

In the UK and many other countries, at least one-third of people living with HIV are not yet diagnosed.

Q: Can I ask my partner to test to know my risk?

A: No. If you want to know your HIV status you need to take your own test.

You cannot interpret your HIV status based on another person's results.

You also have no right to ask another person to take an HIV test.

This is about **your** sexual health. It is **your** responsibility to test. You cannot impose your worries about your health on another person.

If you test positive, then it makes sense to notify your partners so they can also test.

Q: What is seroconversion?

A: Seroconversion is the period when immune responses to HIV start to develop thoughout the body.

This is usually within the first 2-4 weeks after infection.

During this time up to 80% of people have symptoms. These symptoms can last for a few days or a few weeks.

Q: What are symptoms of seroconversion?

A: Seroconversion symptoms are often described as like a heavy flu.

They can also be similar to symptoms of other sexually transmitted diseases. Stress and anxiety can also produce symptoms even when there is no HIV.

The most common symptoms of seroconversion include:

- Fatigue (tiredness)
- Fever
- Sore throat
- Rash
- Headache
- Loss of appetite
- Aching muscles and joints, and
- Swollen lymph glands.

Having only one or two symptoms is very unlikely to be HIV.

Symptoms are not a reliable way of diagnosing HIV infection.

Firstly, 20% of people who become infected with HIV have no symptoms.

Secondly, none of these symptoms, on their own, are an indication that you have HIV. However, if you get several of these symptoms at the same time AND you have had a recent risk of exposure to HIV, then this MAY be related to HIV.

The only way to know is to test.

This involves waiting four weeks for a valid result. It also involves taking a second test after three months (see page 37).

If you are worried about HIV, contact a doctor or sexual health clinic.

If you think you may have been exposed to HIV, you can talk about whether testing is appropriate.

The clinic will be able to go through your risk in the detail that is needed.

The 'Health services near you' section of the NHS website includes a sexual health menu to search for clinics by town or postcode.

http://www.nhs.gov

Q: Does washing after sex reduce the risk?

A: No. If you are in contact with sexual fluid it is better to wipe this off with a dry cloth. One study reported that infection rates were **higher** in people who washed after sex.

Douching can spread the virus further and soap and water may make a vulnerable membrane an easier barrier to get through.

Lemon or lime juice, even diluted, **increase** the risk of transmission as they damage tissue.

Q: How can my partner test positive and I test negative?

A: It is quite common for one partner to test positive and the other negative, even if they have been having sex without condoms.

Mostly this is explained by luck and the role of other risk factors. Over time, most people will catch HIV if they continue to be at risk.

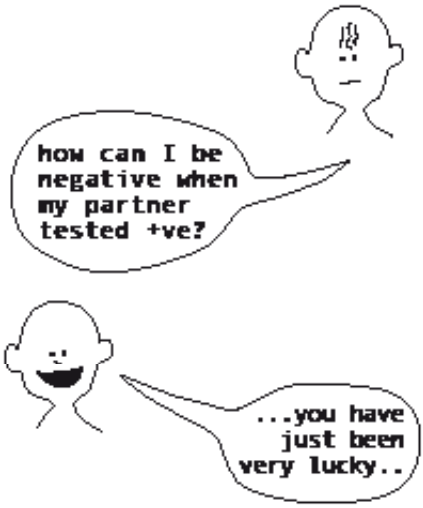
Even though you have been exposed and not infected, you can still catch HIV in the future.

Now you know your partners HIV status you can still stay together and have sex safely.

You could use PrEP to reduce the risk to close to zero. This is a great way to protect your health.

Or if your partner has an undetectable viral load on treatment, the transmission risk also gets close to zero.

The PARTNER study showed this for both vaginal and anal sex and in gay and straight couples.



You can also stay safe and prevent infection by using condoms when having sex and not sharing needles or blood products with your partner.

Even when STIs might have increased the HIV risk, there were no linked transmissions in the PARTNER study. There were no linked HIV transmissions after couples had sex more than 58,000 times without condoms.

Q: Are some people protected from infection?

A: Some people have multiple exposures to HIV, from either one person or several partners, and still do not get HIV.

Sometimes this is related to genetic factors (see page 24) only some of which are understood. Most of the time it is just related to luck.

