The information in this guide is designed to help you understand and manage HIV/HCV coinfection and is not intended as medical advice. All persons with HIV/HCV should consult a medical practitioner for diagnosis and treatment of HIV/HCV.

A GUIDE TO:

HIV/HCV COINFECTION

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INTRODUCTION

When a person is infected with two or more different disease-causing organisms it is called coinfection. Infection with the hepatitis C virus (HCV) is the most common coinfection in people with HIV, and hepatitis C is categorized as an HIV-related opportunistic illness. Complications related to HIV/HCV coinfection have become an increasingly important medical issue in people with HIV. It is estimated that approximately 1.2 million people in the U.S. are infected with HIV and 3.5 million are infected with hepatitis C. It is estimated that as many as 30% of people with HIV may also be coinfected with hepatitis C.

Recent studies show that combination drug regimens can successfully treat hepatitis C in most people with HIV, and that most people with hepatitis C can be successfully treated for HIV. The continual emergence of new data and treatment guidelines will help us to better understand and more effectively treat both diseases. Newer and more effective medications have been approved to treat hepatitis C in people with HIV. There are currently many drugs under study to treat HCV. These drugs will expand the treatment options for people with HCV including those who are also infected with HIV.

This guide will primarily focus on HCV and HIV/HCV coinfection.
HIV/HCV TRANSMISSION

HIV and HCV share many characteristics. Both are RNA viruses and both have similar blood-to-blood transmission routes. Because both HIV and HCV are transmitted through the sharing of contaminated needles, many injection drug users acquire both viruses; in some groups of injection drug users, the rate of coinfection may be as high as 90%. There are, however, studies that have shown lower rates of HCV among young injection drug users. This has been attributed to prevention measures such as education and syringe or needle exchange programs.

Blood transfusions before blood donations were tested for HIV and HCV have caused a significant number of people who received them to be coinfected with HIV and hepatitis C.

Another possible risk factor for acquiring HCV is from hemodialysis (filtering the blood when the kidneys are no longer working).

People with bleeding disorders who received clotting factors before 1987 constitute another at-risk population. Since 1987 clotting factors have been screened and the blood inactivated of viruses.

Vertical transmission of HCV from an HIV/HCV-coinfected mother to her child is approximately 20% compared to the mother-to-child transmission rate of approximately 6% for mothers who are monoinfected with HCV. A high HCV and HIV RNA level (viral load) appears to increase the risk of mother-to-child transmission of hepatitis C.

Another possible transmission route of HCV is from needle stick or exposure to blood.

The rate of sexual transmission of HCV among Gay men and HIV positive men who have sex with men appears to be much higher compared to the rate among HCV monoinfected heterosexual couples who are in a stable long-term mutually monogamous sexual relationship, where there is little chance of infection. The higher rate of transmission is not completely understood, but it is believed to be due to a compromised immune system, and ‘high risk’ practices—multiple sexual partners, unprotected anal sex, the presence of sexually transmitted diseases and certain sexual practices that may involve blood such as fisting (insertion of the fist into the rectum).

Another possible transmission route of HCV is from needle stick or exposure to blood.

Tattoos and piercing have been implicated in the transmission of HIV and hepatitis C. In respect to HIV there has never been a documented case of HIV being transmitted from getting a tattoo or piercing. Transmission of HCV from receiving a tattoo or piercing is possible, but not likely unless safety procedures are not followed carefully.

HCV PREVENTION

The main transmission route of HCV is blood-to-blood. Measures that eliminate blood exposure will prevent HCV transmission. In the setting of HIV and hepatitis C coinfection there are strategies that will prevent the transmission of HCV including:

- The practice of universal or standard precautions will prevent transmission of HCV and HIV.
- Do not share needles or works (cookers,
cottons, tourniquets, water, etc.) or any item that is used in preparation to inject or used to inject drugs. Needle exchanges offer a wide variety of services such as clean needles, works and links to medical and rehabilitative services.

