

The liver serves as your body's engine, pantry, refinery, food processor, garbage disposal, & "guardian angel."¹

- Stores energy in the form of sugar (glucose).
- Stores vitamins, iron and other minerals.
- Makes proteins (including blood clotting factors).
- Processing worn out red blood cells.
- Making bile which is needed for food digestion.
- Metabolizing/breaks down many medications & alcohol.
- Killing germs that enter the body through the intestine.
- It converts food to energy.
- Cleanses poisons from the blood.
- The liver is about the size of a football – the largest organ in your body.
- The liver runs over 500 bodily functions.

One of the most remarkable accomplishments of this complex organ is its ability to regenerate. (Three quarters of the liver can be removed and it will grow back in the same shape and form within a few weeks!) However, sometimes when it is attacked by a virus, drugs and/or alcohol, scar tissue develops and the damage cannot be reversed. This happens in 85% of the people with Hepatitis C virus when left untreated.

What is Hepatitis C Virus (HCV):

- An infection caused by a virus that attacks the liver and leads to inflammation.
- It is one of several hepatitis viruses and is considered to be the most serious of these viruses.
- It is an autoimmune disorder which means the body's own immune system attacks the liver.

How common is HCV in the United States?

- In 2007, there were an estimated 17,000 new cases - the actual reported number of cases is much lower due to the fact that many people have not symptoms.
- An estimated 4 million persons in the United States have HVC infection. Most people do not know they are infected because they don't look or feel sick.
- 70-85% have chronic hepatitis C.
- HCV is the leading cause of liver transplantation in the U.S and is a risk factor for liver cancer.
- 20%-25% of people with HVC will develop cirrhosis
- There are 8,000-10,000 deaths related to HCV/year.

How prevalent is HVC Worldwide?

- 3% of the population is infected with HCV.
- For most countries, the prevalence of HCV infection is less than 3%. The prevalence is higher (up to 15%) in some countries in Africa and Asia, and highest (over 15%) in Egypt.³

Who is at risk/ who needs to be tested?

- Injecting drug users (IDUs) account for approximately 60% of HCV cases. Shared Needles. (This includes tattoo & acupuncture needles plus sharing razor blades.) 1/3 of young IDUs (18-30 yrs old) & older often former IDUs rate of infection is 70-90%^{3b}
- Healthcare or public safety who are exposed to blood through a needle stick or other sharp object injury.
- Blood transfusions and organ transplants before 1992.
- People treated for a blood clotting problem before 1987.
- Sexual contact.
- Person infected with HIV.
- Childbirth. A small number of babies born to mothers with hepatitis C acquire the infection during childbirth.
- The prevalence of HCV infection in prison inmates is substantially higher than that of the general U.S. population.³

What are the symptoms:

- Most people don't know they have the hepatitis C infection until liver damage shows up, sometimes decades later, during routine medical tests.
- Some mild symptoms include fatigue, lethargy, low-grade fever, nausea and vomiting but often are often undistinguishable from other viral infections so HCV is not diagnosed.
- Late stage symptoms may include an enlarged liver, jaundice (only shows up in 50% of the cases), itching, joint pain, abdominal discomfort, spider angiomas (abnormal blood vessels) on the skin, nausea, vomiting, loss of appetite, dark urine, & pale or gray-colored stools.
- "Fatigue is perhaps the most frequent and disabling extra-hepatic symptom of HCV, reports in almost one-half of all infected individuals."²

How can Hepatitis C be prevented?

- HVC is transferred when a person comes in contact with contaminated blood.
- IDUs stop using and injecting drugs. Enter substance abuse program to get medical help. See StopRxDrugAbuse.org
- IDUs who continue use don't share needles, syringe, water, cotton or other supplies. Dispose after use.
- If you are a person at-risk for STD's: use a latex condom, have only one uninfected partner or abstain from sex.
- Healthcare workers- Any blood spills — including dried blood, which can still be infectious — should be cleaned using a dilution of one part household bleach to 10 parts water. Gloves should be worn when cleaning up blood spills.