Although immune responses to HIV can develop in some people after frequent exposure, this is not well understood. Using condoms as protection against infection is still recommended.

Even people with a high level of genetic protection can still become infected.

Q: Are risks different for men and women?

A: In heterosexual vaginal or anal sex, if other factors are equal, a woman has a biologically higher risk of infection compared to a man.

- The surface area of the vagina or anus is far greater than the surface area of the penis.
- The risks of tears to the vagina or anus during sex is greater as the these inner linings are more delicate than the skin on the penis.
- The length of time of exposure of the vagina or anus to semen is greater than the time the penis is exposed to the vaginal fluid or rectal tissue.

Q: Are risks similar for insertive or receptive anal sex?

A: The risk for anal sex, if other factors are equal, is greater for a receptive partner compared to an insertive partner.

- The surface area inside of the anus is larger than the surface area of the penis.
- The risks of tears to the anus during sex is greater as the membrane on the inside of the anus is more delicate than the skin on the penis.
- Pre-cum and cum will stay in the receptive partner for longer than the insertive partner is in contact with rectal tissue and mucosa.

PrEP, PEP and PEPSE

What is PrEP?

PrEP stands for Pre Exposure Prophylaxis.

It is a way for an HIV negative person to use HIV drugs to protect against catching HIV.

PrEP uses two HIV drugs (tenofovir DF and FTC) in one pill. For highest levels of protection PrEP needs to be taken **before and after** sex.

Most PrEP studies – including the UK PROUD study – involved taking one pill every day, even when not having sex. In studies where people were good at not missing doses, there was close to 100% protection.

Other ways of using PrEP have also been studied, which only use PrEP when someone thinks they are likely to have sex. This is called event based dosing (EBD).

One of these studies, called IPERGAY, used a double-dose 24 to 2 hours before sex, with two post-sex single doses 24 and 48 hours after the first dose.

EBD only provides protection for anal sex whereas daily dosing works for both anal and vaginal sex.

PrEP was approved in the US in 2012 and is included as a key recommendation in World Health Organization (WHO) guidelines.

NHS England decide to block access in June 2016. However, many people in the UK buy generic PrEP online. This is just as effective as the brand name drug but much cheaper. It is legal and safe to buy onlne meds.

PrEP: Using HIV drugs before exposure to reduce the chance of getting HIV.

PEP: Using HIV drugs after exposure to reduce the chance of infection

For more information see:

www.IwantPrEPnow.org.uk

www.prepster.info

i-base.info/uk-guide-to-prep

What is PEP and PEPSE?

PEP stands for Post Exposure Prophylaxis.

This involves using a combination of three HIV drugs ***after*** sex if there has been a significant risk - and taking them for a month. The word PEPSE is sometimes used - it stands for **PEP** after **S**exual **E**xposure.

PEP needs to be taken as soon after exposure as possible. This is preferably within hours rather than days. Most guidelines have a cut off for PEP of 48 hours after exposure.

Even though in the UK you can get PEP for up to 72 hours it is much less likely to work when it is used this late.

The longer the delay the less the chance that PEP will work.

Before getting PEP you will need to talk about your risk. This involves talking about the type of sex and whether you know the HIV status of your partner.

You also need to have a rapid HIV test which gives the result within 30 minutes. **This test only tells you whether you were HIV positive three months ago.** It tells you nothing about the recent risk.

You need an HIV test because if you are HIV positive without knowing it, a short-course of treatment could cause drug resistance.

You can get PEP at any accident and emergency (A&E) department of a hospital 24 hours a day. You can also access PEP from a GUM clinic during working hours.

After a course of PEP you need to wait 28 days before testing for HIV. This is because PEP can delay infection.

For more information see:

www.i-base.info/guides/testing/pep-pepse-and-prep

TasP

What is TasP?

TasP stands for Treatment as Prevention.

It refers to the impact of HIV treatment – when taken by an HIV positive person – on reducing the risk of transmitting HIV.

This is because treatment reduces HIV to levels that are too low to be infectious.

This was known in 2001 for heterosexual couples. In 2008, a group of Swiss doctors said that they believed this risk to be zero in a paper called the Swiss Statement. The doctors were sufficiently sure that they said it was safe to have a baby this way, if the man was positive and on treatment and the women was HIV negative.

