

The guide to **VACCINATIONS**



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The aim of this brochure

It is estimated that 30,000 deaths of children and adults in the USA alone could be prevented each year if people were correctly vaccinated. Worldwide, hundreds of thousands of lives could be saved by vaccinations!

Expatriate employees in particular are constantly exposed to many diseases. They work in climates and conditions where they come into contact with viruses and bacteria that do not exist back home.

Local employees who are born and raised in a high-health-risk country usually come into contact with many local germs during their childhood and build up their own natural immunity through repeated minor infections.

Expatriate employees and their families have not acquired this natural defense against unknown pathogenic germs. Because they have no natural protection when they arrive in a foreign country, it is essential for this high-risk group of individuals to be correctly vaccinated before leaving home.

This brochure has life-saving guidance for both expatriate and local employees and their families.

It is my hope that after reading this brochure you will check your vaccinations and those of your family members. Then get the required shots for where you are working or living and update any vaccinations that are out of date.

This third edition of the Guide to Vaccination is based on internationally accepted facts and guidance. Vaccination schedules have evolved since the first edition was printed in 1993, so do not assume that the vaccination schedules you followed in the past have remained the same.

From one country to another, vaccination schedules or recommendations for certain shots or boosters may vary. If you have any questions, do not hesitate to contact a vaccination center near home, your family doctor, or the company's health professional.

Dr. Alex Barbey

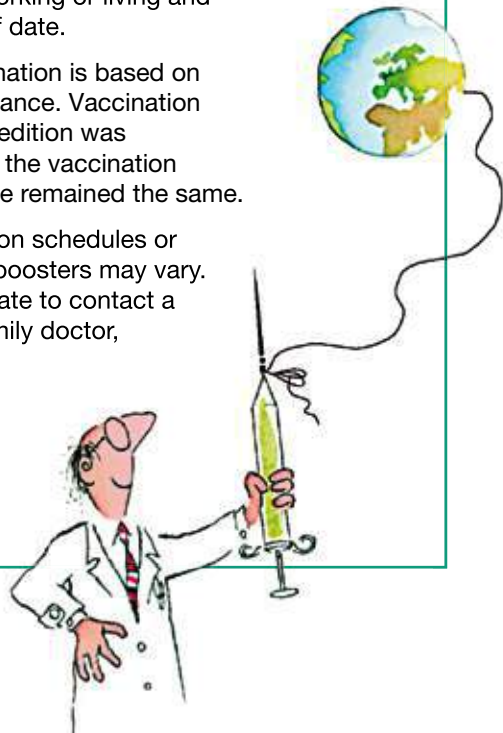


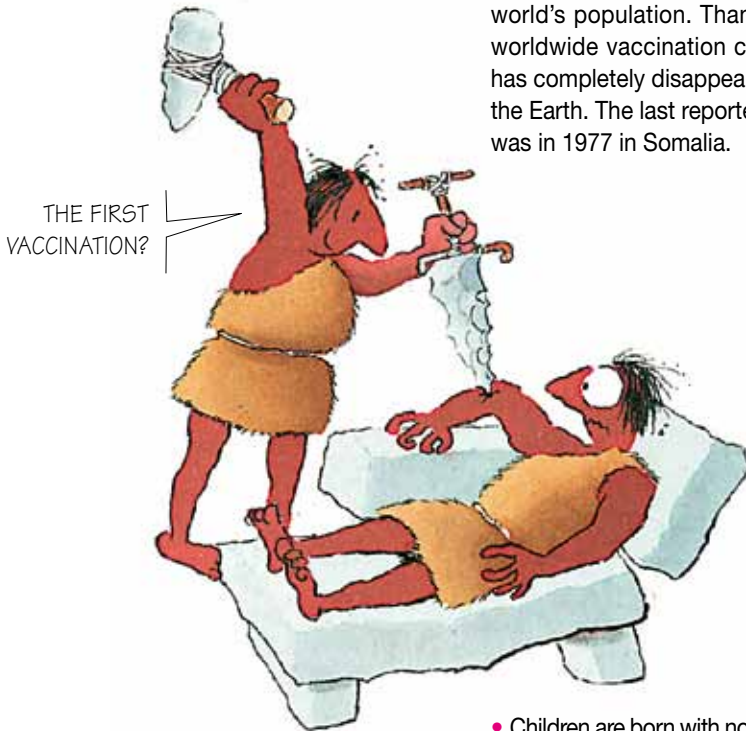
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We often take for granted the fact that many fatal diseases described in history books no longer exist or occur only rarely in some far-off part of the world.

This is due mainly to vaccinations.

The first vaccination was discovered in 1796 by Edward Jenner against smallpox. In the 1700s this fatal disease killed 10% of the world's population. Thanks to a systematic worldwide vaccination campaign, smallpox has completely disappeared from the face of the Earth. The last reported case of smallpox was in 1977 in Somalia.



Vaccinations have become an integral part of our lives. However, each year a few hundred nonvaccinated or undervaccinated people die from tetanus or become paralyzed with polio.

Some people are more vulnerable than others to diseases. This is particularly the case for children and travelers.

- Children are born with no immunity to disease (they have a residual passive immunity after birth from the mother that protects them for only 6 months).
- During their lives, people build natural immunity by coming into contact with bacteria and viruses.
- Travelers are more likely to come into contact with diseases for which their bodies have no immunity because of no prior exposure.

2 What is a vaccination?

A vaccine is a product obtained from disease-causing bacteria or viruses that have been killed or sufficiently weakened so that they can no longer cause an infection when injected or consumed. However, it still contains information that provokes a reaction in the human body. The reaction produces antibodies, which are protein substances that protect the body from that specific disease.

The cells that produce the antibodies are the body's memory in its fight against disease. The memory cells stay alert, ready to combat that specific disease should it ever attack.

Many modern vaccinations provide long-term protection for specific diseases for many, many years, almost for life.

For other vaccinations, like old memories, the antibodies fade away in a few years and have trouble recognizing the attacking bacteria or viruses. Therefore, the body's immunological memory, or capacity to produce antibodies, must be refreshed and reinforced at regular intervals to replenish the stock of circulating antibodies. This is the purpose of a booster shot.

I AM REFRESHING
YOUR IMMUNOLOGICAL
MEMORY!



3 Vaccinations and the traveler

→ It is essential that you and your family have the entire course of vaccinations performed before traveling. Vaccinations should be completed at least two weeks before traveling abroad to allow your body the necessary time to produce the antibodies that will protect you.

