

**TRAIN FOR SUCCESS INC.**  
**HEPATITIS 1 HR**

---

**PREPARED BY MICHELLE BROOMFIELD RN**

# **TRAIN FOR SUCCESS INC.**

## **HEPATITIS 1 HR**

---

### **PURPOSE**

The purpose of this course is to review Hepatitis, to educate and reinforce the knowledge of nurses; ARNP, RN, LPN, CNA, and THERAPISTS, who are working in the health care environment, as well as other professionals, students and other individuals regarding common types of Hepatitis: Hepatitis A, Hepatitis B, and Hepatitis C. causes, symptoms, treatment, individuals at risk of infection and vaccines that are available.

### **Objectives/ Goals:**

After successful completion of this course the students will be able to:

1. Define Hepatitis
2. Discuss causes and symptoms of Hepatitis
3. Describe methods of transmission of hepatitis A, B, C
4. Discuss the available vaccination and schedules
5. Identify at risk population
6. Discuss reasons why some individuals should not be vaccinated or should wait to get vaccinated
7. Discuss approved treatment for Hepatitis B
8. Discuss approved treatment for Hepatitis C

# **TRAIN FOR SUCCESS INC.**

## **HEPATITIS 1 HR**

---

## **HEPATITIS**

Hepatitis means inflammation of the liver. Some drugs /medications, toxins, some diseases, heavy alcohol intake, and viral and bacterial infections can all cause hepatitis. Hepatitis is also the name of a family of viral infections that affect the liver; the most common types are Hepatitis A, Hepatitis B, and Hepatitis C.

### **The difference between Hepatitis A, Hepatitis B, and Hepatitis C**

Hepatitis A, Hepatitis B, and Hepatitis C are diseases caused by three different viruses. Although each can cause similar symptoms, they have different modes of transmission and can affect the liver differently. Hepatitis A appears only as an acute or newly occurring infection and does not become chronic. People with Hepatitis A usually improve without treatment. Hepatitis B and Hepatitis C can also begin as acute infections, but in some people, the virus remains in the body, resulting in chronic disease and long-term liver problems. There are vaccines to prevent Hepatitis A and B; however, there is not one for Hepatitis C. If an individual has had one type of viral hepatitis in the past, it is still possible to get the other types.

**Hepatitis A** is a liver infection caused by the Hepatitis A virus (HAV). Hepatitis A is highly contagious. It is usually transmitted by the fecal-oral route, either through person-to-person contact or consumption of contaminated food or water. Hepatitis A is a self-limited disease that does not result in chronic infection. More than 80% of adults with Hepatitis A have symptoms but the majority of children does not have symptoms or have an unrecognized infection. Antibodies produced in response to Hepatitis A last for life and protect against reinfection. The best way to prevent Hepatitis A is by getting vaccinated.

# TRAIN FOR SUCCESS INC.

## HEPATITIS 1 HR

---

### VACCINES



The best way to prevent hepatitis A is through vaccination with the hepatitis A vaccine. Vaccination is recommended for:

- All children age 12 months or older
- For travelers to certain countries, and
- For individuals at high risk for infection with the virus.

The hepatitis A vaccine is given as two vaccines, 6 months apart. The hepatitis A vaccine also comes in a combination form, containing both hepatitis A and B vaccine, that can be given to individuals who are 18 years or older. This form is given as 3 vaccines, over a period of 6 months or as 3 vaccines over 1 month and a booster shot at 12 months.

# **TRAIN FOR SUCCESS INC.**

## **HEPATITIS 1 HR**

---

### **FOR CHILDREN**

The 1<sup>st</sup> dose should be given at 12-23 months old. Children who are not vaccinated by 2 years old can be vaccinated at later visits.

### **FOR TRAVELERS**

Hepatitis A vaccine is recommended for healthy international travelers who are age 12 months or older; the first dose of Hepatitis A vaccine should be administered as soon as travel is considered.

An injection called immune globulin (IG) can be considered in addition to the hepatitis A vaccine for older adults, immunocompromised patients, and patients with chronic liver disease or other chronic medical conditions who are traveling within 2 weeks.

