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Travelers to Pacific Mexico need to be concerned chiefly about food-borne diseases, though mosquito-borne infections can also be a problem. Most of these illnesses are not life threatening, but they can certainly have an impact on your trip or even ruin it. Besides getting the proper vaccinations, it's important that you bring along a good insect repellent and exercise great care in what you eat and drink.

BEFORE YOU GO

Bring medications in their original containers, clearly labeled. A signed, dated letter from your physician describing all medical conditions and medications, including generic names, is also a good idea. If carrying syringes or needles, be sure to have a physician's letter documenting their medical necessity.

INSURANCE

Mexican medical treatment is generally inexpensive for common diseases and minor treatment, but if you suffer from a serious medical problem, you may want to find a private hospital or fly out for treatment. Travel insurance can typically cover the costs. Some US health insurance policies stay in effect (at least for a limited time) if you travel abroad, but it's worth checking exactly what you'll be covered for in Mexico. For people whose medical insurance or national health systems don't extend to Mexico – which includes most non-Americans – a travel policy is advisable. Check the Travel Links section of the **Lonely Planet website** (www.lonelyplanet.com.au/travel_links/) for more information.

You may prefer a policy that pays doctors or hospitals directly rather than requiring you to pay on the spot and claim later. If you have to claim later, keep all documentation. Some policies ask you to call collect to a center in your home country, where an immediate assessment of your problem is made. Check that the policy covers ambulances or an emergency flight home. Some policies offer lower and higher medical-expense options; the higher ones are chiefly for countries such as the USA, which have extremely high medical costs. There is a wide variety of policies available, so check the small print.

RECOMMENDED VACCINATIONS

Since most vaccines don't produce immunity until at least two weeks after they're given, visit a physician four to eight weeks before departure. Ask your doctor for an International Certificate of Vaccination (otherwise known as the yellow booklet), which will list all the vaccinations you've received. This is mandatory for countries that require proof of yellow fever vaccination upon entry, but it's a good idea to carry it wherever you travel.

The only required vaccine for entry into Mexico is yellow fever, and that's only if you're arriving from a yellow fever-infected country in Africa or South America. However, a number of vaccines are recommended (see table following). Note that some of these are not approved for use by children and pregnant women – check with your physician.

MEDICAL CHECKLIST

It is a very good idea to carry a medical and first-aid kit with you, to help yourself in

Vaccine	Recommended for	Dosage	Side effects
hepatitis A	all travelers	1 dose before trip; booster 6-12 months later	soreness at injection site; headaches; body aches
typhoid	all travelers	4 capsules by mouth, 1 taken every other day	abdominal pain; nausea
yellow fever	travelers arriving from a yellow fever–infected area in Africa or the Americas	1 dose lasts 10 years	headaches; body aches severe reactions are rar
hepatitis B	long-term travelers in close contact with the local population	3 doses over 6-month period	soreness at injection site; low-grade fever
rabies	travelers who may have contact with animals and may not have access to medical care	3 doses over 3-4 week period	soreness at injection site; headaches; body aches
tetanus- diphtheria	all travelers who haven't had booster within 10 years	1 dose lasts 10 years	soreness at injection site
measles	travelers born after 1956 who've had only 1 measles vaccination	1 dose	fever; rash; joint pains; allergic reactions
chickenpox	travelers who've never had chickenpox	2 doses 1 month apart	fever; mild case of chickenpox

the case of minor illness or injury. Following is a list of items you should consider packing.

- acetaminophen/paracetamol (eg Tylenol) or aspirin
- adhesive or paper tape
- antibacterial ointment (eg Bactroban) for cuts and abrasions
- antibiotics
- antidiarrheal drugs (eg loperamide)
- antihistamines (for hay fever and allergic reactions)
- anti-inflammatory drugs (eg ibuprofen)
- bandages, gauze, gauze rolls
- DEET-containing insect repellent for the
- iodine tablets (for water purification)
- oral rehydration salts
- permethrin-containing insect spray for clothing, tents and bed nets
- pocket knife
- scissors, safety pins, tweezers
- steroid cream or cortisone (for poison ivy and other allergic rashes)
- sun block
- syringes and sterile needles
- thermometer

INTERNET RESOURCES

There is a wealth of travel health advice on the Internet. For further information, the **Lonely Planet website** (www.lonelyplanet.com) is a good place to start. The World Health **Organization** (www.who.int/ith) publishes a superb book called International Travel and Health, which is revised annually and is available online at no cost. Another website of general interest is MD Travel Health (www .mdtravelhealth.com), which provides complete travel health recommendations for every country, updated daily, also at no cost.

