

# Can hepatitis C (HCV) transmission be prevented?

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## What is the hepatitis C virus (HCV)?

Hepatitis C virus is a blood-borne virus that affects the liver. It is principally acquired and transmitted by blood-to-blood contact, most commonly among injection drug users (IDU). Other common infectious viruses that affect the liver are Hepatitis A and B, which have other routes of infection. Unlike hepatitis A and B, there is no vaccine for HCV.

About 3.2 - 4 million Americans are estimated to be infected with HCV.<sup>1</sup> In the US, 8,000 to 10,000 deaths per year are attributed to HCV-associated liver disease and that is expected to triple in the next 10-20 years.

infection can occur. While many who become re-infected will clear the virus again, this is not guaranteed, and a subsequent infection may become chronic. Those who do not clear or resolve their HCV infection are considered chronically infected.

Most people with chronic infection remain asymptomatic for 20-30 years, and some will never develop symptoms of advanced disease. However, 60-70% of people with chronic HCV ultimately will develop some degree of liver disease.<sup>5</sup> People with chronic infection

whose liver disease has started to progress often report increasing levels of fatigue and stomach pain. The symptoms of chronic HCV are often vague and unspecific and may go undiagnosed. This again underlines the importance of testing for anyone at risk of HCV.

Chronic HCV infection causes liver damage that can turn into cirrhosis (scarring of the liver) and liver cancer. Up to 20% of chronically infected individuals will develop cirrhosis and 5% will develop liver cancer.<sup>5</sup> Alcohol and drugs—including marijuana and even tobacco—can speed up the rate of liver damage significantly.

## Who's at risk for HCV?

The population at highest risk for HCV are people who inject drugs; principally through sharing of syringes directly or through sharing of drug preparation equipment. Among newly reported HCV cases with known risk factors, 50%-60% are attributable to injecting drugs. However, this may be underestimated due to underreporting both due to the illicit nature of IDU and lack of HCV surveillance in high risk groups.<sup>2</sup> HCV is usually acquired rapidly after a person first starts injecting drugs.<sup>3</sup> As a result, prevalence of HCV among IDU is very high, ranging from 40-90%, depending on a person's age and number of years injecting.<sup>3</sup>

Persons who received blood transfusions or an organ transplant before 1992 and hemophiliacs who received clotting factor concentrates before 1987 are also at risk for HCV. At moderate risk are persons receiving continual care (hemodialysis) for kidney failure. Others at risk include healthcare workers exposed to needles with HCV+ blood, and, rarely, infants born to infected mothers.

Sexual transmission of HCV is uncommon, although recent studies of HIV+ gay men show that it does occur.<sup>4</sup> Rough sex, fisting, sex with multiple partners and having a sexually transmitted disease (STD) or HIV appear to increase a person's risk of HCV.<sup>5</sup> This is likely due to blood contact during sex.

## What does HCV infection look like?

HCV infection can range in severity from a mild illness lasting a few weeks to a serious, lifelong illness that damages the liver.<sup>5</sup> The majority of people infected with HCV do not experience symptoms related to their infection. Because of this, testing is the only way to confirm HCV infection.

The first period after HCV infection is referred to as the "acute" period. Acute HCV infection generally lasts about 6 months after someone is infected with the virus. About 25% of people who become infected with HCV will spontaneously clear the virus on their own in the first 6 months. Studies have shown that women are more likely to spontaneously clear the virus than men.<sup>6</sup> Even for those who have cleared HCV, re-

## Can HCV be treated?

The short answer is yes, there is a treatment for HCV, but currently available treatments will not work for everybody. Before starting a treatment regimen, it is important to stabilize any mental or other health problems. Undergoing antiviral treatment for HCV is a long, difficult and expensive process, so determining whether treatment is the right choice is a decision that should be made between a patient and a care provider.