Immune globulin (IG) without hepatitis A vaccine can be given to travelers who are younger than 12 months old, allergic to a vaccine component, or those who choose not to receive the vaccine.

### **PERSONS AT RISK OF INFECTION**

The hepatitis A vaccine series may be started whenever an individual is at risk of infection, such as:

- Persons who use illegal drugs, both non- injection and injection.
- Men who have sexual contact with men.
- Individuals with chronic liver disease.
- Patients who are treated with clotting-factor concentrates.

# **TRAIN FOR SUCCESS INC.**

## **HEPATITIS 1 HR**

---

- Individuals who work with hepatitis A infected animals
- Individuals who work in a hepatitis A research laboratory.

### **SOME INDIVIDUALS SHOULD NOT BE VACCINATED OR SHOULD WAIT TO GET VACCINATED;**

- Any individual who has had a severe (life threatening) allergic reaction to a previous dose of hepatitis A vaccine should not get another dose.
- Any individual who has a severe (life threatening) allergy to any vaccine component should not get the vaccine.
- Persons who are moderately or severely ill at the time the vaccine is scheduled should probably wait until they recover. Individuals with a mild illness can usually get the vaccine.
- The safety of hepatitis A vaccine for pregnant women has not been determined. But there is no evidence that it is harmful to either pregnant women or their unborn babies. The risk, if any, is thought to be very low (Vaccines.gov 2016).

# **TRAIN FOR SUCCESS INC.**

## **HEPATITIS 1 HR**

---

### **Hepatitis C Virus (HCV)**

Hepatitis C (HCV) is a liver disease caused by the Hepatitis C virus (HCV). HCV infection sometimes results in an acute illness, but most often becomes a chronic condition that can lead to cirrhosis of the liver and liver cancer. There is no vaccine for Hepatitis C.

According to the CDC, based on limited studies, the estimated risk for infection after a needlestick or cut exposure to HCV-infected blood is approximately 1.8%. The risk following a blood splash is unknown but is believed to be very small; however, HCV infection from such an exposure has been reported.

Hepatitis C is a contagious liver disease that ranges in severity from a mild illness lasting a few weeks to a serious, lifelong illness that attacks the liver. It results from infection with the Hepatitis C virus (HCV), which is spread primarily through contact with the blood of an infected person. Hepatitis C can be either acute or chronic.

**Acute Hepatitis C virus infection** is a short-term illness that occurs within the first 6 months after someone is exposed to the Hepatitis C virus. For most people, acute infection leads to chronic infection.

**Chronic Hepatitis C virus infection** is a long-term illness that occurs when the Hepatitis C virus remains in a person's body. Hepatitis C virus infection can last a lifetime and lead to serious liver problems, including cirrhosis (scarring of the liver) or liver cancer.

Hepatitis C is usually spread when blood from a person infected with the Hepatitis C virus enters the body of someone who is not infected. Today, most individuals become infected with the Hepatitis C virus by sharing needles or other equipment to inject drugs.

# TRAIN FOR SUCCESS INC.

## HEPATITIS 1 HR

---

Before 1992, when widespread screening of the blood supply began in the United States, Hepatitis C was also commonly spread through blood transfusions and organ transplants.



People can become infected with the Hepatitis C virus during such activities as

- Sharing needles, syringes, or other equipment to inject drugs
- Needlestick injuries in health care settings
- Being born to a mother who has Hepatitis C.

Less commonly, a person can also get Hepatitis C virus infection through

- Sharing personal care items that may have come in contact with another person's blood, such as razors or toothbrushes,
- Having sexual contact with a person infected with the Hepatitis C virus.