It's usually a good idea to consult your government's travel health website before departure, if one is available.

Australia www.dfat.gov.au/travel/

Canada http://www.hc-sc.gc.ca/english/index.html

New Zealand (www.mfat.govt.nz/travel)

UK (www.dh.gov.uk/PolicyAndGuidance/HealthAdviceFor Travellers/fs/en)

United States www.cdc.gov/travel/

FURTHER READING

For further information, see Healthy Travel Central & South America, also from Lonely Planet. If you're traveling with children, Lonely Planet's *Travel with Children* may be useful. The *ABC of Healthy Travel*, by E Walker et al, and *Medicine for the Outdoors*, by Paul S Auerbach, are other valuable resources.

IN TRANSIT

DEEP VEIN THROMBOSIS (DVT)

Blood clots may form in the legs (deep vein thrombosis) during plane flights, chiefly because of prolonged immobility. The longer the flight, the greater the risk. Though most blood clots are reabsorbed uneventfully, some may break off and travel through the blood vessels to the lungs, where they could cause life-threatening complications.

The chief symptom of DVT is swelling or pain of the foot, ankle, or calf, usually but not always on just one side. When a blood clot travels to the lungs, it may cause chest pain and breathing difficulties. Travelers with any of these symptoms should immediately seek medical attention.

To prevent the development of DVT on long flights you should walk about the cabin, perform isometric compressions of the leg muscles (ie contract the leg muscles while sitting), drink plenty of fluids, and avoid alcohol and tobacco.

JET LAG & MOTION SICKNESS

Jet lag is common when crossing more than five time zones, resulting in insomnia, fatigue, malaise or nausea. To avoid jet lag try drinking plenty of fluids (nonalcoholic) and eating light meals. Upon arrival, get exposure to natural sunlight and readjust your schedule (for meals, sleep etc) as soon as possible.

Antihistamines such as dimenhydrinate (Dramamine) and meclizine (Antivert, Bonine) are usually the first choice for treating motion sickness. Their main side effect is drowsiness. An herbal alternative is ginger, which works like a charm for some people.

IN MEXICO

AVAILABILITY & COST OF HEALTH CARE

There are a number of first-rate hospitals in Puerto Vallarta. In general, private facilities offer better care, though at greater cost, than public hospitals.

Adequate medical care is available in other major cities, but facilities in rural areas may be limited. The **US embassy** (www .usembassy-mexico.gov/guadalajara/GePVhospitals.htm) provides an online directory to local physicians and hospitals in Puerto Vallarta.

Many doctors and hospitals expect payment in cash, regardless of whether you have travel health insurance. If you develop a life-threatening medical problem, you'll probably want to be evacuated to a country with state-of-the-art medical care. Since this may cost tens of thousands of dollars, be sure you have insurance to cover this before you depart.

Mexican pharmacies are identified by a green cross and a 'Farmacia' sign. Most are well supplied and the pharmacists well trained. Reliable pharmacy chains include Sanborns, Farmacia Guadalajara, Benavides and Farmacia Fenix. Some medications requiring a prescription in the US may be dispensed in Mexico without a prescription. To find an after-hours pharmacy, ask your hotel concierge or check the front door of a local pharmacy, which will often post the name of a nearby pharmacy that is open for the night.

INFECTIOUS DISEASES Cholera

Cholera is an intestinal infection acquired through ingestion of contaminated food or water. The main symptom is profuse, watery diarrhea, which may be so severe that it causes life-threatening dehydration. The key treatment is drinking oral rehydration solution. Antibiotics are also given, usually tetracycline or doxycycline, though quinolone antibiotics such as ciprofloxacin and levofloxacin are also effective.

