
# Frequently Asked Questions

and

# Resource Information

for

*Austin/Travis County and Surrounding Areas*

February 2009

AUSTIN/TRAVIS COUNTY
HEALTH AND HUMAN SERVICES DEPARTMENT

www.ci.austin.tx.us/health

# Frequently Asked Questions and Resource Information For Austin/Travis County and Surrounding Areas

## Table of Contents

# Frequently Asked Questions about Hepatitis C (HCV)

## What is hepatitis?

"Hepatitis" is a general term that indicates an inflammation of the liver, a vital organ that has many functions. "Hepar" means liver and "itis" means inflammation. Viruses, bacteria, drugs, toxins (poisons/chemicals), excess alcohol intake, or autoimmunity (your immune system attacking your own body), can cause the inflammation.

## What is a virus?

A virus is a small microorganism that is made up of nucleic acid (either RNA or DNA) and enclosed in an envelope of protein. It can multiply only within the cells of an animal host (or in plants with some types of viruses).

## Do viruses cause hepatitis?

At this time there are five known viruses that cause hepatitis and liver damage: A, B, C, D, and E. The viruses were named in order of their discovery. These viruses – which may all cause very similar symptoms – are very different. They differ in how they are transmitted and treated, as well as how severely and persistently they may impact the body.

Hepatitis A - E

| | A | B | C | D | E |
|---|---|---|---|---|---|
| **Transmission Route** | ♦ Fecal/oral route (ingestion of fecal material via contaminated food, water or oral/anal sex)<br>♦ Injection drug use | Contact with<br>♦ Infected blood<br>♦ Seminal fluid<br>♦ Vaginal secretions<br>♦ Injection drug use<br>♦ Infected mother to newborn | ♦ Contact with infected blood or body fluids<br>♦ Infected mother to newborn<br>♦ Not easily transmitted through sex | ♦ Same as Hepatitis B Virus (HBV)<br>♦ Requires co-infection with HBV | Fecal/oral route (outbreaks are associated with contaminated water supply in some other countries) |
| **Incubation** | ♦ Average 28 days<br>♦ Range 15 – 50 days | ♦ Average 60 - 90 days<br>♦ Range 45 – 180 days | ♦ Average 42 - 49 days<br>♦ Range 14 – 182 days | ♦ Range 21 – 90 days | ♦ Average 40 days<br>♦ Range 15 – 60 days |
| **Symptoms** | ♦ Young children usually have none<br>♦ Adults usually abrupt<br>♦ Jaundice<br>♦ Fatigue<br>♦ Abdominal pain | ♦ Adults more likely than children to have symptoms<br>♦ Jaundice<br>♦ Fatigue<br>♦ Abdominal pain | ♦ 80% without symptoms<br>♦ Jaundice<br>♦ Fatigue<br>♦ Dark urine<br>♦ Abdominal pain<br>♦ Loss of appetite | ♦ Usually abrupt<br>♦ Jaundice<br>♦ Fatigue<br>♦ Abdominal pain<br>♦ Loss of appetite<br>♦ Nausea and | ♦ Usually abrupt<br>♦ Abdominal pain<br>♦ Loss of appetite<br>♦ Dark urine<br>♦ Fever<br>♦ Jaundice<br>♦ Fatigue |

| | | | | | |
|---|---|---|---|---|---|
| **Symptoms (continued)** | ♦ Loss of appetite<br>♦ Nausea<br>♦ Diarrhea<br>♦ Fever | ♦ Loss of appetite<br>♦ Nausea and vomiting<br>♦ Joint pain | ♦ Nausea | vomiting | ♦ Nausea and vomiting |
| **Mortality rate from acute disease** | ♦ 0.3 – 0.6% overall<br>♦ 1.8% in adults >50 years old<br>♦ ~100 deaths/year in the U.S. (rare) | ♦ 0.5% - 1.0% | ♦ 0.2 – 0.4% | ♦ 2 – 20% with HBV co-infection<br>♦ up to 30% with HBV super-infection | ♦ 1 – 2%<br>♦ 15 – 20% in pregnant women |
| **Chronicity** | No | ♦ 6 – 10% (adults)<br>♦ 25 – 50% (children <5 years old)<br>♦ 70 – 90% (infants) | ♦ 85% persistent infection<br>♦ 70% chronic liver disease | ♦ 2 – 70% | No |
| **Vaccine** | Yes | Yes | No | Indirectly (vaccination against HBV protects against hepatitis D) | No |
| **Prevention** | ♦ Vaccine<br>♦ Post-exposure immune globulin<br>♦ Washing hands<br>♦ Safe sex<br>♦ Not sharing IV drug equipment; bleach & water clean-up | ♦ Vaccine<br>♦ Post-exposure immune globulin<br>♦ Safe sex<br>♦ Not sharing personal items, IV drug equipment<br>♦ IV drug equipment bleach & water clean-up | ♦ No vaccine<br>♦ Safe sex<br>♦ Not sharing personal items<br>♦ Not sharing IV drug equipment bleach & water clean-up | ♦ Indirectly: vaccination against HBV protects against hepatitis D<br>♦ Safe sex | ♦ No vaccine<br>♦ Avoid potentially contami-nated drinking water |

## What is hepatitis C?

Hepatitis C is a RNA virus that is spread by contact with the blood or body fluids of an infected person.

Hepatitis C is one of the leading known causes of liver disease in the United States. About one third of people with new hepatitis C infection develop symptoms that may include fatigue, mild fever, flu-like illness, nausea and vomiting, stomachache, loss of appetite or jaundice.

Up to 80% of people who have just been infected with hepatitis C may have no symptoms. They may not even know they are infected. Many people first learn they are infected with this virus when they begin to have symptoms of liver damage. This is often years later.

People with new (acute) hepatitis C infection may be treated, but the timing of treatment and types of treatment to use are still being studied. The Centers for Disease Control and Prevention case definition of acute hepatitis C: http://www.cdc.gov/ncidod/diseases/hepatitis/resource/surveillance.htm#DisSpecAcuteC

Between 60% and 85% of persons with hepatitis C infection develop chronic hepatitis C, which persists over a long period of time. Fatigue is the most common complaint of people with chronic disease. Other symptoms may include mild upper right abdominal pain, poor appetite, and muscle and joint pain.

**What is the liver and what does it do?**

The following is information from "CARING FOR YOUR LIVER," Hepatitis Foundation International, 30 Sunrise Terrace, Cedar Grove, NJ 07009 1-800-891-0707, www.hepfi.org/living/liv_caring.html.

"The liver, the largest organ in your body, plays a vital role in regulating life processes. Its primary functions are to refine and detoxify everything you eat, breathe, and absorb through your skin. It is your body's internal chemical power plant, converting nutrients in the food you eat into muscles, energy, hormones, clotting factors and immune factors. It stores certain vitamins, minerals, and sugars, regulates fat stores and controls the production and excretion of cholesterol. The bile, produced by liver cells, helps you to digest your food and absorb important nutrients. It neutralizes and destroys poisonous substances and metabolizes alcohol. Before you were born it served as the main organ of blood formation. It helps you resist infection and removes bacteria from the blood stream, helping you to stay healthy. Storing iron is another important task it performs.

In essence your liver serves as your engine, pantry, refinery, food processor, garbage disposal and "guardian angel". Your liver is your silent partner, your internal chemical power plant, and a non-complaining organ. Unfortunately, it doesn't usually let your know it is in trouble until the damage is far advanced. It needs your help to keep it healthy.

One of the most remarkable accomplishments of this miraculous 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, overworking your liver can cause liver cells, the employees in your power plant, to become permanently damaged or scarred. This is called cirrhosis. Alcohol, drugs and even some prescribed and over the counter drugs such as acetaminophen, as well as viruses, environmental pollutants and some metabolic disorders can cause liver cell damage. Medicine should never be taken with alcoholic beverages. Remember they are all made up of chemicals and could be potentially hazardous to your precious liver cells.

Fumes from paint thinners, bug sprays, and other aerosol sprays are picked up by the tiny blood vessels in your lungs and carried to your liver where they are detoxified and discharged in your bile. The amount and concentration of those chemicals should be controlled to prevent liver damage. Make certain you have good ventilation, use a mask, cover your skin and wash off any chemicals you get on your skin with soap and water as soon as possible."

**Why is hepatitis C a major health problem?**

Hepatitis C is the most common chronic bloodborne infection in the United States. At least four million Americans are thought to have been infected with HCV. Of these, about 3.2 million are chronically infected. About 70% of persons with chronic hepatitis C infection develop liver disease, which can progress to cirrhosis (scarring), liver failure, and/or cancer of the liver. Severe liver disease from hepatitis C infection accounts for most of the liver transplants in the U.S. Currently, persons aged 40 to 49 years have the highest number of cases of HCV infection, and in this age group, the number of cases is highest in African Americans (6.1 percent).

Estimates vary on the percentage of persons chronically infected with HCV who go on to develop cirrhosis. These projections can be as low as 2 to 4 percent in children and young women to as high as 20 to 30 percent in middle-aged people who had received blood transfusions. The following factors have been found to increase the risk of more serious liver disease in persons with chronic hepatitis C: older age at the time of infection; male gender; having a compromised immune system; being also chronically infected with hepatitis B; and higher levels of alcohol use.

Lower amounts of alcohol also may increase the risk of liver damage associated with HCV. Other factors, including iron overload, nonalcoholic fatty liver disease, schistosomal (parasite) co-infection, medications that may damage the liver, and environmental contaminants, also may have important effects.

It is estimated that 10,000 to 12,000 people in the United States die each year from chronic hepatitis C. The costs associated with hepatitis C are considerable. It is estimated that well over $600 million are spent nationally each year on medical care and lost wages related to hepatitis C.