Yellow fever, rabies, and Japanese encephalitis vaccinations, for example,

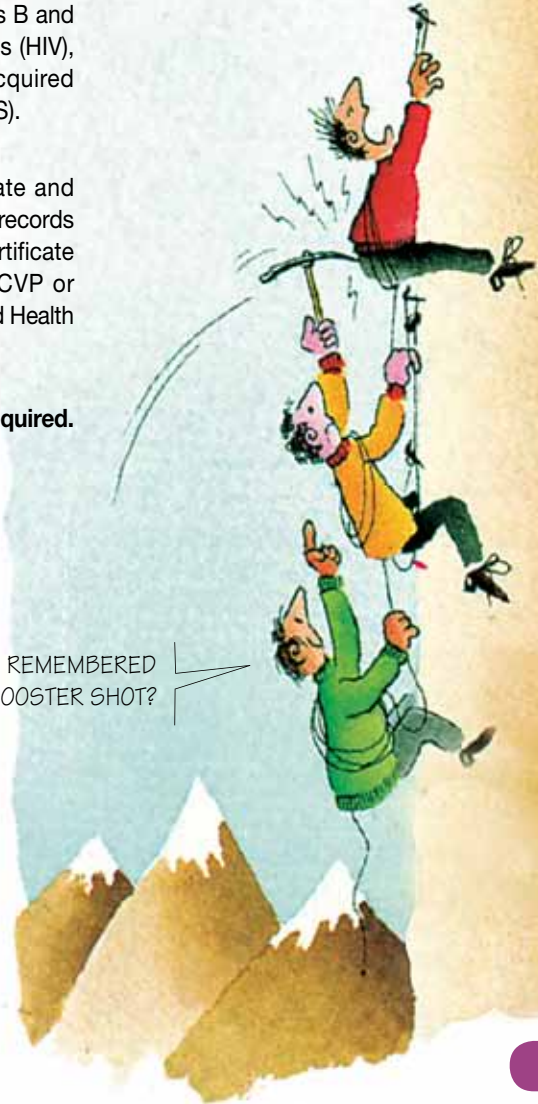
do not start protecting an individual until 10 days after injection. A hepatitis A vaccination requires 15 days before it provides protection.

The sooner you and your family get vaccinated before traveling to a foreign country, the better.



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- Whenever possible, use only company-designated, certified, or recommended medical centers. Otherwise there is no guarantee of the quality of the vaccine, and the risk exists that you will be vaccinated with a used needle or syringe, which puts you at risk of being infected with blood-borne pathogens such as hepatitis B and the human immunodeficiency virus (HIV), which is the virus that causes acquired immunodeficiency syndrome (AIDS).
 - Keep your vaccinations up to date and recorded in your personal medical records as well as on the International Certificate of Vaccination or Prophylaxis (ICVP or «yellow card» provided by the World Health Organization [WHO]).
 - **Do not forget booster shots as required.**

HAVE YOU REMEMBERED
YOUR BOOSTER SHOT?



4 Mandatory vaccinations

Everyone – whether local, home-country employees or expatriate international travelers – must be vaccinated for protection against tetanus.



TETANUS



Tetanus, or «lockjaw,» is a deadly disease caused by bacteria in soil. These bacteria enter the body through a cut, wound, or even a small abrasion.

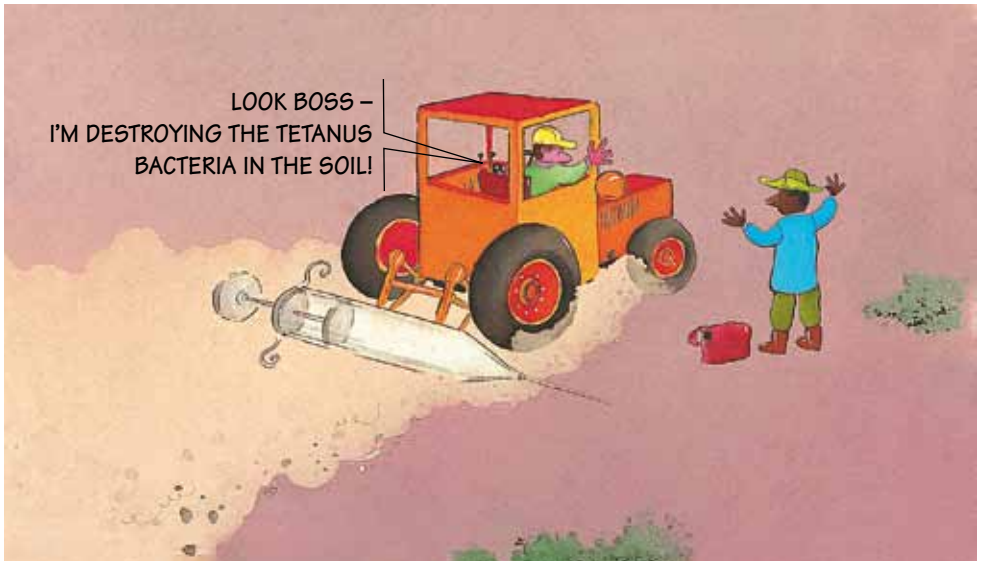
Once inside the body, the bacteria produce a deadly poison, or neurotoxin, that paralyzes the jaw muscles first (hence the name lockjaw) and soon leads to respiratory failure and death. The incubation period varies from a few days to a few weeks.

Tetanus occurs all over the world. Everyone should be vaccinated and stay up-to-date on the tetanus vaccination.

Vaccination

For continuous protection, two shots at a 1-month interval are necessary. The first booster shot is 1 year later, and then every 10 years.

Nonvaccinated individuals who are cut or wounded should receive both the tetanus vaccine and an injection of human tetanus immune globulin, which provides 3 weeks of passive immunity while the tetanus vaccination slowly builds an active immunity with the production of antibodies.





POLIO

Poliomyelitis (polio) is a highly infectious viral disease transmitted by direct contact as well as contaminated food and water. The virus usually enters the body through the mouth. The disease is linked to poor hygiene and sanitation, referred to as «fecal risk,» because it involves the transfer of microorganism-containing feces to human mouths either directly on contaminated hands or indirectly through the consumption of food and water contaminated by fecal matter.

The polio virus multiplies in the central nervous system and causes severe paralysis, which results in deformation and atrophy of the muscles. Polio can cause respiratory failure and death.

