

For someone special

Are you someone special? Are you planning a special trip?

If you—or your plans—are out of the ordinary, you may need some special vaccines.

For ordinary people on ordinary trips, these shots aren't needed. But for someone special, these shots may make all the difference in the world.

Here are some situations that make you someone special:

- Travel to certain parts of **Panama, Trinidad and Tobago, South America, or Africa**. Or travel to a country that requires yellow fever immunization. You may need yellow fever immunization.
- A trip of **30 days or more. Visiting remote areas**. In some situations, you may be surprised to learn that rabies vaccine is recommended.
- A trip to **certain parts of Africa from December to June. A pilgrimage to Mecca**. You may need meningococcal vaccine.
- Travel to **some areas in South Asia, East Asia, Southeast Asia, and nearby islands**. Especially if rural travel is in your plans. Japanese encephalitis vaccine may be important for you.
- You **haven't kept up with all your routine immunizations**, like tetanus. Some of these may be especially important if you're traveling.

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With any vaccine

Have you read our information about “We’re looking forward to seeing you . . . “? This has important general information. It includes a section on “Important information about immunizations.”

Yellow fever

You get yellow fever from certain types of mosquito bites. Yellow fever is a problem in parts of Panama, Trinidad and Tobago, South America, and Africa.

Yellow fever got its name because some patients turn yellow. This is due to severe liver damage. Yellow fever can damage other parts of your body. Sometimes it is deadly.

There is no medicine that can treat yellow fever. All you can do is prevent it. You can prevent it by avoiding mosquito bites and getting yellow fever vaccine.

Have you had yellow fever vaccine before? For most people, one shot is enough. Some countries require you to have an official International Certificate of Vaccination. This is sometimes called a “yellow card.” When we give you yellow fever vaccine, we will give you a yellow card showing that you got the vaccine.

Most people don't have serious side effects from yellow fever vaccine. For about one person in five, there will be a mild illness about ten days after getting the vaccine. The person might have a headache, muscle aches, fever, and feel tired and weak. This goes away on its own in five to ten days. It's just a sign of the live virus in the vaccine doing its job of stimulating the immune system.

Rarely, there are very serious side effects from yellow fever vaccine.

Some involve the brain and nervous system. They rarely cause death. However, they can cause extremely serious illnesses. For example, they can cause paralysis, brain damage, and nerve damage. Sometimes it may be permanent. The Centers for Disease Control and Prevention (CDC) has information about these problems. Almost all cases occurred in people getting yellow fever vaccine for the very first time.

What is the risk from giving 100,000 doses of vaccine?

0.8 cases if you gave 100,000 doses to people in the U.S. in general

1.6 cases if you gave 100,000 doses to people at least 60 years old

2.3 cases if you gave 100,000 doses to people at least 70 years old

There is another rare type of serious side effect. The supposedly weakened virus in the yellow fever vaccine acts like a regular yellow fever virus. As a result, people get damage to many organs of the body. They have bleeding that is difficult, if not impossible, to control. 65% of them die. Again, this type of problem appears to occur only with the very first dose of yellow fever vaccine.

What is the risk from giving 100,000 doses of vaccine?

0.4 cases if you gave 100,000 doses to people in the U.S. in general

1.0 cases if you gave 100,000 doses to people at least 60 years old

2.3 cases if you gave 100,000 doses to people at least 70 years old

You may look at these risks and wonder . . . what is your risk of getting yellow fever if you travel to Africa or South America—without getting any yellow fever vaccine. The answer is: No one really knows. Here's why: Imagine a town in Africa. You check that town. You see how many cases of yellow fever are reported so you can estimate your risk of yellow fever. There's a problem, though. Some people in the town may have gotten the yellow fever vaccine. So they are not at risk of yellow fever. Some people in the town may be very poor. When they get sick, they can't afford to see a doctor. So some of them may have died of yellow fever, and no one reported it. Maybe the town doesn't even have a doctor. So there's no one to diagnose a case of yellow fever and report it. The result: The town records may say: "We don't see yellow fever here." Yet there may be a very definite risk of yellow fever. So it's very hard to know what is the risk of yellow fever.

Despite these problems, here are some estimates from the CDC. They are based on a two-week visit to an area with yellow fever by visitors who don't get the vaccine.

