

Communicable Disease – Hepatitis A-E Home Study Course

4 CE Hours
Text and Online Study Guide

Presented by the:
Center for Massage Therapy Continuing Education

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It is the responsibility of the practitioner to determine the appropriateness of the principles presented in terms within the scope of practice. This information is in no way meant to diagnose or treat medical conditions.

Instructions for the Communicable Disease – Hepatitis A-E home study course

Thank you for investing in the Communicable Disease – Hepatitis A-E home study course, a 4 CE hour course designed to further your knowledge in the practice of protecting yourself and your clients from hepatitis and to provide you with important information regarding hepatitis.

This guide will contain all of the instructions you will need to complete this course. This is a 4 CE hour course, so that means it should take you approximately 4 hours to read the text, complete the examination and course evaluation.

PLEASE READ THE FOLLOWING DIRECTIONS FOR COMPLETION OF THIS COURSE.

The following are steps to follow in completing this course:

- 1. Read the instructions and review the text and exam.**
- 2. Access the online examination in your account at www.massagetherapyceu.com.**
- 3. Complete your examination and print your certificate. The exam is open book and there is no time limit for completion.**

You must pass the exam with a 70% or better to pass this home study e-course. You are allowed to access and take the exam up to 3 times if needed. There is no time limit when taking the exam. Feel free to review the text while taking the exam. There are no trick questions on the exam. All of the answers are clearly found in the text. The exam is also included at the end of the text for review before taking the exam.

It is advised to answer the exam questions in the study guide before testing online. That way, when you are testing you do not have go back and forth through the online exam.

Good luck as you complete this course. If you have any questions please feel free to contact us at 866-784-5940, 712-490-8245 or info@massagetherapyceu.com. Most state boards require that you keep your “proof of completion” certificates for at least four years in case of audit. Thank you for taking our Communicable Disease – Hepatitis A-E home study course.

Communicable Disease – Hepatitis A-E Text

What is hepatitis?

The word hepatitis means inflammation of the liver. Certain drugs, toxins, heavy alcohol use, some diseases, bacterial infections, and viral infections all cause hepatitis. Hepatitis is also the name of a family of five viral infections that affect the liver. These five viruses are the hepatitis A virus (HAV), hepatitis B virus (HBV), hepatitis C virus (HCV), hepatitis D virus (HDV), and hepatitis E virus (HEV). The most common ones are HAV, HBV, and HCV. This home study course will cover these five viruses.

Hepatitis A

Overview

What is hepatitis A?

Hepatitis A is a contagious liver disease resulting from infection with the HAV. Severity ranges from a mild illness lasting a few weeks to a severe illness lasting several months. Hepatitis A virus is transmitted via ingestion of fecal matter even in microscopic amounts, from close person to person contact, and ingestion of contaminated food or drinks.

Statistics

How common is HAV infection in the United States?

In 2014, about 1,200 acute cases of hepatitis A were reported. After adjusting for cases of asymptomatic infection and underreporting, the estimated number of new HAV infections was about 2,500. This is the lowest rate ever recorded. For the most up to date statistics on hepatitis A infections you can follow the CDC's webpage at <https://www.cdc.gov/hepatitis/statistics/>.

Is hepatitis A incidence decreasing or increasing in the US?

Rates of hepatitis A in the US are the lowest they have been in 40 years. Since the hepatitis A vaccine was introduced in 1995, health professionals routinely vaccinate children, travelers to certain countries, and other persons at risk for the disease. Experts believe the hepatitis A vaccination has decreased HAV incidence in the United States.

Transmission/Exposure

How is hepatitis A transmitted?

Hepatitis A virus is transmitted via ingestion of fecal matter even in microscopic amounts, from close person to person contact, and ingestion of contaminated food or drinks.

Person to person contact via the fecal-oral route (i.e. ingestion of something contaminated with the feces of an infected person) is the most common means of transmission in the US. Examples include an infected person not properly washing their hands after going to the bathroom and touching objects and/or food, a parent or caregiver who doesn't wash his or her hands properly after changing diapers or cleaning up the stool of a person infected with HAV, and when someone engages in specific sexual activities like oral-anal contact with an HAV infected person.

As mentioned, hepatitis A is additionally spread by eating or drinking food or water contaminated with the HAV. This occurs in countries with poor sanitary conditions or poor personal hygiene and where HAV is common. The food and drinks most likely to be contaminated are fruits, vegetables, shellfish, ice, and water. In the US, chlorination of water kills HAV that enters the water supply, so water outbreaks are infrequent.

Who is at increased risk for acquiring HAV infection?

- Travelers to countries with high or intermediate incidence of HAV infection
- Men who have intercourse with other men
- Persons who live with someone who has an HAV infection
- Persons who have oral-anal sexual contact with someone who has hepatitis A
- Users of injection and non-injection illegal drugs
- Persons with clotting factor disorders like hemophilia
- Persons working with non-human primates susceptible to HAV infection

How long does HAV survive outside the body and how can the virus be killed?

The hepatitis A virus is able to survive the body's highly acidic digestive tract and can live outside the body for months depending on environmental conditions. Temperatures of 185°F (85°C) for one minute kill the virus, although freezing temperatures do not. The virus can still be transmitted from cooked food if that food is contaminated after cooking. Chlorination of water kills HAV that enters the water supply.

Once a person has had hepatitis A infection, can they get it again?