Only a handful of cases have been reported in Mexico over the last few years. Cholera vaccine is no longer recommended.

Hepatitis A

Hepatitis A occurs throughout Central America. It's a viral infection of the liver usually acquired by ingestion of contaminated water, food or ice, though it may also be acquired by direct contact with infected persons. The illness occurs worldwide, but the incidence is higher in developing nations. Symptoms may include fever, malaise, jaundice, nausea, vomiting and abdominal

pain. Most cases resolve uneventfully, though hepatitis A occasionally causes severe liver damage. There is no treatment.

The vaccine for hepatitis A is extremely safe and highly effective. If you get a booster six to 12 months later, it lasts for at least 10 years. You really should get it before you go to Mexico or any other developing nation. Because the safety of hepatitis A vaccine has not been established for pregnant women or children under age two, they should instead be given a gammaglobulin injection.

Hepatitis B

Like hepatitis A, hepatitis B is a liver infection that occurs worldwide but is more common in developing nations. Unlike hepatitis A, the disease is usually acquired by sexual contact or by exposure to infected blood, generally through blood transfusions or contaminated needles. The vaccine is recommended only for long-term travelers (on the road more than six months) who expect to live in rural areas or have close physical contact with the local population. Additionally, the vaccine is recommended for anyone who anticipates sexual contact with the local inhabitants or a possible need for medical, dental or other treatments while abroad, especially if a need for transfusions or injections is expected.

The hepatitis B vaccine is safe and highly effective. However, a total of three injections are necessary to establish full immunity. Several countries added hepatitis B vaccine to the list of routine childhood immunizations in the 1980s, so many young adults are already protected.

Malaria

Malaria occurs in every country in Central America, including parts of Mexico. It's transmitted by mosquito bites, usually between dusk and dawn. The main symptom is high spiking fevers, which may be accompanied by chills, sweats, headaches, body aches, weakness, vomiting, or diarrhea. Severe cases may involve the central nervous system and lead to seizures, confusion, coma and death.

Taking malaria pills is strongly recommended when visiting rural areas in the states of Oaxaca, Chiapas, Sinaloa, Michoacán, Nayarit, Guerrero, Tabasco, Quintana Roo and Campeche; for the mountainous northern areas in Jalisco; and for an area between 24° and 28° north latitude, and 106° and 110° west longitude, which includes parts of the states of Sonora, Chihuahua and Durango.

For Mexico, the first choice malaria pill is chloroquine, taken once weekly in a dosage of 500mg, starting one to two weeks before arrival and continuing through the trip and for four weeks after departure. Chloroquine is safe, inexpensive and highly effective. Side effects are typically mild and may include nausea, abdominal discomfort, headache, dizziness, blurred vision or itching. Severe reactions are uncommon.

Protecting yourself against mosquito bites is just as important as taking malaria pills (see p307), since no pills are 100% effective.

If you may not have access to medical care while traveling, bring along additional pills for emergency self-treatment, which you should take if you can't reach a doctor and develop symptoms that suggest malaria, such as high spiking fevers. One option is to take four tablets of Malarone once daily for three days. If you start selfmedication, you should try to see a doctor at the earliest possible opportunity.

If you develop a fever after returning home, see a physician, as malaria symptoms may not occur for months.

Malaria pills are not recommended for the major resorts along the Pacific Coast.

Rabies

Rabies is a viral infection of the brain and spinal cord that is almost always fatal. The rabies virus is carried in the saliva of infected animals and is typically transmitted through an animal bite, though contamination of any break in the skin with infected saliva may result in rabies. Rabies occurs in all Central American countries. Most cases in Mexico are related to dog bites, but bats and other wild species remain important sources of infection.

Rabies vaccine is safe, but a full series requires three injections and is quite expensive. Those at high risk for rabies, such as animal handlers and spelunkers (cave explorers), should certainly get the vaccine. In addition, those at lower risk for animal bites should consider asking for the vaccine if they are traveling to remote areas and might not have access to appropriate medical care if needed. The treatment for a possibly rabid bite consists of rabies vaccine with rabies immune globulin. It's effective, but must be given promptly. Most travelers don't need rabies vaccine.

