

## Quiz: Participating in Health Care

# HHRP

Name (first name only): \_\_\_\_\_ Date: \_\_\_\_\_

1. **HIV is spread by casual contact and insect bites.**
  - a. True
  - b. False
  
2. **Patient communication skills include:**
  - a. preparing a list of issues to discuss
  - b. asking for information to be written down
  - c. body language that shows you are an active partner in your health care
  - d. all of the above
  
3. **What is the first thing you should do if you develop side effects when taking a medication?**
  - a. take a “drug holiday”
  - b. take less of the medication
  - c. inform your health care provider
  - d. take another drug to help you feel better
  
4. **For which of the following infectious diseases is there a vaccine that can prevent people from getting it?**
  - a. HIV
  - b. hepatitis B
  - c. hepatitis C
  - d. all of the above
  
5. **Which of the following is a memory aid that can help you adhere to your medication regimen?**
  - a. using a pill organizer
  - b. setting an alarm clock
  - c. placing a “post-it” reminder note on the refrigerator
  - d. all of the above

Score \_\_\_\_\_







# Medical Information Sheet

(keep updated)



**Patient Name** \_\_\_\_\_ Telephone No. \_\_\_\_\_

Address \_\_\_\_\_

## Primary Health Care Provider.

Name \_\_\_\_\_ Telephone No. \_\_\_\_\_

Address \_\_\_\_\_

## “Medication Buddy”.

Name \_\_\_\_\_ Telephone No. \_\_\_\_\_

Address \_\_\_\_\_

## Health Insurance Information.

ID No. \_\_\_\_\_ Carrier \_\_\_\_\_

Allergies \_\_\_\_\_

## Medications Prescribed.

Medication Name	Dose	Special Instructions	Date Discontinued

**Other Drugs Used.**

Drug name	Amount/Frequency	Date Discontinued
Alcohol		
Nicotine		
Opiates		
Cocaine		
Benzodiazepines		
Marijuana		
Other:		

**“Alternative” or “Complementary” Therapies Used.**

Drug name	Amount/Frequency	Date Discontinued
Acupuncture		
Herbal remedies		
Nutritional supplements		
Other		

**Potential Obstacles to Adherence.**

- 1) \_\_\_\_\_
- 2) \_\_\_\_\_
- 3) \_\_\_\_\_
- 4) \_\_\_\_\_
- 5) \_\_\_\_\_
- 6) \_\_\_\_\_

**Possible Solutions.**

- 1) \_\_\_\_\_
- 2) \_\_\_\_\_
- 3) \_\_\_\_\_
- 4) \_\_\_\_\_
- 5) \_\_\_\_\_
- 6) \_\_\_\_\_

**Memory Aids.**

- 1) \_\_\_\_\_
- 2) \_\_\_\_\_
- 3) \_\_\_\_\_
- 4) \_\_\_\_\_
- 5) \_\_\_\_\_
- 6) \_\_\_\_\_

# Medication Adherence Game Worksheet



**Instructions:** Patient Pat has been prescribed the following medications.

Medication	Instructions for Use	Special Instructions
(A) DDI (Didanosine)	2 tablets twice a day	Take a half-hour before a full meal
(B) Viramune (Nivirapine)	1 tablet twice a day	
(C) Viracept (Nelfinavir Mesylate)	3 tablets 3 times a day	Take with a meal
(D) Erythromycin	1 pill 4 times a day	Do not eat 2 hours before or 2 hours after taking

**Facts to know about Patient Pat:**

Pat usually gets up at around 6:00 in the morning and goes to the clinic for methadone at 6:30. Pat usually eats 2 meals a day—breakfast at around 7:30 am, after returning from the methadone clinic, and dinner at around 6:30 pm. Pat works as a retail clerk from 9:00 am to 5:00 pm, sometimes goes out in the evening with friends, and goes to bed at around midnight. Two nights a week Pat bowls on a bowling league from 8:00 pm to 10 pm.