The Hepatitis C virus can survive outside the body at room temperature, on environmental surfaces, for up to 3 weeks.(CDC 2015)



# **TRAIN FOR SUCCESS INC.**

## **HEPATITIS 1 HR**

---

Some people are at increased risk for Hepatitis C, including

- Current injection drug users (currently the most common way Hepatitis C virus is spread in the United States)
- Past injection drug users, including those who injected only one time or many years ago
- Recipients of donated blood, blood products, and organs (once a common means of transmission but now rare in the United States since blood screening became available in 1992)
- People who received a blood product for clotting problems made before 1987
- Hemodialysis patients or persons who spent many years on dialysis for kidney failure
- People who received body piercing or tattoos done with non-sterile instruments
- People with known exposures to the Hepatitis C virus, such as
  - Health care workers injured by needlesticks
  - Recipients of blood or organs from a donor who tested positive for the Hepatitis C virus
- HIV-infected persons
- Children born to mothers infected with the Hepatitis C virus

### **Less common risks include:**

- Having sexual contact with a person who is infected with the Hepatitis C virus
- Sharing personal care items, such as razors or toothbrushes, that may have come in contact with the blood of an infected person

### **Symptoms of acute Hepatitis C**

Approximately 70%–80% of people with acute Hepatitis C do not have any symptoms. Some people, however, can have mild to severe symptoms soon after being infected, including

- Fever
- Fatigue

# **TRAIN FOR SUCCESS INC.**

## **HEPATITIS 1 HR**

---

- Loss of appetite
- Nausea
- Vomiting
- Abdominal pain
- Dark urine
- Clay-colored bowel movements
- Joint pain
- Jaundice (yellow color in the skin or eyes)

However, many people infected with the Hepatitis C virus do not develop symptoms. If symptoms occur, the average time is 6–7 weeks after exposure, but this can range from 2 weeks to 6 months.

### **Blood tests used to test for Hepatitis C**

Several different blood tests are used to test for Hepatitis C. The physician may order just one or a combination of these tests. Typically, a person will first get a screening test that will show whether he or she has developed antibodies to the Hepatitis C virus. (An antibody is a substance found in the blood that the body produces in response to a virus.) Having a positive antibody test means that a person was exposed to the virus at some time in his or her life. If the antibody test is positive, the physician will most likely order a second test to confirm whether the virus is still present in the person's bloodstream.

### **STATISTICS**

According to the CDC, in 2013, there were an estimated 29,718 cases of acute hepatitis C virus infections reported in the United States.

An estimated 2.7 million persons in the United States have chronic hepatitis C virus infection. Most people do not know they are infected because they do not look or feel sick.

Approximately 75%–85% of people who become infected with Hepatitis C virus develop chronic infection.

# TRAIN FOR SUCCESS INC.

## HEPATITIS 1 HR

---

### APPROVED TREATMENTS FOR HEPATITIS C

Brand Name	Generic Names	Manufacturer Name	Indication
<a href="#">CoPegus</a>	ribavirin	Roche	use in combination with Pegasys or with Roferon for the treatment of adults with chronic hepatitis C virus infection who have compensated liver disease and have not been previously treated with interferon alpha
<a href="#">Incivek</a>	telaprevir	Vertex Pharmaceuticals	in combination with peginterferon alfa and ribavirin, for the treatment of genotype 1 chronic hepatitis C (CHC) in adult patients with compensated liver disease, including cirrhosis, who are treatment-naïve or who have been previously treated with interferon-based treatment, including prior null responders, partial responders, and relapsers
<a href="#">Infergen</a>	interferon aphacon-1	Three Rivers Pharma	treatment of chronic hepatitis C in patients 18 years of age or older with compensated liver disease who have anti-HCV serum antibodies and/or HCV RNA
<a href="#">Intron A</a>	interferon alpha-2b	Schering	treatment of chronic hepatitis C in patients 18 years of age or older with compensated liver disease who have a history of blood or blood-product exposure and/or are HCV antibody positive
<a href="#">Olysio</a>	simeprevir	Janssen Pharmaceuticals	for the treatment of chronic hepatitis C (CHC) genotype 1 infection as a component of a combination antiviral