All animal bites and scratches must be promptly and thoroughly cleansed, and local health authorities contacted to determine whether or not further treatment is necessary (see opposite).

Typhoid Fever

Typhoid fever is caused by ingestion of food or water contaminated by a species of *Salmonella* known as *Salmonella typhi*. Fever occurs in virtually all cases. Other symptoms may include headache, malaise, muscle aches, dizziness, loss of appetite, nausea and abdominal pain. Either diarrhea or constipation may occur. Possible complications include intestinal perforation, intestinal bleeding, confusion, delirium or (rarely) coma.

Unless you expect to take all your meals in major hotels and restaurants, typhoid vaccine is a good idea. It's usually given orally, but is also available as an injection. Neither vaccine is approved for use in children under age two.

The drug of choice for typhoid fever is usually a quinolone antibiotic such as ciprofloxacin (Cipro) or levofloxacin (Levaquin), which many travelers carry for treatment of travelers' diarrhea. However, if you self-treat for typhoid fever, you may also need to self-treat for malaria, since the symptoms of the two diseases can be indistinguishable.

Yellow Fever

Yellow fever no longer occurs in Central America. Even so, many Central American countries, including Mexico, require yellow fever vaccine before entry if you're arriving from a country in Africa or South America where yellow fever occurs. If you're not arriving from a country with yellow fever, the vaccine is neither required nor recommended. Yellow fever vaccine is given only in approved yellow fever vaccination centers, which provide validated International Certificates of Vaccination (yellow booklets). The vaccine should be given at least 10

days before departure and remains effective for approximately 10 years. Reactions to the vaccine are generally mild and may include headaches, muscle aches, low-grade fevers or discomfort at the injection site. Severe, life-threatening reactions have been described but are extremely rare.

Other Infections BRUCELLOSIS

This is an infection occurring in domestic and wild animals that may be transmitted to humans through direct animal contact or by consumption of unpasteurized dairy products from infected animals. Symptoms may include fever, malaise, depression, loss of appetite, headache, muscle aches and back pain. Complications can include arthritis, hepatitis, meningitis and endocarditis (heart valve infection).

CHAGAS' DISEASE

This is a parasitic infection transmitted by triatomine insects (reduviid bugs), which inhabit crevices in the walls and roofs of substandard housing in South and Central America. In Mexico, most cases occur in southern and coastal areas. The triatomine insect lays its feces on human skin as it bites, usually at night. A person becomes infected when he or she unknowingly rubs the feces into the bite wound or any other open sore. Chagas' disease is extremely rare in travelers. However, if you sleep in a poorly constructed house, especially one made of mud, adobe or thatch, you should be sure to protect yourself with a bed net and good insecticide.

GNATHOSTOMIASIS

This is a parasite acquired by eating raw or undercooked freshwater fish, including seviche, a popular lime-marinated fish salad. Cases have been reported from Acapulco and other parts of Mexico. The chief symptom is intermittent, migratory swellings under the skin, sometimes associated with joint pains, muscle pains or gastrointestinal problems. The symptoms may not begin until many months after exposure.

HISTOPLASMOSIS

This is caused by a soil-based fungus and acquired by inhalation, often when soil has been disrupted. Initial symptoms may

include fever, chills, dry cough, chest pain and headache, sometimes leading to pneumonia. An outbreak was recently described among visitors to an Acapulco hotel.

This has been reported from all Central American countries. Be sure to use condoms for all sexual encounters.

LEISHMANIASIS

This occurs in the mountains and jungles of all Central American countries. The infection is transmitted by sand flies, which are about one-third the size of mosquitoes. Leishmaniasis may be limited to the skin, causing slowly-growing ulcers over exposed parts of the body, or (less commonly) disseminate to the bone marrow, liver and spleen. The disease may be particularly severe in those with HIV. The disseminated form is rare in Mexico and is limited chiefly to the Balsas River basin in the southern states of Guerrero and Pueblas. There is no vaccine for leishmaniasis. To protect yourself from sand flies, follow the same precautions as for mosquitoes (right), except that netting must be finer mesh (at least 18 holes to the linear inch).

