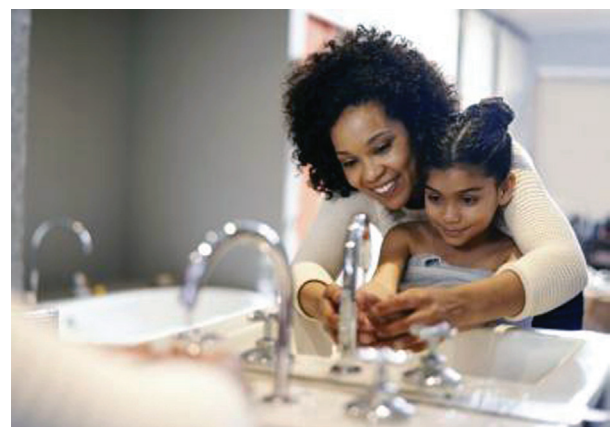


Hepatitis C Infection May Fuel Heart Risk



Results suggest the need for vigilant monitoring in those infected with the liver-damaging virus

People infected with the hepatitis C virus are at risk for liver damage, but the conclusions of a new Johns Hopkins study now show the infection may also spell heart trouble.

The findings, that were described online July the 27th in The Journal of Infectious Diseases, materialized from

a larger ongoing study of many but not all infected with HIV and they followed them over time to track the risk of infection and disease progression. A sub-group of the participants had both HIV and hepatitis C, two infections that often occur together.

Specifically, the research found that study participants chronically infected with hepatitis C were more likely to harbor abnormal fat-and-calcium plaques inside their arteries, a condition known as atherosclerosis and a common foreshadowing for heart attacks and strokes.



“We have substantial reasons to believe that infection with hepatitis C incites cardiovascular disease, separate of HIV and sets the stage for subsequent cardiovascular trouble,” reports study principal investigator Eric Seaberg, PhD, assistant professor of epidemiology at the [*Johns Hopkins Bloomberg School of Public Health*](#). “We hold our findings are relevant to anyone infected with hepatitis C regardless of HIV status.”

Investigators emphasize they do not know completely how infection with the hepatitis C virus precipitates the growth of artery-clogging plaque but that their evidence is strong enough to warrant vigilant monitoring for cardiac symptoms among people infected with the virus.

“People contaminated with hepatitis C are already followed regularly for signs of [*liver disease*](#), but our findings suggest clinicians who care for them should also assess their overall cardiac risk profile regularly,” says study author Wendy Post, MD, MS, professor of medicine at the Johns Hopkins University School of Medicine and a cardiologist at the Johns Hopkins Ciccarone Center for the Prevention of Heart Disease.

Post says that at a minimum, patients with hepatitis C could benefit from an annual cardiac evaluation that includes cholesterol and glucose testing, a blood pressure check and assessment of lifestyle habits.

The study involved 994 men who were 40 to 70 years old without manifested heart disease who were followed across several institutions in Baltimore, Washington, D.C., Pittsburgh, Los Angeles, and Chicago. Of the 994, 613 were infected with HIV, 70 were infected with both viruses and 17 were only infected with hepatitis C. Partakers underwent cardiac [*CT scans*](#) to detect and measure the amount of fat and calcium deposits inside the vessels of their hearts. Those infected with hepatitis C, regardless of HIV status, had, on an average 30 percent more disease-fueling calcified plaque in their arteries, the main driver of heart attack and stroke risk. People infected with either HIV or hepatitis C, on an

average, had 42 percent more non-calcified fatty buildup, a type of plaque believed to confer the greatest cardiac risk.

Additionally, those mentioned who had higher levels of circulating hepatitis C virus in their blood were 50 percent more likely to have clogged arteries, compared with men without hepatitis C. Higher virus levels in the blood signal that the infection is not well controlled by drugs or by the immune system. The infections that are poorly controlled, investigators add, may lead to more inflammation throughout the body, which can fuel blood vessel damage and thus contribute to heart disease.

Treating hepatitis C infection promptly can ward off long-term liver damage, but researchers say their findings now raise another critical question: whether a new class of medications that help 90 percent of patients clear the virus within a few short months could also interrupt the formation of plaque and reduce cardiac risk in the long run.

In excess of 2.7 million people in the United States are infected with the hepatitis C virus, according to estimates from the Centers for Disease Control and Prevention.

The hepatitis C virus can cause a firestorm of [*extrahepatic conditions*](#) such as insulin resistance, diabetes, hepatic steatosis, cryoglobulinemia, and endotoxemia – which are associated with the development of atherosclerosis and cardiovascular disease. The longer the patient has hepatitis C, the higher the risk of developing an extrahepatic condition, such as cardiovascular disease.

How hepatitis C affects liver function

Hepatitis C primarily attacks and damages the liver, but the damage from the virus also affects other vital parts of the body. The liver is responsible for many functions. It stores



sugars, minerals (including iron) and certain vitamins. The liver also regulates fat and controls the production and excretion of cholesterol. The liver also produces bile, which allows your body to digest food and absorb important nutrients.

The liver detoxifies harmful substances and metabolizes **alcohol**. Additionally, the liver helps the immune system in resisting infection and removing bacteria from the bloodstream. Altogether, the liver is the powerhouse of the body.

The liver works with the circulatory system to transport nutrients, oxygen, hormones and cellular waste products throughout the body and to the heart. The hepatitis C virus itself, along with impairment of liver function, can cause **damaging effects to the heart and circulatory system**.



Factors that can increase heart damage

Two big indicators of cardiovascular disease are high blood pressure and increased fat levels in the blood. These indicators are prevalent in patients who have chronic active hepatitis C. Patients with hepatitis C are advised to take proactive steps to protect their heart and circulatory system from these damaging effects.

Types of heart damage

Cardiovascular disease can affect different areas of the heart, possibly leading to coronary artery disease, heart attack, abnormal heart rhythms, heart failure, heart valve disease, congenital heart disease, or cardiomyopathy.

What you can do

Healthy eating, exercise, and maintaining a healthy weight can help protect your heart and blood vessels from becoming damaged. **Lowering blood pressure**, as well as lowering unhealthy fat levels in cholesterol and triglycerides, can also help lower the risk of damaging cardiovascular disease.

Your doctor may recommend that you stop drinking alcohol if you have hepatitis C or cardiovascular disease. Alcohol can increase damage to the liver, increase fat in the liver, and increase toxins in the blood.

Treatment for hepatitis C is highly recommended to eliminate the virus and stop further damage from occurring. Clinical research shows hepatitis C treatment with direct-acting antivirals resulting in clearance of the virus greatly improves the risk factors resulting in cardiovascular disease and associated conditions.

Talk to your physician about what steps you can take to lower risks for cardiovascular damage and extrahepatic conditions associated with hepatitis C.