# TRAIN FOR SUCCESS INC.

## HEPATITIS 1 HR

---

Brand Name	Generic Names	Manufacturer Name	Indication
			treatment regimen
<a href="#">Pegasys</a>	pegylated interferon	Roche	treatment of adults with chronic hepatitis C virus infection who have compensated liver disease and have not been previously treated with interferon alpha
<a href="#">Pegintron</a>	pegylated interferon alpha-2b	Schering	in combination with rebetol, is indicated for the treatment of chronic hepatitis C in patients 3 years of age and older with compensated liver disease use alone for the treatment of chronic hepatitis C in patients with compensated liver disease previously untreated with interferon alpha and who are at least 18 years of age and intolerant to ribavirin
<a href="#">Rebetol</a>	ribavirin	Schering	use in combination with Pegintron for treatment of chronic hepatitis C in patients with compensated liver disease who have not been previously treated with interferon alpha and are at least 18 years of age
<a href="#">Roferon</a>	interferon alpha-2a	Roche	treatment of chronic hepatitis C in patients 18 years of age or older
<a href="#">Sovaldi</a>	sofosbuvir	Gilead Sciences	for the treatment of chronic hepatitis C (CHC) infection as a component of a combination antiviral treatment regimen
<a href="#">Victrelis</a>	boceprevir	Merck & Co.	treatment of chronic hepatitis C (CHC) genotype 1 infection, in combination with peginterferon alfa and ribavirin, in adult patients (18 years of age and older) with compensated liver disease, including cirrhosis, who are previously untreated or who have failed previous interferon and ribavirin therapy.
<a href="#">Viekira Pak</a>	ombitasvir, paritaprevir and ritonavir tablets co-packaged with	AbbVie Inc.	use with or without ribavirin for the treatment of patients with genotype 1 chronic hepatitis C virus (HCV) infection including those with compensated cirrhosis

# TRAIN FOR SUCCESS INC.

## HEPATITIS 1 HR

Brand Name	Generic Names	Manufacturer Name	Indication
	dasabuvir tablets		

### **Hepatitis B Virus (HBV)**

Hepatitis B virus (HBV) is a pathogenic microorganism that can cause potentially life threatening disease in humans. HBV infection is transmitted through exposure to blood and other potentially infectious materials (OPIM), as defined in the OSHA Bloodborne Pathogens standard, 29 CFR 1910.1030. HBV is found in highest concentrations in blood and in lower concentrations in other body fluids (e.g., semen, vaginal secretions and wound exudates) The HBV vaccine is very effective.

The CDC states that health care workers who have received hepatitis B vaccine and have developed immunity to the virus are at virtually no risk for infection. For an unvaccinated person, the risk from a single needlestick or a cut exposure to HBV-infected blood ranges from 6%–30% and depends on the hepatitis B e antigen (HBeAg) status of the source individual. Individuals who are both hepatitis B surface antigen (HBsAg) positive and HBeAg positive have more viruses in their blood and are more likely to transmit HBV.



# **TRAIN FOR SUCCESS INC.**

## **HEPATITIS 1 HR**

---

### **VACCINE**



### **PREVENTION**

The best way to prevent hepatitis B is by taking the hepatitis B vaccine. The hepatitis B vaccine is safe and effective and is usually given as 3-4 injections over a 6 month period.

The Hepatitis B vaccination is recommended for:

- Anyone who wants to be protected from hepatitis B virus infection.
- All infants, starting with the 1<sup>st</sup> dose of hepatitis B vaccine at birth.
- All children and adolescents younger than 19 years old who have not been vaccinated.
- Men who have sexual contact with men.

# **TRAIN FOR SUCCESS INC.**

## **HEPATITIS 1 HR**

---

- Any Individual whose sex partner has hepatitis B.
- Healthcare workers and public safety workers who are at risk for exposure to blood or blood-contaminated body fluids on the job.
- Individuals who are seeking evaluation or treatment for a sexually transmitted disease.
- Any person who share drug-injection equipment such as needles or syringes etc
- Individuals who have close household contact with people infected with the hepatitis B virus.
- Patients with end-stage renal disease (ESRD), including hemodialysis, peritoneal dialysis, home dialysis patients.
- Individuals with chronic liver disease.
- Individuals with HIV infection.
- Residents and staff of facilities for developmentally disabled persons.
- Travelers to area with moderate or high rates of hepatitis B.

