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# Hepatitis 101

An Introduction to Viral Hepatitis and the Florida Hepatitis Program

For Counselors and Outreach Workers

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## Learning Objectives

After participating in Hepatitis 101, you will be able to:

- Describe hepatitis A (HAV), hepatitis B (HBV), and hepatitis C (HCV)
- Identify clients who should be referred for hepatitis vaccination and testing
- Understand information needed to counsel clients about viral hepatitis
- Interpret laboratory test results for hepatitis A, hepatitis B, and hepatitis C
- Describe the interrelationship of HCV and HIV/AIDS progression

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## Hepatitis Symptoms (if present)

- Jaundice
- Fatigue
- Abdominal pain
- Nausea
- Diarrhea
- Loss of appetite

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## Acute vs. Chronic Infection

- **Acute Infection:**
  - Rapid onset
  - Short, severe course (usually less than six months)
- **Chronic Infection:**
  - Of long duration
  - Persists for more than six months (and can last a lifetime)

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## Estimated Number of People in the US Infected With Viral Hepatitis vs. HIV

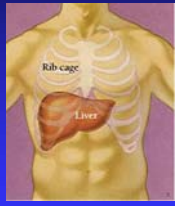
- HIV ~ 1.0 million
- HBV ~ 1.2 million
- HCV ~ 3.9 million (2.7 million are chronically infected)

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## The Liver




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## Functions of the Liver


- Manufactures proteins found in the blood
- Converts food into nutrients
- Detoxifies substances that are harmful to the body
- Stores vitamins, minerals, and sugars
- Secretes bile which aids in the digestion of fats
- Important in carbohydrate & protein metabolism

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# Hepatitis A (HAV)


## An Overview

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## Features of Hepatitis A


- Incubation period: average of 28 days, with a range of 15 to 50 days
- Peak infectivity occurs during the two week period prior to jaundice
- No chronic infection—acute infection only
- Infected children generally have no symptoms, while adults can get very ill

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## Risk Factors for Hepatitis A Transmission


- Oral-fecal transmission
- Having close personal contact with someone who has hepatitis A
- Using poor hygiene
- Eating contaminated food
- Consuming contaminated raw shell fish
- Drinking contaminated water
- Having anal-oral sex

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## How to Prevent Hepatitis A

- Use good hygiene—wash hands well, especially after using the bathroom, changing a diaper, before eating, and before preparing food
- Practice safer sex
- Cook fish & other seafood thoroughly
- Get vaccinated

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## Issues to Discuss With Clients

**Pre-Exposure:**

- Understanding disease transmission
- Using safer sexual practices
- Using proper hygiene and hand-washing
- Getting vaccinated

**Post-Exposure:**


- Immune Globulin (IG) must be given within 14 days of exposure
- Proper hygiene
- Getting vaccinated

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## Clients With Acute Hepatitis A


- There is no treatment specifically for HAV—only for the symptoms
- Eat a healthy diet
- Get plenty of rest
- Avoid alcoholic beverages
- Discuss with their healthcare provider all medications, including over-the-counter, that they may be taking

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## Hepatitis A Test Interpretations

- **IgM anti-HAV (IgM hepatitis A antibody):**  
Appears within six months of acquiring the hepatitis A virus or getting the vaccination.
- **Anti-HAV total (hepatitis A antibody total):**
  - ◆ Detects both IgM and IgG antibodies
  - ◆ Indicates either acute or resolved infection, or vaccine-induced immunity.

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## Vaccination for Hepatitis A

**Pre-Exposure:**

- People having anal-oral sex
- People using street drugs
- People with HCV, HIV/AIDS, hepatitis B, or other chronic diseases
- Testing for prior immunity may be cost-effective for the client


**Post-Exposure:**

- People who have close, personal contact with an HAV-positive person
- IG may also be given within 14 days of exposure

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## Hepatitis B (HBV) An Overview

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## Features of Hepatitis B


- Incubation period: average of 120 days, with a range of 45 to 160 days
- Acute infection (few people show symptoms of acute HBV)
- Chronic infection
  - ◆ 90% of those infected as infants (if not given HBIG & full vaccine series)
  - ◆ 10% of those infected as adults.

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## Risk Factors For Hepatitis B

- Blood & body fluid transmission
- Unprotected vaginal, anal, or oral sex—especially with multiple partners
- Sharing injection drug equipment
- Infected mother to her infant (delivery)
- Occupational or other needle-stick injury
- Household contact with an HBV-positive person


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## Clients Who Should be Tested for Hepatitis B

- Sexually active persons with multiple sex partners
- Persons using street drugs
- Household contact of an HBV-positive person
- Persons with HCV, HIV/AIDS, or other chronic diseases
- All pregnant women

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## Post-Test Counseling: HBV-Negative

- Avoid having unprotected sex
- Avoid sharing needles & objects that may be contaminated with infected blood
- Offer hepatitis B vaccine
- May need to retest for very recent and future risk behavior

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## Post-Test Counseling: HBV-Positive

- Avoid having unprotected sex
- Avoid sharing needles and objects that may be contaminated with infected blood
- Avoid alcohol consumption
- Get vaccinated for HAV
- Identify sexual and other close personal contacts
- Eat a well balanced diet
- Currently, no public health funding for treatment
- Discuss with their healthcare provider all medications, including over-the-counter, that they may be taking

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## Hepatitis B Testing

- HBsAg = Hepatitis B surface antigen
  - If HBsAg is positive, the patient is infected and can transmit the virus
- Anti-HBs (HBsAb) = Hepatitis B surface antibody
  - If Anti-HBs (HBsAb) is positive, the patient is immune
- Anti-HBcAb = Hepatitis B core antibody
  - If this is positive, the patient has been exposed to HBV at some time