**Potential Obstacles to Adherence**

**Possible Solutions**

- |          |       |
|----------|-------|
| 1) _____ | _____ |
| 2) _____ | _____ |
| 3) _____ | _____ |
| 4) _____ | _____ |
| 5) _____ | _____ |
| 6) _____ | _____ |

**Memory Aids to Recommend to Pat:**

- 1) \_\_\_\_\_
- 2) \_\_\_\_\_
- 3) \_\_\_\_\_
- 4) \_\_\_\_\_
- 5) \_\_\_\_\_
- 6) \_\_\_\_\_

Health Care Participation

**Using the letters A, B, C, D to represent the prescribed medications, create Pat's daily medication schedule below (No. = number of pills).**

Time	A, B, C, D	No.
6:00 AM		
6:30		
7:00		
7:30		
8:00		
8:30		
9:00		
9:30		
10:00		
10:30		
11:00		
11:30		
Noon		
12:30 PM		
1:00		
1:30		
2:00		
2:30		

Time	A, B, C, D	No.
3:00 PM		
3:30		
4:00		
4:30		
5:00		
5:30		
6:00		
6:30		
7:00		
7:30		
8:00		
8:30		
9:00		
9:30		
10:00		
10:30		
11:00		
11:30		
Midnight		

## Medical Language Statement

# HHRP

Being a **positive participant** involves taking responsibility for your health. In order to maintain or improve your physical health, you need to be well-informed about the effects of drug use and unsafe sexual practices on your health, so that you can make choices that will protect your health.

The materials in this section contain important information about HIV, Hepatitis B (HBV), and Hepatitis C (HCV), as well as other diseases that occur at high rates among drug users, their sex partners, and their children.

In order for this section to be as helpful as possible, it contains a number of medical terms that doctors and other health care professionals may use with their patients and when talking among themselves about these disorders. Some of these terms may be unfamiliar to you, and you may also find some difficult to read and pronounce. If this is the case, we encourage you to speak with your health care provider, counselor, or someone who is knowledgeable about the subject, and to become informed regarding the meaning and use of these terms. This could make your discussion with your health care providers much more productive and meaningful for you.

Remember that taking responsibility for your health means developing a high **Patient IQ**. “IQ” stands for Inform and Question: you need to **Inform** yourself about issues that trouble you; **Inform** your health care provider of your problems and concerns; and ask **Questions** of those who provide medical services to you.



## HIV / AIDS

# HHRP

The human immunodeficiency virus (HIV) is the virus that causes AIDS. It is estimated that between 650,000 to 900,000 people in this country are now infected with HIV and approximately 40,000 new infections occur every year.

**More than one third of all AIDS cases** reported in the United States are directly or indirectly associated **with drug use.**

HIV is passed from one person to another through blood-to-blood and sexual contact. In addition, infected pregnant women can pass HIV to their babies during pregnancy or delivery, as well as through breast feeding. HIV causes AIDS and most people with HIV infection will develop AIDS as a result of their HIV infection. AIDS is life-threatening because the immune system of someone with AIDS has lost the ability to defend itself against life-threatening cancers and other infections.

HIV is not spread by casual contact or insect bites. Only the following body fluids have been proven to spread HIV:

- Blood
- Semen
- Vaginal fluid
- Breast milk

### **Getting tested**

The blood tests commonly used to detect HIV infection actually determine whether antibodies have been produced by your body to fight HIV. Antibodies are produced by your immune system in response to infection, so you would only have these particular HIV antibodies if in fact you had been infected.

### **The window period**

The period of time between when you were infected with HIV and when antibodies can be detected is called the “window period.” During this window period, your HIV test result may be negative when in fact you are actually HIV-positive. **Most people will develop detectable antibodies within 3 months after infection.** The average window period is about three weeks. In rare cases, it can take up to 6 months.

**It is therefore recommended that you get tested 6 months after the last possible exposure (unprotected vaginal, anal, or oral sex or sharing needles).**

*(over)*

It is very important to **get tested regularly** and to learn your test results because medications are now available that may keep you healthier longer. The less time that HIV has to multiply in your body, the better your chances for managing the disease and the more likely you can prevent transmission of HIV to your drug and sexual partners and to your partner's children.

Do not confuse HIV testing with prevention. Some people who are not well-informed think that they do not need to change their behavior if they continue to test negative for HIV. This is not true.