How is Hepatitis C diagnosed?

- Incubation period is 14-180 (average is 45 days).
- Liver Biopsy is the best method to determine how serious or what stage the disease has reached. (This can be done in a hospital or as at outpatient treatment.)
- Blood tests can be used to determine if you have HVC but they are not refined enough to determine the amount of damage caused by the infection. **Typically** more than one blood test is given
- Antibody Quantitative test⁴ : if you have or have had HVC your immune system will have released antibodies. This does not mean you have an active case of HCV.
- RNA Qualitative Test⁴ : Can detect even low levels of HCV. If the test is positive then you have HVC (more accurate test).

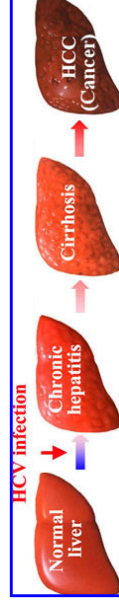
What is the standard treatment?

- HVC is only treated when it is a chronic infections. Approximately 15%-25% of people who get hepatitis C will be cured without treatment.
- Primary treatment is medicine. Combination therapy⁴ of Interferon and Ribavirin:
 - Interferon- injections of protein, remains ineffective in the majority of patient.
 - Ribavirin- by itself is not effective in fighting HVC. Must be used with Interferon.
 - Common side- effects include loss of appetite, sore mouth & throat, metallic tastes, nausea, & vomiting.
 - Check with doctor: chest pain, mood changes, trouble breathing, unusual fatigue, less common: suicide thoughts.
 - Length of treatment is 24-48 weeks depending on patients response. If the side-effects cause too many problems or the treatments are ineffective then therapy is stopped and treatment plan is reevaluated.
- **Tends to recur once treatment is stopped. Success rate is 30-40%.**

• Genotype: There are six strains of HVC.⁴ Your doctor will need to determine which strain you have to provide the proper treatment. 72% of people with HVC in the U.S. have Genotype 1 which is the most difficult to treat.

- Watchful Waiting⁴ For patients with mild HCV or who taking medication may be dangerous. Patient would have enzymes check once or twice a year & a biopsy every 3-5 yrs.
- Liver transplants⁴ are also an option for late stage when the liver begins to fail. 90% of transplantations last at least 1 year while 70-80% have a 5 year survival rate. The infection almost always returns in the transplanted liver, but often the symptoms are mild & the person can survive for many years.

Picture Reference 5



Alternative Treatment

About 40% of HVC patients supplement conventional therapy with some form of alternative therapy. The outcomes vary greater and there is little empirical evidence to support the effectiveness of any of these treatments. They are not FDA approved. There are four herbals treatments with Milk Thistle being the most popular.⁴ For more information call [Department of Veteran's Affairs](http://DepartmentOfVeteran'sAffairs) or view website.

Long-Term Outcome for Chronic Hepatitis C:

Patient education, preventive medicine and routine monitoring every 6 months by a gastroenterologist or hepatologist are the main components of the long-term care.

Expected Quality of Life:

Patients with chronic HVC have a high prevalence for fatigue as well as psychiatric disorders particularly depression and anxiety but there does not seem to be a direct correlation between severity of liver inflammation.²

Psychosocial Concerns:

- Friends and family members may fear they will get the disease and no longer want to hug you. Educate them.
- "Depression appears to have a more significant impact on fatigue and functional impairment than severity of liver disease...since depression appears to be common in this population, patients should be routinely screened for depression."⁶

"Disease is what you have; and illness is how you react to it- some people can have mild disease but serious illness ; others can have severe disease but mild illness."
 Author Unknown

Facts about Hepatitis C:

