Infectious Diseases & Campus Life

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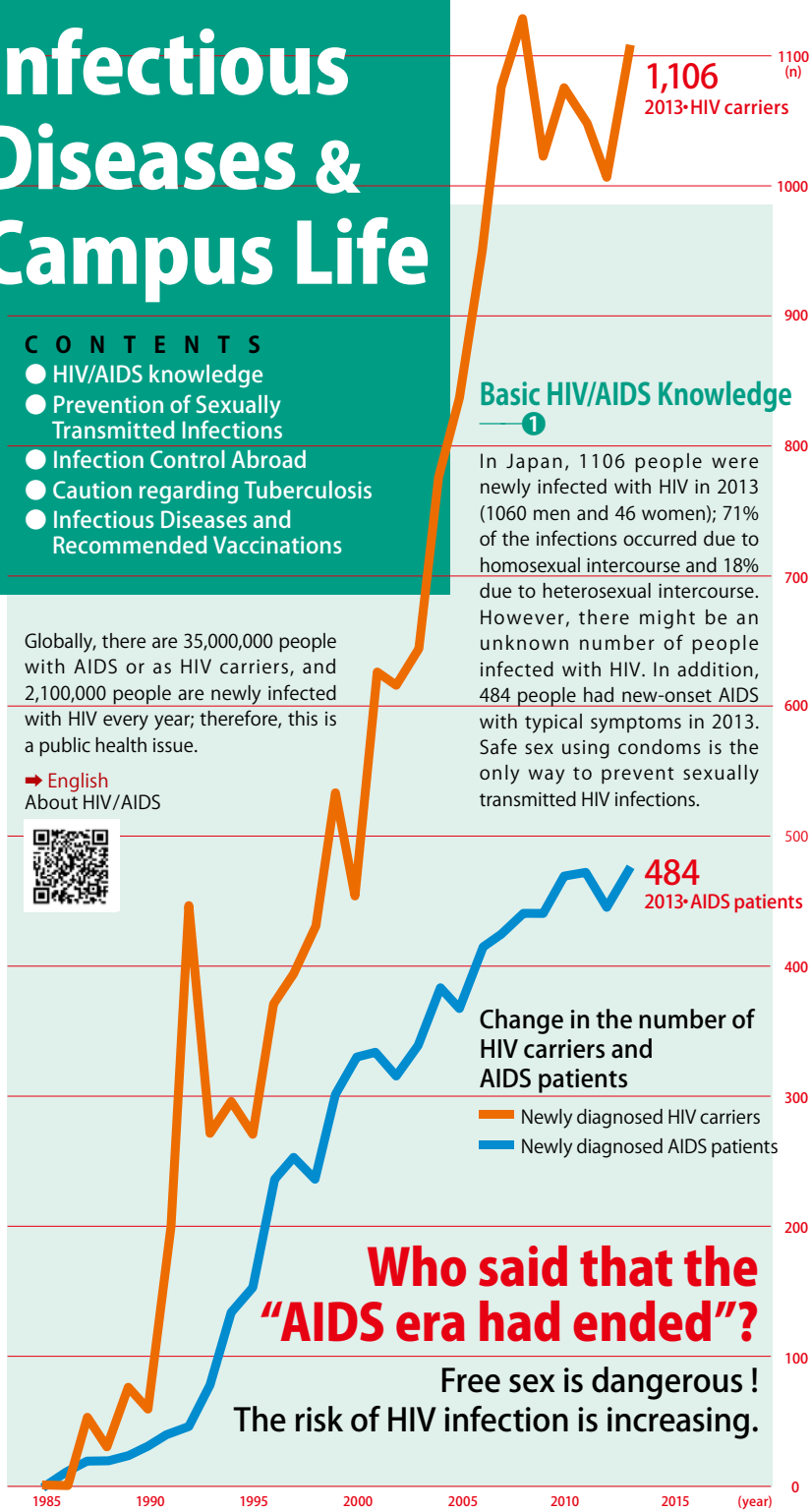
Globally, there are 35,000,000 people with AIDS or as HIV carriers, and 2,100,000 people are newly infected with HIV every year; therefore, this is a public health issue.

➡ English
About HIV/AIDS

Basic HIV/AIDS Knowledge ❶

In Japan, 1106 people were newly infected with HIV in 2013 (1060 men and 46 women); 71% of the infections occurred due to homosexual intercourse and 18% due to heterosexual intercourse. However, there might be an unknown number of people infected with HIV. In addition, 484 people had new-onset AIDS with typical symptoms in 2013. Safe sex using condoms is the only way to prevent sexually transmitted HIV infections.



Who said that the "AIDS era had ended"?

Free sex is dangerous !
The risk of HIV infection is increasing.

Data from Ministry of Welfare, Health and Labor, Japan

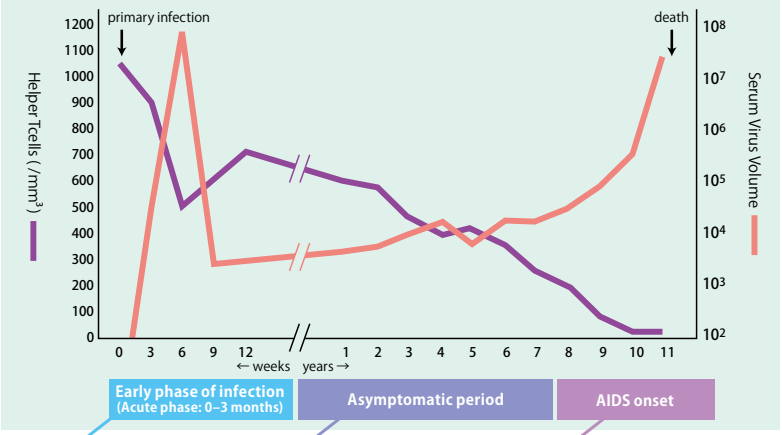
HIV infection and proliferation

HIV infection/AIDS results in immunodeficiency and a high risk of detrimental effects on health.