- Do not share non-injection drug equipment such as snorting straws or crack pipes.
- Practice safer sex – use barriers (condoms) when engaging in sex.
- There are no foolproof measures to prevent the transmission of hepatitis C from mother-to-child. In addition, some of the medications to treat hepatitis C can cause birth defects so pregnant women should not take HCV medications. There are effective strategies, however, that can prevent mother-to-child transmission of HIV.
- Tattooing and Piercing – use only commercial tattoo parlors that practice universal precautions. All tattoo and piercing artists should use disposable equipment (new needles, separate ink pots) and other equipment should be sterilized in an autoclave machine which uses heat, steam and pressure to sterilize equipment.
- In general, use standard measures to prevent transmission of HCV. Do not share razors, toothbrushes, clippers, nail files, or any other instrument that comes into contact with blood.

** TESTING – HCV**

It is recommended that everyone with HIV should be tested for HCV when an HIV diagnosis is confirmed. Additionally, annual testing is recommended for HCV in people with HIV in those who have risk factors such as injection drug use, multiple sexual partners and those who do not practice safer sex.

- **Diagnostic Tests - HCV**

The window period for HCV is between 2 and 26 weeks. The HCV Elisa (EIA) antibody test detects HCV antibodies and a positive result indicates current or past infection.

The HCV OraQuick Rapid Antibody test using finger prick and whole blood draw has been approved by the FDA. Test results are available after 20 minutes, but before 40 minutes.

A positive HCV antibody test indicates prior or perhaps current infection with HCV. But the test that will confirm active infection is an HCV RNA (viral load) test. To find out if someone is currently infected with the hepatitis C virus an HCV RNA (viral load) needs to be conducted.

There are two types of HCV RNA test—qualitative (‘yes’ or ‘no’ result) and quantitative (measures the number of viruses). HCV RNA quantitative tests are very sensitive (PCR and TMA can detect HCV at levels down to 5-10 IU/mL, bDNA assay down to 615 IU/mL) and are now the first line of viral load tests to confirm active infection and record HCV RNA (viral load) measurement. If the antibody test and the HCV RNA are negative, retesting for HCV antibodies is recommended 3 to 6 months after the initial exposure.

Another blood test that is used when considering treatment is the genotype test. An HCV genotype (strain) is the same hepatitis C virus but with some genetic differences. The genotype test is a blood test. There are seven genotypes. Genotypes 1 is the most common and accounts for about 70% of the HCV population; genotypes 2 and 3 account for about 30%. Genotypes 4, 5, 6 and 7 are

**Note:**

The U.S. Public Health Service and the Infectious Diseases Society of America recommend that all people with HIV be tested for hepatitis C.
much less common in this country (less than 1%). The genotype test is only conducted once since genotype does not change unless reinfection occurs. However someone can be re-infected with a different strain. Genotype is used to dictate what medications are used to treat chronic HCV and how long the medications are taken.

There are various blood tests that monitor the health of the liver. These tests include the alanine aminotransferase (ALT), aspartate aminotransferase (GGT), bilirubin, albumin, prothrombin and other tests that when combined will give an indication of how well the liver is functioning.

The liver biopsy is another diagnostic test that will measure the degree of liver damage (inflammation and scarring) if any. There are other diagnostic tests called non-invasive tests. The only non-invasive test that is approved by the Food and Drug Administration (FDA) is the Fibroscan. This test uses a technology that sends radio waves through the liver. This is not a perfect test but many providers will use this test along with various biochemical blood tests to give a clearer indication of the health of the liver.

**SYMPTOMS**

- **Acute HCV**

  Acute infection is defined as the rapid on-set of initial symptoms. The most common symptoms of acute hepatitis C include fever, fatigue, nausea, loss of appetite and joint pain. It is important to know that many people who acquire acute hepatitis C have few or no symptoms.

  According to the Centers for Disease Control and Prevention (CDC) the estimated number of HCV acute infections is 30,500 annually. Many experts, however, believe the true number is much higher. The lower estimate is attributed to the lack of surveillance and the absence of symptoms that would usually trigger a medical provider to test for hepatitis C. It is even more difficult to identify an acute HCV infection in someone with HIV since many of the symptoms of HCV are similar to the symptoms of HIV.

  The estimated rate of spontaneous or natural clearance of HCV is from 15 to 45%. The rate of natural clearance of HCV in people with HIV is lower, especially in people with HIV who have lower CD4 cell count.