A study published by Wong and colleagues in the *American Journal of Public Health* (2000; 90:1562-1569), estimated the future hepatitis C morbidity, mortality, and costs in the United States for the years 2010 through 2019. They based these estimates on data from the third National Health and Nutrition Examination Survey, published literature on the morbidity and mortality from chronic liver disease and hepatocellular carcinoma, and cost estimates for patients with hepatitis C treated at a university hospital. Their conservative model projected 165,900 deaths from chronic liver disease attributable to HCV, 27,200 deaths from hepatocellular carcinoma, and 10.7 billion dollars in direct medical costs for this disease for the 10-year period. For the same time period,

they projected 54.2 billion dollars cost to society from premature deaths of persons less than age 65 and 21.3 billion dollars in cost incurred as the result of disabilities related to cirrhosis and liver cancer.

**What other health problems might persons with chronic hepatitis C experience?**

Persons chronically infected with hepatitis C might also occasionally experience the following health problems:

- Rheumatoid symptoms such as painful joints
- Keratoconjunctivitis sicca—a drying and inflammation of the outer surfaces of the eyes as a result of insufficient tears
- Lichen planus—a disorder of the skin consisting of violet-colored, flat lesions that are often itchy. The lesions usually occur on the wrists, shins, lower back, or the genital area and sometimes on the scalp.
- Glomerulonephritis—inflammation of the kidneys
- Lymphoma—a type of cancer involving the lymphocytes
- Cryoglobulinemia — a condition characterized by the presence of cryoglobulins (abnormal plasma proteins) in the blood. These cryoglobulins can cause restricted blood flow to the skin and to the vital organs (sometimes).
- Porphyria cutanea tarda—a condition characterized by the development of bullous lesions (blisters) following minor trauma or sun exposure to the skin
- Psychological disorders—up to 30 to 40 percent of persons with hepatitis C infection experience depression.

**Why do most persons with hepatitis C become chronically infected?**

The hepatitis C virus mutates rapidly. Mutations or changes in the protein capsid (capsule) that surrounds the virus particle may help it evade the body's immune system.

**Is there a vaccine or other drug to help prevent hepatitis C infection?**

No vaccines or immune globulin products to prevent hepatitis C are currently available. Developing a vaccine will be difficult because the hepatitis C virus includes several genotypes, and the virus undergoes constant mutations.

**Should people with hepatitis C be vaccinated against hepatitis A and B?**

Persons with hepatitis C should get hepatitis A and B vaccines to protect the liver from being infected with these common viruses. Persons with chronic hepatitis C may suddenly develop life-threatening illness if also infected with another hepatitis virus. Vaccines for hepatitis A and B do not provide protection against hepatitis C.

For information regarding other immunizations:
http://www.immunize.org/catg.d/4042hepc.htm

## How can the healthcare provider obtain reimbursement for clients needing hepatitis A and B vaccines?

***(Show this to your physician)***
*Adapted from information from the Seattle-King County Department of Public Health in conjunction with Peter Shalit, MD.*

If routine services are covered**:** hepatitis A and B vaccines, along with most other vaccines, are considered "routine injections" by most insurers. These injections are only covered if the insurer provides a benefit for "routine services" such as physicals and injections. Not all insurers provide a benefit category for "routine services".

If routine services are NOT covered, vaccine may be reimbursed by using:

- CPT and ICD 9 codes: when any medical procedure is billed, such as immunizations, the procedure is given a code called a CPT code, and the associated diagnosis is given an ICD 9 code. The key is to find the code that will allow immunizations to be covered by the insurer.
- For HIV+ clients use the immunosuppressed patient diagnosis code. In the case of HIV or other immune system disorders, most insurers will cover hepatitis A & B vaccines because of the risks and costs associated with these illnesses. For patients with HIV, hepatitis B vaccine has a specific CPT code (90747: hepatitis B vaccine for immunosuppressed patients). Most insurers cover hepatitis vaccines even if the patient doesn't have the "routine services" benefit. There is not yet a specific CPT code for hepatitis A vaccine for persons with HIV or other immune system disorders. To bill an insurer for the immunization, use the appropriate ICD-9 diagnosis code to identify HIV (ICD-9 code 042) or other immune system disorder, along with the appropriate CPT code (90747 for Hep B immunosuppressed or 90730 for Hep A).

For HIV-negative or unknown patient status, use the "exposure" diagnosis code. Insurers will consider payment for hepatitis A & B vaccines when a patient is exposed to hepatitis A or B but does not show signs and/or symptoms of the disease. In these cases you would use the appropriate CPT code (90730 for hepatitis A vaccine, 90746 for hepatitis B vaccine) and use the ICD-9 diagnosis code of "V01.9 = exposure to infectious agent" (*this diagnosis code is appropriate to use in many situations).*

If denied, identify an appropriate "high-risk group" for your client. This method usually requires a call to the insurance company and, in some cases, a letter written by the doctor following a denial of payment.

☞ See below for a comprehensive list of risk groups for Hepatitis A & B.

> **Important:** to protect your patient's confidentiality, discuss the Risk Factor/Group with the patient *prior* to contacting the insurance company!

Last**:** To reduce the number of instances where the insurance company will not cover the vaccine, inquire *prior* to sending the initial claim to the insurance company. Once a

claim has been received and denied it will take a good deal more effort to receive reimbursement from the insurance company. At that point you would need to assess the cost and time associated with the appeal and the specific patient's situation; i.e., the patient's ability to pay for vaccine or whether the patient can be referred to another setting, such as a local STD Clinic.

Hepatitis A Risk Groups:

Persons in these groups are at risk for hepatitis A virus infection and should be vaccinated:

- Men who have sex with men
- Persons traveling to or working in countries that have high or intermediate rates of hepatitis A
- Children in communities that have high rates of hepatitis A and periodic hepatitis A outbreaks
- Illegal-drug users
- Persons who have occupational risk for infection
- Persons who have chronic liver disease
- Persons who have clotting-factor disorders

Hepatitis B Risk Groups:

Persons in these groups are at moderate or high risk for hepatitis B virus infection and should be vaccinated:

- Men who have sex with men
- Immigrants/refugees from areas of high HBV endemicity (Asia, Pacific Islands, Sub-Saharan Africa, Amazon Basin, Eastern Europe, Middle East)
- Children born in the United States to immigrants from areas of high HBV endemicity
- Alaska natives and Pacific Islanders
- Household contacts and sex partners of people with chronic HBV infection
- People who have or who have had sexually transmitted diseases
- Heterosexuals with more than one sex partner in six months
- Users of illicit injectable drugs
- Health care workers who have contact with blood and body fluids
- Adopted children from countries where HBV is endemic
- Hemodialysis patients
- Recipients of certain blood products
- Clients and staff of institutions for the developmentally disabled
- Inmates of long-term correctional facilities

References:

Centers for Disease Control and Prevention. Prevention of hepatitis A through active or passive immunization: Recommendations of the Advisory Committee on Immunization Practices (ACIP). MMWR 1996; 45(No. RR-15): pp. 1-30.
Centers for Disease Control and Prevention. General Recommendations on Immunization: Recommendations of the Advisory Committee on Immunization Practices (ACIP). MMWR 1994; 43(No. RR-1): pp. 1-38.

Centers for Disease Control and Prevention. Hepatitis B virus: A comprehensive strategy for eliminating transmission in the United States through universal childhood vaccination. Recommendations of the Advisory Committee on Immunization Practices (ACIP). MMWR 1991; 40 (No. RR-13): pp. 1-25.

For further Information on hepatitis A and B:

Centers for Disease Control and Prevention (CDC), Hepatitis Branch
1-888-4 HEP-CDC (1-888-443-7232); toll free hotline
http://www.cdc.gov/ncidod/diseases/hepatitis/

## How does a person get infected with hepatitis C?

A person infected with either acute or chronic hepatitis C may infect other people, especially if no safety measures are taken. The virus is found in the blood and is spread by direct contact with blood and blood products.

People who received blood transfusions before 1992 or blood products before 1987 account for 7 – 20% of all hepatitis C cases in the United States. Donor blood is now carefully tested in the laboratory for hepatitis C.

The highest risk of becoming infected with hepatitis C currently is with intravenous drug use. Injecting illegal drugs accounts for 60% of all hepatitis C cases. Hepatitis C virus transmission might also occur via intranasal cocaine use, especially if there is sharing of instruments that are contaminated with blood from bleeding nasal membranes. People can be infected with the virus when they use needles, toothbrushes, and nail files that contain blood from an infected person. People who have acupuncture, body piercing, or tattooing done are at risk if the equipment used is not sterile and was used on persons infected with hepatitis C. These procedures should be done using proper infection control practices that include washing hands, using disposable gloves, disinfecting work surfaces, and using sterilized or disinfected instruments and materials.

A small proportion of people with hepatitis C infection report no known history of exposure to blood or to drug use. They might have been exposed when a cut or wound came in contact with blood from an infected person.

Hepatitis C may also be spread through sexual contact, although this is not a very efficient method of transmission. People who are co-infected with the HIV and hepatitis C viruses appear to transmit the hepatitis C virus more often through sexual contact than those without an HIV infection. People with many sex partners are at increased risk of contracting hepatitis C. A person with multiple sex partners, regardless of infection status, should use latex condoms to help prevent the spread of this virus as well as other infections that can be transmitted through sexual contact. People with hepatitis C infection who have one long-term sex partner do not need to change their practices. The partner's risk is low, but not absent. To lower this small risk, they can use barrier precautions such as latex condoms and ask their doctor about having their partner tested. More studies on sexual transmission are needed.

For every 100 infants born to HCV-infected mothers, between 2 and 7 become infected at the time of birth, depending on whether the mother is HCV RNA

positive at delivery or not. In women who are co-infected with HCV and HIV, up to 20 percent of their babies will become infected with HCV. There is no treatment that can prevent this from happening. Avoiding fetal scalp monitoring and prolonged labor after rupture of membranes might help reduce the risk of HCV transmission to the infant. Most infants who are infected at birth have no symptoms and do well during childhood. More studies are needed to see if these children will have problems later.