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## Vaccination for Hepatitis B

- Persons having unprotected sex—especially with multiple partners
- Inmates in long-term correctional facilities
- Persons with HCV, HIV/AIDS, or other chronic diseases
- Pre-vaccine testing may be cost-effective in populations with high seropositivity
- All infants (since 1991)
- All 7<sup>th</sup> grade students (since 1997)

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## Issues for Pregnant Women

- All pregnant women should be screened for HBsAg
- All babies are routinely vaccinated
- If the mother is hepatitis B-positive, baby is vaccinated and receives hepatitis B immune globulin (HBIG)
- Breastfeeding is permitted if infant receives HBIG and vaccine on schedule

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# Hepatitis C (HCV)

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## Features of Hepatitis C

- Incubation period: average of 6 to 7 weeks, with a range of 2 – 26 weeks
- Acute infection
- Chronic infections in 85% of those infected
- Symptoms are rare during acute infection
- Most do not know they have HCV until 10 to 30 years after they have been infected

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## Risk Factors for Hepatitis C Transmission

- Sharing injection drug equipment, **even once years ago**
- Receiving blood transfusion or organ transplant prior to 1992
- Receiving clotting factors prior to 1987
- Occupational needle-stick injury
- Long term hemodialysis
- An infected mother to her infant
- Sexual transmission (rarely)

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## Clients Who Should be Tested for Hepatitis C

- Injection drug users, even once years ago
- Persons receiving clotting factors prior to 1987
- Persons receiving a blood transfusion or organ transplant prior to 1992
- Persons with HBV or HIV/AIDS
- Persons with persistently elevated liver function tests
- Persons who were ever on long-term hemodialysis

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## Post-Test Counseling: HCV-Negative

- Avoid sharing injection drug equipment and objects that may have contaminated blood on them (razors, toothbrushes, or tattoo needles)
- Always use a condom when having sex
- May need to retest for very recent and future risk behavior

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## Post-Test Counseling: HCV Positive

- Avoid alcoholic drinks
- Get vaccinated against HAV and HBV
- Maintain a healthy and balanced diet
- Discuss with their healthcare provider all medications, including over-the-counter, that they may be taking
- Join a local hepatitis C support group

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## Hepatitis C Testing

- Serologic screening test
    - ❖ Test for antibody (EIA)
    - ❖ If screening test (EIA) is positive, confirmatory test is indicated
  - Confirmatory tests
    - ❖ May use antibody test (RIBA), or
    - ❖ May use viral detection test (PCR)
- [http://labtestsonline.org/understanding/analytes/hepatitis\\_c/test.html](http://labtestsonline.org/understanding/analytes/hepatitis_c/test.html)

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## Hepatitis C Treatment Options

- Currently, there is no public health funding for hepatitis C treatment. Options available:
  - ◆ Private insurance
  - ◆ Veteran services
  - ◆ Medicaid
  - ◆ Clinical trials ([www.centerwatch.com](http://www.centerwatch.com))
  - ◆ Compassionate care treatment programs
- Certain therapies can do more harm than good; treatment is not advised for everyone.

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## Hepatitis C Prevention

- There is NO vaccine for HCV, therefore risk of infection can only be reduced by decreasing exposure to the virus
- All adults with hepatitis C should be vaccinated for hepatitis A and hepatitis B to prevent future liver damage

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## Issues for Pregnant Women

- Hepatitis C can be transmitted from mother to infant during delivery
- It is unclear whether hepatitis C is transmitted through breast milk
- Women with HCV should consult their healthcare provider before breastfeeding

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## Viral Co-Infection An Overview

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## Risk Behavior May Cause Infection With More Than One Virus

### For example:

- Unprotected sex with multiple partners—increases risk for HBV and HIV
- IDU—increases risk for HCV and HIV
- MSM—increases risk for HAV and HIV

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## HBV, HCV, and HIV Similarities

- Viruses are blood borne—including blood from cuts, nosebleeds, and menstrual blood
- Are spread by sharing any kind of needles and other objects with contaminated blood
- Can be transmitted sexually and from mother to baby

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## HCV-HIV Co-Infection

- HIV diminishes the ability of the immune system to fight off infection
- HIV speeds up the rate of liver damage caused by HCV
- There is a greater risk of cirrhosis, liver cancer, and liver failure if co-infected

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## HCV and HIV Similarities

- High levels of viral replication
- Cause of chronic infection that can persist for many years
- Most people do not experience symptoms during the early stages of infection

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## Hepatitis Resource Websites

- For lab interpretations, click on:
  - ◆ [http://labtestsonline.org/understanding/analytes/hepatitis\\_c/test.html](http://labtestsonline.org/understanding/analytes/hepatitis_c/test.html)
  - ◆ [http://labtestsonline.org/understanding/analytes/hepatitis\\_b/test.html](http://labtestsonline.org/understanding/analytes/hepatitis_b/test.html)
  - ◆ [http://labtestsonline.org/understanding/analytes/hepatitis\\_a/test.html](http://labtestsonline.org/understanding/analytes/hepatitis_a/test.html)
- To order educational materials (for free) from the CDC:
  - ◆ <http://www.cdc.gov/ncidod/diseases/hepatitis/resource/materials.html>
- California Distance Learning Health Network:
  - ◆ <http://www.cdhn.com>

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## Florida Hepatitis and Liver Failure Prevention and Control Program

For more information, call:  
850-245-4334  
(fax) 850-414-0038

[www.doh.state.fl.us](http://www.doh.state.fl.us)  
[www.myflorida.com](http://www.myflorida.com)

Type "hepatitis" in the search area

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