HIV infection/AIDS results in immunodeficiency.
HIV transmitted via blood or semen into the body damages the helper T cells, which have a primary role in the immune system. Then, genetic information for HIV is inserted into the helper T cell genes. Owing to helper T cell activity, HIV proliferates, exits the helper T cells, and is inserted into other helper T cells. As a result, HIV gradually damages the immune system.

HIV Infection

-Natural Course of HIV without Therapy-



Early phase of infection (Acute phase: 0–3 months)

Three to 6 weeks after infection with HIV, symptoms similar to those of the common cold are observed. Internally, HIV-infected helper T cells produce considerable amounts of HIV, and the number of helper T cells dramatically decreases. However, the number of helper T cells normalizes to 1000/mm³ after a period of time, and this becomes the normal level; this is the asymptomatic period. The ability for HIV to transmit is very high 4–8 weeks after HIV infection because the patient has a high amount of HIV but does not produce HIV antibodies.

Asymptomatic period

Approximately 12 weeks after infection, the immune system decreases the HIV titer, and the symptoms disappear, as in healthy people. The asymptomatic period continues approximately ≤10 years, without therapy. However, HIV proliferates and can be transmitted to other people, even during the asymptomatic period, and the number of helper T cells continues to decrease.

AIDS onset

When the number of helper T cells in the blood decreases to <200/mm³, a slight fever and general fatigue occur. Then, immunity is destroyed, the volume of HIV increases, and the ability for HIV to be transmitted increases. As a compromised host, infections* such as pneumocystis pneumonia or cytomegalovirus retinitis or cancers such as Kaposi's sarcoma or malignant lymphoma can occur, and the patient will eventually die. It takes approximately 10–12 years from infection to death in the natural course of AIDS. However, owing to the developments in therapy, the duration between infection and onset or onset and death is becoming dramatically longer.

* compromised infection: With a weakened immune system, patients are susceptible to infectious diseases caused by very weak bacteria that could not cause disease onset with a normal immune system.

➡ English
AMDA International Medical Information Center: Telephone Consultation in English

➡ English
SHARE: Telephone Consultation on Medical Care

If you have suspicious event,

what will you do?

Please consult the Health Administration Center.

If you think that it is possible that you are infected with HIV or have a sexually transmitted disease, do not hesitate to visit the Health Administration Center for advice from medical professionals. Of course, your confidentially will be protected, and medical professionals will provide appropriate suggestions based on your school life.

HIV tests at the public health center.

If you suspect an HIV infection, schedule a free and confidential HIV test by calling a public health center. The test requires only 5 mL blood. Tests for other sexually transmitted diseases might also be available. Do not hesitate to contact the public health center.

An examination should be scheduled 2 months after the possible transmission of infection.

HIV antibodies are tested for at the public health center, and it takes 4–8 weeks for the HIV antibody titer to increase after the transmission of infection ("window period"). During this time, it can be difficult to achieve an accurate result. Therefore, an antibody test should be conducted at least 2 months after possible infection.

Do not use a blood donation as an opportunity to test for HIV.

During the window period, the test could be negative even if you are infected, and HIV could be transmitted through your blood if it used for therapy. A blood donation is not an opportunity to test for HIV, and the HIV test results will not be provided to the donor.

Organizations (Tel or web sites) where you can get information

● Home pages of organizations in the private sector

● API - Net:
http://api-net.jfap.or.jp/
● Life AIDS Project (LAP)
http://www.lap.jp/

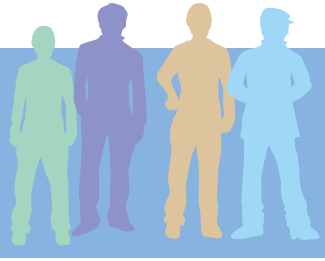
● AIDS prevention groups and victim support groups

● Positive Living And Community Empowerment TOKYO
Care service and consultation
● Japan HIV Center
Support for people who are suffering from AIDS-related prejudice or discrimination
Tel : 03-5259-0622 (Tokyo)
06-6393-8851 (Kansai)
● Japan AIDS & Society Association
Research and information exchange on AIDS
Tel : 03-6279-3094
● Tokyo HIV/telephone counseling
Tel : 03-3292-9090
● NPO OCCUR
Comprehensive support group for gays and lesbians
Tel : 03-3383-5556
● NPO AMDA International Medical Information Center
Offering telephone-based medical information in English
Tel : 03-5285-8088 (Tokyo)
06-4395-0555 (Kansai)
● Services from the Health in Asian & African Regions
Medical consultation service in English
Tel : 03-5807-7581
● PHJ
Japanese branch of an international organization for medical aid
Tel : 0422-52-5507

Prevention of Sexually Transmitted Infectio ns (STI)—❶

➡ English
Sexually Transmitted Diseases

For Men



It is easier to detect STIs when men urinate.

① The most common STI is chlamydia.

There are currently no symptoms. However, signs of chlamydia infection can include a whitish transparent secretion from the male genitals or pain/itching during urination.

● Examination and therapy

The Department of Urology diagnoses chlamydia based not only on a physical examination but also on tests of urine/endothelial cells from the urine duct. Standard therapy involves continuous administration of antibiotics for 14 days.

② The more obvious symptoms of gonorrhea make detection easier.