Current information indicates that babies do not become infected with hepatitis C from their mothers' breast milk. However, mothers who have cracked or bleeding nipples should use formula feeding until their nipples are healed.

**Who are the major high-risk groups for hepatitis C?**

1. People who have been notified that they have received blood or blood products from a donor who tested positive for hepatitis C.
2. People who received a blood transfusion or solid organ transplant (such as a kidney, liver, or heart) before July 1992.
3. People with blood clotting problems who received treatment with a blood product made before 1987.
4. People who have ever injected street drugs, even once many years ago.
5. People who were ever on long-term kidney dialysis.
6. Persons with accidental injuries due to contaminated needles or other sharp objects, which have been exposed to blood from a hepatitis C positive person.
7. Children born to HCV-infected women.
8. Persons who have received injections with non-sterile syringes or received other non-sterile medical procedures. This is primarily a problem in developing countries.

**What about coinfection with HIV?**

Among the estimated 40 million persons infected with Human Immunodeficiency Virus (HIV) worldwide, approximately 4 – 5 million are also chronically infected with the hepatitis C virus. In the United States, an estimated 25 – 30% of persons with HIV infection, or about 300,000 persons, are coinfected with HCV. For those persons with a history of intravenous drug use as the most likely mode of HIV exposure, the prevalence of HCV coinfection is highest, at 70 – 90%. For those persons whose likely mode of HIV exposure is sexual, coinfection ranges around 5 – 10%. Coinfected persons are more likely to transmit both viruses vertically (from mother to child at birth) and sexually.
Coinfection is associated both with higher viral titers of HCV and accelerated disease progression, especially when CD4 levels decline. Within 10 to 15 years, 15 – 25% of coinfected persons develop cirrhosis while only 2.5 – 6.5% of those without HIV (monoinfected persons) develop cirrhosis. For this reason HCV is considered an opportunistic infection. Liver disease associated with HCV is an increasing cause of morbidity and mortality in HIV positive persons.

While HCV in coinfected persons can be successfully treated with pegylated interferon and Ribavirin, the success rate is generally less than in monoinfected people. Nearly two thirds of coinfected persons who are treated for chronic HCV fail to reduce the virus to undetectable levels (sustained virologic response).

**What resources are available at no cost for clinicians caring for patients with hepatitis C?**

Centers for Disease Control and Prevention:

- On-line training
- Fact sheet
- Frequently Asked Questions
- Recommendations
- Slide presentations
- Brochures and posters
  www.cdc.gov/hepatitis

National Institutes of Health:

- Patient Education Materials
  http://www.niddk.nih.gov/

Texas Department of State Health Services:
Hepatitis C brochure (#6-12C)
Fax order to (512) 458-7707, "Attention Warehouse Manager"
Or send written request to:
Texas Department of State Health Services
1100 W. 49th Street
MAMD Warehouse
Austin, Texas 78756
Phone (512) 458-7761
http://www.dshs.state.tx.us/idcu/

Hepatitis Prevention Counseling Training modules for Disease Intervention Specialists and HIV/STD prevention counselors:
www.tdh.state.tx.us/hivstd/train/hepc/default.htm

**Are health care workers at increased risk for getting hepatitis C?**

Health care workers who have had accidental needlesticks from sharps used on an infected source may develop hepatitis C. After needlestick or sharps exposure to HCV-positive blood, about 2 health care workers out of 100 will become infected with HCV. Recent surveys of health care workers, however, have shown them to have approximately the same prevalence of hepatitis C infection as the general population.

Any healthcare worker who is exposed to blood should receive the hepatitis B vaccine. After an accidental needle stick with infectious blood, fewer than one healthcare worker out of 100 (0.3%) will become infected with HIV. Up to 30 out

of 100 will get Hepatitis B if the exposed person has not been vaccinated and the source is hepatitis B "e" antigen positive (a sign of high infectivity). If the source is not "e" positive, infectivity is lower.

**What should be done when a health care worker has an occupational exposure to blood or body fluids?**

Immune globulin and antiviral agents are not recommended for post-exposure prevention of hepatitis C. When HCV infection is identified early, the person should be referred for medical management to a specialist knowledgeable in this area.

http://www.cdc.gov/mmwr/preview/mmwrhtml/rr5011a1.htm (exposure to HBV, HCV, and HIV)
http://www.cdc.gov/mmwr/preview/mmwrhtml/rr5409a1.htm (exposure to HIV)
www.cdc.gov/mmwr/preview/mmwrhtml/rr5011a1.htm (exposure to HBV, HCV, and HIV)

The National Clinicians' Post-Exposure Prophylaxis Hotline (for healthcare providers): 1-888-448-4911

**Have persons caught the hepatitis C virus from having medical or dental procedures in the U.S.?**

Medical and dental procedures done in the U.S. do not pose a risk for the spread of HCV given that standard infection control practices are adhered to. There have, however, been some isolated reports that HCV has been spread between patients in hemodialysis units where supplies or equipment may have been shared between patients, or in isolated incidents where sterile technique was not used in clinical settings. Several studies of the transmission of HCV in countries outside the U.S. have found evidence of HCV transmission from medical or dental procedures in which needles or other medical equipment were reused without adequate disinfection or sterilization.

**What should people do if they have hepatitis C or think they are at risk?**

Many people carry the virus for 20 – 40 years before serious symptoms appear. Most will never develop serious problems (though drinking alcohol can greatly increase the likelihood of developing serious problems).

Persons with hepatitis C can protect their livers from further harm by:

1. Getting a medical evaluation for chronic liver disease and possible treatment. (Persons are encouraged to discuss their disease with their primary healthcare provider. Gastroenterologists and hepatologists are health care providers who specialize in the treatment of liver diseases and other digestive organ diseases.)
2. Not drinking alcohol.

3. Consulting their physician or pharmacist before starting any new medicines, including over-the-counter and herbal medicines.
4. Getting vaccinated against hepatitis A and hepatitis B.
5. Avoiding work with or exposure to solvents, cleaners, pesticides, etc.

Persons with hepatitis C can reduce the risk of infecting others by:

1. Not donating blood, body organs, other tissue, or semen.
2. Not sharing toothbrushes, dental appliances, razors, manicure scissors, or other personal care articles that might have blood on them.
3. Covering cuts and sores on the skin to keep from spreading infectious blood or secretions.

Persons who are injection drug users:

1. Should stop using and injecting drugs. If at all possible, they should enter and complete substance abuse treatment, including relapse-prevention programs.
2. If they continue to use drugs, they can lessen their risk of getting hepatitis C or spreading it to others by:
    a. Washing hands before and after giving injections.
    b. Using a new sterile syringe each time they prepare and inject drugs.
    c. Not reusing or sharing any equipment used to prepare or inject drugs such as syringes, needles, cottons, or water. Otherwise, used equipment should be sterilized or disinfected first (see below).
    d. Using sterile water to prepare drugs. Clean tap water can be sterilized by boiling it for one minute.
    e. Using a new or disinfected container (“cooker”) and a new filter (“cotton”) to prepare drugs.
    f. Cleaning the injection site with a new alcohol swab before injection.

Sterilizing/disinfecting equipment:

Sterilize needles, cookers, and other injection equipment between EACH use. Boiling for 20 minutes will sterilize equipment and kill HIV and many other disease-producing pathogens.

Clean all injection equipment with bleach. Although this process is less effective than using new equipment each time, or sterilizing between each use, it is much easier, less time-consuming, and may offer a more realistic approach, especially when other options are not available.

Instructions for bleaching **(NOTE: It is not known whether this will kill the hepatitis C virus. Therefore, using new equipment each time and NOT sharing any injecting equipment is always safest):**

1. Fill syringe with water, shake well, and then empty. Do not empty syringe back into the remaining water. Do this three times to flush out all residue.
2. Fill syringe with full strength chlorine bleach (normal liquid household bleach), shake well, and then empty. Do not empty syringe into the remaining bleach supply. Do this three times to allow bleach to cover all surfaces.
3. Fill syringe with water, shake well, and then empty. Do not use water previously used to flush the first time; use fresh water. Do not empty syringe back into the remaining water. Do this three times to flush out all remaining bleach.

**What are the drug treatment resources in our community?**

- 211 Texas: Dial 211 for information about and referrals to social service agencies and organizations throughout the state of Texas.
  https://www.211texas.org/211/

**What other information should persons with hepatitis C know?**

1. HCV is not spread by sneezing, kissing, hugging, coughing, food or water, sharing eating utensils or drinking glasses, or casual contact such as shaking hands.
2. Having HCV is not a reason to be excluded from work, school, play, child-care, or other group settings. Persons with hepatitis C can handle food as part of their work without infecting others. Infected health care workers also can continue to work in a health care setting. As recommended for all health care workers, those who are HCV-positive should follow strict aseptic technique and standard precautions, including appropriate use of handwashing, protective barriers, and care in the use and disposal of needles and other sharp instruments.
3. As noted by Hepatitis Foundation International (HFI), “fatigue is a common problem. Finding a happy balance between relaxation and activities is helpful. Frequently, short naps between activities or outings prevent overwhelming fatigue at the end of the day. Don’t plan too many activities for one day, instead space them out over a week. Separate the activities requiring a lot of energy with less strenuous ones. Allow yourself time to regroup while still keeping busy. If your workday is exhausting, try arranging flexible hours or a work-from-home option. Telecommuting, the computer-modem connection, creates new opportunities everyday.”
4. HFI further goes on to say, “In addition to the physical symptoms, hepatitis can cause emotional stress. It is important to have people you can count on for support and encouragement. Talk to friends and loved ones about difficulties you experience and what you need from them. People are not

mind readers, and open discussions can help minimize problems and misunderstandings. Support from loved ones and friends makes coping easier. Try not to set unreasonable standards for yourself or anyone else."

5. Becoming involved with a support group may help both the HCV-infected person and his/her family and/or significant others.