### **FOR CHILDREN AND ADOLESCENTS**

All children should get their 1st dose of hepatitis B vaccine at birth and complete the vaccine series by 6-18 months old.

Hepatitis B vaccine is recommended for all babies so that they will be protected from a serious but preventable disease.

Babies and young children are at much greater risk for developing a chronic infection if infected, but the vaccine can prevent this.

All children and adolescents younger than 19 years old who have not yet received the vaccine should also be vaccinated.

# TRAIN FOR SUCCESS INC.

## HEPATITIS 1 HR

---

### CATCH-UP VACCINATION

Catch-up vaccination is recommended for any child and adolescents who were never vaccinated or who did not receive the entire vaccine series.

### FOR ADULTS

#### Approved Treatments for Hepatitis B

Brand Name	Generic Names	Manufacturer Name	Indication
<a href="#">Baraclude</a>	entecavir	Bristol-Myers Squibb	chronic hepatitis B virus infection with evidence of active viral replication
<a href="#">Epivir HBV</a>	lamivudine	GlaxoSmithKline	chronic hepatitis B associated with hepatitis B viral replication and active liver inflammation
<a href="#">Hepsera</a>	adefovir dipivoxil	Gilead Sciences	chronic hepatitis B in patients 12 years of age
<a href="#">Intron A</a>	interferon alpha-2b	Schering	chronic hepatitis B in patients 1 year of age or older with compensated liver disease
<a href="#">Pegasys</a>	pegylated interferon	Roche	treatment of adult patients with HBeAg positive and HBeAg negative chronic hepatitis B who have compensated liver disease and evidence of viral replication and liver inflammation



# TRAIN FOR SUCCESS INC.

## HEPATITIS 1 HR

---

Brand Name	Generic Names	Manufacturer Name	Indication
<a href="#">Tyzeka</a>	telbivudine	Novartis	chronic hepatitis B in adult patients with evidence of viral replication and either evidence of persistent elevations in serum aminotransferases (ALT or AST) or histologically active disease
<a href="#">Viread</a>	tenofovir	Gilead Sciences	chronic hepatitis B in adults.

Any adult who is at risk for hepatitis B virus infection or who would like to be vaccinated should contact a health professional /practitioner about getting the vaccine series.

**TRAIN FOR SUCCESS INC.**  
**HEPATITIS 1 HR**

---

**TAKE EXAM**

# **TRAIN FOR SUCCESS INC.**

## **HEPATITIS 1 HR**

---

### References

Centers for Disease Control and Prevention (2011) Stop Sticks Campaign; Sharp Injuries. Retrieved from <http://www.cdc.gov/niosh/stopsticks/sharpsinjuries.html>

Centers for Disease Control and Prevention. (2015) Hepatitis C. Retrieved from <http://www.cdc.gov/hepatitis/hcv/cfaq.htm>

Centers for Disease Control and Prevention. (2013) Surveillance Report. Retrieved from [http://www.cdc.gov/hiv/library/reports/surveillance/2013/surveillance\\_Report\\_vol\\_25.htm](http://www.cdc.gov/hiv/library/reports/surveillance/2013/surveillance_Report_vol_25.htm)

Jarvis, C. (2012) Physical Examination & Health Assessment (6<sup>th</sup> ed.) St. Louis, Missouri: ELSEVIER SAUNDERS

Lewis, s., Dirksen, S., Heitkemper, M., Bucher, L., Camera, I. (2011) Medical-Surgical Nursing; Assessment and Management of Clinical Problems. (8<sup>th</sup> ed.) St. Louis, Missouri: ELSEVIER MOSBY

OSHA.GOV (2012) Hazard Communication Standard: Safety Data Sheets Retrieved from <https://www.osha.gov/Publications/OSHA3514.html>

# **TRAIN FOR SUCCESS INC.**

## **HEPATITIS 1 HR**

---

WWW. Vaccines.gov (2016) Hepatitis B. Retrieved from  
[http://www.vaccines.gov/diseases/hepatitis\\_b/index.html](http://www.vaccines.gov/diseases/hepatitis_b/index.html)