West Africa. For every 100,000 visitors:

50 get sick with yellow fever

10 die of yellow fever

South America. For every 100,000 visitors:

5 get sick with yellow fever

1 dies of yellow fever

What if you are at least 60 years old? Should you get yellow fever vaccine? Here are some possible answers:

- Cancel your trip. Go to some place that doesn't have a risk of yellow fever. This is "safe." However, many people would say: "I want to travel to interesting places, even if they have yellow fever. I'm willing to take a small risk."
- Get a medical waiver from yellow fever vaccine requirements. This would avoid the risks of yellow fever vaccine. However, this might not work. Your cruise ship might refuse to accept it. They might keep you from boarding the ship. Border guards might refuse to accept it. They might stop you at the border. Also, you would need to be very careful about avoiding mosquito bites so you don't get yellow fever.
- Get the vaccine. This does have risks of serious side effects, as noted above. However, the risks are small. Many people choose to accept these small, but serious risks.

Another serious problem with yellow fever vaccine is allergy. For every 100,000 doses given, the CDC estimates that there are 1.8 cases of extremely serious allergic reactions.

Some people should not get yellow fever vaccine. If you think you may have one of these conditions, we may need to discuss your situation:

- Allergy to something in the vaccine
- Age less than 6 months
- Advanced infection with HIV
- Disorder of the thymus gland with abnormal immune cells
- Certain immune deficiencies
- Certain types of cancer
- Certain types of transplants that you received
- Certain types of treatment that weaken your immune system

For some people we need caution in deciding to use the yellow fever vaccine. Does one of these situations describe you? We need to discuss it.

- Age 6 to 8 months
- Age 60 years or older

- HIV infection that has not done much damage to the immune system
- Pregnancy
- Breastfeeding

elers/pre-exposure_vaccinations.html. Accessed 2/29/16)

Any animal bite, rabid or not, demands early, thorough treatment. Clean the wound thoroughly. Use soap and water. Use plenty of it. Get medical attention right away. As soon as you return to the US, check with a doctor, too.

Rabies

Are you a traveler who needs rabies shots now? In some countries there is a big risk of running into an animal with rabies. Dogs are a special problem. If you get exposed to rabies, you need special treatment *right away*. In some countries it's hard to get special treatment right away.

If you're in one of those countries, you need a head start on rabies shots. You need rabies shots before you go.

Remember that getting rabies shots before you go does *not* eliminate the need for additional therapy after a rabies exposure. It does simplify treatment.

Suppose you get sick with rabies. What should you do? There's not much hope. Once signs of rabies develop, almost everyone dies. Rarely, medical care has resulted in good outcomes. That's why prevention is important.

The main thing with rabies is prevention. If you have contact with an animal that might have rabies, get help right away. If you have a big risk of contact with animals that might have rabies, get a head start with rabies shots now.

The CDC has listed situations where rabies shots *before travel* are especially important:

- “Your planned activity will bring you into contact with wild or domestic animals, for example if you are a biologist, veterinarian, or agriculture specialist working with animals.
 - You will be visiting remote areas where medical care is difficult to obtain or may be delayed, for example, hiking through remote villages where dogs are common.
 - Your stay is longer than 1 month in an area where dog rabies is common. The longer your stay, the greater the chance of an encounter with an animal.”
- (http://www.cdc.gov/rabies/specific_groups/trav)

Even if you've had some rabies shots already, you need more shots after contact with an animal that might have rabies.

Reasons for getting rabies vaccine before you go:

- Countries with more rabid animals, less control
- Traveling far from sources of medical care
- Countries that lack standard rabies treatment products
- If you get rabies shots to get a head start now, this will simplify any rabies treatment you need as long as you live

Disadvantages of getting rabies vaccine before you go:

- Side effects—but severe ones are uncommon
- You need 3 shots. It will take 3 weeks at least.
- Cost

Meningococcal

Meningococcal disease can be very serious. One day you may be feeling fine. The next day you may get red spots on your skin and die in 12 hours. Or maybe you'll recover—but your hands will fall off.

That's why meningococcal vaccine is now routinely given to children at age 11 in the U.S. Some travelers are at special risk of meningococcal disease. They need vaccine, too.

Who needs meningococcal vaccine?