Support Groups:

| | |
|---|---|
| **Hepatitis C Support Group**<br>Hyde Park United Methodist Church<br>4001 Speedway<br>Austin, TX<br>Every 3rd Wednesday at 6:30 PM<br>Louis 512-892-0755 | **Hepatitis Support Group**<br>Central Texas Blood & Tissue Center<br>4300 N. Lamar Boulevard<br>Austin, TX<br>Every 3rd Tuesday Noon – 2 PM<br>512-451-2222 |
| **Pre & Post Liver Transplant Group**<br>Central Texas Blood and Tissue Center<br>4300 N Lamar<br>Austin, TX<br>Every 3rd Tuesday at Noon<br>Priscilla 512-327-1182 | **Support Group**<br>Office of Imtiaz Alam MD<br>12201 Renfert Way Suite 235<br>Austin, TX<br>Every 1st Wednesday at 6:30 PM<br>Liz 512-719-4370 |

**What are the most common blood tests available to check for hepatitis C?**

| Test | Full Name | Purpose of Test | Normal Range | Comments |
|---|---|---|---|---|
| EIA | Enzyme Immunoassay | Tests for antibody to HCV | Negative | Most widely available lab test to check for hepatitis C antibody. Can't tell if infection is new (acute), chronic, or no longer present. The rate of false positives is high in groups of people with low rates of infection. Antibody is detectable within 15 weeks in 80% of people and within 6 months in 97% of people. Negative result is sufficient to exclude HCV diagnosis in immune-competent persons. Inexpensive. |
| RIBA | Recombinant Immunoblot Assay | Supplemental test to confirm anti-HCV reactivity | Negative | Widely used in the past to confirm diagnosis of HCV antibody, a marker of past or current infection. PCR is now more widely used. Useful as supplemental test for persons screened in non-clinical settings and in persons with a positive EIA who test negative for HCV RNA. |
| PCR Qual | Polymerase Chain Reaction Qualitative | Detects actual presence of virus | Negative | Single negative result may only reflect a transient decline in viral level below the level of detection of the test. Repeat test in 6 months to rule out HCV. Once HCV infection is confirmed, repeat testing using a test with limit of 50 IU/mL or less is not helpful in management of untreated persons except for determining whether an acute infection has resolved spontaneously. A single positive test confirms active HCV replication. |

| | | | | |
|---|---|---|---|---|
| PCR Quan | Polymerase Chain Reaction Quantitative | Detects amount of virus | Non-detectable | Significant variability exists between available tests. Should use same specific assay used initially. Little correlation between disease severity and progression with HCV RNA level but provides information to guide treatment. |
| ALT | Alanine Aminotransferase | Elevation suggests liver injury or disease | Adult/child: 5-35 IU/L or 8-20 U/L (SI units) Elderly/Infant: may be twice as high as adult | Formally known as SGPT. Enzyme found primarily in the liver. Most ALT elevations are caused by liver abnormalities. Many commonly used drugs may cause increased ALT levels. Not specific for HCV. Approximately 30% of patients with HCV infection have normal ALT levels. Inexpensive but relatively insensitive means of assessing disease activity. |
| AST | Aspartate aminotransferase | Liver injury or disease causes a release of this enzyme into blood stream | Adult: 8-20 U/L or 5-40 IU/L, females tend to have slightly lower values than males. Elderly: values slightly higher than adult. Child: values similar to adult. Newborn/infant: 15-60 U/L | Formerly known as SGOT, an enzyme that exists in liver cells. Pregnancy may cause decreased AST levels. Exercise may cause increased AST levels. Drugs may cause increased levels. Not specific for HCV. |

Hepatitis C Virus (HCV) Infection Testing for Diagnosis flow chart: http://www.cdc.gov/ncidod/diseases/hepatitis/resource/PDFs/hcv_flow.pdf

The FDA has approved a home access testing system that is available at some area pharmacies. More information can be obtained at www.homeaccess.com/ 1-888-888-HepC.

**Interpretation of Hepatitis C Test Results**

| TEST | RESULTS | INTERPRETATION | RECOMMENDATION |
|---|---|---|---|
| Anti-HCV (EIA) | Positive | Chronic hepatitis, hepatitis C recovered, recent acute hepatitis C, or false positive test | Further evaluation |
| Anti-HCV (EIA)<br>Supplemental test (RIBA-3) | Positive<br>Positive | Chronic hepatitis, hepatitis C recovered, recent acute hepatitis C | Further evaluation |
| Anti-HCV (EIA)<br>ALT<br>Supplemental test (RIBA-3) | Positive<br>Normal<br>Positive | Chronic hepatitis, hep C recovered, or recent acute hepatitis C | Further evaluation by HCV RNA PCR test |
| Anti-HCV (EIA)<br>ALT | Positive<br>Elevated | Presume chronic hepatitis C | Further evaluation by HCV RNA PCR test |

| | | | |
|---|---|---|---|
| Anti-HCV (EIA)<br>ALT<br>Supplemental test (RIBA-3) | Positive<br>Normal<br>Negative | Presume false positive anti-HCV | No further testing needed (unless ongoing risk factors) |
| Anti-HCV (EIA)<br>ALT<br>Supplemental test (RIBA-3) | Positive<br>Normal<br>Indeterminate | Could be false positive, past infection, or chronic hepatitis C | Further evaluation by repeat RIBA-3 in 2 or more months, or HCV RNA PCR |
| Anti-HCV (EIA)<br>ALT<br>HCV RNA PCR | Positive<br>Elevated<br>Negative | Could be false positive, past infection (recovered), or chronic hepatitis C | Repeat HCV RNA PCR test – if negative second time, further evaluation for liver disease other than hepatitis C |
| ALT<br>(No other symptoms) | Elevated | Possible fatty liver, chronic viral hepatitis, alcoholic liver disease, hemochromatosis, drug induced liver injury, other liver diseases | Further evaluation |
| AST<br>(No other symptoms) | Elevated | Possible disease or injury of heart, liver, skeletal muscle, kidney, pancreas, spleen, lung, red blood cells or brain tissue | Further evaluation |

Definitions:

- Anti-HCV: antibody to hepatitis C virus.
- ALT: Liver enzyme released from liver cells that are injured, e.g.: by virus, alcohol, fat, drug, etc.
- AST: enzyme released from cells or organs that are injured.
- RIBA-3: Supplemental test to detect antibody to hepatitis C virus.
- Indeterminate means 1 of 4 antigens positive.
- HCV-RNA test by polymerase chain reaction (PCR) determines whether the virus is multiplying.
- *It is assumed that other forms of hepatitis are ruled out.*

Centers for Disease Control and Prevention Reference for Interpretation of HCV Test Results: http://www.cdc.gov/hepatitis/hcv/pdfs/hcv_graph.pdf
For further information on laboratory testing, go to the February 7, 2003 MMWR "Guidelines for Laboratory Testing and Result Reporting of Antibody to Hepatitis C Virus." at http://www.cdc.gov/mmwr/preview/mmwrhtml/rr5203a1.htm

## What other tests might be done in managing hepatitis C?

Liver biopsy

Type of test: Microscopic examination of tissue.

Liver biopsy is a valuable method of grading the severity of disease and staging the degree of fibrosis of the liver. It is also helpful in ruling out other causes of liver disease, such as alcoholic liver injury or iron overload. It cannot be used to diagnose HCV infection.

There are potential risks associated with the procedure, and the role of liver biopsy in the management of hepatitis C is currently being debated. Possible complications may include puncture of the lung or gallbladder, infection, bleeding and pain, but these complications are rare.

Before scheduling the biopsy, the physician will take blood samples to make sure the patient's blood clots properly. The patient should inform the physician of any medications they take, especially those that affect blood clotting, like blood thinners. The patient will have to stop taking aspirin, ibuprofen, and anticoagulants one week before the procedure.

For this procedure, a specially designed needle is inserted through the abdominal wall and into the liver. A piece of liver tissue is removed for microscopic examination. Liver biopsy is used in the diagnosis of various liver disorders such as cirrhosis, hepatitis, granuloma and tumors.

The liver biopsy is performed by a physician and takes about 15 minutes. However, after the procedure is finished the patient will stay for observation for approximately 1 to 2 hours.

During the liver biopsy the patient lies on his/her back or left side. The area to be punctured is anesthetized locally. The patient is asked to exhale and hold the exhalation. This causes the liver to descend and reduces the possibility of a punctured lung. Frequently, the patient practices exhalation two or three times before insertion of the needle. While the patient is exhaling the physician rapidly introduces the biopsy needle into the liver to obtain liver tissue. The needle is then withdrawn from the liver. The procedure is generally not painful, but the patient may experience discomfort during the injection of the local anesthetic and during the needle insertion.

A small dressing is placed over the needle insertion sight and the patient will be instructed to lie on his/her right side. In this position the liver is compressed against the chest wall, thereby decreasing the risk of hemorrhage or bile leak. The patient's vital signs are checked frequently for evidence of hemorrhage (increased pulse, decreased blood pressure) and inflammation of the membrane lining the abdominal cavity (increased temperature).

The tissue sample is sent to the laboratory to be examined under a microscope. Abnormal findings (which may indicate liver disease) could include tumors, abscesses, cysts, hepatitis, or infiltrative diseases such as amyloidosis, hemochromatosis, fibrosis and cirrhosis.

The patient is usually instructed to have someone take them home. They should remain in bed (except to use the bathroom) for 8 to 12 hours, depending on the physician's instructions. The patient should also avoid exertion for the next week so that the incision and liver can heal. One might expect some soreness at the incision site and possibly some pain in the right shoulder. This pain is caused by irritation of the diaphragm muscle and should disappear within a few hours or days.

Because a favorable response to current HCV therapy occurs in 80 percent of patients with genotype 2 or 3, it may not be necessary to perform liver biopsy in these patients to make a decision to treat.