If you engage in any of the behaviors we just discussed with someone who has been infected, you are at risk for infection. There is no way to prevent transmission except through your own behavior. You are in control.

### **Interpreting your test results**

*If you test negative:*

If you test negative, don't forget the "window period." **You may in fact be HIV-positive**, but your immune system has not yet developed detectible antibodies. However, if you still test negative six months after the last time you engaged in any high risk behavior, then you can feel assured that you have not been infected. **Do not assume that because you tested negative, that your partner must also be negative.** HIV is not necessarily transmitted every time there is exposure. So, for example, you could have had unprotected sex or shared drug paraphernalia with an HIV-positive partner without having become infected on that particular occasion. However, if you engage in high risk behavior again with this person you could still be at risk unless your partner also tested negative 6 months after his or her most recent high risk behavior.

*If you test positive:*

Depending on how much of the virus you have and the strength of your immune system, your doctor may prescribe some medications that will help you to stay healthy longer. **There is no cure.** If you engaged in high risk behavior any time after you were infected, you could have infected your partners or have become re-infected with a strain of the virus that does not respond well to medications. That's why it is so important for everyone to get tested. The sooner you know that you have been infected, the sooner you can begin treatment, and the sooner you can stop the spread of HIV to others.

**Some people believe that they don't have to worry about getting HIV any more because they think that it can be cured with medication. THIS IS NOT TRUE.** The truth is that despite medical advances, HIV remains a very serious disease that requires costly, and often complicated, treatment regimens that **may** slow the disease, but do not cure it.

## Prevent Hepatitis B: Get Vaccinated



**Hepatitis B is a serious disease caused by the hepatitis B virus (HBV) that attacks the liver and can be spread to others.**

### **Is hepatitis B a serious problem?**

Yes. Each year, thousands of people of all ages get hepatitis B and about 5,000 die of chronic (life-long) liver problems caused by HBV infection. If you have had other types of hepatitis, such as hepatitis A or hepatitis C, you can still get hepatitis B.

### **How is hepatitis B spread?**

- HBV is spread by contact with the blood of an infected person or by having sex with an infected person
- A woman who has hepatitis B can spread the virus to her baby during birth.
- HBV is spread by contact with the blood of an infected person or by having sex with an infected person

### **You cannot get HBV from:**

- sneezing or coughing
- kissing or hugging
- sharing eating utensils or drinking glasses
- breast feeding
- food or water
- casual contact (such as an office setting)

### **How do you know if you have hepatitis B?**

Only a blood test can tell for sure. See your doctor if you have symptoms of hepatitis (e.g., tiredness, stomach ache, joint pain, yellow skin or eyes), or if you think you have had direct contact with someone who has hepatitis B.

***It is very important that all pregnant women get a blood test for hepatitis B early in their pregnancy, since a woman who has hepatitis B can spread the virus to her baby during birth.***

### **How can you protect yourself from getting infected with HBV?**

- **Get vaccinated!**  
Hepatitis B vaccine is safe, effective, and your best protection.

(over)

- **Practice “safer” sex.**

If you are having sex, but not with one steady partner, use latex condoms correctly every time you have sex and get vaccinated against hepatitis B. Men who have sex with men should be vaccinated against both hepatitis A and hepatitis B.

- **Don’t share anything that might have blood on it.**

Never share anything that might have blood on it, such as a razor or toothbrush.

If you shoot drugs, get help to stop or get into a treatment program. Don’t share needles, syringes, cookers, cottons, water, or rinse cups. Get vaccinated against hepatitis A and hepatitis B.

- **Think about the health risks if you are planning to get a tattoo or body piercing.**

You can get infected if the artist or piercer doesn’t sterilize needles and equipment, use disposable gloves, and wash hands properly.

- **Follow standard precautions.**

If you are a health-care worker, follow standard precautions and handle needles and sharps safely. Get vaccinated against hepatitis B.