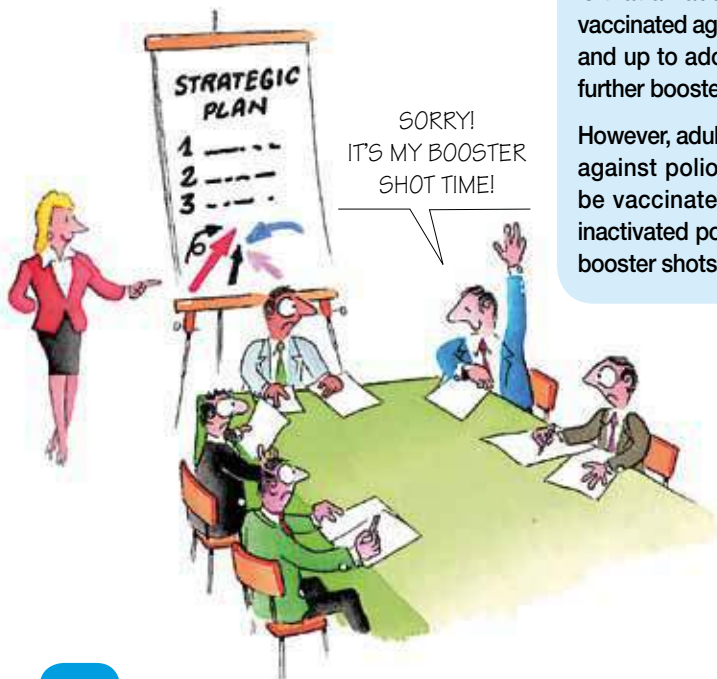
Polio occurs all over the world but most frequently in developing countries. Polio occurrence has decreased dramatically in the last few years because of polio eradication efforts. Most of the world is considered free of the poliovirus with the exception of a few countries in Africa and Asia.

Vaccination

In previous editions of the *The Guide to Vaccinations*, polio was a mandatory vaccination for everyone.

International medical consensus today is that an adult who has been correctly vaccinated against polio during childhood and up to adolescence does not require further booster shots.

However, adults who were not vaccinated against polio during childhood should be vaccinated with three doses of the inactivated polio vaccine (IPV) (initial and booster shots at 1 month and 1 year).



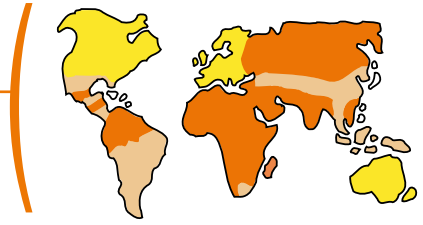
5 Highly recommended vaccinations

The following vaccinations are particularly indicated for people working and living outside of their home or native country or country of permanent residence.

Even a travel layover in a high-health-risk foreign country can expose travelers to many diseases for which they have not developed natural immunity.

DISINFECTED WATER! DISINFECTED WATER!





HEPATITIS A

Hepatitis A is a viral disease affecting the liver. Transmitted by water and food that have been contaminated by feces, it is linked to poor hygiene and sanitation, called fecal risk, involving contact between feces, hands, and water.

Hepatitis A is fairly common around the world, but it is rarely as serious as the other major types of hepatitis, hepatitis B and C. The symptoms of all forms of the hepatitis are identical, including jaundice, fatigue, and nausea.

Until recently, the only protection from hepatitis A was to disinfect water, wash hands, cook or boil all foods, avoid contact between sewage or fecal waste and drinking water, and receive an injection of relatively ineffective immune globulin, which provided a few weeks of passive protection at best.

Vaccination

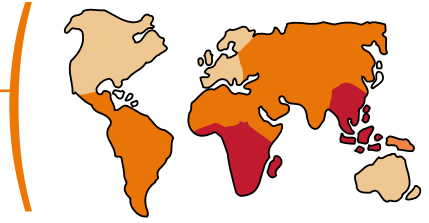
With the development of an effective vaccination, hepatitis A has become rather simple to prevent.

The vaccine requires two shots at a 6-month interval. Usually no booster shots are required. The hepatitis A vaccination can be administered at the same time as the hepatitis B vaccination and becomes effective within 2 weeks.

VACCINATIONS!



HEPATITIS B



Hepatitis B is also a viral disease affecting the liver, but unlike hepatitis A, it is transmitted almost exclusively through unprotected sexual intercourse (homosexual or heterosexual) and through blood and blood-related products (transfusions, contaminated needles or syringes, and other invasive medical or surgical procedures using nonsterile or nondisposable materials). Its transmission is identical to that of HIV and the hepatitis C virus. The hepatitis B virus also can occur in other body fluids, but it is not conclusively known if these can transmit the virus.

Symptoms include fever, loss of appetite, nausea, and abdominal discomfort followed within a few days by jaundice.

Hepatitis B can lead to chronic hepatitis, cirrhosis, or liver cancer, all of which are deadly conditions. It is highly endemic in Africa and Asia and affects an estimated two billion people around the world. Two million people die each year from hepatitis B.

Prevention of hepatitis B is based mainly on

- abstinence or «safer sex» practices (for example, using condoms)
- use of disposable medical materials: needles, syringes, etc.
- sterilization of all nondisposable medical materials: dental, endoscopic equipment, etc.
- avoidance of blood transfusions, unless absolutely necessary, and only after ensuring that the blood is uncontaminated

- the very effective vaccination against hepatitis B.

Note: There are other strains of hepatitis called C, D, E, and G. (There is no hepatitis F). They are transmitted similarly to hepatitis A and B. There is currently no vaccination against any of these other types, which are relatively rare in comparison with hepatitis A and B.

Vaccination

The highly effective vaccine against hepatitis B requires two shots at a 1-month interval with a booster shot 6 months later. An accelerated schedule for hepatitis B vaccination is administered on days 0, 7, and 21 followed by a booster shot at 12 months.

The hepatitis B vaccination can be administered in association with the hepatitis A vaccination.





TYPHOID FEVER

Typhoid fever is an acute infection caused by salmonella bacteria. Although rarely fatal, thanks to antibiotics, it can still cause severe diarrhea. Other symptoms include a sustained high fever, weakness, and stomach pains. Some people develop a rash of rose-colored spots.

Typhoid fever occurs worldwide but is most common in areas with poor hygiene and sanitation. It is transmitted by «unclean» water and contaminated food linked to fecal risk.

Prevention is based on washing hands before meals; drinking bottled water or water that has been disinfected (boiled or chemically treated); avoiding foods that cannot be cooked, boiled, or peeled; and receiving a vaccination.