Genotyping

There are six known genotypes and more than 50 subtypes of the hepatitis C virus. The different genotypes vary by geographic region. Approximately 70 - 75% of persons in the United States have genotype 1, with frequency of subtype 1a predominating over subtype 1b. The genotype of infection is helpful in defining the epidemiology of hepatitis C.

Knowing the genotype or serotype (genotype-specific antibodies) of HCV is helpful in making recommendations and counseling regarding therapy. Patients with genotypes 2 and 3 are almost three times more likely to respond to therapy with alpha interferon or the combination of alpha interferon and ribavirin. Furthermore, when using combination therapy, the recommended duration of treatment depends on the genotype. For patients with genotypes 2 and 3, a 24-week course of combination treatment may be adequate, whereas for patients with genotype 1, a 48-week course is recommended. For these reasons, testing for HCV genotype is essential prior to treatment.

Once the genotype is identified, it need not be tested again; genotypes do not change during the course of infection. There is little evidence showing differences in clinical outcomes of disease progression among people with different genotypes. It is possible to get re-infected by a second genotype.

**Who should be tested for HCV infection?**

The Centers for Disease Control and Prevention have developed the following set of recommendations for screening and testing for HCV:

> *Persons who should be tested routinely for HCV infection based on their increased risk for infection:*

- Persons who ever injected illegal drugs, including those who injected once or a few times many years ago
- Persons who were treated for clotting problems with a blood product made before 1987 when more advanced methods for manufacturing the products were developed
- Persons who were notified that they received blood from a donor who later tested positive for hepatitis C
- Persons who have ever been on long-term kidney dialysis
- Persons who received a blood transfusion or solid organ transplant before July 1992 when better testing of blood donors became available
- Persons who have signs or symptoms of liver disease (e.g., abnormal liver enzyme tests)
- Persons with documented HIV infection

*Persons who should be tested routinely for HCV based on a recognized exposure:*

- Children born to HCV-infected women (after 12 – 18 months old)
- Healthcare workers after exposure (e.g., needle sticks or splashes to the eye) to HCV-positive blood

*Persons for whom routine testing for hepatitis C infection is of uncertain need:*

- Persons who have received transplanted tissue (e.g. corneal, musculoskeletal, skin, ova, sperm)
- Intranasal cocaine and other non-injecting illegal drug users
- Persons with a history of tattooing or body piercing
- Persons with a history of multiple sex partners or sexually transmitted diseases
- Long-term steady sex partners of hepatitis C-positive persons

*Persons for whom routine testing is not necessary:*

- Health-care, emergency medical, and public safety workers unless a needle stick or sharps exposure has occurred from a positive source
- Pregnant women unless they have risk factors for HCV infection
- Household (nonsexual) contacts of HCV-positive persons unless an exposure to a contaminated source has occurred such as razors or sharps from an HCV-positive household member

**Where can I be tested?**

Persons with insurance coverage, Medicare or Medicaid should see their physician for hepatitis C testing.

Confidential hepatitis C testing may be available for those at highest risk. Call Austin/Travis County Health & Human Services Department at (512) 972-5580 for further information.

**What are the resources for Veterans?**

The Central Texas Veterans Health Care System serves clients from Hillsboro to San Marcos, with approximately 50,000 veterans in the central Texas area. Austin has a large clinic and there are smaller clinics in the surrounding area. It is estimated that there are 5,000 veterans with hepatitis C in this area, with approximately 35% of these in Austin.

Testing is done through the VA primary care clinics and the client is then referred to a hepatitis C clinic.

Clients are normally seen within 30 days of the initial consult with a primary care provider. Treatment is offered to eligible clients who meet treatment criteria based on NIH and VA guidelines. All clients are provided needed vaccines and followed up on a yearly basis.

Clients with meld scores of 15 and above are referred for evaluation of liver transplantation. There are four designated transplant facilities.

Call (800) 423-2111 for more information.

**What are the treatments for chronic hepatitis C infection?**

In the U.S., four different treatment regimens have been approved for hepatitis C:

1. Interferon used alone
2. Combination therapy with interferon and ribavirin
3. Pegylated interferon used alone
4. Combination therapy with pegylated interferon with ribavirin

Combination therapy results in better treatment responses than with interferon alone, but the highest response rates have been achieved with pegylated interferon in combination with ribavirin. Genotype determinations influence treatment decisions. Currently the best indicator of effective treatment is a sustained viral response (SVR), defined by the absence of detectable HCV virus in the blood at 24 weeks after the end of treatment.

Sustained viral response rates of about 45 - 50% have been achieved in patients with genotype 1 compared to rates of about 75 – 80% in patients with genotypes 2 and 3. Twenty-four weeks of treatment appears to be sufficient for persons with genotypes 2 and 3, while patients with genotype 1 need 48 weeks of treatment.

Ribavirin, when used alone, does not work. Interferon may be given several times a week or daily as an injection. Pegylated Interferon is usually given once

a week as an injection. Ribavirin comes in capsules that are taken by mouth twice each day. Some studies suggest that treatment with interferon and ribavirin may help reduce the risk of liver cancer in HCV patients with cirrhosis, but more studies are needed to confirm this relationship.

**What are the side effects of interferon therapy?**

Periodic blood tests are required to monitor white blood cells and platelets because interferon may interfere with their production by depressing the bone marrow. Common side effects of interferon (occurring in more than 10 out of 100 patients) include: fatigue, muscle aches, headaches, nausea and vomiting, skin irritation at the injection site, low-grade fever, weight loss, irritability, depression, mild bone marrow depression (shows up in the white blood cell and platelet counts), and reversible hair loss.

Most of these side effects are mild to moderate in severity and can be managed. Interferon has an antigrowth effect that could be damaging to the developing embryo and fetus; therefore, it should not be taken during pregnancy.

**What are the side effects of ribavirin?**

The most common side effects of ribavirin are: anemia, fatigue and irritability, itching, skin rash, and nasal stuffiness, sinusitis, and cough. Ribavirin should not be given to women who are pregnant or who are not using an effective method of birth control. A male patient should not impregnate a female partner while he is taking ribavirin. Ribavirin has been found to cause birth defects in animal studies. This drug can also make some persons' skin more sensitive to the sunlight, so excessive sun exposure should be avoided while on ribavirin.

**What can be done about the side effects of interferon or ribavirin?**

You should report what you are feeling to your doctor. Giving interferon at night or lowering the dose of the drug may reduce some side effects. In addition, taking acetaminophen (e.g., Tylenol) can reduce flu-like symptoms. Antihistamines may relieve nasal stuffiness from ribavirin therapy. Check with your doctor, however, before using acetaminophen, antihistamines, or any other drugs to alleviate these symptoms.

Patient adherence is critical to success of treatment of hepatitis C. Patients and healthcare providers should both be alert to problems with side effects of treatment. Psychological conditions, particularly depression, are common among persons with hepatitis C and are frequent side effects of interferon. A person’s mental health should be assessed before beginning therapy and monitored regularly during therapy. Antidepressants may be useful in the management of depression. People with a history of past IV drug use should be encouraged to obtain appropriate care before beginning interferon injections (such as 12-step programs, etc.).

## Who should be treated?

The June 2002 NIH Consensus Statement states that all patients with chronic hepatitis C are potential candidates for therapy. Treatment is recommended for those with an increased risk of developing cirrhosis (when healthy liver cells are killed and replaced with scar tissue). This is defined as having viral load levels higher than 50 IU/mL, a liver biopsy with portal or bridging fibrosis (formation of fibrous tissue), and at least moderate inflammation and necrosis (tissue death).

Many people with chronic hepatitis C have not been treated because of their injection drug use, significant alcohol use, age, or other conditions. But it has been shown that HCV therapy has been successful even when people have been using drugs or alcohol, or are on daily methadone. Continued alcohol use during therapy affects response to treatment, and alcohol abstinence is strongly recommended before and during antiviral therapy. *Treatment should be considered on a case-by-case basis.*

A large number of HCV-infected persons in the United States are in prison. Also, people who are uninsured or have publicly funded healthcare may be more likely to be infected with HCV. Successful treatment may reduce transmission.

All HIV-infected persons should be screened for HCV. Patients with both chronic hepatitis C and HIV infection may have a faster course of HCV disease. Treatment is recommended on a case-by-case basis.

Many factors must be considered in starting treatment, including genotype, presence of fibrosis, motivation of person, symptoms, presence of other diseases, and the person's age.

American Association for the Study of Liver Diseases (AASLD) Practice guideline: Diagnosis, Management, and Treatment of Hepatitis C: https://www.aasld.org/eweb/docs/hepatitisc.pdf

## Can children be treated for chronic hepatitis C?

Diagnosis and testing (including liver biopsy) of children suspected of having chronic HCV should proceed as with adults.

Because of the high rate of clearance of the HCV virus within the first year of life, and the level of anxiety that may be caused by an early positive test, routine testing for HCV RNA in infants born to HCV-infected mothers is not recommended. Testing for anti-HCV may be performed at 12 - 18 months or later. If an earlier diagnosis is desired, PCR for HCV RNA may be performed at or after the infant's first well-child visit at 1 to 2 months.

Children aged 3-17 who are infected with hepatitis C and are considered appropriate candidates for treatment may receive therapy with interferon alfa-2b and ribavirin, administered by those experienced in treating children.

Safety and effectiveness of treatment in pediatric patients below the age of 18 years have not been established.

Treatment of children under the age of 3 years is contraindicated.