  Many experts recommend that treatment of acute hepatitis C should be initiated as soon as possible after an acute infection has been confirmed and after allowing for a period of time to give the body’s immune system a chance to possibly clear the virus from the body.

**Note:**

*In people with HIV who have CD4 T counts (<200 cells/uL), the body may not be able to develop antibodies, and for this reason someone with HIV who has a risk factor for HCV or someone with unexplained liver disease should have an HCV RNA (viral load) test to completely rule out the presence of HCV.*

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**Genotypes 1 is the most common and accounts for about 70% of the HCV population; genotypes 2 and 3 account for about 30%.”**

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**The rate of natural clearance of HCV in people with HIV is lower, especially in people with HIV who have lower CD4 cell count.”**
body naturally. There are now guidelines (AASLD/IDSA) that recommend the use of HCV inhibitors as the treatment for acute hepatitis C.

• **Symptoms – Chronic**

If an acute infection lasts longer than 6 months it is considered chronic infection.

Chronic infection with hepatitis C does not necessarily translate into on-going disease progression—the key to living well with hepatitis C—including people who are also infected with HIV—is being evaluated and monitored on a regular basis.

The most common symptoms of chronic hepatitis C include:
• Fatigue (mild, moderate or severe)
• Muscle and joint pain
• Depression
• “Brain fog”
• Night sweats
• Loss of appetite
• Nausea
• Indigestion or heartburn
• Headaches

**HCV PROGRESSION**

The number of annual deaths due to HCV is over 19,000 a year, but many experts believe that the real number of deaths is much higher.

Hepatitis C is now one of the most common causes of death in people with HIV. Most studies indicate that HIV can worsen hepatitis C disease progression—in some studies it has been found that having HIV triples the risk of severe HCV disease progression. HIV/HCV coinfection has also been associated with higher HCV viral loads, and a greater risk of developing severe liver damage including cirrhosis and liver cancer.

The impact of hepatitis C on HIV disease is less clear, but a majority of studies suggest that hepatitis C does not accelerate HIV disease progression. Hepatitis C can affect HIV treatment by increasing the frequency of liver toxicity related to the processing of HIV drugs. There is also the potential for interactions between HIV drugs and drugs used to treat hepatitis C. However, with careful medical monitoring, most coinfected people can be successfully treated for both HIV and hepatitis C.

Hepatitis C mainly infects and replicates in liver cells. This process leads to inflammation of the liver cell, which can cause the immune system to attack and kill the liver cell. After a period of time this process can lead to light scarring of the liver called fibrosis. Over time, (usually many years) the fibrosis can lead to more severe scarring (called moderate to severe fibrosis). Eventually, the scarring can progress to cirrhosis. There are two types of cirrhosis—compensated and decompensated. Compensated cirrhosis means that the liver is severely scarred, but it can still perform the many functions that keep the body healthy. Once the liver becomes extensively scarred it is called decompensated cirrhosis—which can lead to many severe and possibly life-threatening conditions.
Complications from decompensated cirrhosis include:

- **Portal hypertension**: The liver becomes so scarred that blood cannot enter the liver.
- **Ascites**: Accumulation of fluid in the abdominal cavity.
- **Varices**: Weakened blood vessels in the esophagus and gastrointestinal system that can lead to internal bleeding.
- **Encephalopathy**: Mental confusion, coma, loss of intelligence and personality changes.

Once decompensated cirrhosis develops, the goal is to manage the complications. At this stage, a person is listed to receive a liver transplant.

**MANAGEMENT**

There are many strategies to successfully manage hepatitis C including medical monitoring and lifestyle modifications.

First and foremost, regular medical monitoring of HIV and HCV is one of the most important strategies for staying healthy and living well with HIV and hepatitis C.

- **Alcohol**
  Alcohol especially in large amounts can cause cirrhosis. In the past, alcohol was the leading cause of cirrhosis, liver cancer, and liver transplantation. Now, the leading cause of cirrhosis, liver cancer, and liver transplantation is hepatitis C. Alcohol also contributes to fatty liver, which could also cause liver disease progression. It is important to try to cut back or avoid alcohol completely. If you are having trouble stopping or cutting back on alcohol, ask for help—there are many counseling services available to help people abstain from alcohol.

