

**HIV
&
hepatitis
A, B, & C**

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Introduction

This fact sheet is for people with HIV who have been diagnosed with any of the following (or any combination):

- hepatitis A virus (hep A)
- hepatitis B virus (hep B)
- hepatitis C virus (hep C).

Having HIV and hepatitis is commonly referred to as co-infection.

Hepatitis is the inflammation or enlargement of the liver, but the term is most commonly used to describe a group of viral infections that cause liver inflammation or liver damage. Having HIV and hepatitis co-infection is not uncommon. In Australia, about 12% of people who are HIV positive also have the hep C virus. About 6% have the hep B virus and 50% have had hep A at some time. A small percentage of people will have chronic infection with hep B and/or hep C and HIV. Hepatitis A does not cause chronic infection.

Even if you don't know your hepatitis virus status, you may be highly anxious about co-infection. This fact sheet is designed to answer questions you may have about:

- how hep A, hep B and hep C are transmitted
- which virus to treat first if you're co-infected
- how chronic hep B or hep C affects treatment choices for HIV
- how hep B or hep C might affect the progress of HIV
- how HIV affects the progress of hep B or hep C
- implications for sex and sexual partners
- implications for family

Infection with each hepatitis virus is discussed separately.

About hepatitis A

Hepatitis A does not usually cause serious illness. Typically, someone infected with hep A will be ill for a short time with nausea, fatigue, loss of appetite, abdominal pain, fever, vomiting and jaundice (eyes and/or skin turns yellow). Urine becomes darker in colour and faeces lighter. However, some people who get hepatitis A will have no symptoms at all and may not even be aware they have had the virus.

Hep A only causes severe illness in a person who also has other liver disease such as chronic infections with hep B or hep C. After infection, the hep A virus is cleared from the body. It does not cause chronic infection so hepatitis A is never long term or on-going.

Once recovered, a person has immunity from hep A for life.

Transmission

Hep A is transmitted when infected faeces or secretions from an acutely infected person get into another person's mouth (e.g. from rimming or rosebudding/leafing), or from consuming contaminated food or water or swimming in water contaminated with sewage.

Vaccine

An effective vaccination for hep A is available which gives protection after 2 or 3 shots depending on the vaccine used. Havrix protects against hep A. Twinrix is a combination vaccine for protection against both hep A and hep B .

It's important for anyone who has hep B, hep C or HIV to be tested for hep A. If they do not already have immunity, they can reduce further risks to their health by being vaccinated against hep A.

About hepatitis B

Infection with the hep B virus has two phases: acute and chronic.

Acute infection develops shortly after exposure to the virus. During this phase, a small number of people develop a very severe, life-threatening form of acute hepatitis called fulminant hepatitis.

Chronic hep B is when the infection lasts longer than 6 months. Once the infection becomes chronic, it may never go away completely.

About 95% of adults who are infected are able to fight off the virus so their infection never becomes chronic. People who go on to develop chronic infection are called chronic carriers. About 65% of this group don't get sick or die from hep B but they can transmit it to others. The remaining 35% will develop complications of chronic hep B which can be extremely serious.

The rate of chronic infection is very different in babies who contract it in the womb or at birth. Only 10% are able to fight it off, and 90% develop chronic infection.

The serious complications of chronic hep B include liver damage which, in a small number of people, continues until the liver becomes permanently scarred. This is called cirrhosis. In a person with cirrhosis, the liver is no longer able to carry out its normal functions, leading to liver failure. The only treatment for advanced liver failure is liver transplant. Liver transplants, when appropriate, are available for co-infected patients in Australia. Chronic hep B may also lead to liver cancer (hepatocellular carcinoma). All of these conditions – cirrhosis, liver failure or liver cancer – are potentially life threatening.

Transmission

Hepatitis B is transmitted via blood or other bodily fluids such as saliva, vaginal secretions, semen and breast milk. It can be transmitted by the sharing of any injecting equipment (not just needles), by sexual contact that may tear or break the lining of the anus or vagina and from mother to child during breastfeeding.

The transmission routes for hep B and HIV are similar so it's not surprising that there is a high frequency of co-infection. Approximately 6% of the people in Australia who are infected with HIV are also chronically infected with hep B. Sexual activity and injecting drug use are the most common routes of transmission of hepatitis B among people also infected with HIV.