**What about herbal remedies - are they helpful or can they be harmful?**

It is important to check with your doctor or pharmacist before taking herbal medicines. Some herbal products can actual cause injury to the liver. Harmful products include (but are not limited to the following): comfrey; gordologo herbal tea; mate tea; Chinese herb medicinal tea; Jin Bu juan; germander; chaparral leaf; chapparal, valerian root, skullcap; mistletoe; margosa oil; and pennyroyal oil (Reference: *Strader DB, Zimmerman HJ: Complementary and alternative medicine in hepatitis C. In: Hepatitis C, ed. By Liang TJ, and Hoofnagle JH*, *San Diego: Academic Press, 2000).*

Some of the herbal medicines that have been used in treating hepatitis C are CH100, *Glycyrrhiza glabra* (licorice), Goou plus Yutan, Sho-saiko-to (TJ-9), Silymarin (milk thistle), Sophora (oxymatrine), thymus extracts, and 90-11 granules. Strader and Zimmerman (see above reference) note in their review "these agents may be effective either in promoting recovery or in [lessening] the ongoing liver injury." They caution, however, that none of these agents have been studied adequately for their effectiveness or safety.

Persons with liver disease should use all herbal and nonprescription drugs with caution. An objective reference about different herbal remedies can be found in *PDR for Herbal Medicines*, 2nd edition, Montvale, NJ: Medical Economics Company, 2000.

U.S. Food & Drug Administration, Center for Food Safety & Applied Nutrition:
http://www.cfsan.fda.gov/~dms/supplmnt.html

**Where can I find information on alternative therapies?**

Acupuncture: http://www.nccaom.org
Massage: www.amtamassage.org
National Center for Complementary and Alternative Medicine:
http://nccam.nih.gov

**What about diet?**

Diet and Hepatitis C*

| *Foods and Beverages* | *Recommendations* |
|---|---|
| General Diet | Eat a well-balanced, low-fat diet. A diet high in complex carbohydrates may be helpful in providing calories to maintain weight. Frequent small meals may be more easily tolerated. |
| Alcohol | Total avoidance of all alcohol is recommended. Excessive intake can lead to cirrhosis. Damage can occur in even some moderate "social drinkers." |
| Iron | Avoid taking iron supplements and restrict intake of iron-rich foods such as red meats, liver, and iron-fortified cereals. Avoid cooking with iron-coated cookware and utensils. Excess iron can be damaging to the liver, and high iron levels can reduce the response rate of patients to interferon. |
| Fat | Maintain normal weight. Overweight people often have liver-related abnormalities such as fatty deposits in the liver, which improve when weight is lost. Diabetics should follow a sugar-restricted diet. |
| Sodium | Cirrhosis may lead to abnormal accumulation of fluid in the abdomen (ascites). Patients with this condition must restrict sodium (salt). Sodium intake should be 1000 mg. a day or less. Patients without ascites should not overindulge in salt intake, but restrictions are not as severe. |
| Protein | Adequate intake is needed to build and maintain muscle mass and to assist in liver healing and repair. Individual intake is dependent on one's weight. *See chart below. Patients should consult their physician regarding specific recommendations. |

| *Weight* | *Recommended average protein intake for regeneration of liver cells in non-cirrhotic patients* | *Maximum recommended protein intake for patients at risk for encephalopathy* |
|---|---|---|
| 100 lbs. | 45-68 gm. (6-9 oz. Meat or equivalent) | 27 gm. |
| 130 lbs. | 59-87 gm. (8-12 oz. Meat or equivalent) | 35 gm. |
| 150 lbs. | 68-103 gm. (9.7-14 oz. Meat or equivalent) | 40 gm. |
| 170 lbs. | 77-116 gm. (11-16 oz. Meat or equivalent) | 46 gm. |
| 200 lbs. | 91-136 gm. (13-19 oz. Meat or equivalent) | 54 gm. |

*Palmer, Melissa. Diet and Hepatitis C (Information Sheet), New York: American Liver Foundation, 1997.

USDA Food Pyramid: http://www.mypyramid.gov/

**What about liver transplants for persons with HCV?**

Liver transplantation is surgery to remove a diseased liver and replace it with a healthy liver from an organ donor. A liver transplant is necessary when diseases such as chronic hepatitis C infection cause cirrhosis to such an extent that the liver stops working.

Liver transplantation is usually done when other medical treatment for end-stage liver disease cannot keep a damaged liver functioning. About 80 to 90 percent of people survive after liver transplantation. Survival rates have improved over the years because of drugs like cyclosporine and tacrolimus that suppress the immune system and keep it from attacking and damaging the new liver. The recurrence of HCV infection (as detected by polymerase chain reaction) almost always occurs after liver transplant in persons with HCV infection. However, despite re-infection, survival after transplant is fairly good. For more information regarding organ donation, call Texas Organ Sharing Alliance (Austin office) at 512-459-4848 or go to United Network for Organ Sharing at www.unos.org. For more information regarding transplantation, go to National Foundation for Transplants at www.transplants.org or TransWeb Organ Transplantation Information Site at http://www.transweb.org.

**How should a person who is diagnosed with HCV handle their work and employer?**

A person with hepatitis C infection can face challenges in the workplace. First, if coworkers or employers find out about his/her infection, they may become very concerned about the possibility of transmission of the virus to them. Education about transmission is important to reduce anxiety and help prevent discrimination against the employee with hepatitis C. Literature from local, state, or federal health agencies can also help clear up misconceptions about the disease such as “airborne spread” or being able to get it “from the restroom or telephone.”

It is important that the employee with hepatitis C not share personal items with coworkers such as combs, nail files, and toothbrushes. These items could have minuscule amounts of blood on them, which could transmit the virus to someone with non-intact areas of skin or mucous membranes.

HCV-infected employees will need to decide whether to inform their employers about their disease status. Each person needs to consider the impact that his/her disease will have on their job in terms of the effect of work on their health; the effect of their health condition on work performance; and chances of exposing other workers or customers to the virus (very low probability).

Under the Americans with Disabilities Act (ADA) an employer must help a person with hepatitis C identify ways to accommodate his/her disability. However, the employee must still be able to perform the essential functions of his/her job. Reasonable accommodations that may help a person with hepatitis C function optimally in his/her job include:

- ♦ Flex time
- ♦ Shorter workdays
- ♦ Telecommuting from home

To be protected under the ADA, a person must inform their employer that they have hepatitis C. If unable to work, a person with hepatitis C may need to apply for Social Security Disability Insurance (SSDI) or Supplemental Security Income (SSI). Americans with Disabilities Act: http://www.usdoj.gov/crt/ada/adahom1.htm.

**How do I apply for disability?**

Call 1-800-772-1213 or apply at 903 San Jacinto, #102, Austin, TX, 512-916-5404. http://www.dshs.state.tx.us/idcu/disease/hepatitis/hepatitis_c/employers/

**I have no insurance. Can I obtain treatment?**

Persons with hepatitis C may be eligible for Medicare, Medicaid or CHIP, which would cover treatment.

*Medicare* is a federal program that may help to provide healthcare coverage for:

- People 65 years of age and older, and
- Certain younger people with disabilities, and
- People with end-stage renal disease (people with permanent kidney failure who need dialysis or a transplant).

For more information, call 1-800-MEDICARE (1-800-633-4227). Information can be found on the Internet at www.medicare.gov.
To apply for Supplemental Security Income (SSI), which may come with Medicare: call 1-800-772-1213 or go to http://www.trailblazerhealth.com/.

*Medicaid* is a joint federal/state program that may help to provide healthcare coverage for people who are low-income and are:

- Pregnant
- A child (up to age 19 years old)
- Elderly
- Disabled
- Blind

To apply for Medicaid:

(1) Children (birth through age 18) may be eligible. Call TEXCARE Partnership at 1-800-647-6558 or go to www.texcarepartnership.com.
(2) Adults (pregnant women and adults with children in the household) should contact their local Texas Department of Human Services office to apply.
Email: Medicaid@hhsc.state.tx.us
Client Hotline 800-252-8263

| | |
|---|---|
| 1165 Airport Blvd., Austin, 78702 | (512) 929-7330 |
| 1601 Rutherford, Austin, 78754 | (512) 339-8868 |
| 724 Eberhart, Austin, 78745 | (512) 445-0022 |

1011 Gattis School Rd., Round Rock, 78664 (512) 244-1592

(3) Persons who receive Supplemental Security Income (SSI) will be notified by the Texas Department of Human Services if they are eligible for Medicaid. Contact the Social Security Administration at 1-800-772-1213 to apply for SSI if you are elderly, disabled or blind. If you receive SSI, you will also receive Medicaid.

For more information, call your local DHS office or the Medicaid Hotline at 1-800-252-8263 or go to http://www.hhsc.state.tx.us/medicaid/index.html.

*Children's Health Insurance Program (CHIP):* Children (birth through age 18) who do not qualify for Medicaid may qualify for CHIP. Call TexCarePartnership at 1-800-647-6558 or go to www.texcarepartnership.com.

*Medical Assistance Program (MAP):* The Medical Assistance Program is a service of the Community Care Services Department. MAP provides access to health care through networks of established providers for those Travis County residents who meet eligibility criteria. Some services require a co-payment.

*Who qualifies for a MAP card?*

- Travis County residents with family incomes at or below 100% of the Federal Poverty Index Guidelines, and who meet asset guidelines.
- Disabled or elderly individuals, if their income is at or below 200% of the Federal Poverty Index Guidelines, and if they meet asset guidelines.
- Residents who receive Medicare and meet the income and asset guidelines. (They may qualify for limited MAP benefits.)

**Even if you do not qualify for MAP, you may be enrolled in other programs that can help you get health care at a reduced rate.*

*Where do I go for a MAP card?*

See the chart below for the Eligibility Office nearest you.

*What do I have to bring to the MAP interview, for each member of my family? **

Call the eligibility office nearest you to find out how to apply and what to bring to your interview. However, you will probably be asked to bring the following documents to your interview:

1. Birth certificate or passport
2. Identification (for example, Texas Driver's License/I.D., out-of-state ID, foreign ID, if applicable. This requirement is for adults only.)
3. Social Security card (if available)
4. Income verification – proof of earned or unearned income for past 4 weeks (for example, employment, Social Security, child support, TANF, unemployment benefits, proof of alien sponsor's income, etc.)