Vaccination

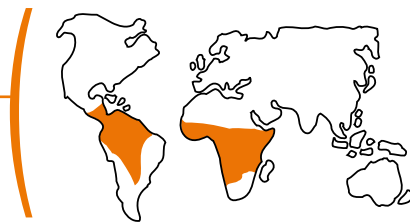
Two types of typhoid fever vaccine are available:

- injectable vaccine, which requires readministration every 2 years.
- oral vaccine, taken as four doses of capsules (one every other day), with a repeat series every 5 years.

Both types of vaccine provide good, although incomplete, protection.



YELLOW FEVER



Usually fatal, yellow fever is a viral disease transmitted by infected *Aedes aegypti* mosquitoes. It causes severe bleeding and kidney and liver failure that causes jaundice – thus the disease’s name. Yellow fever kills thousands of people each year. An estimated 50,000 people died from yellow fever in 2005.

This disease occurs in tropical regions of Africa as well as parts of Central and South America.

Yellow fever prevention is based on insect-bite prevention (insecticide-impregnated bed nets, insect repellents, window screens, protective clothing, electric diffusers, coils, etc.) and, most importantly, the highly effective vaccination.



Vaccination

Yellow fever is the only mandatory vaccination required by countries for travelers to many parts of Africa and South America. However, in some countries where yellow fever is endemic, the yellow fever vaccination is not required. Since the risk remains significant the vaccine should still be systematically administered. The vaccination must be recorded on the International Certificate of Vaccination (WHO yellow card).

Proof of a yellow fever vaccination is also required for entry into many countries when coming from a yellow fever-infected or –endemic area (check with the medical authorities before traveling).

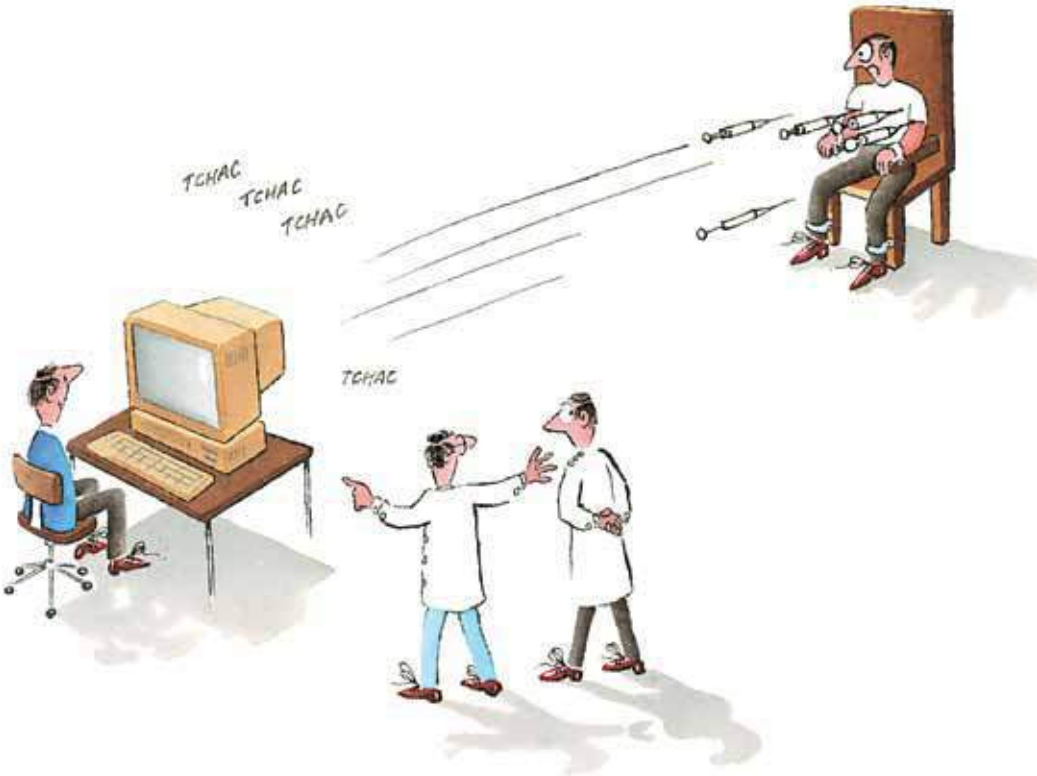
One injection provides protection for 10 years. This vaccination must be administered at least 10 days prior to departure. In many countries it can be performed only in specially designated medical centers. The injection rarely causes fever, headaches, and joint pain in the following days.

The yellow fever vaccination should not be administered to children under 6 months of age because of the increased risk at this age of postvaccinal encephalitis. Pregnant women should consult a doctor for advice on the vaccine.

6 Other useful vaccinations

The vaccinations described in this chapter are recommended only for certain countries or for specific high-health-risk travel with regard to living conditions, climate, time of year, and local epidemics.

See your doctor, a travel clinic, or company-designated health professional for further advice.



CEREBROSPINAL MENINGITIS



Cerebrospinal meningitis is a serious and often fatal disease that is transmitted from one individual to another through respiratory tract secretions (coughing, sneezing, etc.). It occurs mostly in children and young adults, producing an inflammation of the fluid and envelope covering the brain and spinal cord.

This disease is caused by the meningococcal bacteria that occurs mainly in Africa, South America, and the Middle East. Five major meningococcal serogroups can cause epidemics of the disease – A, B, C, Y, and W135. A and C are responsible for most cases in Africa. Serogroups Y and W135 have appeared only recently. Epidemics of meningitis are frequent during the dry season.

Symptoms include high fever, a stiff neck, headache, nausea, and vomiting. Neurological symptoms appear rapidly, with sleepiness, reduced alertness, seizures, and eventually coma.

Vaccination

The meningitis vaccination is highly recommended for those traveling or living in high-risk areas.

The original meningitis A and C vaccination still exists. It requires one shot every 3 years, and it protects only against strains A and C.

The more recent meningococcal vaccination protects against four strains (A, C, Y, and W135) and requires one shot every 5 years. This vaccination may not be available in all countries.

Note : Although there is no vaccination against meningitis B, antibiotics are extremely effective. The B serogroup of meningitis is not prevalent in Africa, South America, or the Middle East.





RABIES

Often fatal, rabies is a viral disease transmitted by an infected animal's saliva or tissue from its brain or nervous system. It occurs mostly in people bitten by stray dogs or other mammals (typically cats, bats, foxes, and squirrels). Children are considered at higher risk because of their tendency to play with animals.