- Anyone who needs it anyway, even if they weren't traveling, such as teenagers
- Those visiting places with recently reported meningococcal epidemics
- Muslim pilgrims going to Mecca for the Hajj and Umrah pilgrimages
- Those who will be in the meningitis belt of Africa during the December through June season



The meningitis belt is shown in color.

What about people who have already had meningococcal vaccine? When do they need revaccination? If they have a reason for meningococcal vaccine now (like a trip to northern Nigeria in February), they need revaccination if:

- They were 2 to 6 years old when they got their previous shot and 3 years have gone by
- They are going to the Hajj and 3 years have gone by
- Otherwise, 5 years have gone by

Japanese encephalitis

Japanese encephalitis is a problem in parts of Asia. You get it from mosquito bites. The mosquitoes pick up the Japanese encephalitis virus from pigs and wading birds, and then the mosquitoes infect more pigs and wading birds. So it's mainly a problem if you spend time in a farm area with lots of mosquitoes, pigs, and wading birds. Usually it's a problem in areas where they grow rice and irrigate the fields by flooding. For most travelers from the U.S., the risk of Japanese encephalitis is extremely low. In the 20 years since 1992, there have been four cases reported in people from the U.S. The low number may be due, in part, to use of a vaccine for protection.



Japanese encephalitis areas are shown in color.

Most of the people who get Japanese encephalitis do well, but uncommonly it causes brain damage or death.

What's the best way to prevent Japanese encephalitis?

Avoid mosquito bites.

For whom is the Japanese encephalitis vaccine NOT recommended?

People traveling for less than a month who will stay in:

- urban areas or
- rural areas *outside* of times of well-defined Japanese encephalitis seasons.

Who should consider Japanese encephalitis vaccine?

Travelers who go:

- To an area with an ongoing outbreak
- To areas in which the disease occurs and who are uncertain of specific destinations, activities, or duration of travel
- To areas in which the disease occurs during the season in which it occurs if they plan to travel outside an urban area for higher-risk activities, such as:
 - Spending substantial time outdoors in rural or agricultural areas, especially evenings and nights
 - Extensive outdoor activities
 - Staying in places without air conditioning screens, or bed nets

The CDC has a table with information about where and when the risk exists:

<http://wwwnc.cdc.gov/travel/yellowbook/2016/infectious-diseases-related-to-travel/japanese-encephalitis>

Advantages of the Ixiaro® brand of Japanese encephalitis vaccine

- Almost everyone who gets it will have a high level of antibodies that neutralize the virus
- Safety evaluated in almost 5,000 adults

Disadvantages of the vaccine

- Two doses needed: now and 28 days later
- Headache, muscle ache, fatigue, and influenza-like illness each seen in over 10% of cases
- Possibility of rare serious reactions
- Not to be given if you're allergic to it
- Cost

Who needs revaccination for Japanese encephalitis?

Experts aren't sure. Some recommend a booster dose after a year.

Important in the U.S., important abroad

Some vaccines are important for you to get in the U.S. as a matter of routine. Some are especially important for some people who travel abroad.

Influenza

Are you at least 6 months old? As a general rule, you should get influenza vaccine every year.

For many people, influenza is a mild disease. For some people, though, it can result in hospitalization. When we have an epidemic in the U.S., we can expect tens of thousands of deaths from influenza.

The vaccine often provides some protection against influenza.

You wouldn't want to get sick at home with influenza. Wouldn't it be worse if you got influenza while you were traveling?

Some people can get influenza vaccine free at work. Many people can get it at low cost at many different places in the Omaha area. Is there a doctor that you see for care under Medicare? Medicare covers it.

When should you get influenza vaccine? Here's what experts advise: As soon as the year's vaccine is available, it's okay to get it. Often this is in September. That's *not* too early. Maybe you delayed getting the vaccine. Well, don't delay any more. Even if spring rolls around and you haven't gotten the vaccine, get it. Sometimes we have late epidemics, and the vaccine might protect you.

What if you are going to the Southern Hemisphere during their winter? Can you get influenza vaccine for their winter (which is our summer)? No. We don't have the influenza vaccine for the Southern Hemisphere. If you are planning a long stay in the Southern Hemisphere during their influenza season, think about getting the vaccine there.

Tetanus-diphtheria-acellular pertussis

It is important for everyone to be protected against tetanus. Doctors are concerned about your risk of tetanus when you get a wound. It might be contaminated with the bacteria that cause tetanus. Tetanus can make you very sick or even kill you.