5. Insurance verification - Medicare, Medicaid or insurance card/letter (if it applies)
6. Address verification – lease agreement/rent receipt or current utility bill (except for people who are homeless)
7. Resource verification – current bank statement, property tax appraisal (if it applies)

**You may discuss other acceptable documents with the eligibility office. Remember: even if you do not qualify for MAP, you may be enrolled in other programs that can help you get health care at a reduced rate.*

**City of Austin**

City of Austin residents should contact one of the City of Austin Eligibility Offices below:

**Cesar Chavez Building**
1111 East Cesar Chavez
Austin, TX
Telephone: **972-5300** (Call Center)
Hours: Call for an appointment
Located at East Cesar Chavez and Waller St.

 #17 Johnston, #21 Exposition, and #22 Chicon

**South Austin Neighborhood Center**
2529 S. First Street
Austin, TX
Telephone: **972-5300** (Call Center)
Hours: Call for an appointment
Located at Durwood and W. Oltorf

 #10 South First

**Northeast Austin Health Center**
7112 Ed Bluestein Blvd., Suite 155
Austin, TX
Telephone: **972-5300** (Call Center)
Hours: Call for an appointment
Located at Ed Bluestein Blvd. (183 North) and Springdale Rd.

 #20 Manor Road, #37 Colony Park, #23 Johnny Morris

**Travis County**

Travis County residents who live outside Austin City Limits should contact one of the Travis County Eligibility Offices below:

**East Rural (Manor) Community Center**
606 W. Carrie Manor
Manor, TX
Telephone: **272-5561**
Hours: Call for hours open
Located near W. Carrie Manor and FM 973

 #990 Northeast Express or call CARTS, 478-7433

| |
|---|
| **North Rural (Pflugerville) Community Center**<br>15822 Foothill Farms Loop, Bldg D<br>Pflugerville,TX<br>Telephone: **251-8202**<br>Hours: Call for hours open<br>Located north of the corner of Foothill Farms Loop and FM 1825<br><br>  Call CARTS, 478-7433 |
| **Northwest Rural (Jonestown) CommunityCenter**<br>18649 FM 1431<br>Jonestown, TX<br>Telephone: **267-3245**<br>Hours: Call for hours open<br>Located at FM 1431 and Park Rd.<br><br>  #214 Lago Vista Feeder or call CARTS, 478-7433 |
| **South Rural (Del Valle) Community Center**<br>3518 S. FM 973<br>Del Valle, TX<br>Telephone: **247-4407**<br>Hours: Call for hours open<br>Located south of the corner of Hwy. 71 and FM 973<br><br>  #350 Airport or call CARTS, 478-7433 |
| **West Rural (Oak Hill) Community Center**<br>8656-A Hwy. 71 West, Bldg A, 1st Floor<br>Austin, TX<br>Telephone: **854-2130**<br>Hours: Call for hours open<br>Located 1 mile west of the "Y" in Oak Hill on Hwy 71W<br><br>  #171 Oak Hill Flyer or call CARTS, 478-7433 |

Assistance with Medications:

Infergen Patient Support Line 800-405-8506
Roche's Hepline Reimbursement Hotline (Roferon A) 800-443-6676
Roche's Reimbursement Hotline (Pegasys) 877-PEGASYS
Schering's Commitment To Care 800-521-7157

Other prescription drug assistance programs:

www.rxassist.org
http://www.themedicineprogram.com/
www.needymeds.com

**What about clinical trials?**

Some physicians have access to clinical trial programs that can cover the costs of your doctor visits and/or your medications. Ask your doctor for further information.
National Institutes of Health Clinical Trials Database: www.clinicaltrials.gov

**What are the reporting guidelines healthcare professionals must follow for infectious diseases including hepatitis C?**

Beginning 12/20/00, all newly diagnosed cases of hepatitis C were reported to the local, regional or state health departments. As of Spring 2007, only acute cases of hepatitis C are reported.

Health professionals may call (512) 458-7676 or (800) 705-8868 for information and obtain reporting forms at http://www.dshs.state.tx.us/idcu

**What is the government doing about the hepatitis C problem in the U.S.?**

In 1999, the Texas legislature passed House Bill 1652 that earmarked state money for seroprevalence studies, public and professional education concerning hepatitis C, and provided funds for screening persons for HCV. These funds were cut in 2004 because of budgetary constraints.

In 2001, the following bills were passed in Texas:

House Bill 767 requires six hours of training during each two-year licensing period relating to HIV, hepatitis C, and sexually transmitted diseases in continuing education for chemical dependency counselors.

House Bill 768 amended the Health and Safety Code to change the name of the HIV/AIDS Interagency Coordinating Council to the Interagency Coordinating Council for HIV and Hepatitis, and to include policies and program activities relating to hepatitis among the council's concerns. The bill added the Texas Department on Aging and the Texas Workforce Commission to the list of agencies represented on the council. This council was disbanded due to budgetary constraints.

Senate Bill 338 required the Texas Department of Health to develop a state plan for the prevention and treatment of Hepatitis C.

House Bill 2650 amended the Occupations Code to require a licensed nurse who renews a license on or after June 1, 2002 to participate in at least two hours of continuing education related to hepatitis C in a two-year licensing period. This was a one-time requirement.

Senate Bill 1006 requires a licensed hospital, in a case of accidental exposure of certified emergency medical services personnel, a firefighter, a peace officer, or a first responder who renders assistance at the scene of an emergency or during transport to the hospital, to blood or other body fluids of a patient who is transported to the hospital, to take reasonable steps to test the patient for hepatitis B or hepatitis C if the report shows there is significant risk to the person exposed.

In January 2003, a federal bill “The Hepatitis C Epidemic Control and Prevention Act” was drafted. This bill closely mirrors the Texas House Bill 1652 passed in 1999.

**How do I find out who my representatives are?**

Find your representatives at the following web site:
www.capitol.state.tx.us

**Which agencies in our community care for patients with hepatitis C?**

*Austin/Travis County Health & Human Services Department*
Website Address:
http://www.ci.austin.tx.us/health/communicable_disease_hepatitis.htm
Hepatitis C Resource Manual:
http://www.ci.austin.tx.us/health/downloads/resmanual.pdf
Location Served: Travis County and surrounding area
Type of Services:

- Free hepatitis C testing and counseling for those at risk. Call (512) 972-5580 for an appointment.

Communicable Disease Unit
15 Waller St.
Austin, TX 78702
(512) 972-5430
Fax: (512) 972-5451
Location Served: Travis County and surrounding area
Type of Services:

- Sexually Transmitted Disease Clinic
- Tuberculosis Clinic
- Outreach education
- Counseling
- Testing
- Case management
- Partner services

Clientele: General population. No residency or income requirements
Hours of Operation: 8:00 AM – 5:00 PM (some evening and weekend locations for HIV counseling and testing). Call 512-972-5430 for an appointment.

*AIDS Services of Austin*
7215 Cameron Road
Austin Texas 78752
(512) 458-AIDS or 458-2437
Fax: (512) 452-3299
Email Address: asa.mail@asaustin.org
Website Address: www.asaustin.org
Location Served: Primarily Travis County, with coordinated services in surrounding 9 counties
Type of Services:

- Case management linking people to services, assisting individuals with maintaining independence and dignity, providing support to caregivers, significant others and family members
- Information and referral services
- HIV information telephone line 458-AIDS
- Legal services for HIV+ people with non-criminal situations such as medical power of attorney, insurance disputes, child support. Program has income eligibility guidelines.

- Food pantry for HIV+ symptomatic & AIDS diagnosed individuals
- Nutritionist consultation for HIV+ people
- Prevention and outreach
- Women Rising: HIV+ support group
- Q: A community-run organization run for and by young gay, bi, curious and queer guys 18 - 29
- Home Health Aides: limited assistance including light housekeeping and cooking, personal attendance/bathing for homebound clients
- Jack Sansing Dental Clinic, providing primary dental and oral medical care to HIV+ persons
- Testing: Anonymous and/or confidential HIV testing with pre and post-test counseling
- Spanish speaking staff available

Clientele: HIV+ or AIDS diagnosed. Information/referral and outreach/prevention to general public and those at risk for HIV infection
Hours of operation: Monday through Friday 8:30 AM to 5:30 PM
Cost: No fee for services

*American Liver Foundation, South Texas Chapter*
2425 West Loop South, Suite 840
Houston, TX 77027
(713) 622-1318
Texas only toll-free 866-58-liver (866-585-4837)
Helpline (800) GO-LIVER or 888-4HEP-USA
Fax: (713) 622-1376
Email Address: southtexas@liverfoundation.org
Website Address: http://www.liverfoundation.org
Location served: Texas
Type of services:

- Patient and professional education programs- “Liver Updates”
- Local, state and national advocacy for persons with hepatitis and all liver diseases
- State and national research programs
- Support groups – local, statewide and national
- Free educational brochures about hepatitis and other liver diseases
- Foreign language hepatitis brochures – Spanish, Chinese, Japanese, Vietnamese
- Physician referrals
- Resource information – screening, medications, support
- Health promotion through corporate and neighborhood health fairs

Clientele: All
Hours of operation: 9 AM – 5 PM
Cost: None

*Hep C Advocate Network, Inc. (HepCAN)*
1821 Clinton
Longview, Texas 75604

(903) 291-9700
Fax (903) 291-9701
Email Address: hepcan1@aol.com
Website Address: www.hepcan.org
Location Served: Texas, U.S.
Type of Services:
- State and National advocacy for persons living with HCV and their families
- Professional and public education programs
- Collaboration with states and federal government to recognize need for public HCV screenings
- Outreach and resources for the uninsured and working poor
- Advocacy for research and treatment resources
- Organ donor awareness programs