- **Smoking**
  Smoking cigarettes and cigars as well as chewing tobacco can lead to serious health problems including cancer. There have been just a few studies linking tobacco with accelerated HCV disease progression and liver cancer, but improvement in overall health will help to decrease the chances of accelerated HCV disease progression.

- **Obesity**
  Body mass index (BMI): A measurement used to define healthy weight, overweight and obesity. It is a calculation that uses a person’s body weight and body measurements. A BMI greater than or equal to 25 is overweight. Obesity is defined as a body mass index (BMI) equal to or more than 30.

  Obesity can lead to many health-related conditions, such as insulin resistance, diabetes, heart disease, and many other health problems. It can also cause fatty liver that, for some, can lead to liver inflammation, cirrhosis, and death.

**NUTRITION**

It is not surprising that following a healthy diet can help to keep the body healthy and thus help the liver. But a healthy diet is even more important for people with hepatitis C because of the connection between diet, fatty liver, insulin resistance, and diabetes and the liver. There is no general diet recommended for people with hepatitis C besides the recommendations found at www.choosemyplate.gov. A healthy diet should include lots of fruits, vegetables, lean protein, dairy, and multi-grains. If possible, stay away from highly processed foods and eat foods that are low-fat, low in sodium (salt) and sugar, and try to stay away from artificial ingredients.

> Alcohol especially in large amounts can cause cirrhosis. 🍺
Exercise is important to keep people physically and emotionally healthy. It is recommended that everyone should strive to exercise 20 to 30 minutes each day – this can also be broken into 2 to 3 10-minute sessions. It is important to get aerobic and resistance exercise. Always check-in with a medical provider before starting any exercise routine.

**TREATING HIV IN PEOPLE WITH HEPATITIS C**

HIV can be successfully treated in most people with hepatitis C. Some experts believe it is better to begin HIV treatment first in order to control HIV replication and increase the CD4 count. Some research suggests that even after starting HIV treatment, CD4 counts do not increase as rapidly in coinfected people as in people with HIV alone.

However, in people with early-stage HIV disease and advanced hepatitis C, it may be better to start hepatitis C treatment first. This will help the liver to be better able to process HIV drugs since many HIV medications are metabolized by the liver and some can cause liver toxicity (hepatotoxicity). Impaired liver function can result in slower processing of drugs in the body. Some HIV drugs—particularly protease inhibitors—can cause elevated liver enzyme levels, especially in people with chronic hepatitis C; however, liver enzyme levels often stabilize over time. Severe liver toxicity related to HIV drugs is seen most often in people who already have liver damage; but even in this group it is uncommon.

Most people with hepatitis C can tolerate HIV medications if they are closely monitored for hepatotoxicity. Though dose reductions and changes in HIV or hepatitis C medications may be necessary, most coinfected people can be successfully treated. Because hepatitis C appears to be more aggressive in people with HIV, some experts believe that controlling HIV can help slow hepatitis C disease progression. But HIV treatment can sometimes lead to increased liver inflammation (“flares”) as the drugs improve immune system function. If possible, both an HIV specialist and a liver disease specialist should work together as a team to treat coinfected people.

**TREATING CHRONIC HEPATITIS C IN PEOPLE WITH HIV**

The treatment cure rates for hepatitis C (HCV) in someone with HIV are similar to someone who is mono-infected with HCV. Information about currently approved HCV medications visit: http://hcvadvocate.org/treatment/drug-pipeline/

For more information on HIV/AIDS and HIV/HCV coinfection check out our Coinfection publications at the HCV Advocate:

"Because hepatitis C appears to be more aggressive in people with HIV, some experts believe that controlling HIV can help slow hepatitis C disease progression."
PATIENT ASSISTANCE PROGRAMS

There are many assistance programs that can help you with the cost of the medicines including the insurance co-payments. Talk to and work closely with your medical provider to access these programs.