In 2012, another heterosexual study called HPTN-052 showed treatment reduced the risk of HIV by 96%.

Then in 2014, the PARTNER study reported no linked HIV transmission in over 900 couples and after more than 44,000 times when people had sex without a condom. PARTNER included both gay and straight couples and incuded anal and vaginal sex. See page 16 for more details.

In the UK, every HIV positive person can access HIV treatment if they want to be less infectious to partners.

HIV testing

How soon can I take an HIV test?

This question usually refers to how soon after exposure can someone test for HIV.

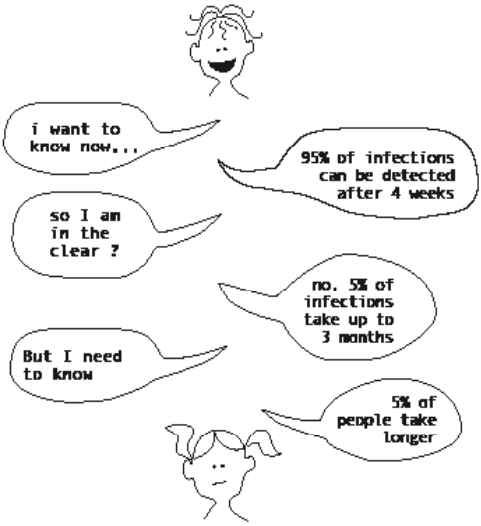
This usually requires waiting 3 to 4 weeks before taking an antibody-based test (see Figure 6).

UK guidelines state that 4th generation HIV tests (antigen/antibody) will detect 95% of infections four weeks after exposure.

A negative test after four weeks then needs to be confirmed with a second test three months after the risk. This is in case you take longer than four weeks to generate an antibody response.

In high risk exposures, especially if symptoms occur, viral load testing is sometimes used after one week.

This includes after a sexual assault or after a needlestick injury to a healthcare worker.



In these cases a viral load test can exclude an infection when there are symptoms.

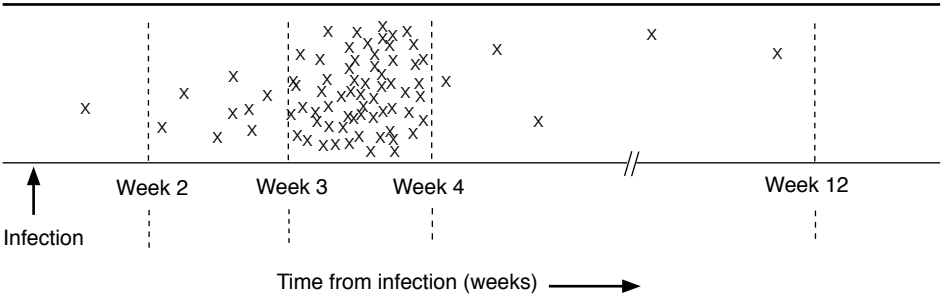
Viral load tests are not approved to diagnose HIV. A negative result still needs to be confirmed by an antibody test three months after the risk.

Figure 6: Recommended time from exposure to HIV test

Day 0	Week 4	Week 12
Potential exposure	4th generation HIV antigen/ antibody tests will detect 95% of infections after 28 days	If negative at 28 days confirm with a second test after three months

A negative HIV test four weeks after an exposure is good news, but you still need to confirm this three months after the exposure.

Figure 7: Time to develop antibodies: 95% by week 4 and more than 99.9% by week 12



Each 'x' represents the time when a different person develops HIV antibodies. Testing is only useful when the majority of infections would be detected. Even though a few people can be detected earlier, testing after only 2 or 3 weeks is not useful.

What is the window period?

The window period is time between potential exposure to HIV infection and the point when the test will give an accurate result.

During the window period a person can be infected with HIV and be very infectious but still test HIV negative.

The window period for a 4th generation antigen/antibody test is four weeks. At this time 95% of infections will be detected (see Figure 7). There is a three month window period after exposure, for the confirmatory result to detect more than 99.9% of infections.