Avoiding transmission

- If you are sexually active, practise safe sex. Correct use of latex condoms can help prevent transmission of hep B, but even when used correctly, condoms are not 100% effective at preventing transmission.
- If you inject drugs, don't share needles or any other injecting equipment.
- Don't share anything that might have blood on it, such as a razor or toothbrush.
- Think about the health risks if you are planning to get a tattoo or body piercing. Ideally get it done professionally. Don't opt for home piercing or tattooing.
- In general health care, health care workers should follow standard precautions and handle needles and sharps safely.

What effect does hep B have on HIV – and vice versa?

There is no evidence that hep B speeds the progression of HIV or that hep B has any effect on the way HIV responds to antiretroviral therapy (ART). However, when a co-infected person starts ART, there may be a higher risk of the antiretroviral drugs causing damage to the liver.

This is known as hepatotoxicity. A series of blood tests called liver function tests (LFTs) can be used at this time to carefully monitor how the liver is coping.

People with hep B who also have HIV are less likely to fight off the hep B than those who don't have HIV. As a result, they are more likely to develop chronic hep B and are at increased risk of cirrhosis, liver cancer or liver failure.

The degree of liver damage from hep B is related to the amount of active virus in the blood and liver. Regularly measuring the amount of hep B in the blood gives a good indication of how fast the virus is multiplying. The test which does this is called the HBV (hepatitis B virus) DNA test.

Because having HIV increases the risk of developing chronic hep B, it's recommended that, where possible, co-infected people avoid developing severe immune deficiency – that means having a CD4 count of less than 200. If you are co-infected with hep B and HIV and have not begun ART, you should consider starting it before your CD4 count drops this low in order to give your body a better chance of fighting the hepatitis B.

Treatment

Two of the three antiretroviral drugs commonly used for treating HIV will also have strong effects against hepatitis B.

The decision to start medication for the treatment of hep B and HIV is made by you and your doctor, often in consultation with a specialist in diseases of the liver (a gastroenterologist or hepatologist). The medical experts will look at:

- HIV viral load
- CD4 counts
- liver function (LFTs)
- The amount of hepatitis B virus (HBV DNA test)
- Sometimes liver biopsy.

Other tests may be recommended, such as a liver ultrasound or FibroScan. FibroScan is a new development, a non-invasive device that measures the elasticity of the liver and in some circumstances can be used as an alternative to biopsy. It is only available in a handful of hospitals in Australia.

So, people with hep B/HIV co-infection who begin treatment with HIV antiretrovirals are recommended to use drugs that treat both viruses. The treatment is continued until it stops being effective against one or both viruses. After this, some components of the treatment may be changed depending on which virus has becoming resistant to the treatment.

Meanwhile, people who develop chronic hep B can help themselves by avoiding high alcohol consumption and being overweight. Ideally, people with chronic hep B should stop drinking alcohol altogether.

Vaccine

A number of vaccines are available to combat the hep B virus (Engerix-B, Recombivax HB, or Twinrix). A total of 3 doses of the vaccine are given over several months. This vaccine has successfully prevented infection in people exposed to the virus. Vaccination against hepatitis B is recommended for all children younger than 19 years and can be given as part of their normal vaccination schedule.

All sexual partners of people with hep B infection should have their immunity checked and should be vaccinated if they are not immune.

Hepatitis B immune globulin (BayHep B, Nabi-HB) is given along with the hepatitis B vaccine to unvaccinated people who have been exposed to hepatitis B. These include close contacts of people with hep B infection, health care workers who are exposed to hep B-contaminated blood, and infants born to mothers infected with hep B. It also includes people who have finished only part of the 3-shot vaccination series. Giving the immune globulin and the vaccine together in these situations prevents transmission of the disease in 80 to 90% of cases.

About hepatitis C

Infection with the hepatitis C virus is potentially serious but not everyone who gets the virus will get sick or have any serious liver problems. There are a number of ways a person might be affected once they get the hepatitis C. If you're diagnosed with hep C, it's important to remember that, just as with HIV, treatment is changing and improving all the time.

There are several genetic 'types' of hep C virus, each of which is called a genotype. These can be readily distinguished by testing. Genotypes 2 and 3 respond better to treatment than genotypes 1 and 4.