Clientele: General public
Cost: None

*Texas Department of State Health Services*
*Infectious Disease Surveillance and Epidemiology Branch*
1100 West 49th Street
Austin, Texas 78756
(512) 458-7676
Fax (512) 458-7616
Email address: Gary.Heseltine@dshs.state.tx.us
Website Address: http://www.texasdisease.org
Location Served: State of Texas
Type of Services
- Distribution of limited educational materials in English and Spanish (brochures, posters and videos)
- Toll-free hepatitis infoline (1-866-4HEPABC)
- Hepatitis C surveillance
- Phone calls from general public

Hours of Operation: Monday - Friday, 8:00 AM. – 5:00 PM
Cost: None

*Texas Liver Coalition*
6620 Main Street Suite 1505
Houston, Texas 77030
1-800-LIVER (800) 725-4837
Fax: (832)-355-7014
Email Address: mail@texasliver.org
Website Address: www.texasliver.org
Location Served: State of Texas
Type of Services:
- Statewide network of support groups, serving patients with hepatitis and liver disease through education and support
- Toll-free Helpline – 800-72-LIVER – advice and assistance from Community Health Education Coordinator

- Clinical trial participation to people with hepatitis C or hepatitis B
- Public information – resource information for callers
- Online resources – E-mail answers, advice and assistance online at mail@texasliver.org
- Health education – free printed materials covering most aspects of liver disease on request
- Speakers bureau – board members, physicians and selected patients for speaking at civic, community and business groups
- Work-site health promotion – hepatitis awareness programs for company employees

Clientele: general public
Hours of Operation: Monday – Friday 9 AM – 5 PM
Cost: all services provided at no cost

*Travis County Comprehensive Underage Drinking Prevention Program*
314 W. 11th Street
Austin, Texas 78701
(512) 854-4229
Fax: (512) 854-9316
Email Address: gloria.souhami@co.travis.tx.us
Location Served: Travis County
Type of Services:

- Free presentations – "Why Risk It" for students grades 9 – 12
- "Busted" for students grades 6 - 8
- Information on legal and social consequences of underage drinking including issues such as violence, HIV, teen pregnancy, fetal alcohol syndrome, and hepatitis C exposure

Clientele: Grades 6 through high school, parents and teen parents
Cost: None

*Workers Assistance Program*
*Texas HIV Connection*
4115 Freidrich Lane Suite 100
Austin, Texas 78744
(512) 343-9595
Fax: (512)-372-8816
Website Addresses: http://www.wapeap.com/wap/index.html
www.hivconnection.org
Location Served: Texas
Type of Services:

- Provide training to providers on all Hepatidities including Hepatitis C (signs, symptoms, prevention, prevalence, relationship to other diseases, substance abuse)

Clientele: Primarily providers who work with substance abusers. Can be adapted to any provider of social service programs.
Hours of Operation: 8 AM – 5 PM, Monday -Friday

Cost: No cost for persons funded by the Texas Commission on Alcohol and Drug Abuse. Others - $800.00/day plus all travel related expenses

*The Wright House Wellness Center*
Central Austin Administrative Offices
4.01-B North IH-35
Austin, Texas 78722
(512) 467-0088
Fax: (512 467-0829
East Austin Program Offices
2324 East Cesar Chavez
Austin, Texas 78702
(512) 236-8901
Fax: (512) 236-0365
Email Address: info@thewrighthouse.org
Website Address: http://www.thewrighthouse.org/
Location Served: Travis, Llano, Burnet, Williamson, Lee, Fayette, Bastrop, Caldwell, Hays, and Blanco counties
Type of Services:

- Holistic/Complementary therapies: acupuncture, massage, cranial sacral, chiropractic care, reiki
- Emotional support: therapeutic support groups and individual/couples counseling
- Fitness programs: yoga class
- Eat to Live Food Pantry
- Food For Life Nutrition Program
- Communities Together: serving the needs of the African American and Latino Communities whose lives are impacted by HIV/AIDS. Treatment education, advocacy, information and referral, HIV testing.
- Spanish-speaking staff
- Client advocacy for substance abuse
- HIV prevention targeting African American men who have sex with men and African American women
- Educational programs: information and referral, wellness planning, community education

Clientele: persons living with HIV/AIDS, hepatitis C and cancer.
Hours of Operation: Office hours are Monday - Friday 9:00 AM. - 5:00 PM
Many services are offered at other times.
Cost: No or low-cost

**Where can I find more information on hepatitis C?**

Publications:

*The First Year: Hepatitis C* (Cara Bruce and Lisa Montanarelli), 2002
*Hepatitis C* (edited by T. Jake Liang, Jay H. Hootnagle), Academic Press, 2000
*Hepatitis C Handbook* (Matthew Dolan), 1999

*The Hepatitis C Help Book* (Misha Ruth Cohen, Robert Gish, Kalia Doner), 2000
*Dr. Melissa Palmer's Guide to Hepatitis & Liver Disease: What you Need to Know (*Melissa Palmer, MD), 2004
*Hepatitis* Magazine 888-711-3911
*Living with Hepatitis C, A Survivor's Guide* (Dr. Gregory T. Everson and Hedy Weinberg), 2002
*A Personal Guide to Good Health* (Beth Petro Roybal), 2002
*Triumph Over Hepatitis C* (Lloyd Wright), 2000

Web links and Telephone Resources:

American Association for the Study of Liver Diseases http://www.aasld.org/
The American Gastroenterological Association http://www.gastro.org/
American College of Gastroenterology www.acg.gi.org
American Liver Foundation www.liverfoundation.org (800) 465-4837
Americans with Disabilities Act (ADA) www.ada.gov (800) 514-0301
Austin/Travis County Health & Human Services Department
http://www.ci.austin.tx.us/health/default.htm
CDC *Morbidity and Mortality Weekly Report* http://www.cdc.gov/mmwr/
Centers for Disease Control and Prevention www.cdc.gov/hepatitis
C Everett Koop Institute at Dartmouth www.epidemic.org
CenterWatch Clinical Trails Listing Service www.centerwatch.com
Equal Employment Opportunity Commission www.eeoc.gov (800) 669-4000
HCV Advocate www.HCVadvocate.org
Harm Reduction Coalition www.harmreduction.org
Health Fraud www.quackwatch.com
Hepatitis Foundational International www.hepfi.org (800) 891-0707
The Hep C Advocate Network www.hepcan.org
Hep C Alert! www.hep-c-alert.org (877) 435-7443
Hep C Connection http://www.hepc-connection.org/
Hepatitis Central www.hepatitis-central.com
Hepatitis Magazine www.hepatitismag.com (800) 792-6397 ext 133
Hepwatch http://www.hepwatch.com/
HIV and Hepatitis.Com http://hivandhepatitis.com
Instant Advocacy Initiative www.hepatitisactivist.com
Melissa Palmer, M.D. www.liverdisease.com
The Hepatitis Education Project http://www.hepeducation.org/
Immunization Action Coalition www.immunize.org
The Journal of the American Medical Association www.jama.com
Latino Organization for Liver Awareness (LOLA) www.lola-national.org
Mayo Clinic www.mayoclinic.com
Medscape Daily News & Feature Updates www.medscape.com
Merck Manual of Medical Information-Home Edition www.merckhomeedition.com
National Association of Hepatitis Task Forces www.nahtf.org
National AIDS Treatment Advocacy Project www.natap.org
National Digestive Diseases Information Clearinghouse www.niddk.nih.gov
National Foundation for Infectious Diseases www.nfid.org

National Hepatitis C Advocacy Council www.hepcnetwork.org
National Hepatitis C Prison Coalition www.hcvinprison.org
National Institutes of Health Clinical Trials Database www.clinicaltrials.gov
National Digestive Diseases Information Clearinghouse/ National Institutes of Health/Hepatitis C www.niddk.nih.gov/health/digest/pubs/hep/hepc/hepc.htm
NIH Hepatitis C Consensus Statement June 2002
http://consensus.nih.gov/2002/2002HepatitisC2002116html.htm
The National Library of Medicine www.nlm.nih.gov (888) 346-3656
Parents of Kids with Infectious Diseases http://www.pkids.org
Substance Abuse & Mental Health Services Administration
www.findtreatment.samhsa.gov
Texas Department of State Health Services www.dshs.state.tx.us
(866) 4HEPABC
Texas Liver Coalition www.texasliver.org
United Network for Organ Sharing www.unos.org (888) 894-6361
Veterans Administration National Hepatitis C Program
http://www.hepatitis.va.gov/
Veterans Health Administration www.va.gov/vbs/health
Veterans Helping Veterans www.geocities.com/pentagon/bunker/2704
WebMD www.webmd.com
World Health Organization www.who.int/home-page

Drug Company Web Sites:

www.infergen.com
www.rebetron.com
www.rocheusa.com

*Additional copies of this document may be reproduced via the web at http://www.ci.austin.tx.us/health/downloads/resmanual.pdf*



*Prepared by:*

- *Karen Mueller, RN, BSN, Hepatitis C Coordinator, Austin/Travis County Health & Human Services Department*
- *Jean Brender, RN, Ph.D., Associate Professor, Department of Health Services & Research, Texas State University at San Marcos*
- *Gary Heseltine, M.D., M.P.H., Staff Epidemiologist/Infectious Disease Epidemiology & Surveillance Division, Texas Department of State Health Services*

*First edition printing of this resource guide prepared by:*

- *Karen Mueller, RN, BSN, Hepatitis C Coordinator, Austin/Travis County Health & Human Services Department*
- *Jean Brender, RN, Ph.D., Associate Professor, Department of Health Services & Research, Texas State University*
- *Suzanne Anderson, RN, MSN, Texas Department of Health*

*Appreciation is extended to the following for their time spent in reviewing this document:*

- *Joanna Buffington, M.D., M.P.H., Medical Epidemiologist/Preventive Medicine, Hepatitis Branch, National Center for Infectious Diseases, Centers for Disease Control and Prevention*
- *Gary Heseltine, M.D., M.P.H., Staff Epidemiologist/Infectious Disease Epidemiology & Surveillance Division, Texas Department of State Health Services*