### **Get hepatitis B vaccine if:**

- your sex partner has hepatitis B
- you are a man who has sex with men
- you have had a sexually transmitted disease (e.g. gonorrhea, syphilis)
- you have sex with more than one partner
- you shoot drugs
- you live with someone who has life-long hepatitis B
- you have a job that exposes you to human blood
- you are a kidney dialysis patient
- you live or travel for more than six months in countries where hepatitis B is common

***Everyone under 19 years old should get vaccinated against hepatitis B!***

### **Is the vaccine safe?**

Yes. Hepatitis B vaccine is safe and effective. Millions of people have received the vaccine worldwide since 1982. **You do not need booster shots** after you complete the three-shot vaccine series.

### **Should you get a blood test after the three shot vaccine series to be sure that you are protected?**

Most people don’t need to get their blood tested after getting the vaccine.

You should get a blood test 1 to 2 months after you complete the series if:

- your sex partner has chronic hepatitis B
- your immune system is not working well (i.e., you are on dialysis or you have AIDS)
- you have a job that exposes you to human blood

***Babies born to infected mothers should get their blood tested at 9 to 15 months old to be sure that they are protected.***

# Hepatitis C Prevention



**Almost 4 million Americans are infected with hepatitis C virus.**

## **What is hepatitis C?**

Hepatitis C is a liver disease caused by the hepatitis C virus (HCV), which is found in the blood of persons who have this disease. The infection is spread by contact with the blood of an infected person.

## **How serious is hepatitis C?**

Hepatitis C is serious for some persons, but not for others. Most persons who get hepatitis C carry the virus for the rest of their lives. Most of these persons have some liver damage but many do not feel sick from the disease. Some persons with liver damage due to hepatitis C may develop cirrhosis (scarring) of the liver and liver failure which may take many years to develop.

## **How can I protect myself from getting hepatitis C?**

HCV is spread primarily by exposure to human blood.

- Don't ever shoot drugs! If you shoot drugs, stop and get into a treatment program. If you can't stop, use a clean needle and works every time and don't share them.
- Practice safer sex. If you have sex with multiple partners, lower your number of partners and always use barrier precautions, such as latex condoms.
- If you are a health care worker, always follow routine barrier precautions and safely handle needles and other sharps.
- Do not share toothbrushes, razors, or other personal care articles. They might have blood on them.

## **Hepatitis C is not spread by:**

- sneezing
- hugging
- coughing
- sharing eating utensils or drinking glasses
- food or water
- casual contact

*(over)*

## **Could I already have hepatitis C?**

Ask your doctor for a blood test for hepatitis C if:

- you received a blood transfusion or solid organ transplant (e.g., kidney, liver, heart) before 1992.
- you were treated with a blood product for clotting problems before 1987.
- you ever injected street drugs, **even once**.
- you were ever on long-term kidney dialysis.

## **Why should I be tested for hepatitis C?**

Early diagnosis is important so you can be:

- counseled about how to prevent transmission of HCV to others.
- checked for liver disease and get treatment, if indicated.

Many people who are at risk for hepatitis C are at risk for hepatitis A and hepatitis B. Check with your doctor to see if you should get hepatitis A and hepatitis B vaccines.

**There is no vaccine to prevent hepatitis C.**

# Endocarditis

(Bacterial Endocarditis; Infective Endocarditis)



## Basic information

### Description

A noncontagious infection involving the heart muscle, heart valves, endocardium (lining of the heart chambers or valves).

### Frequent signs and symptoms

#### Early symptoms:

- Fatigue and weakness.
- Intermittent fever, chills and excessive sweating, especially at night.
- Weight loss.
- Vague aches and pains.
- Heart murmur.

#### Late symptoms:

- Severe chills and high fever.
- Shortness of breath on exertion.
- Swelling of the feet, legs and abdomen.
- Rapid or irregular heartbeat.

### Causes

Bacteria or fungi that enter the blood and infect the valves and heart lining of persons with damaged skin (See risks below). Bacteria or fungi further damage the heart valves, muscles and linings.

### Risk increases with

Risk of heart-valve damage increases with:

- Rheumatic fever.
- Congenital heart disease.