No. Once someone has had HAV infection, antibodies protect them from the virus for life. Antibodies are found in the blood. The body produces antibodies in response to the virus. HAV antibodies protect the body from disease by attaching to the virus and destroying it, thus giving the person immunity from HAV.

Is it okay to donate blood after having had hepatitis A?

Always check with the local blood donation center for a definite answer. Generally, if a person had an HAV infection at 11 years of age or older, they can't donate blood. If a person had hepatitis A before 11 years of age, they may be able to donate. Again, check with a blood donation center.

Signs/Symptoms

What are the signs and symptoms of HAV infection?

Some persons, particularly children, never develop symptoms. When symptoms are present, they include fever, fatigue, loss of appetite, nausea, vomiting, abdominal pain, dark urine, clay colored bowel movements, joint pain, and jaundice. Symptoms usually last less than 2 months, although some people may have the disease for up to 6 months. The incubation period for hepatitis A is 15-50 days, so this means a person could see symptoms 2-6 weeks after exposure to HAV. Hepatitis A does not become chronic. Early in the course of infection, IgG antibodies to HAV form and provide lifelong immunity to the disease, so persons recovering from HAV can't become reinfected.

Diagnosis / Treatment

How is hepatitis A diagnosed?

A physician, physician's assistant, or nurse practitioner can diagnosis hepatitis A based on clinical symptoms and a blood test for HAV.

How is HAV infection treated?

There is no specific treatment course for hepatitis A. Few people with HAV infection need to be hospitalized and most people just feel sick for a few months. Typically doctors recommend rest, adequate nutrition, and fluids during those 2 months. People with HAV infection should check with their health care provider before taking prescription drugs, supplements, or over-the-counter medications, since these things pass through the liver and can damage the liver. Alcohol should always be avoided with hepatitis infection.

Prevention / Vaccination

How is HAV infection prevented?

The best way to prevent HAV infection is vaccination with a full two dose series of hepatitis A vaccine. Good hygiene practices like frequent hand washing or use of hand sanitizer after using the bathroom, changing diapers, and before preparing or eating food, is another way to prevent HAV infection.

Who should receive the hepatitis A vaccination?

- All children at age 1 year
- Travelers to countries with high or intermediate incidence of HAV infection
- Men who have sexual contact with other men
- Users of injection and non-injection illegal drugs
- People who have clotting factor disorders like hemophilia
- People with chronic liver diseases
- People who have occupational risk for infection such as those who work with HAV infected animals or in a hepatitis A research laboratory
- Any persons who wish to obtain immunity to HAV infection

Who does NOT need routine vaccination against hepatitis A and is not at increased risk for hepatitis A?

- Food service workers since food borne hepatitis A outbreaks are uncommon in the US.
- Sewage workers since no work related outbreaks have been reported among workers exposed to sewage.
- Healthcare workers (massage therapists are included in this group) since routine infection control precautions prevent transmission.
- Children under 12 months of age due to limited hepatitis A vaccination experience in this age group and the fact that the vaccine is not licensed for children less than 12 months old.
- Child care center attendees since hepatitis A outbreaks have a low frequency in the child care setting.
- Residents of institutions for developmentally disabled persons since hepatitis A occurrence in this population has decreased.
- Persons who are allergic to the hepatitis A vaccination or any other known part of the vaccination.

How long does immunity from hepatitis A vaccination last?

Protective levels of antibody to HAV infection could be present for at least 25 years in adults and at least 14–20 years in children.

What if a person is exposed to hepatitis A and has not had the vaccination series?

If a person has been exposed to HAV infection and hasn't had any prior hepatitis A vaccinations, they may receive either an injection of immune globulin (IG) or a single dose injection of hepatitis A vaccine within 2 weeks after exposure. This is known as postexposure prophylaxis.

What is postexposure prophylaxis (PEP)?

Postexposure prophylaxis or PEP is trying to prevent or treat an illness after exposure to it. In the case of hepatitis A, it includes an injection of immune globulin (IG) or a single dose of the hepatitis A vaccine.

Who requires postexposure protection (IG or hepatitis A vaccine) after exposure to HAV infection?

- Close personal contacts like those that live with someone who has hepatitis A
- People who recently had sexual contact with an HAV infected person
- Those who recently shared injection or non-injection illegal drugs with someone who has hepatitis A
- Persons who have ongoing and close personal contact with an HAV infected person such as a regular babysitter or caregiver
- Those who have been exposed to food or water known to be contaminated with HAV

Hepatitis B

Overview

What is hepatitis B?

Hepatitis B is a contagious liver disease resulting from infection with HBV. Severity ranges from a mild illness lasting a few weeks to a complicated lifelong illness. Hepatitis B can be either acute or chronic. Acute HBV infection is a short term illness occurring after exposure to the hepatitis B virus within the first 6 months. It can lead to chronic hepatitis B infection. Chronic HBV infection is a long term illness occurring when the hepatitis B virus remains in the body.

Statistics

How common is acute HBV infection in the United States?

In 2014, about 3,000 acute cases of hepatitis B were reported to the CDC. After adjusting for cases of asymptomatic infection and underreporting, the estimated number of new HBV infections was about 19,200. This is the lowest rate ever recorded. For the most up to date statistics on hepatitis B infections you can follow the CDC's webpage at <https://www.cdc.gov/hepatitis/statistics/>.

Is hepatitis B incidence decreasing or increasing in the US?