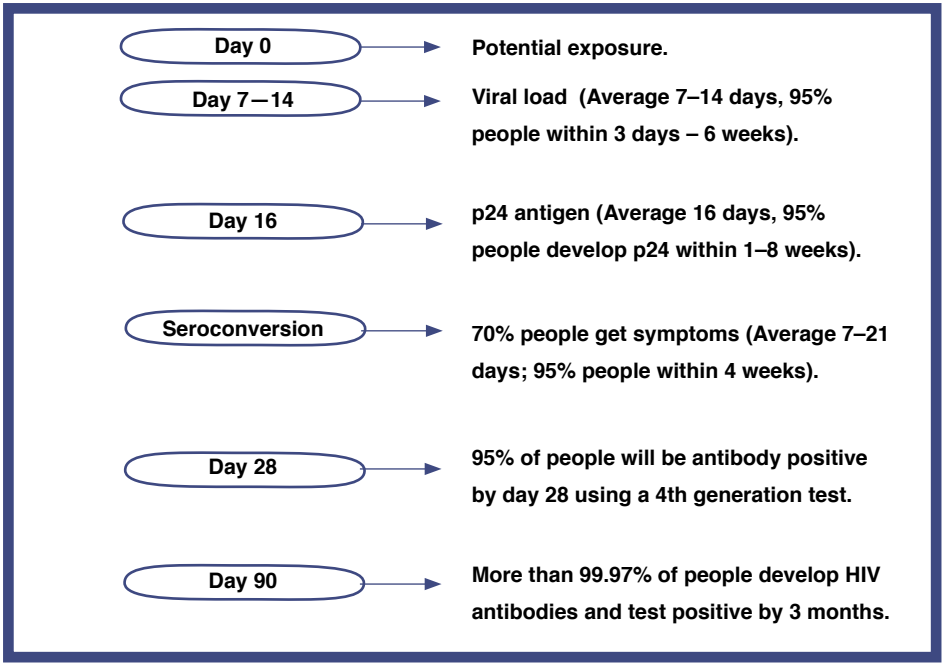
Figure 8 shows the range of times that people can take to respond to HIV infection.

The earliest marker is HIV viral load. This is in the first weeks after infection (usually from 1 to 6 weeks after exposure). A high viral load is related to seroconversion symptoms.

The first HIV protein (antigen) that can be measured is p24 (from 1 to 8 weeks after exposure).

Viral load and p24 tests are not accurate for diagnosing early HIV if the results are negative.

Figure 8: Timeline for HIV infection, immune responses and window period for tests



An HIV antibody response can be detected as early as two weeks in a few people and in more than 99.9% of people by 12 weeks. An antibody test at 4 weeks will detect 95% of infections.

Antibody testing at 4 weeks can give you a good indication of your HIV status, but you need a test at 12 weeks after the exposure to be considered HIV negative.

Where can I test in the UK?

In the UK you can test anonymously at any GUM (genito-urinary medicine) clinic or sexual health clinic. You can test at your GP.

The 'Health services near you' section of the NHS website includes a sexual health menu to search for clinics by town or postcode.

http://www.nhs.gov

Sexual health or GUM clinics often offer more information on HIV and other sexually transmitted infections (STIs).

Community testing sites

Many HIV organisations offer free rapid HIV testing in community venues. These are usually drop-in services with no need to make an appointment.

The Terrence Higgins Trust (THT) have testing centres around the UK. (www.tht.org.uk)

Positive East offer rapid HIV tests in many sites in East London.

http://www.positiveeast.org.uk/testing

LBGT Foundation test in Manchester.

http://lgbt.foundation/get-support/for-men/get-tested

Private clinics charge to test for HIV.

Testing at home

There are also several ways to have an HIV test at home. This includes:

1. Self tests use a pinprick blood sample. You get the result yourself after about 15 minutes.
2. Self sample tests. This is where you take your own sample and post it to a lab. These can use a mouth swab or pinprick of blood.

Free self tests are available as part of some research studies.

Free self sample tests are already available in many parts of the UK.

https://www.test.hiv

Home test are also available to buy online and in some pharmacies (for about £30).

Why do some UK clinics ask people to wait 3 months?

UK clinics should NOT ask you to wait for three months before testing.

UK guidelines say you can be tested 3 to 4 weeks after an exposure.