### Risk of endocarditis following heart valve damage increases with:

- Pregnancy.
- Injections of contaminated materials into the bloodstream, such as with self-administered intravenous drugs.
- Excess alcohol consumption.
- Use of Immunosuppressive drugs.
- Artificial heart valves.

**Endocarditis**  
**(Bacterial Endocarditis; Infective Endocarditis)**  
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**Preventive measures**

If you have heart-valve damage or a heart murmur

- Request antibiotics before medical procedures that may introduce bacteria into the blood. These include dental work, childbirth and surgery of the urinary or gastrointestinal tract.
- Don't drink more than 1-2 if any alcoholic drinks in 1 day.
- Consult medical professional before becoming pregnant.
- Don't use illicit drugs like heroin or cocaine.

**Expected outcome**

Usually curable with early diagnosis and treatment, but recovery may take weeks. If treatment is delayed, heart function deteriorates, resulting in congestive heart failure and death.

**Possible complications**

- Blood clots that may travel to the brain, kidneys or abdominal organs, causing infections, abscesses or stroke.
- Heart-rhythm disturbances (atrial fibrillation is most common).

**Treatment**

**General measures**

Diagnostic tests may include laboratory blood counts and blood cultures, electrocardiogram (method of diagnosing heart diseases by measuring electrical activity of the heart), X-rays of the heart and lungs, including echocardiogram (studying the heart by examining sound waves created by an instrument placed on the chest).

- The goal of treatment is to eradicate the infecting organism with medications, and supportive care for relieving symptoms.
- Hospital care during acute phase. Once stable, some patients can continue with treatment at home.
- Surgery to replace infected valve in some patients.
- If you have damaged heart valves, tell any doctor or dentist before any treatment or procedure. Preventive antibiotics will be needed in some situations.
- Ongoing dental hygiene is important to prevent infection.
- Once you have had endocarditis, stay under a doctor's care to prevent a relapse.
- Wear a medical alert type bracelet or neck tag that indicates your medical problem. Carry a wallet card listing the antibiotic regimens needed for medical and dental procedure.

**Endocarditis**  
**(Bacterial Endocarditis; Infective Endocarditis)**  
(page three)

**Medication**

Antibiotics for many weeks to fight infection. Antibiotic treatment is often intravenous.

**Activity**

- Rest in bed until you are fully recovered. While in bed, flex your legs often to prevent clots from forming.
- Resume your normal activities, including sexual relations, when strength allows.

**Diet**

No special diet.

**Notify our office if**

You or a family member has symptoms of endocarditis.

The following occur during or after treatment:

- Weight gain without diet changes.
- Blood in the urine.
- Chest pain or shortness of breath.
- Sudden weakness or numbness in the muscles of the face, trunk, or limbs.

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# Cirrhosis of the Liver



## Basic information

### Description

Chronic scarring of the liver, leading to loss of normal liver function. It is twice as common in men as in women. Congenital cirrhosis can affect infants or young children.

### Frequent signs and symptoms

#### Early stages:

- Fatigue, weakness.
- Poor appetite: nausea; weight loss.
- Enlarged liver.
- Red palms.

#### Late stages:

- Jaundice (yellow skin and eyes).
- Dark yellow or brown urine.
- Spider blood vessels of the skin (fine vessels that spread out from a central point).
- Hair loss.
- Breast enlargement in men.
- Fluid accumulation in the abdomen and legs.
- Enlarged spleen.
- Diarrhea; stool may be black or bloody.
- Bleeding and bruising.
- Mental confusion, coma.

### Causes

Inflammation of the liver, accompanied by destruction of liver cells, cell regeneration and scarring. These may be preceded by:

- Prolonged, excess alcohol consumption.
- Hepatitis.
- Exposure to toxic chemical.
- Inherited causes.

### Risk increases with

- Poor nutrition.
- Hepatitis.
- Excess alcohol consumption. Individuals vary widely in the amount and duration of alcohol consumption necessary to cause cirrhosis.
- Occupational exposure to chemicals toxic to the liver.

## **Cirrhosis of the Liver**

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### **Preventive measures**

- Obtain treatment for alcoholism.
- Obtain prompt medical treatment for hepatitis.
- Survey your work environment for possible exposure to toxic chemicals.