Rates of HBV infection have dropped by more than 80% since 1991. In 1991, routine hepatitis B vaccination of children was started. Experts believe the hepatitis B vaccination has dramatically decreased the HBV incidence in the US especially in children.

How common is chronic hepatitis B in the US and around the world?

An estimated 850,000 to 2.2 million persons have chronic HBV infection in the US. Globally, chronic HBV infection is an even greater problem affecting approximately 240 million people. Worldwide, an estimated 686,000 people die each year from HBV related liver disease.

Transmission / Exposure

How is hepatitis B transmitted?

Hepatitis B is transmitted via contact with HBV infected body fluids such as blood, semen, saliva or other body fluids. Activities that involve puncture through the skin or mucosal contact with these infected fluids include:

- Sex with an infected partner
- Spread from an infected mother to her baby during birth
- Direct contact with the blood or open sores of an infected person
- IV drug use that includes sharing needles, syringes, or other drug-preparation equipment
- Sharing items such as razors or toothbrushes with an infected person
- Exposure to blood from needle sticks or other sharp instruments

Hepatitis B isn't transmitted via food or water, sharing eating utensils, hugging, kissing, hand holding, breastfeeding, sneezing, or coughing.

Who is at risk for acquiring HBV infection?

- Sex partners of HBV infected persons
- Sexually active persons who have had more than 1 sex partner during the previous 6 months
- Men who have sexual contact with other men
- Persons with a sexually transmitted disease
- Babies born to infected mothers
- Hemodialysis patients
- IV drug use including sharing needles, syringes, or other drug equipment
- Living with a person who has chronic HBV infection
- Healthcare and public safety workers with exposure risks to blood and blood contaminated body fluids

- Staff and residents of facilities for developmentally disabled persons
- Travelers to countries with moderate to high rates of hepatitis B infection

How long does the hepatitis B virus survive outside the body and what can be done to remove HBV from environmental surfaces?

HBV can survive outside the body for at least 7 days. During this time, if it enters the body of a person who is not infected, it can cause infection. Any blood spill, whether fresh or dried blood, should be cleaned using gloves with a bleach and water mixture, one part household bleach to ten parts of water.

How often does acute HBV infection become a chronic HBV infection?

It depends upon the age at which someone becomes infected. About 90% of infected infants will develop chronic infection. The risk decreases as a child gets older. About 25%–50% of children infected between the ages of 1 and 5 years will develop chronic hepatitis and about 6%–10% of children infected over 5 years of age will develop chronic HBV. Globally, most people with chronic hepatitis B infection were infected at birth or during early childhood.

Once a person has had hepatitis B infection, can they get it again?

No. Once someone has had HBV infection, antibodies protect them from the virus for life. Antibodies are found in the blood. The body produces antibodies in response to the virus. HBV antibodies protect the body from disease by attaching to the virus and destroying it, thus giving the person immunity from HBV. However, some people, particularly those infected during early childhood, remain infected for life because they never clear the virus from their bodies.

Is it okay to donate blood, organs or semen after having had hepatitis B?

No. Once a person has tested positive for the hepatitis B virus, experts do not recommend blood, organ, or semen donation because this can put the recipient at great risk for getting hepatitis B.

Signs/Symptoms

What are the signs and symptoms of acute hepatitis B infection?

Many young children do not have signs or symptoms. Adults and children over 5 years of age are more likely to show them. About 70% of adults develop signs and symptoms from the infection. If they appear, they include nausea, vomiting, abdominal pain, jaundice of the skin and eyes, fever, fatigue, loss of appetite, dark urine, clay colored stools, and joint pain. Symptoms appear anywhere between 6 weeks and 6 months after exposure with the average being 3 months. The symptoms last for a few weeks for some while others can be sick for up to 6 months. Many with HBV infection have no symptoms, but can still spread the virus.

What are the signs and symptoms of chronic hepatitis B infection?

The signs and symptoms of chronic HBV infection are similar to acute hepatitis B, although most with chronic hepatitis B remain symptom free for 20 to 30 years. Approximately 15%–25% of people with chronic HBV develop serious liver conditions like cirrhosis or liver cancer. A physician can run blood tests to help diagnose chronic hepatitis B.

Diagnosis / Treatment

How is hepatitis B diagnosed?

A physician, physician’s assistant, or nurse practitioner can diagnosis hepatitis B based on clinical symptoms and a blood test or serological marker for HBV.

What are antigens and antibodies?

An antigen is a substance on the surface of a virus that causes the immune system to recognize and respond to it. After the body is exposed to an antigen, it views this as foreign material. The body takes steps to neutralize the antigen by making antibodies. An antibody is a substance found in the blood that the body produces in response to a virus. The body is protected from disease by antibodies which attach to the virus and destroy it.

What are the common blood tests or serological markers available to diagnose hepatitis B?

There are many serological markers to diagnose hepatitis B. Six are discussed below.

Hepatitis B surface antigen (HBsAg) is a protein on the surface of the hepatitis B virus. It is detected in the blood in either acute or chronic hepatitis B virus infection. As a normal part of the immune system response to infection, the body normally produces antibodies to HBsAg. HBsAg is the antigen used to make the hepatitis B vaccine. A positive test means a person has acute or chronic HBV and can pass it to others. A negative test means a person doesn't have HBV in their blood.

Hepatitis B surface antibody (anti-HBs) is an antibody produced by the body's immune system in response to the hepatitis B surface antigen. A positive test means a person is immune from the HBV because they were successfully vaccinated against hepatitis B or they recovered from an acute infection of hepatitis B.