TULAREMIA

Also known as 'rabbit fever,' this is a bacterial infection that primarily affects rodents, rabbits and hares. Humans generally become infected through tick or deerfly bites or by handling the carcass of an infected animal. Occasional cases are caused by inhalation of an infectious aerosol. In Mexico, most cases occur in rural areas in the northern part of the country. Tularemia may develop as a flu-like illness, pneumonia or skin ulcers with swollen glands, depending upon how the infection is acquired. It usually responds well to antibiotics.

This may be transmitted by lice in scattered pockets of the country.

TRAVELERS' DIARRHEA

To prevent diarrhea, avoid tap water unless it has been boiled, filtered or chemically disinfected (iodine tablets); only eat fresh fruits or vegetables if cooked or peeled; be wary of dairy products that might contain

unpasteurized milk; and be highly selective when eating food from street vendors.

If you develop diarrhea, be sure to drink plenty of fluids, preferably an oral rehydration solution containing lots of salt and sugar. A few loose stools don't require treatment, but if you start having more than four or five stools a day you should start taking an antibiotic (usually a quinolone drug) and an antidiarrheal agent (such as Loperamide). If diarrhea is bloody or persists for more than 72 hours or is accompanied by fever, shaking chills or severe abdominal pain you should seek medical attention.

ENVIRONMENTAL HAZARDS **Animal Bites**

Do not attempt to pet, handle or feed any animal, with the exception of domestic animals known to be free of any infectious disease. Most animal injuries are directly related to a person's attempt to touch or feed the animal.

Any bite or scratch by a mammal, including bats, should be promptly and thoroughly cleansed with large amounts of soap and water, followed by application of an antiseptic such as iodine or alcohol. Contact the local health authorities immediately for possible postexposure treatment, whether or not you've been immunized against rabies. It may also be advisable to start an antibiotic, since wounds caused by animal bites and scratches frequently become infected. One of the newer quinolones, such as levofloxacin (Levaquin), which many travelers carry in case of diarrhea, would be an appropriate choice.

Air Pollution

Air pollution may be a significant problem. Pollution is typically most severe from December to May. Travelers with respiratory or cardiac conditions and those who are elderly or extremely young are at greatest risk for complications from air pollution, which may include cough, difficulty breathing, wheezing or chest pain. Minimize the risk by staying indoors, avoiding outdoor exercise and drinking plenty of fluids.

Mosquito Bites

To prevent mosquito bites, wear long sleeves, long pants, hats and shoes (rather than sandals). Bring along a good insect repellent, preferably one containing DEET, which should be applied to exposed skin and clothing, but not to eyes, mouth, cuts, wounds or irritated skin. Products containing lower concentrations of DEET are as effective, but for shorter periods of time. In general, adults and children over 12 should use preparations containing 25% to 35% DEET, which usually lasts about six hours. Children between two and 12 years of age should use preparations containing no more than 10% DEET, applied sparingly, which will usually last about three hours. Neurological toxicity has been reported from DEET, especially in children, but appears to be extremely uncommon and generally related to overuse. Don't use DEETcontaining compounds on children under the age of two.

Insect repellents containing certain botanical products, including oil of eucalyptus and soybean oil, are effective but last only 1½ to 2 hours. Where there is a high risk of malaria or yellow fever, use DEET-containing repellents. Products based on citronella are not effective.

For additional protection, apply permethrin to clothing, shoes, tents and bed nets. Permethrin treatments are safe and remain effective for at least two weeks, even when items are laundered. Permethrin should not be applied directly to skin.

Don't sleep with the window open unless there is a screen. If sleeping outdoors or in accommodation that allows entry of mosquitoes, use a bed net treated with permethrin, with edges tucked in under the mattress. The mesh size should be less than 1.5mm. Alternatively, use a mosquito coil, which will fill the room with insecticide through the night. Repellent-impregnated wristbands are not effective.