Here are some of the things that can happen following infection with the hep C virus.

Your body may deal with hep C of its own accord, and you may never get sick

In about 25% of all people who contract hepatitis C, the virus will be cleared from the body without treatment. If this happens, it is usually within 12 months of being infected.

To check that the hepatitis C has been cleared, a person must have two tests for hepatitis C, 6 months apart; both these tests must be negative. These are called PCR (polymerase chain reaction) tests and they measure the level of virus in the blood. In addition, blood tests for liver function must be normal. If this happens to you, you do not have chronic hepatitis C.

The hep C virus may remain present in your body

About 75% of people who contract the hep C virus will be chronically infected. This means that they have consistently detectable hep C virus (measured by a PCR test) in their blood for a period of longer than 12 months. People in this group may be at risk of developing liver problems over time.

Chronic infection with the hep C virus

The course of hep C in people with chronic infection can vary, depending on whether they have treatment, whether that treatment is successful and whether their liver is at risk from other infections. As with hep B, high alcohol consumption and being overweight are two factors which might lead to a poorer outcome. It is important that people with chronic hep C reduce or preferably eliminate their alcohol consumption.

The hep C virus differs from HIV in that the amount of hep C virus in your blood is not an accurate indication of whether or not you are likely to get progressively sick with hepatitis.

Even if you are one of the 75% of people chronically infected with the hep C virus, it is possible that you won't develop any severe liver problems. Many people with chronic infection (40%) have consistently normal LFTs and their outcome is good. Others with persistently abnormal LFTs (chronic hepatitis) are likely to develop ongoing liver problems, although these can still develop with normal LFTs.

As with hepatitis B, some people may develop permanent scarring of the liver, called cirrhosis (see About hepatitis B). A very small number of people may go on to develop liver cancer or liver failure. Out of every 100 people initially exposed to the hep C virus, it is thought between 1 and 5 people may develop these extremely serious problems over time. The development of cirrhosis and liver failure appears to be more common in people co-infected with HIV than in people infected with hep C alone.

Some people with chronic hepatitis C will have no symptoms or very few. However, as with hepatitis B, people without symptoms can still transmit the virus to others.

Transmission

Hepatitis C is a blood-borne virus and is transmitted when a small amount of blood from an infected person enters the blood of an uninfected person.

Injecting drug use involving the sharing of needles and other injecting equipment is the main way by which the hep C virus is transmitted in Australia. However, people have also contracted the hep C virus through:

- tattooing and body piercing where equipment is not sterile (e.g. in prisons, where there's no access to clean equipment)
- blood transfusion before blood banks routinely screened donations for the hep C virus (i.e. before 1990)
- pregnancy, from a mother to her child (risk is about 10%, but this significantly increases with co-infection with HIV)
- sharing razors, toothbrushes or other things that may have tiny traces of blood on them, and sharing nasal straws (e.g. as used with cocaine and other illicit drugs).

Like HIV, the hep C virus needs to be present in the blood in certain amounts before it can be transmitted via blood-to-blood contact. In people with co-infection, the presence of HIV can lead to increased levels of hep C virus in the blood. There's some evidence, therefore, that HIV may increase the risk of hep C virus being transmitted: this has certainly been shown in mother-to-child transmission. If you have HIV and hep C, it's important to be aware of this possibility. Sexual transmission of hep C is a controversial subject, but it can occur through blood-to-blood contact and has been reported in men who have sex with men, especially if there are other STIs (sexually transmissible infections) present such as syphilis. Sexual activity which increases the risk of abrasions or tears in the anus or vagina, such as fisting, may also result in transmission of hep C.

Testing for hep C in people with HIV

For people with HIV, exposure to hep C is usually diagnosed by testing for the presence of antibodies to hepatitis C in the blood. However, there may be a very rare risk of the hep C antibodies not showing up with normal testing. This has been reported only in patients with low CD4 counts. It may be necessary to have a PCR test (see above) which measures the presence of the virus itself. Talk to your doctor about this.

Treatment

Like HIV, hep C treatments are being researched and improved all the time. The standard treatment currently is ribavirin and interferon (called pegylated interferon in combination). Combination treatment has a much higher success rate in people with chronic hepatitis C infection than interferon alone.