Total hepatitis B core antibody (anti-HBc) is an antibody produced by the body's immune system in response to a part of the hepatitis B virus called the "core antigen." A positive test indicates current infection with HBV or past infection with HBV.

IgM antibody to hepatitis B core antigen (IgM anti-HBc) is typically used to detect an acute infection of HBV. A positive test indicates a person was infected with the hepatitis B virus within the last 6 months.

Hepatitis B e antigen (HBeAg) is a protein found in the blood or serum when HBV is present during an active acute or chronic hepatitis B virus infection. A positive test means the virus is replicating, there are high levels of virus in the blood, and the person can easily spread the virus to others. This marker is also used to monitor the effectiveness of treatment for chronic hepatitis B.

Hepatitis B e antibody (HBeAb or anti-HBe) is an antibody produced by the body's immune system in response to the hepatitis B "e" antigen. A positive test indicates a person has chronic hepatitis B virus infection and a lower risk of liver damage due to low levels of HBV in their blood.

How is HBV infection treated?

For acute infection, no medication is available. Supportive treatment which includes rest, nutrition, and fluids, is recommended. Some people may need hospitalization.

For chronic infection, several antiviral medications are available, although not all persons with chronic HBV require them. People with chronic hepatitis B infection do require regular medical evaluation and monitoring to determine whether disease is progressing and to identify possible liver damage.

People with HBV infection should always avoid alcohol as it can cause potential liver damage. They must also check with their health care provider before ingesting any prescription pills, supplements, or other over the counter drugs. Again, these things may cause additional liver damage.

Prevention / Vaccination

How is HBV infection prevented?

The best way to prevent HBV infection is vaccination with a full series of the hepatitis B vaccine over a six month period.

What is the hepatitis B vaccine series?

The hepatitis B vaccine series is a sequence of 3 to 4 shots stimulating the immune system to protect the person against HBV. After the hepatitis B vaccine is given, the body makes antibodies which protect against HBV. These antibodies are stored in the body and fight off infection if exposure to the hepatitis B virus occurs.

Who should receive the hepatitis B vaccine series?

- Infants at birth
- Children and teens younger than 19 years who haven't been vaccinated
- Persons whose sex partners have hepatitis B
- Sexually active persons who have had more than 1 sex partner in the past 6 months
- People being evaluated or treated for a sexually transmitted disease
- Men who have intercourse and sexual contact with other men
- IV drug users who share needles, syringes, or other drug injection equipment
- Close household contacts of persons infected with hepatitis B
- Healthcare and public safety workers with exposure risks to blood or blood-contaminated body fluids
- Patients of predialysis, hemodialysis, peritoneal dialysis, and home dialysis
- Patients with chronic liver disease
- Patients with HIV infection
- Staff and residents of facilities for developmentally disabled persons
- Travelers to areas with moderate or high rates of HBV infection
- Any other persons wishing to have protection from HBV infection

Is the hepatitis B vaccine series recommended in certain settings?

Yes. This includes both the patients and employees of these settings. These settings may include:

- Sexually transmitted disease treatment facilities
- HIV testing and treatment facilities
- Correctional facilities
- Drug abuse and prevention facilities
- Chronic hemodialysis facilities and end-stage renal disease programs
- Healthcare settings targeting services to injection drug users
- Healthcare settings targeting services to men who have intercourse with men
- Non-residential day care facilities and institutions for developmentally disabled persons

Who does not need to receive the hepatitis B vaccine series?

The hepatitis B vaccine series isn't recommended for people who have had serious allergic reactions to prior doses of hepatitis B vaccine or to any other part of the vaccine. Additionally, it isn't recommended for anyone who is allergic to yeast since yeast is used when making the vaccine.

How long does immunity from the hepatitis B vaccination series last?

Studies indicate people have immunity from HBV infection for at least 20 years after receiving the hepatitis B vaccination series.

Hepatitis C

Overview

What is hepatitis C?

Hepatitis C is a contagious liver disease resulting from infection with HCV. Severity ranges from a mild illness lasting a few weeks to a complicated lifelong illness which attacks the liver. Hepatitis C can be either acute or chronic. Acute HCV infection is a short-term illness occurring after exposure to the hepatitis C virus within the first 6 months. For most people, acute infection leads to chronic infection. Chronic HCV infection is a long-term illness occurring when the hepatitis C virus remains in the body. HCV infection can lead to serious liver problems such as cirrhosis or liver cancer.

Statistics

How common is acute HCV infection in the United States?

In 2014, about 2,200 cases of hepatitis C were reported to the CDC. After adjusting for cases of asymptomatic infection and underreporting, the estimated number of new HCV infections was about 30,500. HCV infection is usually asymptomatic, so acute hepatitis C is rarely identified or reported. For the most up to date statistics on hepatitis C infections you can follow the CDC's webpage at <https://www.cdc.gov/hepatitis/statistics/>.

How common is chronic HCV infection in the United States?

An estimated 2.7 to 3.9 million persons have chronic HCV infection in the US. Most don't know they are infected because of the lack of symptoms.

How often does acute HCV infection become chronic HCV infection?

About 75%–85% of people who are infected with hepatitis C virus develop chronic infection.

Transmission / Exposure

How is hepatitis C transmitted?