### **Possible complications**

- Cirrhosis can be arrested if the underlying cause can be removed. Liver damage is irreversible, but symptoms can be relieved or controlled. A near-normal life is possible if treated early and treatment succeeds.
- If the underlying cause is not removed, liver scarring will continue, resulting in death from liver failure.

### **General measures**

- Life-threatening hemorrhage, especially from the esophagus and stomach.
- Liver cancer.
- Body poisoning and coma from a buildup of ammonia and other body waste.
- Sexual impotence.

### **Treatment**

#### **General measures**

- Diagnostic tests may include laboratory studies, such as blood and urine tests of liver function, X-ray and/or biopsy of liver.
- Treatment methods may include drug treatment, dietary restrictions, rest and other supportive measures.
- If cirrhosis is caused by alcoholism, stop drinking. Ask for help from family, friends and community agencies. Contact an Alcoholics Anonymous group in your community.
- Additional Information available from the American Liver Foundation  
75 Maiden Lane  
Suite 603  
New York, NY 10038  
(800) GO-Liver (465-4837) toll-free  
(888) 4HEP-USA (443-7872) toll-free  
(212) 668-1000  
(212) 483-8179 fax  
info@liverfoundation.org

#### **Medication**

- Iron supplements for anemia resulting from or poor nutrition.
- Diuretics to reduce fluid retention.
- Antibiotics, such as neomycin, to reduce ammonia buildup.
- Stool softeners.

## **Cirrhosis of the Liver**

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### **Activity**

- Maintain as active a life as possible.
- Elevate swollen feet and legs when resting.

### **Diet**

- In the early stages, eat a well-balanced diet that is high in carbohydrates, high in protein and low in salt.
- Late stages may require protein reduction.
- Vitamin and mineral supplements may be necessary.
- Don't drink alcohol.

### **Notify our office if**

- You or a family member has symptoms of cirrhosis.
- The following occur during treatment:
  - Vomiting blood or passing black stool.
  - Mental confusion or coma.
  - Fever or other signs of infection (redness, swelling, tenderness or pain).

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# Cellulitis



## Basic information

### Description

A noncontagious infection of connective tissue beneath the skin. It can affect skin anywhere on the body, but most likely on the face or lower legs. Erysipelas is the name of a severe cellulitis of the face.

### Frequent signs and symptoms

- Sudden tenderness, swelling, and redness in an area of the skin. The area of cellulitis is initially 5cm to 20cm in diameter, and grows rapidly in the first 24 hours. A thin, red line often extends from the middle of the cellulitis toward the heart. Cellulitis does not develop into a boil.
- Fever, sometimes accompanied by chills and sweats.
- General ill feeling.
- Swollen lymph glands near the cellulitis (sometimes).

### Causes

Infection from *Staphylococcus* or *Streptococcus* bacteria.

### Risk increases with

- Use of immunosuppressive or cortisone drugs.
- Chronic illness, such as diabetes mellitus, or a recent infection that has lowered resistance.
- Any injury that breaks the skin, or underlying skin lesion.
- Intravenous drug use.
- Burns.
- Surgical wound.
- Diabetes mellitus.
- Immunosuppression due to illness or medications.

### Preventive measures

- Avoid skin damage. Use protective clothing or gear if you participate in strenuous work or sports.
- Keep the skin clean.
- Avoid swimming if you have skin lesion.

### Expected outcome

Usually curable in 7 to 10 days with treatment, unless the patient has a chronic disease or is receiving immunosuppressant treatment; in that case, cellulitis may lead to blood poisoning and become life threatening.

(over)

### **Possible complications**

Blood poisoning, if bacteria enter the bloodstream.

Brain infection or meningitis, if cellulitis occurs on the central part of the face.

### **Treatment**

#### **General measures**

- For diagnosis, laboratory studies or a skin biopsy may be recommended.
- The usual treatment is with an antibiotic.
- Use warm-water soaks to hasten healing and relieve pain and inflammation.
- If excess fluid is lost from the skin, hospitalization may be necessary to provide adequate hydration.
- Elevation and restricted movement of the affected area can help reduce swelling.