Ask if your clinic uses 4th generation tests. If so, you can test after 3-4 weeks, and confirm this with a second test after three months.

If your clinic doesn't use 4th generation tests ask why not, and where you can get this test.

Please call i-Base if you want us to help.

What happens when I test?

Before taking an HIV test someone at the clinic should explain what is involved. This should include information about the type of test and test accuracy.

It should include information about what happens if the results are positive. It is important that you know about what happens if the results are positive.

Blood samples can be from a pinprick or having blood taken into a test tube.

Oral tests involve rubbing a swab on your gums to collect samples of cells.

You cannot catch HIV by taking an HIV test.

How long do results take?

Rapid HIV tests can give results in 15—60 minutes, or on the same day.

'Rapid' refers to the time taken for the results and not to the time betwenn exposure and the test.

If samples are being sent to another lab, results can take a few days or a few weeks.

Rapid blood tests put a pin-prick of blood on a testing strip. This test takes about 15-20 minutes so you can get the results whilst you wait.

Some rapid tests also work on oral samples by collecting cells from the surface of the gums. These cells can contain HIV antibodies.

When samples are sent to a lab you can either collect your results in person or they will be posted out to you. It is your responsibility to get the results. A few clinics may give results over the phone.

A positive result from a rapid test always needs to be confirmed by a different laboratory test.

How are results reported?

Your test centre should clearly explain the results of your test.

If you have questions that were not explained, or that still worry you, ask the test centre first.

Rapid blood tests show two lines if positive or one line if negative, in a similar way as a pregnancy test (see Figure 9).

Results from laboratory tests are given as negative, positive or indeterminate.

- Negative or non-reactive means you are HIV negative. You do not have HIV (based on the window period and no recent risks).
- Positive or reactive means the test shows you are HIV positive and you have HIV infection.
- Indeterminate means the test result was unclear and needs to be repeated.

Figure 9: Example results from a rapid test

Non-reactive result (HIV negative)
Only control area shows a line
No line in the test area

Reactive result (HIV positive)
Line in both control and test area
(may be different strengths)

Invalid result (repeat the test)
No control line showing

What does a number on my negative HIV test result mean?

Some tests (not usually in the UK) include a number (ie 0.31 or 0.64).

- If the number is less than 1.0 the result is negative.
- If the result is above 1.0 the result is positive.
- If the result is very close to 1.0 (higher than 0.90) the doctor may repeat the test.

A higher number below 1.0 does NOT indicate a higher chance of having HIV.

Are HIV tests accurate?

Yes. Modern HIV tests are very accurate.

This accuracy has to be considered with the window period in mind.

For example, 4th generation tests will pick up 95% of infections at 28 days after exposure.

A confirmatory test three months after the exposure is always recommended. This is because 5% of people take this long to show a positive result.

A positive test result is routinely confirmed using a different type of test called western blot. The western blot test looks for immune responses to specific HIV proteins and is 100% accurate as the second test.

Can anything affect the result of my HIV test?

HIV antibody tests are not affected by other circumstances.

This includes infections, medications, most vaccinations, putting on weight, eating or drinking anything before the test, use of alcohol or recreational drugs, mouthwash or time of day.

Your test result is accurate even if you had flu or a cold or are using any medication.

You do not need to fast before your test. Food and drink do not affect the results.

Do I need to take another test?

This will depend on how recent your last exposure was.

As part of good practice, if the exposure was less than three months ago then testing at three months after exposure is usually recommended.

Can it take longer than three months for a test to work?

This is so unlikely that UK guidelines consider a negative result three months after an exposure as being HIV negative.

Is a negative test 100% accurate?

HIV tests after the 3 month window are more than 99.97% accurate. They work for all types and subtypes of HIV.

Very few medical tests have 100% accuracy. There will still be rare cases where someone is HIV positive and not picked up.

However, HIV tests are one of the most accurate tests for any medical infection. Tests showing a negative result are interpreted as negative.

This assumes you have had no further risks.

At this point you can stop worrying. This is the purpose of testing. Learn from the experience you have gone through in taking a test.

Learn about how to protect yourself in the future so you don't have to go through this stress again. This will enable you to make informed decisions and to look after your sexual health.