Light itching or heat is felt in the urinary tract 3–7 days after infection with gonorrhea. Mucus, followed by whitish, turbid pus, is excreted with urine. Pain or heat will also be felt.

● Examination and therapy

The diagnosis is based on the detection of gonorrhea in urine, mucus, or pus from the urine duct. Standard therapy involves oral or intravenous administration of antibiotics. It takes almost 2 weeks for a cure, which should be confirmed by a medical professional. If the therapy is inappropriately discontinued, the gonorrhea infection can easily become chronic or recurrent.

③ The issue with genital herpes.

Infection is transmitted by mucus containing the herpes virus. A week after infection, small blisters appear on the foreskin and top of the penis; when the blister breaks open, a thin ulcer develops. Then, sharp pain, fever, headache, and exhaustion occur for approximately 3 weeks. Genital herpes can easily recur because the herpes virus persists in neurons; recurrence is triggered by external injury, fever, sex, or mental stress.

● Examination and therapy

Herpes is diagnosed based on a blood test. Anti-viral medication is effective for symptom control, but cannot kill the virus completely. It is important to avoid transmission to others when recurrence is triggered by physical or mental stress.

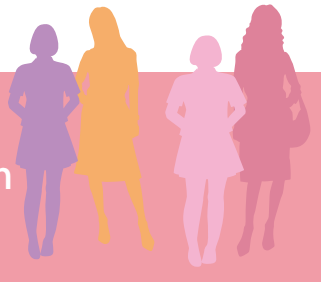
④ Tell your partner and get treated together.

It is easier to detect infection in men because of the obvious symptoms. When you are diagnosed with an STI, you should tell your partner and advise him/her to visit the clinic/hospital. It is important to prevent infection of others.

***STIs**

Syphilis, condyloma acuminatum, trichomoniasis, candidiasis, scabies, pubic lice, and viral hepatitis are also STIs.

For Women



It is harder for women to feel the malaise.

① Women have very slight symptoms with a chlamydia infection.

Therefore, women who have had sexual intercourse should ask to be tested for chlamydia during a gynecology appointment. Some public health services also perform the test.

● Examination and therapy

Samples from the cervix are examined. Standard therapy involves oral administration of antibiotics for 14 days.

② Gonorrhea can be transmitted through oral sex.

STIs can be transmitted through any location with a membrane. Therefore, gonorrhea can be transmitted by sexual contact (genitalia, oral, anal) through the membranes. Because the symptoms are slight in women, it is more difficult to detect gonorrhea. Polyuria or pain with urination can be a sign of cystitis induced by gonorrhea.

● Examination and therapy

For diagnosis, samples from the vagina or cervix are tested. Standard therapy involves oral administration of antibiotics for 2 weeks. Gonorrhea can easily become recurrent or chronic if the medication is ceased earlier than recommended. It is important to have a cure confirmed by a doctor.

③ Genital herpes is an STI that recurs.

When a woman is infected with genital herpes through her partner's semen, small blisters appear in the genital area within 1 week of infection. After the blister breaks open, a thin ulcer grows, followed by sharp pain, fever, headache, and exhaustion for 3 weeks. Then, recurrence can be caused by stimuli such as external injury, fever, menstruation, sex, and mental stress.

● Examination and therapy

Diagnosis is based on analysis of blood samples. Although anti-viral medication is effective, it will not completely kill the herpes virus. It is important to prevent infecting others; therefore, causes of recurrence should be avoided, such as injury, fever, sex, and mental stress.

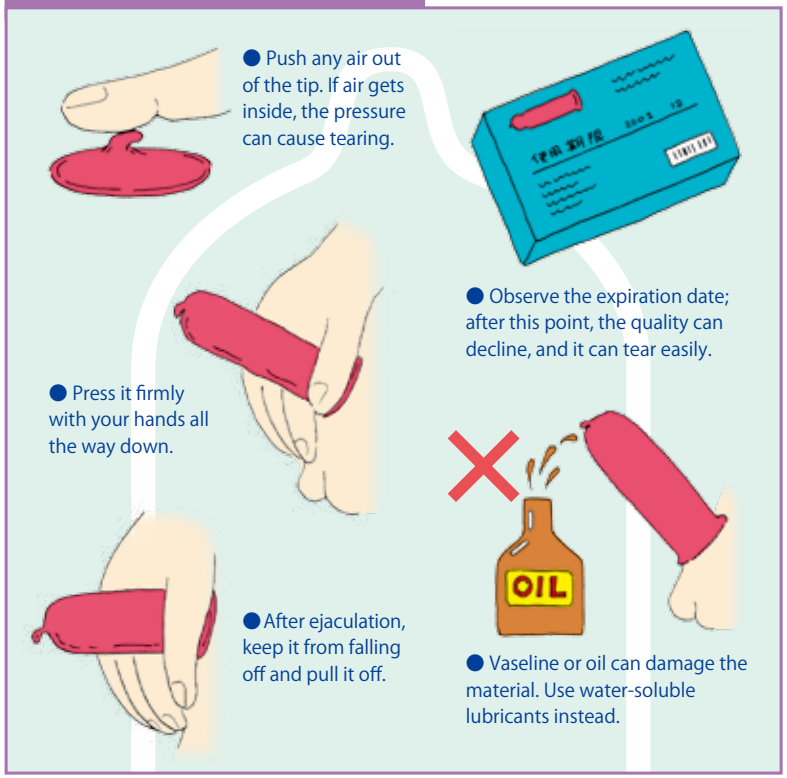
④ Do not neglect even the slightest signs.

If you do not do anything after you are infected, inflammation will spread from the uterus to the oviduct/ovary glands. The risk of sterility, miscarriage, or extrauterine pregnancy increases. In addition, newborn babies can become infected and develop serious pneumonia, eye disease, or brain damage.