The incubation period for rabies can vary from a few days to a few months, depending on the depth of the wound and its location. The disease causes paralysis, spasms of the swallowing muscles, delirium, and convulsions, rapidly followed by coma and death. Recovery once symptoms occur remains extremely rare.

Rabies occurs in almost all developing countries. In some countries, more than 30% of stray dogs are contaminated.

Vaccination

The rabies vaccination requires three injections performed within a 1-month period, with a booster shot 1 year later and then every 3 years.

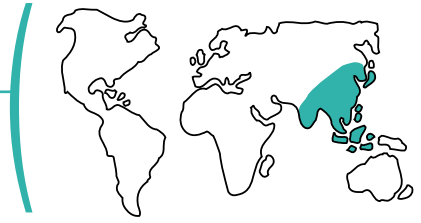
Pre-exposure or pretravel vaccination does not eliminate the need for medical attention after a potential rabies exposure but simplifies the treatment by reducing the number of injections required as well as improving the likelihood of recovery.

If a person bitten by a stray animal has been previously correctly vaccinated, emergency treatment requires only two additional injections of the rabies vaccination whereas a nonvaccinated individual needs one shot of antirabies immune globulin plus five injections of the rabies vaccination within a 30-day period.

Considering that the rabies vaccination may be extremely difficult to obtain in developing countries, pretravel rabies vaccination is particularly recommended for people who will be living in high-risk areas, especially children who love to play with and pet stray animals.



JAPANESE ENCEPHALITIS



Japanese encephalitis is an often fatal viral disease, killing approximately 10,000 people each year, that attacks the brain and spinal cord. It is a rural disease transmitted by mosquitoes during the summer months in the agricultural, rice paddy regions.

The mosquito bites during the night, just like in malaria transmission, but it is a different species of mosquitoes from the *Culex* family. After a 7-day incubation period, symptoms may include headache, fever, and disorientation. The disease can lead to convulsions and death.

Japanese encephalitis is the main cause of viral encephalitis in Japan, Korea, China, India, the Philippines, Southeast Asia, and the eastern part of Russia.

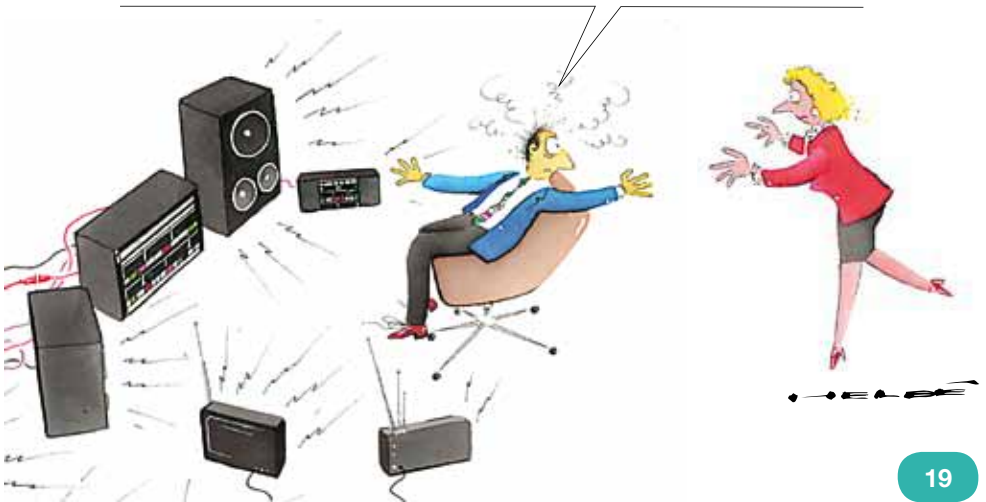
Prevention of Japanese encephalitis is based on insect-bite prevention (impregnated bed nets, insect repellents, window screens, protective clothing, electric diffusers, coils, etc.) and the highly effective vaccination.

Vaccination

The Japanese encephalitis vaccination is recommended for stays in rural areas during the summer months where the disease is both endemic and prevalent.

Two injections are given at a 1-week interval with a booster shot 1 month later and every 2 years thereafter.

I HAVE A SPLITTING HEADACHE! COULD IT BE JAPANESE ENCEPHALITIS?





TUBERCULOSIS

Tuberculosis (TB) is a bacterial disease that infects the lungs and also the bones, kidneys, and brain. Transmission occurs when a person with active TB disease coughs, spreading the germ in the air. Repeated and prolonged contact with a contagious person is usually necessary to contract the disease.

Diagnosis is suspected on a chest X-ray and confirmed by other tests (tuberculin skin test, QuantiFERON® blood test). Treatment requires 6 to 12 months of antibiotics. Untreated TB can be fatal.

One-third of the world's population is infected with latent TB. Of these people, 5% to 10% become sick or infectious, resulting in more than 1.5 million deaths each year. It is most common in developing areas with poor hygiene and sanitation. Drug-resistant tuberculosis is a major problem among people with HIV.



Vaccination

One injection of the BCG (bacille Calmette Guérin, named for its developers) vaccine is mandatory at birth in many developing countries to reduce the severe consequences of the disease in children. It does not provide 100% protection but prevents the severe neurological forms of the disease.

Although it is not systematically administered in the USA and some other countries, the BCG vaccination is highly recommended by the WHO for travelers, particularly children, who will have lengthy stays in high-risk countries for TB. Check with your medical adviser before leaving home.

Prevaccination verification by a tuberculin skin test or the QuantiFERON® test (where available) is recommended to confirm that a person is negative for TB.

Administration of the BCG vaccination will cause a positive tuberculin skin test, usually for life. This can create unnecessary concern, particularly when registering a child in a new school, because the child may be falsely considered to have TB. It is therefore essential to keep proof of the BCG vaccination.

CHOLERA



Cholera is a bacterial disease transmitted by contaminated water, food, or dirty hands (fecal risk). Cholera can cause massive, watery diarrhea, vomiting, and dehydration, which can lead to death within a few hours. Treatment requires antibiotics and rehydration.

In South America, Africa, Asia, and parts of the Middle East, cholera reappears in epidemic forms when hygiene and sanitation standards are relaxed.

Prevention is based on drinking only «clean» water (bottled, boiled, or chemically disinfected), avoiding ice cubes, washing hands before meals, and eating safe foods (avoiding raw, undercooked, or unrefrigerated foods, especially meat, fish, and milk products). As the saying goes, “Boil it, peel it, cook it, or forget it!”