Hepatitis C is transmitted primarily via exposures to HCV infected blood. Currently, most people become infected with HCV by sharing needles or other drug injection equipment. Prior to blood screening in 1992, hepatitis C was commonly spread through blood transfusions and organ transplants. People can become infected with the hepatitis C virus during such activities as:

- Injection drug use
- Needle stick injuries in healthcare settings
- Being born to a mother who has HCV infection

HCV is less commonly spread through:

- Sharing personal care items contaminated with HCV infected blood such as razors or toothbrushes
- Having intercourse or sexual contact with an HCV infected person
- In the context of outbreaks, other invasive healthcare procedures such as injections

Hepatitis C virus isn't transmitted by sharing eating utensils, hugging, kissing, holding hands, breastfeeding, sneezing or coughing. Food and water are not a mode of transmission.

Who is at increased risk for acquiring hepatitis C infection?

- Recipients of donated blood, blood products, and organs
- People who received a blood product for clotting problems made before 1987
- Chronic hemodialysis patients
- Current injection drug users – most common mode of transmission in the US
- Former injection drug users – including those who injected only one time or many years ago
- People who received body piercing or tattoos done with non-sterile instruments
- Healthcare workers from an HCV infected needle stick

- Blood or organ recipients from an HCV infected donor
- HIV infected persons
- Infants born to mothers with HCV infection
- Sexual contact with an HCV infected person
- Sharing personal care items, such as razors or toothbrushes, that may have come in contact with the blood of an HCV infected person

Is it okay to donate blood, organs or semen after having had hepatitis C?

No. Once a person has tested positive for the hepatitis C virus, experts do not recommend blood, organ, or semen donation because this can put the recipient at great risk for getting hepatitis C.

Signs/Symptoms

What are the signs and symptoms of acute hepatitis C infection?

About 70%–80% of people with acute hepatitis C don't have any signs or symptoms. If they appear, they include nausea, vomiting, abdominal pain, jaundice of the skin and eyes, fever, fatigue, loss of appetite, dark urine, clay colored stools, and joint pain. Symptoms appear anywhere between 2 to 24 weeks after exposure with the average time period from exposure to symptoms being 4 to 12 weeks. Many with HCV infection have can still spread the virus even if they don't know they have it or don't have symptoms.

What are the signs and symptoms of chronic hepatitis C infection?

The majority of persons with chronic HCV infection don't have symptoms. Unfortunately, many have chronic liver disease including cirrhosis and liver cancer. Chronic liver disease in HCV infection is slow and insidious and may continue without symptoms for decades. Routine blood tests measuring liver function and enzymes and blood donation screening are the two most common ways asymptomatic persons are identified.

How serious is chronic HCV infection?

Chronic hepatitis C infection is a serious disease often resulting in long-term health problems such liver damage, liver failure, liver cancer, or even death. Hepatitis C infection is the leading cause of liver cancer and cirrhosis and the most common reason for liver transplantation in the US. About 8,000–10,000 people die every year from HCV related liver disease.

What are the long term effects of HCV infection?

Out of every 100 people with HCV infection, about 75–85 people will develop chronic hepatitis C virus infection. Of those 75-85 people, 60–70 people will go on to develop chronic liver disease, 5–20 people will go on to develop cirrhosis within 20–30 years, and 1–5 people will die from cirrhosis or liver cancer

Diagnosis / Treatment

How is hepatitis C diagnosed?

A physician, physician's assistant, or nurse practitioner can diagnosis hepatitis C based on clinical symptoms and blood tests for HCV.

What are the common blood tests or serological markers available to diagnose hepatitis C?

There are many different blood tests used to diagnosis HCV. Two are discussed below.

Anti-HCV is a screening test that looks for antibodies to HCV and show whether a person has antibodies to the virus. A positive test means the person was exposed at some time. If a person has a positive anti-HCV, the next test is done to see if they still have it.

HCV RNA polymerase chain reaction (PCR) is a qualitative test that is done to detect the presence or absence of the virus and the amount or titer of the virus if present.

Who is HCV testing recommended for?

- Recipients of donated blood, blood products, and organs
- People who received a blood product for clotting problems made before 1987
- Chronic hemodialysis patients
- Current injection drug users – most common mode of transmission in the US
- Former injection drug users – including those who injected only one time or many years ago
- People who received body piercing or tattoos done with non-sterile instruments
- Healthcare workers from an HCV infected needle stick
- Blood or organ recipients from an HCV infected donor
- HIV infected persons
- Infants born to mothers with HCV infection
- People with abnormal liver tests or signs and symptoms of liver disease

How HCV infection treated?

For acute infection, no medication is available. Doctors recommend supportive treatment which includes rest, nutrition, and fluids.

For chronic infection, several antiviral medications are available, although not all persons with chronic HCV will need or benefit from them. The treatment most often prescribed for hepatitis C is a combination of two drugs, interferon and ribavirin. People with chronic hepatitis C infection require regular medical evaluation and monitoring to determine whether the disease is progressing and to identify possible signs of liver damage.

People with HCV infection should always avoid alcohol as it can cause potential liver damage. They must also check with their health care provider before ingesting any prescription pills, supplements, or other over the counter drugs. Again, these things may cause additional liver damage.

Prevention / Vaccination

How is HCV infection prevented?

Since there is currently no vaccine for hepatitis C infection, the best way to prevent the spread of the disease is to avoid contact with HCV infected blood. There are only vaccines for hepatitis A and hepatitis B. Research into the development of a hepatitis C vaccine is under way.