The pill is only for birth control

It is a mistake to think that the pill (oral contraceptives) prevents sexual diseases including AIDS. The pill is only for birth control and is totally useless against the AIDS virus. The AIDS virus is transmitted through the mucous membranes of sexual organs, semen, and vaginal fluid. Because the pill cannot prevent physical contact, it cannot prevent the transmission of AIDS. Condoms can prevent direct physical contact of mucous membranes and semen or vaginal fluid; therefore, they are effective in preventing AIDS as well as pregnancy. However, condoms are effective only if they are worn from the start of the sexual contact. To avoid tears or slipping off, remove the air the air of tip so that the condom will fit tightly on the male penis. In other words, wear it correctly to make sure the condom is effective.

How to use condom



Absolutely No Drugs!

➡ English
Drug Abuse

The use of illegal drugs is becoming increasingly common among university students. Simplistic ideas such as "drugs help you lose weight" or "drugs are good for sex" pique young adults' interest in using these substances. Illegal drugs are extremely addictive, and are related to crime, unprotected sex, and therefore sexual transmitted infections (STIs) such as HIV/AIDS. Recently, there has been an increase in so-called "loophole drugs" that are easily obtained through the internet. However, these drugs contain illegal compounds such as stimulants, so they have now come to be known as "dangerous drugs." Let's look at illegal drugs in more depth.

● Cannabis

Gateway drug

Within a few minutes of taking cannabis, you begin to feel "high." You also feel relaxed, euphoric, and more talkative (loquacious), but you also experience cramps. Your perception begins to change, colors appear more vivid, sounds seem louder, and time feels as though it is moving slowly. However, continuous usage of cannabis induces apathy for study/work, and a high risk of accidents. Cannabis abuse raises tolerance of the drug, which thereby increases the amount of cannabis needed to achieve the same high. Cannabis is a highly addictive drug because it does have noticeable side-effects immediately after stopping cannabis abuse. Cannabis is referred to as a gateway drug, because its abuse brings users into contact with people who use other illegal drugs, making these drugs easy to access.

● Cocaine

Very dangerous narcotic drug

Cocaine stimulates the central nervous system and induces feelings of pleasure and euphoria immediately upon ingestion; these effects fade quickly because cocaine-induced biotransformation is very fast. Cocaine entails high risks, and leads to social problems such as crime, deep debt, and bankruptcy. Cocaine can lead to failure in many aspects of life. This is because it decreases brain metabolism, which may induce various mental symptoms, such as sleeplessness and hallucination/delusion; nervous symptoms such as headache and convulsion; and various physical symptoms including cardiovascular, respiratory, or gastrointestinal problems. The opportunities to use cocaine are growing as people are increasingly able to travel abroad for study or training. Even "casual" use of cocaine can ruin your life, so its use should be avoided at all costs.

● Amphetamine

Strong and dangerous stimulant drugs

Amphetamine abuse releases users from boredom and malaise, and quickly brings about pleasant feelings and euphoria. Therefore, Amphetamine abuse quickly becomes habitual, eventually resulting in addiction—a state in which the user cannot do without the Amphetamine. These drugs have toxic effects on the mental condition, which can induce various psychotic symptoms. Amphetamine are water-soluble and odorless white powders, which are easily absorbed through the mouth, skin, veins, and via inhalation. Inhalation of heated Amphetamine smoke increases serum concentration of the Amphetamine, which is absorbed through the pulmonary alveolus. Amphetamine poisoning entails schizophrenia-like symptoms such as derangement of ego. and depressive symptoms such as mood disorders. Even after quitting stimulants, long-term abuse can lead to flashbacks of psychotic symptoms induced by a small amount of Amphetamine or alcohol intake at a future point in time. Avoid being in the presence of Amphetamine, and do not be fooled into thinking that just using them once will be okay.

● MDMA

Strong effects on psychiatric and nervous system

MDMA, which is often called "ecstasy," stimulates the production of serotonin in the brain. This induces feelings of euphoria, affection for others, and hallucinations. Hallucinations from MDMA are weaker than those from other hallucinogens, such as LSD; however, the ongoing feelings of relaxation and euphoria that continue after the hallucination can hold the user spellbound. The drug-induced release of high amounts of serotonin over a long period of time and damages neurotransmitters, which in turn decreases mental activity and causes a decline in bodily mobility. In addition, damage to serotonin-producing neuron cells bring about mental disorders such as sleep disturbance, serious anxiety disorders, and delusions. Therefore, MDMA is also a very dangerous drug.

Infection control abroad

Notable infectious diseases when traveling abroad.