Vaccination

The old injectable cholera vaccination is no longer recommended. Neither is the newer oral vaccination, which requires two doses at an 8-day interval but provides only partial protection for a few months against the disease.

From a practical point of view, forget the cholera vaccination and insist on practicing good hygiene, hand washing, drinking clean water, and eating safe foods.

COULD YOU PLEASE DISINFECT MY WATER
A LITTLE BIT MORE?





DIPHTHERIA

Although diphtheria is historically a children's disease, this severe toxin-producing bacterial infection can occur in adults. Transmitted through coughing and sneezing, diphtheria causes fever and sore

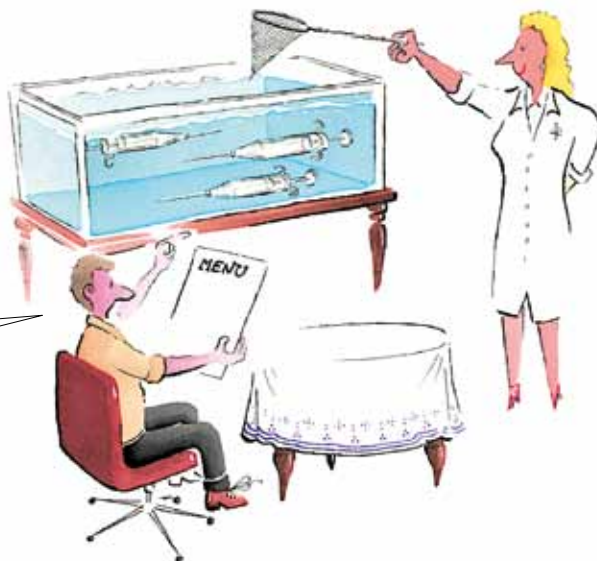
throat and produces a whitish membrane that adheres to the tonsils and throat, which causes difficulty swallowing and eventually fatal airway obstruction. Immediate treatment with a specific diphtheria antitoxin is required.

Vaccination

This once-fatal disease is easily prevented by a mandatory vaccination, usually performed during childhood at the same time as the combination tetanus, polio, and pertussis vaccination (see «Vaccinations, Travel, and Children»).

Adults who received their last booster shot for diphtheria more than 10 years ago, when they were adolescents, are no longer actively protected against the disease. A booster shot every 10 years is recommended.

Nonvaccinated adults should be immunized with two shots at a 1-month interval, with a booster shot 1 year later and then every 10 years.



I'LL TAKE A DIPHTHERIA SHOT TODAY.

THE FLU (INFLUENZA)

The flu is a major cause of absenteeism around the world. In the USA alone, each year 5% to 20% of the population contracts the ordinary, seasonal flu, and about 36,000 people die from flu-related causes – mainly the elderly and those who have a preexisting medical condition (severe diabetes, or heart or lung disease).

The ordinary, seasonal flu is a viral disease easily transmitted by coughing and sneezing. Symptoms include fever (usually high), headache and body aches, cough and sore throat, and extreme tiredness. The flu lasts about a week, but it is followed by post-flu fatigue.

HAPPY NEW YEAR! BUT NEXT YEAR
DON'T FORGET YOUR FLU SHOT!

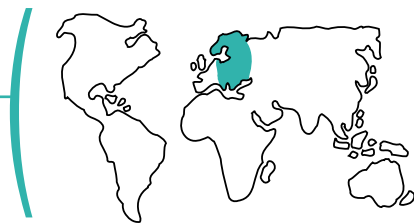


Vaccination

The yearly flu shot provides protection against the flu for 6 to 12 months. The vaccine is also available as a nasal spray. The flu virus mutates, or changes, its molecular structure regularly. Therefore, the vaccine is reformulated each year and must be readministered yearly, at least 2 weeks before flu season. Yearly flu shots are a worthwhile precaution for busy, always-on-the-run, modern employees and their families.

The flu vaccine is recommended for children as young as 6 months.

The yearly seasonal flu shot does not protect against other strains of influenza, such as avian flu or the H1N1 virus. Future flu shots may incorporate these new viral strains in their formulation.



TICK-BORNE ENCEPHALITIS

Ticks are blood-sucking arachnids that attach themselves to warm-blooded vertebrates. They are found in forests, woods, parks, and any place where there is heavy vegetation and undergrowth.

Tick-borne encephalitis (TBE) is a viral disease that occurs mainly in Eastern and Central Europe (extremely common in Austria), as well as certain parts of Scandinavia, CIS, and Asia. The disease is most often contracted from spring to fall. Although TBE is rarely fatal, it can cause severe damage to the brain and nervous system. There is no curative treatment.

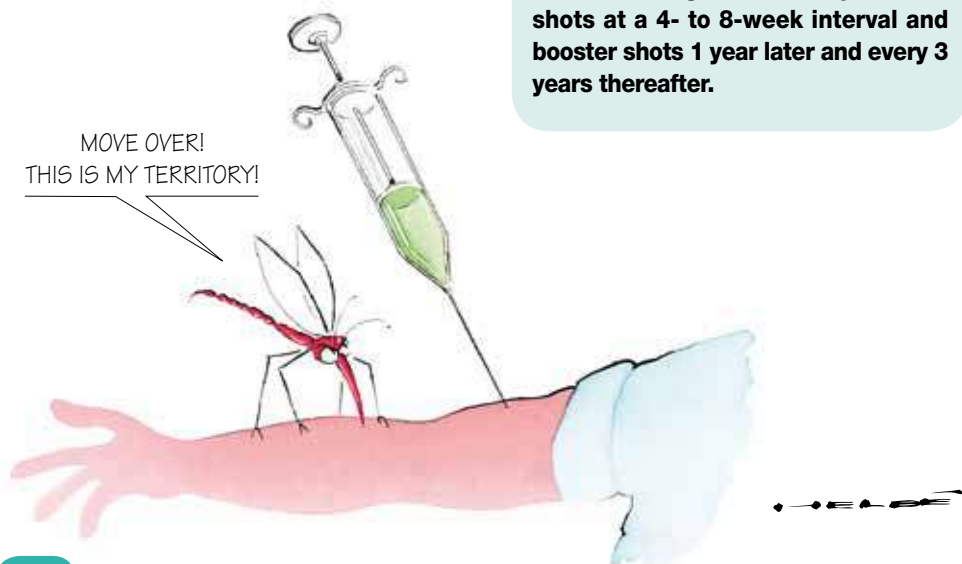
Prevention of TBE is based on insect bite protection (wearing protective clothing,

repellents, and boots or hiking shoes; examining exposed areas of the body; and promptly removing any ticks that are found) and the very effective vaccination.