- HVC was known as "non A or non B hepatitis" until 1987 when it was officially documented as Hepatitis C.
- There are no vaccines for HVC.
- The hepatitis C virus can survive outside the body at room temperature, on environmental surfaces, for at least 16 hours but no longer than 4 days.³
- Among people who start injecting illegal drugs, 50 to 80 percent get infected with HCV within one year.⁵
- HCV is not spread by casual contact (coughing & sneezing, hand shaking, hugging,, food or water, sharing eating utensils or drinking glasses, or causal contact.
- There is no evidence indicating that HCV is transmitted through breast milk.
- As of October 2009 in the U. S. 1.637 people have died from HCV.³ This is double the 2008 statistics.
- The hepatitis C virus's greatest weapon might very well be its silence.⁷

Protecting your liver:

- Do get the vaccine for Hepatitis A and Hepatitis B to avoid having two liver infections.
- Notify your doctor and dentist that you have HVC.
- Eat healthy and a well-balanced diet of foods.⁴
- People with HVC have a higher rate of diabetes so eating healthy decreases the risk of diabetes.
- Drink lots of water.
- Avoid Alcohol- drinking it advances HCV more rapidly, causes the liver to swell & increases the chances of cirrhosis.⁴
- Inform your doctor of all the medicines and vitamins you are taking. Many over-the-counter drugs affect the liver.
- Avoid certain herbs.⁴ Ask your doctor for the list. Health-care providers should be aware of the possibility of hepatic toxicity in patients taking herbal supplements containing artemisi-
nin.³⁰
- Exercise, good sleeping habits, positive attitude, stress reduction, and good nutrition will benefit physical and mental health. (HVC Advocate: Living with Hepatitis C)⁹

Hepatitis and the Americans with Disabilities Act

The ADA does not contain a list of medical conditions that constitute disabilities. Instead, the ADA has a general definition of disability that each person must meet. Therefore, some people with hepatitis will have a disability under the ADA and some will not (IEOC, 2002).⁸

Some Accommodation Recommendations:

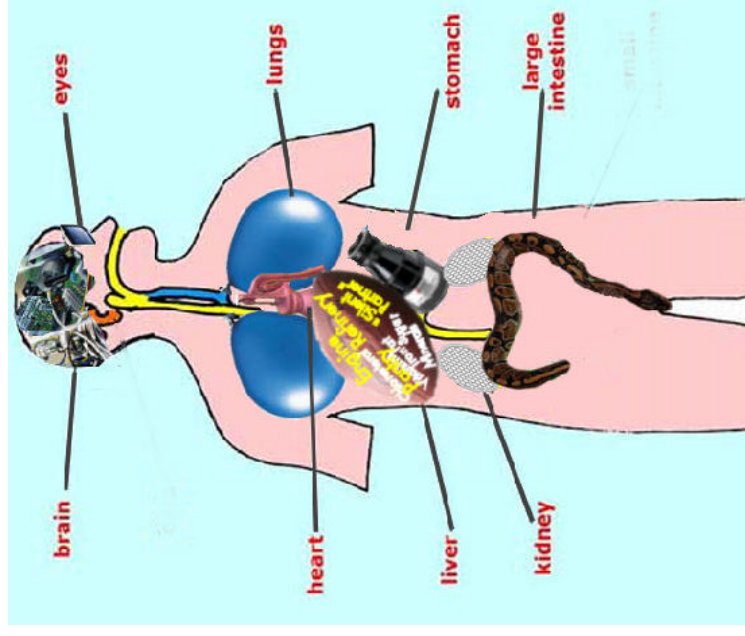
- Fatigue/weakness: flexible leave, frequent breaks, rest area
- Cognitive Complications: increase job structure, minimize distractions
- Psychological Implications: Educate co-workers, open door policy to supervisor, time off for counseling (HVC Advocate: Guide to Hepatitis C and Disability)⁹

Support Group Information:

Hepatitis Foundation International 800-891-0707
http://www.hepfi.org/support/support_find.html
 U.S. Department of Veterans Affairs
<http://www.hepatitis.va.gov/vahp?page=prtp03-ed-01>

Hepatitis C

"The liver isn't just your silent partner – it's your best friend." ¹ However, this quality also gives it the liver the reputation for being the "silent killer."