Hepatitis D

Overview

What is hepatitis D?

Hepatitis D is a contagious and serious liver disease resulting from infection with HDV.

Statistics

How common is HDV infection in the US?

It is uncommon in the United States.

Signs/Symptoms

What are the signs and symptoms of HDV infection?

When symptoms are present, they include fever, fatigue, loss of appetite, nausea, vomiting, abdominal pain, dark urine, clay colored bowel movements, joint pain, and jaundice. Symptoms usually last less than 2 months. Acute HDV infection usually manifests in one of three ways. It appears as unusually severe acute HBV infection (co-infection), an acute exacerbation in chronic HBV carriers (superinfection), or a relatively aggressive course of chronic HBV infection.

Diagnosis / Treatment

How is hepatitis D diagnosed?

A physician, physician's assistant, or nurse practitioner can diagnosis hepatitis D based on clinical symptoms and a blood test for HDV.

How is HDV infection treated?

There is no specific treatment course for hepatitis D. Supportive treatment which includes rest, nutrition, and fluids, is recommended. Some people may need hospitalization. Since hepatitis D occurs with HBV infection, the HBV infection may need treatment with antiviral medications. People with HDV infection should always avoid alcohol as it can cause potential liver damage. They must also check with their health care provider before ingesting any prescription pills, supplements, or other over the counter drugs. Again, these things may cause additional liver damage.

Transmission / Exposure

How is hepatitis D transmitted?

Hepatitis D infection is transmitted via contact with HDV infected body fluids such as blood. It is transmitted similar to HBV is spread.

Prevention / Vaccination

How is HDV infection prevented?

Since there is currently no vaccine for hepatitis D infection, the best way to prevent the spread of the disease is to avoid contact with HDV infected blood.

Hepatitis E

Overview

What is Hepatitis E?

Hepatitis E is a contagious and serious liver disease resulting from infection with HEV. HEV infection usually results in acute infection and does not lead to a chronic infection.

Statistics

How common is HEV infection in the US?

It is rare in the United States. However, hepatitis E is common in many other parts of the world.

Transmission / Exposure

How is hepatitis E transmitted?

Hepatitis E infection is transmitted via ingestion of fecal matter, even in microscopic amounts. Outbreaks are typically associated with contaminated water supply in countries with poor sanitation.

Signs/Symptoms

What are the signs and symptoms of HEV infection?

When symptoms are present, they include fever, fatigue, loss of appetite, nausea, vomiting, abdominal pain, dark urine, clay colored bowel movements, joint pain, and jaundice. Symptoms usually last less than 2 months. HEV can be severe, particularly in pregnant women.

Diagnosis / Treatment

How is hepatitis E diagnosed?

A physician, physician's assistant, or nurse practitioner can diagnosis hepatitis E based on clinical symptoms and a blood test for HEV.

How is HEV infection treated?

There is no specific treatment course for hepatitis E. Supportive treatment which includes rest, nutrition, and fluids, is recommended. Some people may need hospitalization. People with HEV infection should always avoid alcohol as it can cause potential liver damage. They must also check with their health care provider before ingesting any prescription pills, supplements, or other over the counter drugs. Again, these things may cause additional liver damage.

Prevention / Vaccination

How is HEV infection prevented?

Since, there is currently no FDA approved vaccine for hepatitis E, the best way to prevent the spread of the disease is to avoid anything with contaminated HEV infected fecal matter, especially water in countries with questionable sanitation.

Massage Therapy and Hepatitis

Can massage therapy help clients infected with any of the hepatitis viruses?

Although many massage therapists may be hesitant in treating clients with hepatitis, studies have shown that massage and bodywork can indeed benefit people living with hepatitis. There is nothing massage therapists and body workers can do to cure the infection; however, massage therapy treatment can be used to help the symptomatology of hepatitis.

Therapeutic massage is not only beneficial in relieving a variety of physical symptoms including chronic pain, but it may also be effective for relaxation and stress reduction. Massage can help people with hepatitis relieve chronic muscle tension and ease the mental and emotional stress that may accompany the illness.

Massage therapy may also play a role in improved immune function in clients with hepatitis. The factors that contribute to immune enhancement in clients with hepatitis are:

- Pressure of strokes
- Frequency
- Length of massage

In studies, a single massage treatment on a healthy person shows substantial increases in the NKCA (natural killer cell activity). The effect on the immune system was greater when pressure was applied with multiple massages lasting for a longer duration of time. Deep strokes, pressure points and trigger-point massage may improve immune function for those living with hepatitis.

For the treatment to prove beneficial when working with hepatitis clients, it is recommended the massage therapist use a full body stress management approach. The techniques should include pressure strokes, such as acupressure, trigger-point therapy and deep strokes, which should last approximately one hour and be performed at least once or twice weekly over an extended period of months for the best immune enhancing results.

Important factors for massage therapists to consider

It is important for you to always remember that the hepatitis viruses can be transmitted via blood, blood contact, bodily fluids, fecal matter, contaminated food, and contaminated water. Most massage therapists and body workers do not come into contact with their client's blood and bodily fluids on a regular basis. However, there are some key points to keep in mind if you choose to work on a client with hepatitis. These are also valid points when working on any client in your practice. There may be clients who come to you and do not know they are infected with a hepatitis virus or do not tell you that they are infected. Universal precautions for every client are the best policy to follow in order to keep you protected.