Lyme disease is another tick-borne disease that occurs mainly in North America and Europe, but unlike TBE, it is caused by a bacteria and has no preventive vaccination, although it can be successfully treated by antibiotics. In humans symptoms include fever, headache, fatigue, and a typical skin rash known as erythema migrans. If untreated the infection can spread to the heart, joints, and nervous system.

Vaccination

The vaccine against TBE requires two shots at a 4- to 8-week interval and booster shots 1 year later and every 3 years thereafter.



OTHER VACCINATIONS

Vaccinations are available for the following diseases. Except for the chickenpox (varicella) vaccine, which is a routine vaccination for children, these vaccines are usually reserved for specific situations, professions, epidemics, or local conditions. This list is just for your information.

- **Chickenpox (varicella)** is mainly a childhood disease. However, nonimmune adults who contract the disease are at high risk of complications, which include swelling of the brain, pneumonia, and even death.
- **Herpes zoster** or shingles is due to the same varicella virus that causes chickenpox. After a person recovers from chickenpox, the virus stays in the body, usually remaining dormant. However, if it is reactivated, it causes a painful skin rash of blisters on one side of the face or body. Although the rash disappears within a few weeks, severe post-herpetic pain can last for months or years.
- **Human papilloma virus (HPV)** is the most commonly sexually transmitted infection. Some types of HPV can cause cervical and other cancers.
- **Leptospirosis** is a bacterial infection that is spread through the urine of infected animals in tropical and subtropical areas.
- **Pneumococcal** disease is a bacterial infection that can cause severe pneumonia and meningitis. Children under 2 years old and the elderly are most susceptible.
- **The plague** is another bacterial infection transmitted by infected fleas and rats. In the 14th century more than 20 million people in Europe died from what was known as the «Black Death.»
- **Anthrax** is an acute bacterial infection affecting cattle, horses, and goats. Humans contract the disease by coming in contact with infected animals.
- **Rickettsia bacteria** carried by lice cause epidemic typhus.



Children do not have natural immunity against disease. It is important for them to be protected correctly by vaccinations from an early age when in their home country, and even more important if they are traveling or living abroad. Vaccination programs and the vaccination calendar for children vary from one country to another.



All children must have the following:

- **Tetanus, polio, diphtheria, and whooping cough (pertussis).**

The vaccines for these four diseases are usually combined in one injection.

The recommended schedule for this shot is:

- one injection per month for 3 months, starting at 2 or 3 months of age,
- one booster shot 1 year later and at 4 to 6 years old.

Highly recommended for children:

- **Mumps, measles, and rubella (German measles)**

The combined MMR vaccine for these three diseases is given in one injection that should be administered at 12 to 15 months of age with booster shots 1 month and 10 years later. In some countries MMR is associated with the chickenpox vaccine.

- **Haemophilus influenza (type b)**

The Hib vaccine is recommended for very young children. The disease can cause fatal

cases of meningitis (completely different from meningitis A, B, and C). The vaccination can be combined in one injection with that for tetanus, polio, diphtheria, and whooping cough.

- **Hepatitis A and B**

- **Rotavirus**

This viral infection is the primary cause of acute, severe diarrhea in the world. Some 500,000 children under 5 years of age die each year of rotavirus infections, mainly in Africa and Asia. This is a highly recommended vaccination for the traveling young child.

NOTE :

- Medical advice should be requested before vaccinating children under 9 to 12 months of age for yellow fever, typhoid fever, tick-borne encephalitis, and meningitis because these vaccinations are not always well tolerated or effective before this age. All other vaccinations can be routinely administered to children, even under 12 months of age, without any problems.
- In some countries the pneumococcal vaccine is routinely administered to young children. Check with your family doctor.
- For young children traveling to developing countries, the value of a BCG vaccination against tuberculosis should also be discussed with your family doctor. As already discussed in the TB page, this vaccination may pose a problem upon returning to countries such as the USA or the UK because the tuberculin skin test will appear positive, mimicking a tuberculosis infection. Be sure to have a medical certificate confirming that the child has received the BCG vaccine.

Certain vaccinations should be avoided during pregnancy because of their potential risk to the developing fetus.



During pregnancy the following vaccinations should be avoided:

- **oral polio vaccination (Sabin). The injectable vaccination (Salk)** can be safely performed during pregnancy for nonvaccinated women going to high-risk countries.
- **mumps, measles, rubella (German measles), and chicken pox.**
- **BCG for tuberculosis.**

During pregnancy but only in cases of absolute necessity

(for example, travel to a high-risk area such as Africa for yellow fever or Asia for Japanese encephalitis), the following vaccinations can be administered with only a minimal fetal risk:

- **rabies**
- **yellow fever (if possible avoid vaccination during the first 3 months of pregnancy)**
- **Japanese encephalitis (if possible, avoid vaccination during the first 6 months of pregnancy)**
- **typhoid fever.**

Ideally, these vaccinations should be administered either before or after pregnancy.

Virtually all other vaccinations can be administered to pregnant women without any problems.

If necessary, vaccinations can be performed during breastfeeding without risk to the mother or baby.

9 When to avoid vaccinations

There are certain situations when a person must temporarily delay or indefinitely refrain from receiving a vaccination.

In these cases, travel to a high-health-risk area should be postponed. It may be preferable to delay or cancel a trip rather than

risk acquiring a serious or fatal disease, such as yellow fever or meningitis.

Consult a doctor

The following is a nonexhaustive list of examples for which a vaccination may have to be temporarily delayed or not given:

- people with or recuperating from a severe disease or illness
- people with fever or a highly infectious disease
- people with severe skin infections and eczema (this advice applies mainly to the BCG vaccine against tuberculosis)
- pregnant women
- people with an immune deficiency that occurs with certain diseases, such as leukemia, cancer, lymphoma, and AIDS
- people undergoing certain medical treatments such as high doses of cortisone, chemotherapy, other immunosuppressive drugs, or cobalt therapy
- people with known allergies to a specific vaccine.

JUST KEEP MOVING BACK AND YOU WILL GET ALL THE SHOTS AT THE SAME TIME!



10 Vaccinations of the future

Scientists around the world are working on new vaccinations to combat old problems.