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<tr>
<th>Umbrella Organizations</th>
<th>Phone Number</th>
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<tr>
<td>Good Days</td>
<td>1-877-968-7233</td>
<td><a href="http://www.gooddaysfromcdf.org">www.gooddaysfromcdf.org</a></td>
</tr>
<tr>
<td>Needymeds.org</td>
<td>1-800-503-6897</td>
<td><a href="http://www.needymeds.org">www.needymeds.org</a></td>
</tr>
<tr>
<td>Partnership for Prescription Assistance</td>
<td>1-888-477-2669</td>
<td><a href="http://www.pparx.org">www.pparx.org</a></td>
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<tr>
<td>Patient Advocate Foundation Co-Pay Relief</td>
<td>1-866-512-3861</td>
<td><a href="http://www.copays.org/diseases/hepatitis-c">www.copays.org/diseases/hepatitis-c</a></td>
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<tr>
<td>Merck-VAQTA – hepatitis A vaccine; RECOMBIVAX HB – hepatitis B vaccine</td>
<td>1-800-293-3881</td>
<td><a href="http://www.merck.com/merckhelps/vaccines/home.html">www.merck.com/merckhelps/vaccines/home.html</a></td>
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<tr>
<td>AbbVie</td>
<td>1-844-2proCeed</td>
<td><a href="http://www.viekira.com/proceed-support">www.viekira.com/proceed-support</a></td>
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<td>BMS</td>
<td>1-844-442-6663</td>
<td><a href="http://www.daklinza.bmscustomerconnect.com/support">www.daklinza.bmscustomerconnect.com/support</a></td>
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<tr>
<td>Gilead</td>
<td>1-855-769-7284</td>
<td><a href="http://www.mysupportpath.com/">www.mysupportpath.com/</a></td>
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<tr>
<td>Kadmon Pharmaceuticals (Keys Program)</td>
<td>1-888-668-3393</td>
<td><a href="https://www.drtms.net/Kadmon/Ribapak/Consumer.aspx">https://www.drtms.net/Kadmon/Ribapak/Consumer.aspx</a></td>
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<tr>
<td>Merck</td>
<td>1-800-405-5810</td>
<td><a href="http://www.merckhelps.com">www.merckhelps.com</a></td>
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<tr>
<td>Moderiba Ribavirin</td>
<td>1.844.MODERIBA (1.844.663.3742)</td>
<td><a href="http://www.moderiba.com/patient-support/financial">www.moderiba.com/patient-support/financial</a></td>
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SUGGESTED READING

Free from Hepatitis C: Your Complete Guide to Healing Hepatitis C
By Lucinda K. Porter, RN.
Square One Publishers.

Hepatitis C Treatment One Step at a Time.
By Lucinda K. Porter, RN.
Demos Health.

RESOURCES

For more information about HCV, contact the following organizations

- HIVandHepatitis.com
  www.hivandhepatitis.com/
- National AIDS Treatment Advocacy Project (NATAP)
  www.natap.org/
- National HCV Helpline
  877-HELP-4-HEP (877-435-7443)

Visit the HCV Advocate Website for information about hepatitis C including:

- Newly Diagnosed: Information and a printable brochure to help newly diagnosed patients
  http://hcvadvocate.org/newly-diagnosed/
- Treatment Issues: Treatment-related information: fact sheets about approved medications, side effects, and more
  http://hcvadvocate.org/treatment/
- Fact Sheets: This lists all of our fact sheets including our Easy C Facts, HCSP Fact Sheets, FAQ, Guides, Coinfection Facts, Chinese Easy C’s, and Tattoos
  http://hcvadvocate.org/publications/fact-sheets/
- Resources: Disability Benefits, Glossaries (Medical & Herbal), Helpful links including support groups
  http://hcvadvocate.org/resources/
- Espanol: Fact Sheets in Spanish
  http://hcvadvocate.org/spanish/
- HBV: A web page dedicated to hepatitis B
  http://hcvadvocate.org/hbv/
- Newsletter: Monthly and Mid-monthly editions
  http://hcvadvocate.org/publications/newsletter/
Managing HCV

HCSP GUIDES

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The information in this guide is designed
to help you understand and manage HIV/
HCV and is not intended as medical advice.
All persons with HIV/HCV should consult
a medical practitioner for diagnosis and
treatment of HIV/HCV.