If the result is negative four weeks after the exposure, this tells you that you are likely to be HIV negative. The test after three months is needed to confirm this.

What is a 'false negative' test result?

A false negative test result occurs when the test shows negative and the person is really HIV positive.

This is very rare and usually occurs during the window period when people are newly infected but the test can't quite pick up the infection.

As with other types of tests, there is always be a small margin of error. With antibody-only tests (3rd generation) only 0.3% of tests (3 tests in every 1000) will be a false negative after 3 months.

With 4th generation tests this is even lower. In practice, a negative result after three months means you do not have HIV.

You do not need to test again unless you expose yourself further in the future.

What is a 'false positive' test result?

A false positive test is when the test result shows positive but the person is really negative. This can happen with antibody tests when the test picks up antibodies for other infections.

Approximately 1.5% (15 out of every 1000) antibody only tests are a false positive. The fourth generation tests have a much lower chance of a false positive.

This means that a small percentage of people who test positive on a rapid test (where the results are given within an hour) may turn out to be HIV negative.

A second blood sample will be tested in a lab to look for this.

If your blood test was originally performed in a laboratory, a positive result would have been confirmed by a second test before giving you this result.

All positive laboratory tests in the UK are routinely confirmed using a second type of test called western blot that is 100% accurate.

What happens after my test?

If you have had your test results and the results were positive, these will need to be confirmed.

If confirmed you will be referred to an HIV clinic where a doctor and health advisor will be responsible for your future care. Page 45 includes information about what to do if your result is positive.

If the results were negative, then you may be told to have a confirmatory test in a few months time.

It is rare for the confirmatory test to be positive, but this is important to rule out late seroconversion.

What if I still think I have HIV?

A few people test many times after one exposure. Even when the results are all negative they refuse to believe the results.

Sometimes the anxiety causes symptoms that someone mistakenly thinks are related to HIV.

In these cases psychological help or counselling from NHS doctors or nurses is more appropriate than further tests.

If you have had more than one test and all results are negative, without any additional exposures, then you do not have HIV.

What happens if I am HIV positive?

If your test results are positive with a rapid test then you first need a lab test to confirm the result.

If your positive result came from a lab test, then the confirmatory test will already have been done.

If you are HIV positive then your test centre will arrange for you to speak with a doctor. It is important that you then have a few other tests to see how strong your immune system is.

You will need time to come to terms with this news.

With support and information this will become easier. Good information will help you to make informed decisions about your health.

Learning you are HIV positive is never great news. But HIV is now largely a treatable and manageable infection.

HIV treatment can give you a near normal life expectancy with a good quality of life.

Even before the new treatments, HIV positive people wanted to continue to live life to the full. There are very few things that you can't do now because of this virus.

For further information or support then please contact i-Base via our website (www.i-base.info) or our treatment information phoneline.

What if I am diagnosed in pregnancy?

HIV testing is routinely offered to every woman as part of prenatal care.

The almost universal use of HIV testing has reduced the number of babies born with HIV in the UK.

This is because diagnosing HIV during pregnancy allows the mother to receive treatment that also protects the baby. If your HIV is managed correctly, the UK has one of the lowest rates of transmission to the baby (less than 1%).

If you are diagnosed during pregnancy you should get special care and counselling.

For more information, see the testing section of the i-Base guide "HIV, Pregnancy and Women's Health".

http://www.i-Base.info/guides

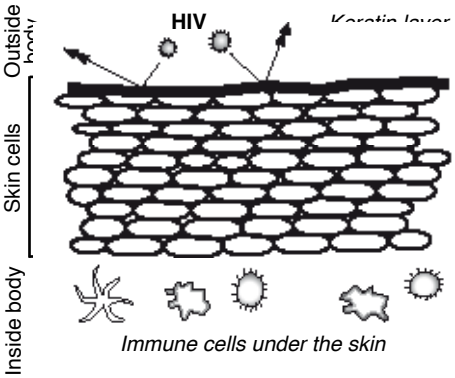
Skin, mucous membranes and HIV transmission

Figure 10 shows the cellular structure of skin compared to mucous membranes.

Figure 11 shows the earliest stages of infection.