Snake & Scorpion Bites

Venomous snakes in the region include the bushmaster, fer-de-lance, coral snake and various species of rattlesnakes. The fer-de-lance is the most lethal. It generally does not attack without provocation, but may bite humans who accidentally come too close as its lies camouflaged on the forest floor. The bushmaster is the world's largest pit viper, measuring up to 4m in length. Like other pit vipers, the bushmaster has a heat-sensing pit between the eye and nostril

on each side of its head, which it uses to detect the presence of warm-blooded prey.

Coral snakes are somewhat retiring and tend not to bite humans. North of Mexico City, all coral snakes have a red, yellow, black, yellow, red banding pattern, with red and yellow touching, in contrast to non-venomous snakes, where the red and yellow bands are separated by black. South of Mexico City, the banding patterns become more complex and this distinction is not useful.

In the event of a venomous snake bite, place the victim at rest, keep the bitten area immobilized, and move them immediately to the nearest medical facility. Avoid tourniquets, which are no longer recommended.

Scorpions are a problem in much of Mexico. If stung, you should immediately apply ice or cold packs, immobilize the affected body part and go to the nearest emergency room. To prevent scorpion stings, be sure to inspect and shake out clothing, shoes and sleeping bags before use, and wear gloves and protective clothing when working around piles of wood or leaves.

Sun

To protect yourself from excessive sun exposure, you should stay out of the midday sun, wear sunglasses and a wide-brimmed hat, and apply sunscreen with SPF 15 or higher, providing both UVA and UVB protection. Sunscreen should be generously applied to all exposed parts of the body approximately 30 minutes before sun exposure and be reapplied after swimming or vigorous activity. Drink plenty of fluids and avoid strenuous exercise when the temperature is high.

Tick Bites

To protect yourself from tick bites, follow the same precautions as for mosquitoes, except that boots are preferable to shoes, with pants tucked in. Be sure to perform a thorough tick check at the end of each day. You'll generally need the assistance of a friend or mirror for a full examination. Remove ticks with tweezers, grasping them firmly by the head. Insect repellents based on botanical products, described above, have not been adequately studied for insects other than mosquitoes and cannot be recommended to prevent tick bites.

Water

Tap water in Mexico is generally not safe to drink. Vigorous boiling for one minute is the most effective means of water purification. At altitudes greater than 2000m, boil for three minutes.

Another option is to disinfect water with iodine pills. Instructions are usually enclosed and should be carefully followed. Or you can add 2% tincture of iodine to one quart or liter of water (five drops to clear water, 10 drops to cloudy water) and let stand for 30 minutes. If the water is cold, a longer time may be required. The taste of iodinated water can be improved by adding vitamin C (ascorbic acid). Don't consume iodinated water for more than a few weeks. Pregnant women, those with a history of thyroid disease and those allergic to iodine should not drink iodinated water.

A number of water filters are on the market. Those with smaller pores (reverse osmosis filters) provide the broadest protection, but they are relatively large and are readily plugged by debris. Those with somewhat larger pores (microstrainer filters) are ineffective against viruses, although they remove other organisms. Manufacturers' instructions must be carefully followed.

TRAVELING WITH CHILDREN & WOMEN'S HEALTH

In general, it's safe for children and pregnant women to go to Mexico. However, because some of the vaccines listed previously are not approved for use in children and pregnancy, these travelers should be particularly careful not to drink tap water or consume any questionable food or beverage. Also, when traveling with children, make sure they're up to date on all routine immunizations. It's sometimes appropriate to give children some of their vaccines a little early before visiting a developing nation. You should discuss this with your pediatrician. If pregnant, bear in mind that should a complication such as premature labor develop while abroad, the quality of medical care may not be comparable to that in your home country.

Since yellow fever vaccine is not recommended for pregnant women or children less than nine months old, if you are arriving from a country with yellow fever, obtain a waiver letter, preferably written on letterhead stationery and bearing the stamp used by official immunization centers to validate the International Certificate of Vaccination.

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