Not everyone who has the hep C virus will be recommended to begin treatment as soon as they are diagnosed, whether they have co-infection or not. Some people may not require treatment at all, and some may be reluctant to embark on treatment if they are relatively unaffected by hepatitis C. The treatment for hep C is not always successful in clearing the virus from the body and it can cause unpleasant side-effects in some people.

If you have HIV, you can still be treated for hep C. But, if you are on HIV treatment, it may be more complicated than treating either infection by itself. With the standard treatment for hep C - combination ribavirin and interferon – there may be a risk of drug side-effects and interactions. Talk this over with your doctor.

Side-effects of ribavirin and interferon combination therapy can include:

- flu-like symptoms
- depression
- low red blood cell count (anaemia).

If you do experience side-effects, it may be possible to manage them by:

- using other medications to reduce any fever and pain
- dose-reduction (taking a smaller than normally prescribed dose to reduce side-effects)
- psychological support or antidepressants.

If you have a high HIV viral load or low CD4 count, you could be at risk of becoming sick from HIV, so you might be advised to treat the HIV first, to reduce that risk and to give your body a better chance of fighting the hep C.

A small number of people, when they first begin HIV treatment, may experience a flare-up of hep C symptoms and feel quite sick. Some people call this 'immune restoration disease'; it's a sign that your body is restoring some of the immunity lost through HIV. This is usually a short-term problem, and tends to resolve as the HIV treatments begin to work, and your immune system stabilises. But you may still need to be aware of this possibility, and take extra care to avoid anything that might make the liver inflammation worse during this period when you first start HIV treatments, especially if you initially had a low CD4 count.

What effect does hep C have on HIV – and vice versa?

There is some debate about whether hep C affects HIV. Some studies have suggested that infection with the hep C virus can lead to more rapid progression of HIV but others have not drawn this conclusion.

Hep C is a more serious illness in people with HIV disease – it tends to be more severe and to progress more quickly. The reasons for this are not fully understood but it's thought that the body's ability to deal with hep C is reduced when HIV is present. You should discuss this issue carefully with your GP or an infectious diseases specialist.

How does the hep C virus affect HIV treatment choices?

HIV can still be treated even if you also have the hep C virus. In fact, it's really important to be aware of your HIV viral load and your CD4 count, and to treat HIV to keep it under control

Hep C can affect HIV treatment choices, because of the potentially toxic effects some HIV drugs have on the liver. There's no accepted list of 'best HIV treatments' for people with both HIV and hep C virus. Many different HIV drugs can affect your liver in the short and long term, but you need to consider both viruses, and carefully plan your treatment combination with your doctor. Ritonavir and nevirapine are two HIV drugs which are more likely to affect the liver. Your doctor will regularly check up on how your liver is coping, to make sure the HIV drugs aren't causing any problems.

Minimising risky behaviours

If you have HIV and hep C co-infection, you may need to be careful about minimising the risks that might damage or stress your liver. The following are risks:

- binge-drinking or heavy drinking
- use of some prescription and other drugs:
ask your doctor for more information about drugs which can affect your liver.

Some people claim there is no safe level of alcohol consumption if you have hep B or hep C, although you may find it unreasonable to be totally abstinent. If you cannot stop drinking alcohol altogether, reduce the amount you consume.

Alternative treatments

Many people with hep B or hep C use non-prescribed alternative treatments such as herbs. But be careful, just because a treatment is advertised as 'natural' doesn't necessarily mean it's proven or even safe. To look after your liver, make sure that you discuss any herbal or other alternative treatment you may be considering with your doctor, and with a well-qualified alternative therapist. The wrong kind of herbal treatment might be dangerous, and may even harm your liver. For example, Kava, a herbal medicine used to treat stress, anxiety and insomnia, should not be used if you have liver problems as a result of hepatitis C.

Maintaining a healthy, balanced diet is a good idea, although there is no evidence that a special diet is needed for people with hep B or hep C. Extreme forms of diet are not appropriate however.

Vaccine

There is no vaccination for hep C. If you have HIV or have co-infection with hep A or B, it's vital to protect against getting infected with hep C.

You should talk to your doctor about getting vaccinated against the preventable hepatitis viruses (hep A and hep B), or testing for immunity, whether you have hepatitis C or not. It is particularly important if you are already infected with HIV and hep C. Hep A and hep B can be life-threatening if they occur in people who already have hep C. These issues are discussed in the next few paragraphs.