- Use thorough intake forms – Most intake forms will ask the client if they have any serious or chronic illnesses or medical conditions. Read carefully through the intake form and look for things that may cause your caution. In some states, you may be prohibited from directly asking your client if they are infected with a hepatitis virus. If you are uncomfortable asking or prohibited from asking, a thorough intake form should give you the information you need to proceed with your treatment plan. Medical history and intake forms will also tell you about any other medical conditions a client may have that you will need to be cautious of, such as HIV/AIDS, cancer, immune disorders, skin conditions, etc.

When you have good information from an intake form you protect yourself from potential dangers such as performing massage treatment on a contraindicated area, going outside your scope of practice in treating a client, and potentially harming yourself or a client during the massage.

- Educate yourself about hepatitis and other potentially dangerous diseases – As a massage therapist, the more you know about hepatitis, the better you will be prepared if you encounter it.
- Always avoid open wounds, cuts, lesions, rashes, boils and acne on every client, hepatitis virus infected or not. You do not want to expose yourself to infection or introduce your clients to possible infection by treating an area with an open wound.
- Consult with your client’s physician – If your client has a pertinent medical condition (hepatitis, HIV/AIDS, cancer, immune disorders, chronic illnesses), it is acceptable to consult with their family physician before starting a treatment plan. Discussing whether or not massage therapy is contraindicated with their physician can help you in formulating a treatment plan and can protect you from malpractice or going outside of your scope of practice.
- Use gloves – The use of latex gloves or latex free gloves is common in the medical community and will protect both you and your clients. If you are uncomfortable for any reason with a client, feel free to use gloves. You may want to use a water based lubricant with latex gloves as some oils can break down the latex material.

The CDC recommends when removing gloves, peel them down by turning them inside out. This will keep the wet side on the inside, away from your skin and other people. When you take the gloves off, wash your hands with soap and water right away.

- If you are comfortable using your bare hands, be sure that they are clean and free of cuts, scratches or wounds. If you do have an open sore, cut or scratch on your hands, arms or elbows, use a protective barrier to protect both you and your client.
- When cleaning and/or changing your drape, face cradle cover, sheets, massage table or massage chair, if you find an unidentifiable material, use latex gloves and thoroughly disinfect your sheets and table or chair. Disinfecting can be done by using a 10% bleach solution for 10 minutes or a 70% alcohol solution for 10 minutes.
- Always wash and clean your drape, sheets, face cradle covers, and towels after each use. You do not want to introduce germs to other clients or yourself while performing a massage session.
- If you are uneasy working on any client, whether or not they have one of the hepatitis viruses, refer them elsewhere or simply tell them you cannot work on them. You have the right to refuse service to any client for a number of reasons such as, you do not feel they will benefit from your treatment, you feel that you are going outside of your scope of practice in treating them, and/or the client has contraindications to massage therapy. If you feel that you will not be able to work on the client to the best of your ability, it is acceptable/better to refer them to the appropriate healthcare professional.

References:

Center for Disease Control, <http://www.cdc.gov/hepatitis/>

The Merck Manual Online, <http://www.merck.com/mmpe/sec03/ch027/ch027b.html>

Communicable Disease – Hepatitis A-E Exam

- Hepatitis can be caused by:
 - Bacterial and viral infections
 - Heavy alcohol use
 - Certain drugs
 - All of the above
- The most common hepatitis virus is(are):
 - HAV
 - HBV
 - HCV
 - All of the above
- In 2014, the number of actual reported cases of hepatitis A was:
 - 1,200
 - 12,000
 - 1,600
 - 16,000
- The hepatitis A vaccine was introduced in:
 - 1992
 - 1995
 - 1997
 - Currently, there is no vaccine for hepatitis A
- Hepatitis A is transmitted via:
 - ingestion of fecal matter even in microscopic amounts
 - close person to person contact
 - ingestion of contaminated food or drinks
 - All of the above
- Which of the following DOES NOT increase a person's risk for getting hepatitis A?
 - Living with someone who has HAV infection
 - Traveling to a country with a high rate of HAV infection
 - Receiving the hepatitis A vaccine
 - Having oral-anal sexual contact with an HAV infected person
- What temperature kills the hepatitis A virus?
 - 100°F (35°C)
 - 185°F (85°C) for one minute
 - 32°F (0°C) for one minute
 - No temperature kills the hepatitis A virus
- Hepatitis A is diagnosed based on clinical symptoms and blood work by a:
 - Physician
 - Physician's assistant
 - Nurse practitioner

- D. All of the above
9. Who does NOT need routine vaccination with the hepatitis A vaccine?
- A. Massage therapists
 - B. Food service workers
 - C. Healthcare workers
 - D. All of the above
10. Who is NOT at increased risk for hepatitis A infection?
- A. Massage therapists
 - B. Men who have sex with other men
 - C. Housemates of HAV infected people
 - D. Users of IV and injection drugs
11. Immunity from the hepatitis A vaccination lasts:
- A. 10 years in adults
 - B. 15 years in adults
 - C. 20 years in adults
 - D. 25 years in adults
12. Who requires postexposure prophylaxis (PEP) with IG or the hepatitis A vaccine?
- A. A massage therapist who lives with an HAV infected person
 - B. A healthcare worker who uses universal precautions
 - C. A food service worker who uses gloves when handling food
 - D. A sewage worker who follows safety protocol when on the job
13. Rates of hepatitis B infection have dropped by what percentage since 1991?
- A. 60%
 - B. 70%
 - C. 80%
 - D. 90%
14. Hepatitis B is transmitted by which of the following:
- A. Sex with an HBV infected partner
 - B. An HBV infected mother to her baby at birth
 - C. Direct contact with the blood or open sores of an HBV infected person
 - D. All of the above
15. Who is at risk of acquiring HBV infection?
- A. Healthcare and public safety workers
 - B. Staff and residents of care facilities for the disabled
 - C. Travelers to countries with high incidence of HBV infection
 - D. All of the above
16. How often does acute HBV infection become chronic HBV infection?
- A. All the time in every case
 - B. It depends on the age at which a person was infected
 - C. Acute HBV infection does not become a chronic HBV infection
 - D. All of the above