infection route	disease	main symptoms	high risk area	vaccination
drink / food	cholera	diarrhea like water in which rice has been washed, vomiting, dehydration	Asia, Africa	○
	shigellosis (bacillary dysentery)	fever up, left lower abdominal pain, diarrhea, bloody mucous stool	bad sanitation area	—
	typhoid abdominalis	high fever up, relative slow pulse, rose rash	Asia, Africa, Latin America	—
	hepatitis A	jaundice subsequently common cold symptoms, general fatigue	Asia, East Europe, Africa Latin America	○
	hepatitis E	same as hepatitis A, however more serious	Asia, North Africa, Mexico	—
insect / animal vector	malaria	fever up with a chill, muscle pain, headache anopheles	Asia, Oceania, Africa, Latin America	—
	yellow fever	fever up with a chill, headache,jaundice, bloody stool, hematemesis aedes aegypti	Latin America, Africa	○
	dengue fever	sudden fever up, headache, eye pain, muscle pain, eruption aedes aegypti, aedes albopictus	Southeast Asia, West Pacific Ocean, Africa, Latin America, East Mediterranean Sea	—
	chikungunya fever	fever up, joint pain, eruption aedes aegypti, aedes albopictus	Asia, Africa	—
	west nile fever	commonly asymptomatic, sudden high fever culex pipiens pallens, aedes albopictus	Africa, Middle East, Central Asia, West Asia, Europe, Far East Russia, North America	—
	japanese encephalitis	fever up, headache, vomit, consciousness disorder culex tritaeniorhynchus	Asia, West Pacific Ocean	○
	plague	Swelling and pain of Lymph nodes, blood spot in skin, high fever up flea in rodents including squirrels and rats	Madagascar, Africa, The USA southwest, South America, Asia	—
	rabies	ever up, dysesthesia in bite injury, Hydrophobia, hypersensitive for wind or light, confusion dog, raccoon, fox, bat	world wide except Japan, United Kingdom, Australia, New Zealand, Sweden	○
	hantavirus pulmonary syndrome(HPS)	fever up, muscle pain, progressive dyspnea rat	The USA southwest, Canada, Latin America	—
	avian influenza (AI)	fever up, cough, dyspnea chicken, duck, goose	Southeast Asia, China, Egypt	—
water / soil	tetanus	difficult in opening mouth, dysphoria, dysuria(urinary disturbance), body muscle rigidity	Asia, Africa, South America	○
	coccidioidomycosis	common cold-or pneumoniae-like symptoms, erythema, ulcer formation based on wound	The USA southwest, Latin America	—
blood / body fluid	ebola hemorrhagic fever (EHF)	high fever up, vomit, diarrhea, gingival and nasal bleeding	Africa	—
	crimean-congo hemorrhagic fever	similar to EHF	Africa, Asia, Middle East, East Europe	—
sexual intercourse	AIDS	opportunistic infection after long incubation period		—
	syphilis	genital tumor, lymph nodes swelling genital ulcer, rush		—
	gonorrhea	micturition pain, erosion or pus of external urethral orifice		—
	chlamydia	asymptomatic, mild micturition pain or discomfort		—
	genitalherpes	genital itching and pain, ulcer with eruption of blistering		—
	hepatitis B	similar to hepatitis A, chronic course		—

Caution ❶

Don't drink tap water

In developing countries, most tap water is contaminated. It is recommended that you drink boiled or bottled water. You should buy water at supermarkets or convenience stores in order to be more sure of its origin. Bottled, carbonated/sparkling mineral water may be better because it is difficult to create imitations. Be wary of water that is served at hotel restaurants. Also, be careful of ice, juice with ice, ice candy, and ice cream because it you cannot be certain if the original water is contaminated.

● How to disinfect water

If you cannot obtain bottled water, boil clear water for at least one minute and then leave it for 2–3 minutes after turning off the heater. This method will kill most bacteria and viruses. If you cannot boil water, please use a disinfectant agent and a filter before drinking the water.

Caution ❷

Avoid dangerous food

Similar to the situation concerning water, you should be prepared for food contamination in developing countries. Have your meals at the hotel or a tourist restaurant, as these generally have moderate sanitary conditions. Please select sufficiently heated food, not cooled food, salad, or insufficiently heated meat or fish. It is better to avoid having food from street vender's stalls because the food at these stalls is often raw. Pay attention to dairy products, since these are very likely to have a bacterial contamination. Boil milk before drinking it. Don't add milk when you drink coffee or tea.

Caution ❸

Thorough measures to repel mosquitoes

Malaria, one of the world's top three major infectious diseases, is carried by Anopheles (shimadaraka) mosquitoes. Since dengue fever is also carried by Aedes aegypti (the yellow fever mosquito or Nettaishimaka), anti-mosquito measures are important in regard to infection control. To avoid mosquito bites, wear long sleeves and use bug spray (moth-proofing spray) or cream. Bug spray works even if you spray it on clothes. At bedtime, use moth-proofing spray and burn mosquito incense inside the room. Mosquito mats are also available. In areas where malaria is prevalent, the use of bed nets is also an effective measure.

● Be cautious of animals

Zoonotic infections exist, so be mindful of your contact with animals. Avian influenza induces a high fever and cough, then dyspnea and multiple organ failure. This disease has a high mortality rate. It is transmitted by contact with infected birds or inhalation of droppings. In countries where the disease is prevalent, it is dangerous to visit bird markets, farms, or slaughterhouses.

Rabies is transmitted by wild animals, including dogs, raccoons, and vampire bats. Once clinical signs have onset, rabies has an almost 100% mortality rate. In areas of high prevalence, keep away from animals, including pets and livestock. If you get bitten, immediately wash the affected area with running water and soap and visit a medical facility as soon as possible to receive a rabies vaccination. Continuous vaccination after a bite injury, five to six rabies shots, can suppress the onset of rabies.

Plague is transmitted by fleas that live as parasites on rats and squirrels. This disease is found in South America, Western China, India, Madagascar, East Africa, and in the mountains of the Southwestern U.S. In prevalent areas, don't feed or touch rodents. Plague is a disease with a high mortality rate if appropriate therapy is not administered at an early phase.