If you injured yourself in the U.S. and came to an emergency room, they'd check to see if you were up to date on tetanus vaccine. What if you injured yourself while traveling? Would it be easy to find an emergency room that was well stocked with tetanus vaccine?

Ordinarily, you should have tetanus vaccine every ten years.

Nowadays we give teenagers and adults a tetanus vaccine that also protects against diphtheria and pertussis (or whooping cough), too. These are also serious illnesses. Pertussis is especially serious for infants. It's important for adults to be immune to pertussis. That cuts down on the chance that they could catch pertussis and pass it on to an infant, who could die.

What if you don't remember how long it's been since your last tetanus shot? Well, if it's been that long, you probably need another one. That's what experts recommend.

What if you're over 65? Should you still get the tetanus shot that has protection against diphtheria and pertussis? Yes. Recently experts have recommended that. People over 65 might visit grandchildren and give them pertussis if they aren't protected.

Hepatitis B

Nowadays infants in the U.S. routinely get hepatitis B vaccine. Protection from hepatitis B is important. Hepatitis B can cause serious liver disease or even liver cancer. These conditions can be deadly.

Other people in the U.S. routinely get hepatitis B vaccine. Hepatitis B can spread through exposure to blood. So hepatitis B vaccine is given to healthcare workers who handle bloody material.

Hepatitis B can spread through sharing dirty needles for injection. It can also spread through sex.

There is a lot more hepatitis B outside the U.S. than inside the U.S. So some travelers should get hepatitis B vaccine.

Think about your need for hepatitis B vaccine if you:

- Might have sex with someone outside the U.S.
- Might have exposure to blood or other body fluids. For example, you might be doing medical work or helping to handle infants at an orphanage.
- Might be shooting up drugs and sharing dirty needles
- Might be spending a considerable amount of time outside the U.S.
 - You might come across someone who has been injured and is bleeding. You might want to help them—but this would mean getting some of the blood on you—which could give you hepatitis B.
 - Or you might be in accident—and get someone's blood on you. Or they might take you to a medical facility where their needles are contaminated with hepatitis B. You might be given a transfusion of blood that wasn't tested for hepatitis B.

Hepatitis B can spread very easily. If you want hepatitis B vaccine, just tell us. You don't have to have any particular reason.

There are two types of vaccines for hepatitis B. One combines protection against hepatitis A with hepatitis B. It's called Twinrix®. The other just has protection against hepatitis B.

There are different schedules for giving hepatitis B vaccine. A common one is to give you a shot now, a second shot in a month, and a third shot after another five months. For some people, there will be good protection from the first shot. For other people, good protection will happen after the second shot . . . or even the third shot. In about 5 percent of people the vaccine never works at all. The reason has something to do with genetics.

What if you're leaving soon and want protection against hepatitis B? Try the accelerated schedule: a dose now, another dose a week later, and a third dose two or three weeks after the second dose. You will also need a dose 12 months after the first dose to get longterm protection.

What if you already had three shots of hepatitis B vaccine? Do you need a booster shot if time has passed? People wonder about this. Currently, our answer is “no.”

Varicella (chickenpox and shingles)

There is a virus called Varicella Zoster Virus, or VZV. The first time you get it, you usually get chickenpox. The technical name for chickenpox is varicella. The main problems with chickenpox are a rash, itching, and fever. Occasionally people get severe complications.

Later in life, the virus can strike again and give you shingles. The technical name for shingles is zoster. Shingles usually causes a painful rash on a limited area of the body. Sometimes people get severe complications. Sometimes people get severe pain that persists for months or years.

Nowadays we routinely give children varicella vaccine when they are about a year old. They generally get another shot of varicella vaccine before they start school.

When the varicella vaccine first came out, doctors thought that small children needed only one shot. Nowadays, we know that two shots are needed. Some people have gotten one shot, but they need to get a second shot.

For people who are 50 years of age and older, we have a shingles vaccine.

We know some people are immune to varicella, even if they've never had varicella vaccine. These include people who:

- Have had chickenpox themselves
- Have had shingles themselves
- Have lived in the same house at the same time a family member got chickenpox. Examples:
 - Lived in the same house when their sister got chickenpox

- Lived in the same house when their son got chickenpox
- Have had the shingles vaccine
- Had a lab test showing that they are immune

However, some people don't ever remember having the chickenpox or varicella vaccine (or the shingles vaccine). They don't ever remember living in the same house with someone with chickenpox. There's something very interesting about these people: Remarkably, lab tests will show that 80% have had chickenpox without knowing it! Also, just about everybody born in the U.S. before 1980 had chickenpox and is immune to it—but not all.