17. Which of the following is not a sign or symptom of hepatitis B infection?
- A. Joint pain
 - B. Nausea and vomiting
 - C. Headaches
 - D. Fever
18. A positive Hepatitis B surface antigen (HBsAg) means:
- A. A person has acute or chronic HBV and can pass it to others
 - B. A person has acute or chronic HAV and can pass it to others
 - C. A person is successfully vaccinated against HBV
 - D. A person is successfully vaccinated against HAV
19. A positive Total hepatitis B core antibody (anti-HBc) test means:
- A. A person has a current infection with HBV and/or past infection with HBV
 - B. A person has no infection with HBV
 - C. A person has been vaccinated against HBV
 - D. A person has only a current infection with HBV and no past infection with HBV
20. A positive Hepatitis B e antigen (HBeAg) monitors:
- A. How long ago a person got HBV
 - B. The effectiveness of the treatment of chronic hepatitis B
 - C. The effectiveness of hepatitis B vaccination
 - D. How often the HBV infected person needs to see the doctor
21. Who should get the hepatitis B vaccination series?
- A. Patients of dialysis
 - B. Patients with chronic liver disease
 - C. Patients with HIV infection
 - D. All of the above
22. In which of the following settings is the hepatitis B vaccination series recommended?
- A. HIV testing and treatment facilities
 - B. Correctional facilities
 - C. Drug abuse and prevention facilities
 - D. All of the above
23. What is hepatitis C?
- A. A contagious liver disease resulting from infection with HCV
 - B. A contagious heart disease resulting from infection with HCV
 - C. A contagious lung disease resulting from infection with HCV
 - D. A contagious intestine disease resulting from infection with HCV
24. In 2014, the estimated number of new cases of hepatitis C was:
- A. 200
 - B. 1,900
 - C. 2,200
 - D. 20,000

25. In the US, how many people are estimated to have chronic HCV infection?
- A. 1.2 to 2.1 million
 - B. 1.8 to 2.2 million
 - C. 2.7 to 3.9 million
 - D. 3.8 to 4.2 million
26. Hepatitis C is spread via:
- A. Food
 - B. Blood
 - C. Breast milk
 - D. Water
27. Hepatitis C is NOT spread via:
- A. Sneezing
 - B. Coughing
 - C. Kissing
 - D. All of the above
28. Which of the following people has a higher risk of acquiring HCV infection?
- A. A massage therapist who is exposed to a bloody sore of an HCV infected person
 - B. A massage therapist who uses universal precautions with their clients
 - C. A massage therapist who is exposed to a bloody sore of an HCV negative person
 - D. A massage therapist who uses gloves with their HCV infected clients
29. Once a person has tested positive for hepatitis C, experts recommend donating:
- A. Blood
 - B. Organs
 - C. Semen
 - D. None of the above
30. Who is HCV testing recommended for?
- A. Massage therapists
 - B. Nurses
 - C. HIV infected persons
 - D. None of the above
31. Acute hepatitis C infection is routinely treated with:
- A. Antiviral medications
 - B. Rest, nutrition, and fluids
 - C. Antibacterial medications
 - D. Over the counter medications
32. Which of the following is a symptom of hepatitis D infection?
- A. Headaches
 - B. Jaundice
 - C. Back pain
 - D. Malaise

33. Hepatitis D infection usually occurs with:
- A. HAV
 - B. HBV
 - C. HCV
 - D. HEV
34. Hepatitis E is transmitted via:
- A. Fecal matter
 - B. Blood
 - C. Semen
 - D. Water
35. HEV infection can be particularly severe for:
- A. Pregnant women
 - B. Menstruating women
 - C. Older men
 - D. Younger men
36. What is the best way to prevent HEV infection?
- A. The hepatitis E vaccination series
 - B. Avoiding fecally contaminated food only
 - C. Avoiding fecally contaminated water only
 - D. Avoiding fecally contaminated food and water both
37. How does massage therapy help clients with hepatitis?
- A. Improves immune system function
 - B. Relieves chronic muscle tension
 - C. Eases mental and emotional stress
 - D. All of the above
38. How can massage therapist protect themselves from infection when working with hepatitis clients?
- A. Do not use intake forms
 - B. Never consult with the client's physician
 - C. Use universal precautions
 - D. Ignore the patient's medical history
39. Your massage table has been contaminated with blood. You disinfect it with:
- A. A 5% bleach solution for 5 minutes
 - B. A 5% alcohol solution for 5 minutes
 - C. A 10% bleach solution for 10 minutes
 - D. A 10% alcohol solution for 10 minutes

This completes the Communicable Disease – Hepatitis A-E exam.