Caution regarding tuberculosis

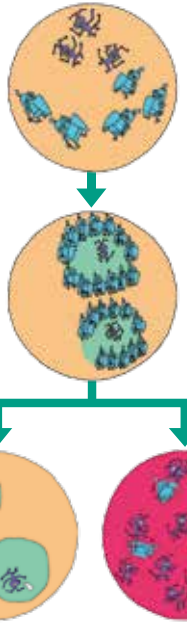
➡ English
Tuberculosis Telephone Consultation Service

➡ English
stop TB

In Japan, the previous high rate of mortality associated with tuberculosis supported its status as "an incurable disease." After World War II, with the decrease in the mortality rate, the prevalence of tuberculosis was considered to be stable. However, the incidence of tuberculosis began to increase in 1997, and a Declaration of a State of Emergency Concerning Tuberculosis was declared by the Japanese Minister of Health and Welfare in 1997. Then, the number of patients began to decrease. However, tuberculosis is now considered a reemerging infectious disease, with >20,000 new-onset cases per year and >2,000 deaths per year. Given the increasing percentage of the young generation without immunity to tuberculosis, mass infections have also been increasing. Therefore, you should have basic knowledge of tuberculosis and its prevention. In particular, people with HIV infection are at high risk of tuberculosis infection owing to decreased immune defenses.

Tuberculosis infection and onset

Tuberculosis infection is not the same as disease onset.



● **Establishment of infection (unapparent infection):**
tubercle bacilli enter the body and colonize → immune mechanism is activated

● **Immune cells suppress the tubercle bacilli:**
tubercle bacilli surrounded by immunocytes

10-15%

● **Spontaneous cure:**
a scar or calcification remains at the area of an immune reaction

● **Onset:**
when the immune defense is insufficient, onset occurs.

Not all patients experience infectivity, with positive and negative infectivity occurring.

Negative infectivity	Positive infectivity
When the patient's sneezing contains no tubercle bacilli, the patient cannot infect others.	If the patient's sneezing contains numerous tubercle bacilli, the patient can infect others. Approximately two months of therapy are typically sufficient to result in negative sneezing results for tubercle bacilli; however, admission for 2–3 months is sometimes required.

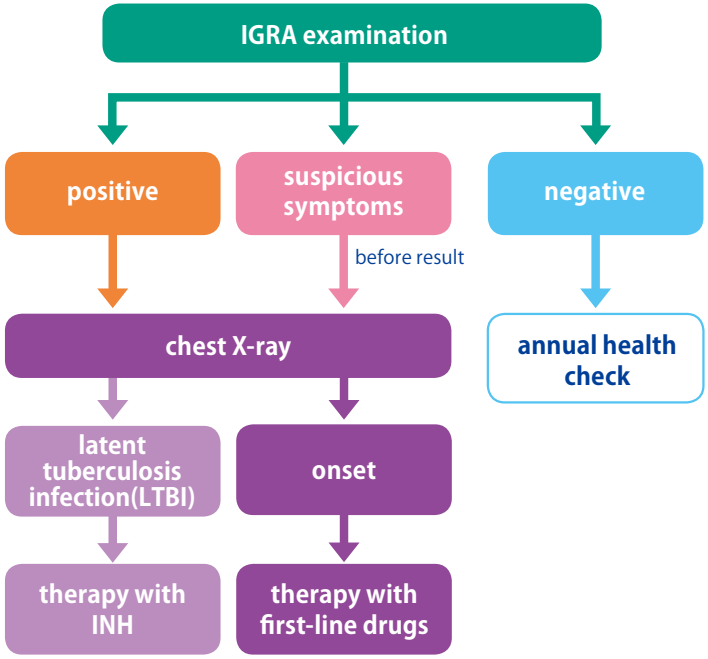
When a patient with positive infectivity is encountered on campus.

An interferon- γ release assay (IGRA) examination is performed first.

Special health checks for people who had contact with the patient also include an IGRA exam and QuantiFERON and T-spot blood tests.

Chest radiography

Patients with positive IGRA results should undergo chest radiography. Patients with obvious symptoms such as cough and sneezing should immediately undergo chest radiography before the IGRA results are available.



Newly diagnosed patients should be immediately admitted to a medical institution.

Newly diagnosed patients who are identified during a special health check should be referred to a specialist of tuberculosis therapy. Patients with latent tuberculosis infection, who have a positive IGRA result but no symptoms, should also be referred to a specialist and provided anti-tuberculosis therapy in the form of isoniazid for 6–9 months, which is effective for >10 years.

Therapy and daily life

Latent tuberculosis infection(LTBI) is treated with isoniazid(INH) as preventive treatment for 6 to 9 months, which effect lasts at least 10 years. During the period of medication, the following are important:

- Consume adequate nutrition
- Get adequate rest and avoid overwork
- Avoid tobacco and alcohol use

Infectious Diseases and Recommended Va ccinations ①

➡ English
Adult Vaccination

● Measles

The main symptoms of measles include a high fever and eruptions, and it can become pandemic without vaccination. In Japan, the percentage of measles vaccinations for the 1-year-old population decreased after 1994. Recently, the onset of measles in those over 15 years old has been increasing.

Therefore, after June 2, 2006, two measles and rubella (MR) vaccination systems were started: the first shot was administered at 1 year old, and the second shot was administered at 5–7 years old.

*Recently, the booster effect (when contact with the real virus after vaccination strengthens one's immune defense) has become very important. Consequently, two MR vaccination systems were initiated.

● Rubella

Rubella is prevalent among elementary school students, and it presents as eruptions. Rubella infection after the teenage years is associated with serious symptoms and a high frequency of arthritis. If a pregnant woman becomes infected with rubella within 16 weeks of pregnancy, the infant will also become infected and have congenital rubella syndrome with congenital heart disease, hearing disturbance, and cataracts.