If you don't think you've ever had chickenpox, shingles, or the vaccines and you don't think you've been around someone with chickenpox, here's what we'll do: We'll recommend that you get your blood drawn. They can check it for chickenpox immunity. If you are immune, that's fine. If you aren't, you can get the vaccine.

There are some special issues with varicella vaccine. Most people do very well with it. However, it has a weakened (but live) virus. This causes problems for people with certain health problems. That's why we need to know about your health, especially the medicines that you are taking.

Are you taking other vaccines? Sometimes there are problems with scheduling varicella vaccine in relation to other live vaccines, especially yellow fever vaccine. Do you think you might need both varicella vaccine and yellow fever vaccine? Call us. We need to talk about scheduling. The general rule: Give both vaccines the same day—or at least 30 days apart. Also, there are problems if you need immune globulin and varicella vaccine. Call us if you think there might be problems.

Measles-mumps-rubella

Measles, mumps, and rubella used to be very common childhood illnesses. Now we hardly see them in the U.S. Why? We have a measles-mumps-rubella vaccine. Children routinely get a dose when they're about a year old and another with their preschool shots.

The vaccine has prevented a lot of suffering. Measles causes a rash and fever. Sometimes there are severe

complications, like brain damage. Mumps causes facial swelling and fever. Sometimes there are severe complications, like brain damage and sterility. Rubella also causes a rash and fever. If pregnant women get rubella, rubella can cause birth defects.

Were you born before January 1, 1957? You are probably immune to measles. Why? You were born several years before we had any vaccines for measles. Back in those days, just about everybody got measles as a small child.

Did you have measles? Did you have a lab test showing you were immune to measles? If either of those situations applies to you, you don't need measles vaccine.

Otherwise, you need to have gotten two doses of measles vaccine. Caution: If you need yellow fever vaccine, too, you need to coordinate the scheduling of measles vaccine and yellow fever vaccine.

Pneumococcal

Pneumococcal vaccine is sometimes called pneumonia vaccine. Why? Pneumococcus is a type of bacteria, and it sometimes causes pneumonia. It can cause other conditions, too. Sometimes it can cause serious disease, and sometimes people die from it.

Children routinely get a pneumococcal vaccine which protects against 13 different types of pneumococcus. So it is called "13-valent." Standard recommendations call for people who are 65 and older to get two types of pneumococcal vaccine. Some people with certain health problems need pneumococcal vaccine, even if they are younger than 65. That's why we ask you to tell us about your health.

If it's important for you to have pneumococcal vaccine in the U.S., it's important for you to have it if you are traveling.

Which younger adults need pneumococcal vaccine? Younger adults need pneumococcal vaccine if they have certain health problems. That's why we need to know about your health. We need to know if you have problems with:

- Heart (persistent disease, but not high blood pressure)

- Lungs (cigarette smoking, asthma, emphysema, chronic obstructive pulmonary disease)
- Liver (alcoholism, persistent disease such as cirrhosis)
- Pancreas (diabetes mellitus)
- Kidneys (persistent kidney failure, nephrotic syndrome)
- Nervous system (leaks of cerebrospinal fluid, implantation of device to treat deafness)
- Immune system (HIV, lack of spleen, immunosuppressive drugs, radiation, solid organ transplant, immune deficiency)
- Cancer (lymphoma, leukemia, multiple myeloma, widespread cancer)

Some older adults need a repeat vaccination with pneumococcal vaccine. That includes you if you are at least 65 years old AND your last pneumococcal vaccination was at least 5 years ago.

Also, you need a single repeat vaccination if five years have passed since your last vaccination AND you have certain medical conditions.

Haemophilus influenzae b

This vaccine is routinely given to preschool children. It cuts their risk of serious infections that can cause brain damage.

Human papillomavirus

This vaccine is routinely given to those aged 9 to 26 years old.

Some types of this virus cause cancer. Others cause genital warts.

Rotavirus

Infants routinely get this vaccine. Rotavirus is one of the causes of diarrhea.