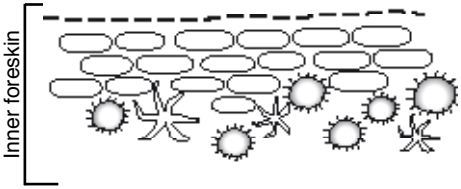
Figure 10: Cell structure of skin and mucous membranes

(a) Skin: tightly packed cells are a barrier to HIV



Most of your skin (on your hands, arms, legs, stomach, back, etc) is a thick layer of tightly packed cells that is further protected by a keratin layer. This stops HIV getting to the immune cells that it needs to infect.

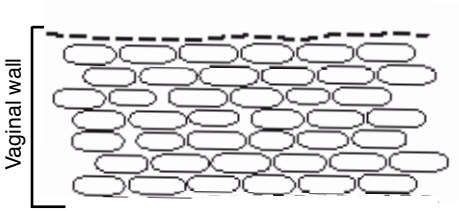
(b) Cells in the inner foreskin of the penis



Tissue on sexual organs can be different from skin. The inner foreskin is a mucous membrane with a thin layer of cells with no keratin layer that is easy for HIV to cross.

There may be a higher concentration of HIV target cells in the glans (penis head) of an uncircumcised man.

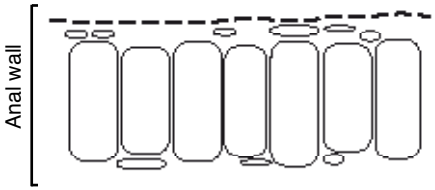
(c) Cells in the vagina wall



Mucosal tissue inside the vagina has many layers but the cells are more loosely packed.

HIV can get through loosely packed cells. This is why vaginal sex without a condom is such a high risk for a woman to catch HIV.

(d) Cells in the anal wall



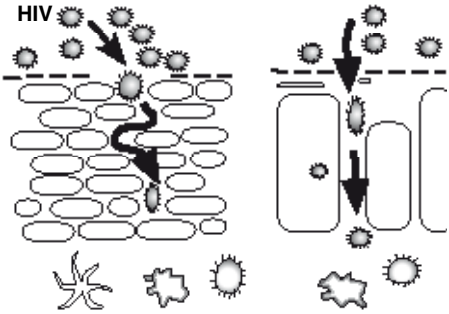
The anus is also lined with a mucous membrane. This tissue is made up of a single layer of column shaped cells. This is even less of a barrier against HIV compared to the multiple layers of cells that line the vagina.

This is why unprotected anal sex is a much higher sexual risk for the receptive partner.

Electron microscope image of cells in anal wall

Figure 11: How HIV crosses skin or mucosal barriers

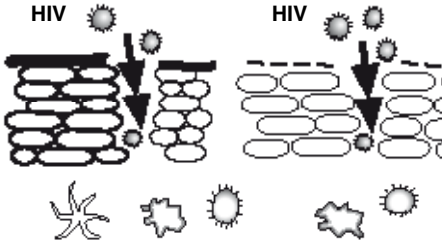
(a) Genital tissue is an easy target for HIV



Vaginal tissue, rectal tissue and the inner foreskin are all mucous membranes. Cells in mucous membranes are more loosely connected compared to skin.

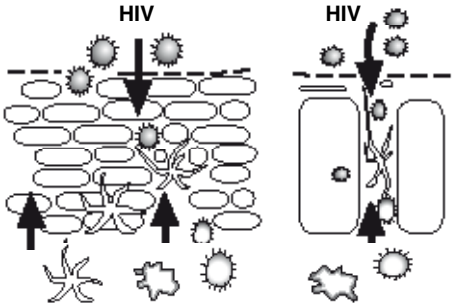
This makes it easier for HIV to penetrate.

(b) Tiny cuts or tears are an easy route for HIV



If you get a cut in your skin or your mucosal membranes have microscopic tears, HIV has an even easier way to reach target cells.

(c) Some STIs increase the risk of infection



Immune cells move up through skin cell layers to get closer to an infection

If you have a sexually transmitted infection (STI) your body sends immune cells to genital tissue. These immune cells move closer to the surface to reach the infection.

For most infections this is a good thing.

But this just makes it easier for HIV to establish an infection. These immune cells are the cells that HIV needs to target and infect.