To prevent rubella, a live vaccine is used. Therefore, when young woman get the rubella vaccination, they must use anti-contraceptives starting 1 month before to 2 months after receiving the vaccination. In Japan, the rubella vaccination was provided for all junior high school female students from 1977 to 1994. In 1994, the target of the rubella vaccination changed to boys and girls 12–90 months old. Therefore, the rubella vaccination rate among the generation born from April 1979 to October 1987 decreased, causing nation-wide epidemic in 2013 among this generation.

mother/child book

When woman is diagnosed her pregnancy, City Hall provides them with a mother/child book. In this book, the mother's and baby's health conditions and histories of vaccination are recorded. If you are unsure of your vaccination history, please refer to your book for this information. → See p16.

● Mumps

The mumps present with swelling of the maxillary glands and sometimes meningitis, a hearing disability, testitis, and ovaritis. To prevent the mumps, a live vaccine is administered. Meningitis is a potential side reaction of the mumps vaccination, and since it became a serious problem, routine vaccination was discontinued by the Japanese Ministry of Health and Welfare. Therefore, it has been very difficult to prevent an outbreak of the mumps, since more than 90% of children have to have the mumps vaccination around 1 year old to prevent an outbreak.

● Diphtheria

Since the main pathological foci of diphtheria are the pharynx and larynx, hoarseness and a cough-like barking are its main symptoms, and sometimes laryngectomy is required because of dyspnea. The toxoid vaccine is used to prevent diphtheria; usually the diphtheria, pertussis, and tetanus (DPT) or diphtheria and tetanus vaccination is administered.

● Pertussis

Pertussis is a respiratory disease induced by Bordetella pertussis. In adults, a cough continues for more than 2 weeks, and vomiting and whoop- or whistle-like breath sounds after coughing are typical symptoms. The strength and number of coughs gradually decrease within 2–4 weeks, and coughing disappears within 1–3 months. The DPT vaccination is provided; however, after many years, the benefits of the vaccination decrease. Recently, cases of pertussis have been increasing among university students.

● Tetanus

Clostridium tetani exists in soil worldwide as a spore, which is hardy against heat and dryness. It is contracted through various wounds and infections. A tetanus infection induces serious symptoms in neurons and muscles similar to convulsions. When you have an injury, you should visit a clinic or hospital to get a tetanus toxoid vaccination. A tetanus vaccine is also recommended before travel and performing fieldwork.

● Chickenpox (Varicella Virus)

Varicella is transmitted by droplet and airborne infection, and it is established when the virus invades the throat mucosa. The infection is also established by direct contact with a wet eruption before it forms a crust. Eighty percent of the population contracts the varicella infection before 5 years old, and anyone can acquire permanent immunity to varicella. It always presents with a serious condition in adult cases, so it is recommended that persons who have never been infected with varicella get the vaccination. Painful skin blisters in a belt-like fashion along the nerve, i.e., herpes zoster, appear in immuno-compromised patients under stress who have been infected by varicella before and reactivated.

● Typhoid

Typhoid is an oral infectious disease, and it is prevalent in Asia, Africa, and middle South America. Its main symptom is a high fever, and sometimes rose spots appear on the chest or abdomen. If therapy is delayed, intestinal perforation can occur, causing it to be a fatal disease. The vaccine is not approved by the Pharmaceuticals and Medical Devices Agency (PMDA) in Japan. Its effect last 2–3 years.

● Hepatitis A

Hepatitis A is also an oral infectious disease, and it is prevalent in Asia, Africa, and middle South America. In Japan, it is commonly contracted after eating raw clams. When you visit a developing country for more than 1 month, boiling the water and washing your hands regularly are important, and vaccination is strongly recommended for the Japanese population under 50 years old to get the vaccination since many of them do not have immunity to hepatitis A. Vaccination is required at least twice at intervals of 2–4 weeks. If you will be visiting a developing country for more than 6 months, an additional vaccination is recommended after 24 weeks, and then immunity to hepatitis A will last for more than 5 years.

HIV Vaccine

Vaccines work by making antibodies that are specific for the outer sheath of a virus. Since the outer sheath of HIV changes very frequently, it is very difficult to make an HIV vaccine. This is the most important factor preventing the development of an HIV vaccine.

➡ English
Immunization Schedule, Japan

● Hepatitis B

In the past, many people became infected with hepatitis B through blood transfusions; however, strict regulations has since been established and no cases of infection by blood transfusion exist. However, infection through sexual intercourse can still occur and can develop into chronic hepatitis B . Sometimes, one percent of acute hepatitis B develops into fulminant hepatitis, which is fatal. Therefore, the hepatitis B vaccine is highly recommended for people at high risk: those who will stay in high-prevalence areas, family members of a virus carrier, medical professionals, and baby of virus carrier woman. Unfortunately, a hepatitis C vaccine has not yet been developed.

● Rabies

Once onset of rabies is complete, 100% of those infected with this terrible disease die. Symptoms in the early phase resemble the common cold. Later, pain around the site of the animal bite and muscle spasms develop, followed by abnormal tetanus that is induced by cold air or from seeing water.
Although rabies was eradiated in Japan through dog vaccination and counter-measures against animal importation, many cases of infection exist worldwide. In addition, rabies is transmitted through bites not only from dogs but also from foxes, raccoons, and bats. If you will travel to Asia, Africa, or Middle/South America, rabies vaccinations are recommended.

● Cholera

In the past, diarrhea resembling water left over from washing rice was said to be the main symptom of cholera; however, currently, rare and varied symptoms such as soft stool and watery diarrhea are more common.
In cholera prevalent areas, such as South-East Asia, South Asia, and Africa, you should avoid consuming unboiled water, ice, and raw seafood.
An inactivated vaccine is used for cholera immunization. For adults over 13 years old, the vaccine is taken twice at a 5–7 day interval and lasts for 6 months. If an additional vaccine is received within the 6-month period, the duration will be prolonged for an additional 6 months.