The Silent Epidemic

Understanding the multiple functions of the liver is useful to understanding the disease of Hepatitis C. This virus not only affects the liver but the entire body and frequently involves emotional side-effects too. Most people are familiar with the basic functions of most of the organs in our bodies. The brain acts like a computer process information; the heart is like a pump circulating blood; the kidneys are like one big filter system; the stomach is our human disposal ; and our lungs are like balloons enabling us to breath. However, few people are aware of the complexity of the liver.

Resource Information:

1. Hepatitis Foundation International <http://www.hepfi.org/>
 Phone: 1-800-891-0707
2. Hepatitis C & Poor Quality of Life: Is it the Virus or the Patient? <http://www.ncbi.nlm.nih.gov/pmc/articles/PMC2702919/>
3. Center for Disease Control and Prevention (Spanish too) <http://www.cdc.gov/hepatitis/ChooseC.htm>
4. U.S. Department of Veterans Affairs (Excellent Website) <http://www.hepatitis.va.gov/vahp?page=we-00-00>
 1-800-827-1000 Resource Center
<http://www.hepatitis.va.gov/vahp?page=prin-con-harc-02>
5. Bioscience- Progression of Chronic Liver Disease <http://www.bioscience.org/2009/v14/af/3423/figures.htm>
6. Depression, fatigue, and functional disability in patients with chronic hepatitis C by Megan Dwight
7. Therapeutic Implications of Acute Hepatitis C Infection- Physicians Research Network http://www.prn.org/index.php/coinflections/article/acute_hepatitis_c_infection_433/
8. Office of Disability Employment Policy- Job Accommodation Network <http://www.ign.vvu.edu/media/hep.html>
9. HVC Advocate <http://www.hcvadvocate.org/>
 Living with Hep C: http://www.hcvadvocate.org/hepatitis/living_w_hepatitis_C.asp

Other Helpful Websites:

- American Association for the Study of Liver Diseases www.aasld.org Phone: 703-299-9766
- American Liver Foundation www.liverfoundation.org
 Phone: 1-800-GO-LIVER
- National Institute of Diabetes and digestive and kidney Diseases <http://digestive.niddk.nih.gov/ddiseases/pubs/autoimmunehep/#what>
- Comparing Hep A, B, & C http://www.cdc.gov/hepatitis/Resources/Professionals/PDFs/ABCTable_BW.pdf
- National Digestive Disease Information Clearinghouse <http://digestive.niddk.nih.gov/ddiseases/pubs/autoimmunehep/#what>
- Hepatitis C Harm Reduction Project http://hepproject.typepad.com/hep_c_project/2005/09/how_can_you_pre.html

PubMed Central: Free archive of life science journals <http://www.ncbi.nlm.nih.gov/pmc/> Have HVC medical updates sent to your e-mail through **NCBI.**

Medline Plus Internet Access Only: <http://medlineplus.gov/>
 Offers access to medical journal articles, a medical dictionary & medical encyclopedia, health information in Spanish, hospital & physician directories, drug & supplement lists, interactive patient tutorials, links to hundreds of clinical trials, and the latest health news. Hepatitis C

YOUTUBE:

- Hepatitis C Infection- 3D Medical Animation**
<http://www.youtube.com/watch?v=y6osMO5xng&NR=1>
- University of California- Hepatitis C From A to Z**
<http://www.youtube.com/watch?v=kflu9uQODgQ&feature=related>

Other Hepatitis C Virus Fact Sheets:

English, German, Russian, Spanish & Vietnamese



For information about Prescription Drug Addiction, Recovery, Signs of Abuse, Support Groups...

For an electronic version of this brochure:
http://www.stoprxdrugabuse.org/html/hepatitis_c.html