There are two approved antiviral medications used for the treatment of HCV: pegylated interferon alpha (often referred to as "peg") and ribavirin. Peg interferon is taken by injection once a week. Ribavirin is an oral tablet that is taken daily. When taken together, the medications are effective in clearing the HCV virus 40-80% of the time, depending on the genotype of the virus.<sup>7</sup> Hepatitis C has 6 chemical types (1-6), called genotypes, and they differ in how they respond to treatment.

People of color, especially African-Americans and Latinos, have lower response rates to treatment, compared to other groups.<sup>7</sup> New drugs are being developed that may be more effective than currently available treatments and may be available in the very near future. Treatment during the acute phase of infection is significantly more likely to be effective,<sup>8</sup> so identifying HCV early can be beneficial. While herbal remedies are popular among people living with HCV, none have been proven effective at clearing the HCV virus or in improving liver health.<sup>9</sup>

HCV treatment can be successful for active drug users. Nonetheless, daily drug and alcohol use can adversely affect treatment eligibility and completion. Engaging in drug or alcohol treatment programs while being treated for HCV can be helpful.

## How does HCV affect HIV?

About one-quarter of all people in the US living with HIV are also infected with HCV. Persons who are both HIV+ and HCV+ (coinfected), can experience a much faster progression of liver disease and have higher HCV viral loads and higher rates of cirrhosis than do people who have HCV but not HIV.<sup>10</sup> Liver damage from HCV infection also can increase the toxicity of medications used to treat HIV.

As persons living with HIV who are on effective medications lead longer lives, liver disease has become the leading cause of non-AIDS-related deaths among HIV+ persons, due to HCV and HBV infection.<sup>11</sup> Treatment for HCV infection in an HIV+ person can be effective. Side effects and drug interactions, however, can be hard to manage. It is important the coinfecting person be on well-managed HIV treatment before starting treatment for HCV.

## How can HCV be prevented?

HCV prevention can take many forms.<sup>12</sup> Currently, targeted prevention strategies and harm reduction programs, including increased availability of clean syringes and increased access to drug treatment programs have the greatest potential to slow transmission of HCV. Educating those at risk, especially about the risks associated with shared injecting and ancillary equipment is very important. Encouraging the use of condoms, lubrication and gloves during high-risk sexual practices also can help reduce HCV transmission.

Behavioral risk reduction prevention programs have had mixed results in decreasing risks associated with HCV transmission. Two peer-led interventions were effective in reducing injection risk behaviors in HIV negative and positive IDUs. The Study

to Reduce Intravenous Exposures (STRIVE) and Drug Users Intervention Trials (DUI) both provided information, enhanced risk-reduction skills, and motivated behavior change through peer education training. Although participants in these programs reported decreases in sharing syringes and drug preparation equipment,<sup>13,14</sup> rates of new HCV infections among HCV negative participants in the DUI Study did not decrease (neither did HIV infections).

The UFO Study conducts HCV-related research and provides hepatitis, HIV and STD prevention services including testing, counseling, support and education tailored to young adult IDUs under age 30 in San Francisco, CA. Young injection drug users comprise a group for whom few health-related resources or programs are targeted.<sup>15</sup>

For persons who are infected with HCV or at risk of becoming infected with HCV, it is important to get regular healthcare. A healthcare provider can help monitor HCV infection and liver health and make important decisions about prevention and treatment. Support and education groups are valuable in learning more about HCV infection and about the experience of living with HCV, treating HCV and preventing HCV transmission to others. People infected with HCV should be screened and vaccinated for HBV and should be strongly encouraged to stop or decrease alcohol use.

## What needs to be done?

Over the next 15 years, the global costs associated with HCV infection are projected to increase from \$30 billion to \$85 billion.<sup>16</sup> Development of an HCV vaccine will significantly decrease rates of new HCV infections. Research is needed on the development of a vaccine and effective models for delivery. Increasing access to HCV testing and screening, HCV treatment, drug treatment, clean syringes and effective behavioral interventions is crucial.

## Says who?

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