Because there are more of these cells, and they are easier to find, some STIs increase the risk of acquiring HIV.

Additional online information

Three appendices have been produced with this guide that include more technical details about HIV testing.

Print copies of this booklet do not include these sections which are all available online:

http:///www.i-Base.info

These additional 14 pages are only available in the online and PDF versions.

Appendix 1: Different types of HIV test

This section explains in detail the difference between the main types of tests used to test for HIV and when they are used.

These are:

- Antigen only (p24 tests). These are rarely used.
- Antibody only tests (Ab). These are rarely used because of more recent availability of joint Ag/Ab tests.
- Combined antibody-antigen tests. These are the most commonly recommended tests in the UK. These test for both antibodies to HIV and p24.
- Viral load tests (RNA PCR test)

  Viral load tests are not approved to diagnose HIV but are sometimes used in some circumstances.

Appendix 2: Theoretical risk, population risk & individual risk

This section discusses the differences between individual risk and population risk. Sometimes what is a very small individual risk may still not be acceptable for many people.

It also includes a brief section about how difficult it is to judge risks and how we approach the idea of risk in daily life.

Appendix 3: How HIV tests work

This section describes how HIV tests work in more detail.

Sometimes i-Base is asked technical details and so these might be useful for some people.

This section talks about antigens and antibodies and explains how each of these tests work.

It also explains the differences between Elisa and western blot tests.

It also includes more detailed information and the timing of different stages of early infection and seroconversion.

If you do not have access to the internet please contact i-Base and we can post you a print out of these sections.

Feedback

Your feedback on this guide helps us develop new resources and improve this resource. All comments are really appreciated. Comments can be posted free to:

FREEPOST RSJY-BALK-HGYT, i-Base, 107 The Maltings, 169 Tower Bridge Rd. London SE1 3LB.

Or made directly online at: http://www.surveymonkey.com/s/Z9BP2FY

1. How easy was the information in this guide to understand?

☐ Too easy ☐ Easy ☐ Difficult ☐ Too difficult

2. How much of the information did you already know?

☐ None ☐ A little ☐ Most ☐ All

3. Did the information help you feel more confident when speaking to your doctor?

☐ Yes, a lot ☐ Yes, a little ☐ Maybe ☐ No

4. Which information did you find most useful?

5. Do you still have questions after reading this guide? Please give examples.

Please include a contact email address if you would like us to reply.

6. Any other comments?

Contact details (if you would like a reply): Name _____

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If you post this form back, please consider filling in the feedback form on the reverse, answers will remain anonymous.

The treatment guides listed below are written in everyday language.

HTB is written in more technical medical language.

Please send me	No. of copies
HIV testing and sexual transmission *(this guide)*	_____ ☐
Introduction to Combination Therapy	_____ ☐
Guide to hepatitis C for people living with HIV	_____ ☐
HIV, Pregnancy and Women's Health	_____ ☐
Guide to Side Effects and Other Complications	_____ ☐
Treatment passport (to record your treatment history)	_____ ☐
HIV Treatment Bulletin (HTB)	_____ ☐

Name .....

Address .....

.....

Postcode ..... **Tel** .....

Email .....

Further information

If you would like to talk to someone about **HIV treatment** contact the i-Base information service by phone or email.

0808 800 6013

questions@i-Base.org.uk

If you would like to talk about **HIV testing and the risk of transmission** call your local GUM clinic or the Terrence Higgins Trust on 0808 800 1221.

WWW...

Selected websites

The following websites include information on HIV, safer sex and sexual transmission of HIV.

- MTV online game about HIV status

  http://posornot.com
- UK site for gay men and men who have sex with men

  http://www.gmfa.org.uk
- UK Heath information organisations

  http://www.hivscotland.com

  http://www.tht.org.uk
- US medical site developed for younger people

  http://www.iwannaknow.org
- Information on health and sexuality

  www.avert.org/young-gay-sex.htm

References

Full references for the medical information are available in the online version of this guide.

http://www.i-Base.info/guides

Call us on
0808 800 6013

i-Base Treatment Information Phoneline

Monday to Wednesday
12 noon to 4pm

i-Base can also answer your questions by email or online

questions@i-Base.org.uk
www.i-Base.info/questions