● Yellow fever

Yellow fever is transmitted by mosquitos. Early phase symptoms resemble the common cold and gradually become more severe including nasal and gum bleeding and jaundice. Yellow fever mortality is very high (more than 50% among tourists), but a live vaccine is used for prevention. The vaccine is effective for 10 years, and health officials recommend obtaining a vaccination at a quarantine office or the Japanese Quarantine Association in Tokyo. All visitors to the endemic area and tourist by way of endemic area, the certification of vaccination (a yellow card) is required.

● Poliomyelitis (epidemic poliomyelitis)

Polio is transmitted from contaminated food and drinks; however, the virus is sterilized through heating. Although there were several outbreaks from poliomyelitis in the 1960s, the introduction of the Salk vaccine brought poliomyelitis completely under control in developed countries. However, it is still present in South Asia, the Middle East, and Africa. Polio sometimes leads to paralysis. A live vaccine was previously used for prevention, but an inactivated polio vaccine (IPV) was introduced in 2012.

● Japanese Encephalitis

Japanese encephalitis is transmitted by mosquitos that have bitten infected pigs. It is a very serious infectious disease with a high mortality rate. In the past, vaccination was provided in three doses; however, to prevent serious side reactions, a new vaccine was introduced in 2010.

● Influenza

In Japan, several million people are infected with influenza every year and several hundred people die. Influenza is transmitted by droplets or through direct contact. An inactivated vaccine is used for prevention. Because vaccination is recommended for elderly people, it has been supported by the public funding since 2001. Therefore, those who have a cardiac or chronic lung disease, diabetes mellitus, an immunodeficient condition, or are engaged in medical and nursing care services are also advised to get vaccinated. However, the vaccine's effects lasts less than a year; therefore, you should get a vaccine every year before the high season (October to November).
In 2009, H1N1 was prevalent among Japanese universities. In 2013, avian influenza(H7N9) was prevalent in China.

● Tuberculosis

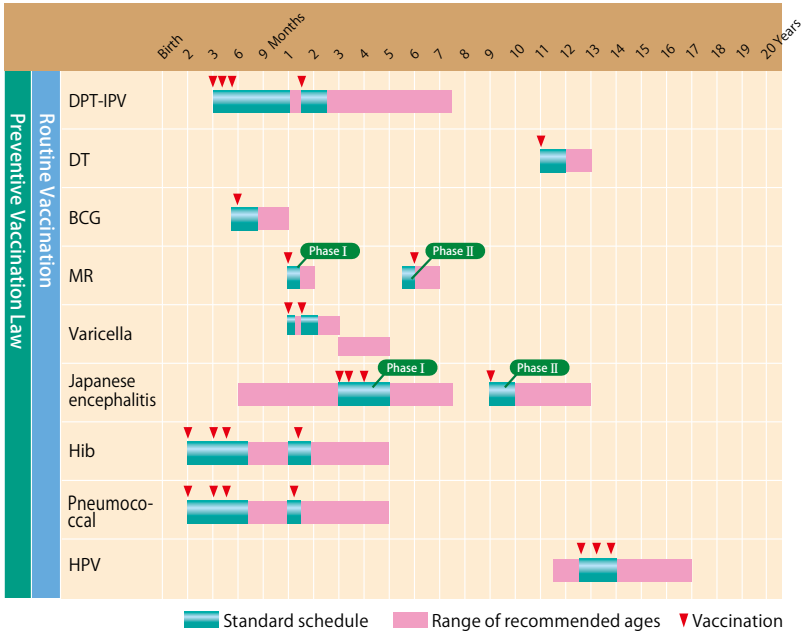
Tuberculosis is transmitted by an air-borne infection. It takes 6–8 weeks after contagion for symptoms to develop and more than 4 months for complete onset. The tuberculosis onset peaks within 2 years after contagion, but the risk of onset lasts for a lifetime because tubercle bacilli are latent in the body for life. In Japan, the BCG vaccination is provided as the standard universal vaccine for children aged 5–8 months old.

● Others

The vaccine for HPV, which leads to cervical cancer and condylomata acuminate, has been provided by public health services in Japan. However, this vaccine has been reported to have side reactions, and it is better to understand the risks and benefits before vaccination. Currently, a Haemophilus influenzae b (Hib) vaccine and a Streptococcus pneumoniae vaccine are provided as part of routine immunization. However, vaccines for dengue fever and malaria, which are transmitted by mosquitos, have not yet been developed.

● Routine immunization Calendar:

Based on the routine immunization schedule from the National Institute of Infectious Diseases (NIID) (October 1, 2014)



Immunization Records

Please have your immunization records with you.

You can find your records in your "mother-and-baby notebook," which includes your medical and welfare records. These records are very valuable for infection control on campus, and are very important for issuing the "Certificate of Immunization" prior to studying abroad.

Immunization Records

			times	date and year	hospital/clinic	company	Lot
Regular Vaccination	DPT D (Diphtheria) P (whooping cough) T (Tetanus)	I	1				
			2				
			3				
			4				
		II	5				
	BCG						
	MR M (Measles) R (Rubella)		1				
			2				
	Japanese encephalitis	I	1				
			2				
			3				
		II	4				
Recommended Immunization.	Acute poliomyelitis		1				
			2				
	Varicella		1				
			2				
	Mumps		1				
			2				
	Hepatitis B		1				
			2				
			3				
	Hepatitis A		1				
			2				
			3				
	Influenza						
	Tuberculin skin test						

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Infectious disease headlines news

An Ebola hemorrhagic fever epidemic occurred in West Africa in 2014, and the WHO declared a state of emergency.