#### **Medication**

Antibiotics to fight infection. Finish the prescribed dose, even if symptoms disappear quickly.

#### **Activity**

Rest in bed until fever disappears and other symptoms improve. Resume your normal activities as soon as symptoms improve.

#### **Diet**

No special diet.

#### **Notify our office if**

You or a family member has symptoms of cellulitis, especially on the face.

The following occur during treatment:

- Fever.
- Headache or vomiting.
- Drowsiness and lethargy.
- Blister over the area of cellulitis.
- Red streaks that continue to extend, despite treatment.
- New, unexplained symptoms develop. Drugs used in the treatment may produce side effects.

# Osteomyelitis



## Basic information

### Description

Infection of the bone and bone marrow. It can involve any bone in the body. In a child, the femur (upper-leg bone), tibia (lower-leg bone) or humerus or radius (bones in the arm) is usually affected. In an adult, the pelvis or spine is usually affected. It can affect both sexes and all ages, but is more common in rapidly growing children (5 to 14 years), especially males.

### Frequent signs and symptoms

- Fever. Sometimes this is the only symptom.
- Pain, swelling, redness, warmth and tenderness in the area over the infected bone, especially when moving a near by joint. Nearby joints, especially the knee, may also be red, warm and swollen.
- If a child is too young to talk, signs of pain are reluctance to move an arm or leg or refusal to walk; limping; or screaming when the limb is touched or moved.
- Pus drainage through a skin abscess, without fever or severe pain (chronic osteomyelitis only).
- General ill feeling.

### Causes

Usually staphylococcal infection, but many other bacteria may be responsible. The bacteria may spread to the bone through the bloodstream from the following sources.

- Compound fracture or other injury.
- Boil, carbuncle or any break in the skin.
- Middle-ear infection.
- Pneumonia.

### Risk increases with

- Illness that has lowered resistance.
- Rapid growth during childhood.
- Diabetes mellitus.
- Implanted orthopedic device (artificial knee).
- Intravenous drug use.

## **Osteomyelitis**

(page two)

### **Preventive measures**

Obtain prompt medical treatment of any bacterial infection to prevent its spread to bone or other body parts.

### **Expected outcome**

Usually curable with prompt and aggressive treatment.

### **Possible complications**

- Abscess that breaks through the skin and won't heal until the underlying bone heals.
- Permanent stiffness in a nearby joint (rare).
- Fracture.
- Loosening of implanted orthopedic device.
- May require amputation if circulation is blocked or severe gangrene infection occurs (rare).

### **Treatment**

#### **General measures**

- Diagnostic tests may include laboratory blood studies and blood cultures to identify the bacteria, radionuclide bone scan, CT or MRI scans. X-rays often don't show changes until 2 to 3 weeks after the infection begins.
- Treatment involves medications, rest and other supportive measures.
- Keep the involved limb level or slightly elevated and immobilized with pillows. Don't let it dangle.
- Keep unaffected parts of the body as active as possible to prevent pressure sores during required, prolonged bed rest.
- Hospitalization may be necessary for surgery to remove pockets of infected bone, and/or to administer high doses of antibiotics sometimes intravenously.
- A previously implanted orthopedic device (artificial, knee) may need to be removed (sometimes a replacement can be implanted at the same time).

#### **Medication**

- Large doses of antibiotics. With powerful new antibiotics, intravenous administration, once a necessity, may no longer be needed. Antibiotics may be necessary, either orally or by injection for 8 to 10 weeks.
- Pain relievers.
- Laxatives, if constipation develops during prolonged bed rest.

## **Osteomyelitis**

(page three)

### **Activity**

Rest in bed until 2 to 3 weeks after symptoms disappear. Resume your normal activities gradually.

### **Diet**

No special diet. Eat a nutritionally balanced diet. Take vitamin and mineral supplements if needed.

### **Notify our office if**

You or your child has symptoms of osteomyelitis.

The following occur during treatment:

- An abscess forms over the infected bone, or drainage from an existing abscess increases.
- Fever.
- Pain becomes intolerable.
- New unexplained symptoms develop. Drugs used in treatment may produce side effects.

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