Minimising the risk of passing hep C to your partner during sex

Decisions around safe sex in this context are likely to be very individual but should be based on reliable information. Using condoms may be your preferred option. However, some HIV positive people with HIV positive partners often choose not to use condoms. If you are having sex with someone who is also HIV positive, but not positive to hep C, you should talk to a doctor about some of the potential risks for the sexual transmission of hep C. These include unprotected anal sex and sex during menstruation. You may need to think about using a condom or barrier protection. If you're co-infected with HIV and hep C you may also wish to avoid other sexual activities, such as fisting, where there is the potential for blood contact.

Injecting drug use

If you do inject drugs, you need to be 'blood aware'. Any injecting equipment that's re-used, handled or passed on to other people is potentially infectious. This includes not only needles and fits but tourniquets, spoons and other articles. Never share any part of the injecting equipment and use a new fit every time.

The hep C (or hep B) virus may be transmitted:

- through blood left in a syringe that is re-used by someone else
- through blood left in the water, spoon or filter by a used fit
- from blood left on a tourniquet that brushes against an injecting site
- in blood on a person's skin (e.g. when a finger is pressed against someone who's just injected themselves)
- in any blood left on the filter
- from blood left on surfaces such as a table, or on objects or other injecting equipment.

For more information about safe injecting to prevent hep C transmission, contact your local AIDS council, hepatitis C council or injecting drug user group. (See Contacts list below.)

For more information about treatment options for co-infection, talk to your GP or specialist, or contact your AIDS council Treatments Officer.

If you have HIV and you're diagnosed with hep A, B or C, it's important to get clear information from your health professionals about how to look after yourself and those around you, as well as how to treat both viruses.

Although co-infection can present challenges, treatments are changing all the time and outcomes are improving.

National, state and territory contacts

NATIONAL	
National Association of People Living with HIV (NAPWA)	02 8568 0300 www.napwa.org.au
Australasian Society for HIV Medicine (ASHM)	02 8204 0700 www.ashm.org.au
Australian Federation of AIDS Organisations (AFAO)	02 9557 9399 www.afao.org.au
Australian Capital Territory	
People Living with HIV/AIDS (ACT)	02 6257 4985 http://aidsaction.org.au/plwha
AIDS Action Council of the ACT	02 6257 2855 http://aidsaction.org.au
NEW SOUTH WALES	
Positive Life NSW	02 9361 6011 Free call 1800 245 677 http://positivelife.org.au/
ACON (AIDS Council of NSW)	02 9206 2000 Free call 1800 063 060 TTY 02 9283 2088 www.acon.org.au

NORTHERN TERRITORY	
People Living with HIV/AIDS (NT)	08 8941 7711
Northern Territory AIDS and Hepatitis Council	Darwin 08 8941 1711 Free call 1800 880 899 Alice Springs 08 8953 3172 www.ntahc.org.au
QUEENSLAND	
Queensland Positive People (QPP)	07 3013 5555 Free call 1800 636 241 www.qpp.org.au
Queensland Association for Healthy Communities (QaHC)	07 3017 1777 Free call 1800 155 141 www.qahc.org.au
SOUTH AUSTRALIA	
People Living with HIV/AIDS (SA)	08 8293 3700 www.hivsa.org.au
AIDS Council of South Australia (ACSA)	08 8334 1611 www.acsa.org.au
VICTORIA	
People Living with HIV/AIDS (VIC)	03 9865 6772 www.plwhavictoria.org.au
Victorian AIDS Council Gay Men's Health Centre	03 9865 6772 www.vicaids.asn.au
TASMANIA	
Tasmanian Council on AIDS, Hepatitis & Related Diseases (TasCAHRD)	03 6234 1242 Free call 1800 005 900 www.tascahrd.org.au
WESTERN AUSTRALIA	
HIV/AIDS Peer Advisory Network (HAPAN) (HIV Positive Group)	08 9482 0000
Western Australian AIDS Council (WAAC)	08 9482 0000 www.waaid.com
Hepatitis Australia	02 6232 4257 INFO LINE: 1300 HEPABC (1300 437 222) www.hepatitisaustralia.com

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