Some of these vaccinations are almost ready for commercialization, whereas others are still in the experimental stage.



TO THE STARS
AND BEYOND!

Some of the vaccinations researchers are working on are for:

- AIDS
- bilharziasis (schistosomiasis)
- cancer
- chikungunya
- Congo crimean fever
- dengue fever
- hanta virus
- hepatitis C
- Lassa fever
- leishmaniasis
- leprosy
- Lyme disease
- malaria
- herpes
- meningitis B
- Rift Valley fever
- syphilis
- toxoplasmosis
- traveler's diarrhea.

11 Conclusions

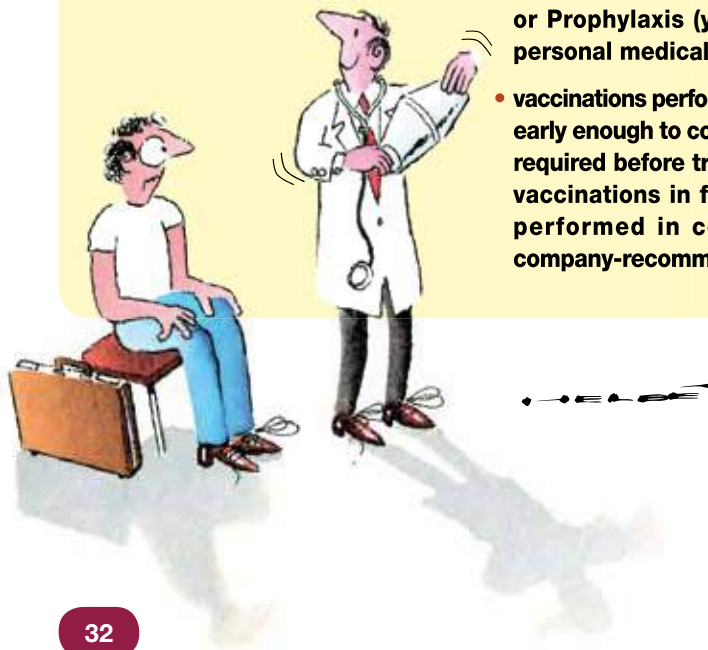
Today, vaccinations are taken for granted and their importance has become underestimated.

However, it should not be forgotten that vaccinations are the major factor in completely eliminating certain fatal diseases around the world and reducing the incidence of others.

People working overseas travel and work in many parts of the globe. They live in varied climates and are exposed to health conditions that make them particularly vulnerable to many types of illnesses that are totally unknown in their home country.

VACCINATIONS MUST NOT BE FORGOTTEN!

A LITTLE VACCINATION COCKTAIL
BEFORE YOUR TRIP.



It is essential that everyone have:

- a tetanus vaccination
- the correct vaccinations performed depending on age, travel, and eventual exposure (time of year, epidemic, climate)
- booster shots kept up-to-date
- all vaccinations recorded in the WHO International Certificate of Vaccination or Prophylaxis (yellow card) and in their personal medical records
- vaccinations performed in their home country early enough to complete the series of shots required before travel is initiated (but avoid vaccinations in foreign countries, unless performed in company-designated or company-recommended medical centers).

12 Recommended vaccination calendar for adults

| | Tetanus | Hepatitis A | Hepatitis B | Typhoid ¹ | Yellow Fever | Meningitis ² | Rabies | Jap. Enceph. | Flu | TBE |
|---------|---------|-------------|-------------|----------------------|--------------|-------------------------|--------|--------------|-----|-----|
| Year 1 | | | | | | | | | | |
| Month 0 | | | | | | | | | | |
| Month 1 | | | | | | | 3 | 2 | | |
| Month 6 | | | | | | | | | | |
| Year 2 | | | | | | | | | | |
| Year 3 | | | | | | | | | | |
| Year 4 | | | | | | | | | | |
| Year 5 | | | | | | | | | | |
| Year 6 | | | | | | | | | | |
| Year 7 | | | | | | | | | | |
| Year 8 | | | | | | | | | | |
| Year 9 | | | | | | | | | | |
| Year 10 | | | | | | | | | | |
| Year 11 | | | | | | | | | | |
| Year 12 | | | | | | | | | | |

1 - Vaccination schedule for injectable vaccine. Oral vaccine requires booster every 5 years.

2 - Vaccination schedule for Meningitis A,C, Y,W135. Meningitis A&C vaccine requires a booster every 3 years.

13 Frequently asked questions

1. *How long can a vaccine be removed from the refrigerator before losing its effectiveness?*

Vaccines should be stored in a refrigerator at between +2 and +8 degC (+35 and +40 degF). A vaccine can be at room temperature for up to 48 hours without losing its effectiveness. If returned to the refrigerator, it can be conserved for a few more weeks.

2. *Is it necessary to test a person's immunity (for tetanus, hepatitis B, etc.) before getting vaccinated?*

Your doctor will advise if this is necessary. From a public health point of view, there is no reason to check your immunity before getting vaccinated. It is a costly and time-consuming procedure and most vaccinations are usually required.

3. *If I do not remember when I was last vaccinated, is there any danger in getting another shot?*

No, there is no such thing as too much protection, and so there is no danger in getting an extra shot.

4. *If I have missed the scheduled date of my booster shot, do I have to redo the entire series?*

No, you can simply get the booster shot that you missed. Your doctor may recommend another booster shot 1 month later to account for the unprotected interval.

5. *Is there any danger in getting more than one vaccination on the same day?*

No, there is no problem in receiving two or more different shots against different diseases on the same day. Some injections already combine protection against three, four, or more diseases in the same syringe.

6. *Where on the body should vaccinations be injected?*

Vaccinations should ideally be administered in the deltoid region (the upper and outer part of the arm). Avoid injections in the buttocks because of potential injury to the sciatic nerve.

7. *What materials are necessary to be vaccinated?*

A vaccination is an easy medical procedure that requires the vaccine in a sterile, disposable syringe; a sterile, disposable needle; disinfectant (alcohol, Betadine®, etc.) on a cotton ball or gauze; and a bandage or small dressing to protect the skin from infection.

PAPERS-OK?
VACCINATIONS-OK?
HAVE A SAFE TRIP!



The recommendations and practices described in this brochure should be considered only as valuable advice.

They cannot replace a personalized and adapted consultation by a medical professional.

Therefore, the author disclaims all and any liabilities resulting from the implementation of the health prevention recommendations and practices described in this brochure, including but not limited to personal injury or illness.



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