

研究成果の刊行に関する一覧表

書籍

著者氏名	論文タイトル名	書籍全体の編集者名	書籍名	出版社名	出版地	出版年	ページ
加藤 達夫	受けましょう！子どもの予防接種 ～感染症から子どもを守ろう～	加藤達夫	受けましょう！子どもの予防接種 ～感染症から子どもを守ろう～	社会保険出版社	東京	2010	2・13
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Ⅲ.研究成果の刊行物・別冊



Vaccination

2010

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1 Infectious Diseases

Infectious Diseases

Our health has to be maintained and cherished. There are many infectious diseases that may ruin our health. In Japan, with good sanitary conditions and immunization programs, we normally do not have to worry too much about infections. Even in such a desirable environment, however, it is nearly impossible to prevent all infections caused by viruses and bacteria. Especially when a viral infectious disease starts going around, many people will contract it and some may even die since there are very few effective antiviral drugs. To live without worrying about these infections, we must therefore deepen our understanding of vaccinations and follow a well-planned immunization program, from infancy to adulthood.

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2 Pertussis (Whooping Cough)

Pertussis (Whooping Cough)

Pertussis is caused by *Bordetella pertussis*, transmitted by droplet infection. Early symptoms may be similar to those of common cold. Coughing gradually becomes more severe, developing into continuous coughing fits that are so intense that the face becomes red. Fever does not develop. Severe coughing may cause babies to have breathing difficulty, sometimes leading to spasms. Furthermore, some babies may die of serious complications such as pneumonia or encephalopathy.

☆ *Who should receive pertussis vaccine?*

When a baby is three months old, he can receive the first DPT vaccine (a combined vaccine against diphtheria, pertussis, and tetanus). Since this vaccine should be repeated several times over the following few years, parents are advised to be careful not to miss any subsequent shots.

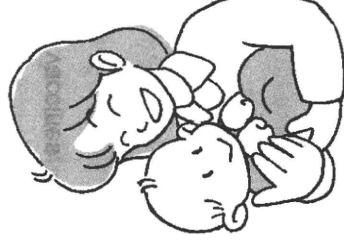
3 Diphtheria

Diphtheria

Few cases of diphtheria have been reported in Japan, but a diphtheria epidemic was previously observed in Russia and other regions of the world. This disease shows severe symptoms including breathing difficulty, with a fatality rate of over 10%. The heart and nerves are damaged, sometimes leading to heart attack and neuroparalysis. This is a dangerous disease, but it can be prevented by vaccination.

☆ *Who should receive diphtheria vaccine?*

For babies over three months of age, DPT vaccine (a combined vaccine against diphtheria, pertussis and tetanus) and DT-toxoid vaccine are available. Diphtheria toxoid vaccine for adult use is available.



4 Tetanus

Tetanus

Tetanus occurs when a wound is infected with *Clostridium tetani*. Some cases of tetanus result from a very small wound. The microorganism produces a very powerful toxin that causes neuroparalysis, painful muscle spasms, and breathing difficulty. The fatality rate is very high. Since tetanus vaccine is the only way to prevent tetanus, it is important to receive this vaccine at the earliest possible time after external injuries.

☆ *Who should receive tetanus vaccine?*

There are three kinds of vaccines against tetanus, namely, DPT vaccine (a combined vaccine against diphtheria, pertussis, and tetanus) DT-toxoid vaccine; and tetanus toxoid vaccine. Children over three months of age can receive any one of these vaccines.



5 Polio

Polio

Polio (infantile paralysis) is an infection caused by poliovirus, resulting in limbs paralysis. Currently no polio case is reported in Japan because of its high polio immunization rate. However, polio epidemics are still reported in some countries, and there is no way of knowing when the virus may land in Japan. There is also a risk of getting infected with poliovirus while visiting polioepidemic countries without immunization.

☆ *Who should receive polio vaccine?*

Babies should take an oral polio vaccine twice (a single dose is not enough to provide immunity against polio) between the ages of 3 and 90 months, with more than a forty-one day's interval between doses. It is desirable to complete the immunization before a baby reaches the age of 18 months.

6 Measles

Measles

Measles is caused by measles virus, transmitted by droplet infection, i.e., an air-borne infection. As the infection becomes stronger, many people catch the disease unless they receive vaccination. Its symptoms are severe, including high fever of 39–40°C and rash. Measles is sometimes complicated by pneumonia, otitis media, bronchitis, and acute encephalitis (inflammation of the brain), of which some patients may die. The mortality rate, i.e., the ratio of people who die of the disease, is one per several thousand persons infected with measles. There is no means of prevention other than vaccination. Japan declared to achieve elimination of measles by 2012.

☆ *Who should receive measles vaccine?*

Starting from April 2008, vaccination is administered to children aged one year (the 1st phase), to older children one year before admission into the elementary school (the 2nd phase), to junior high school first-year students aged 12 to 13 years (the 3rd phase) and to high school third-year students aged 17 to 18 years (the 4th phase). The vaccine used is either mixed measles and rubella (MR) vaccine or measles vaccine alone. In principle, MR vaccine is preferred.

7 Rubella (German Measles)

Rubella (German Measles)

Rubella is an infectious disease caused by the rubella virus with an epidemic season ranging from early spring to the beginning of summer. Its symptoms include rashes, fever, and swelling in the posterior cervical lymph nodes. If non-immune pregnant women contract the disease in their first trimester, their infants may be born with congenital rubella syndrome, manifested by cataracts, heart disease, hearing loss and other disorders. The only prevention measure is to have a vaccination.

☆ *Who should receive rubella vaccine?*

From April 2008, either the combined measles/rubella (MR) vaccination or the rubella vaccination is administered in the following phases. Phase 1: 1 year-olds. Phase 2: children in the academic year (April 1 – March 31) prior to the year they begin elementary school. Phase 3: 1st grade junior high school-aged children. Phase 4: 3rd grade high school-aged children. In general, the combined MR vaccination is administered.

8 Japanese Encephalitis

Japanese Encephalitis

Japanese encephalitis is caused by a virus transmitted by culex tarsalis (mosquitoes) during summer and autumn. This disease develops into acute encephalitis with symptoms including high fever, headache, vomiting, consciousness disorder, and spasms. Japanese encephalitis is a dangerous infectious disease with 50% of cases developing serious complications, such as sensory and motor disorders, and 15% of cases may die. The most effective preventive measure is vaccination.

☆ *Who should receive Japanese encephalitis vaccine?*

Children aged 3 to 12 years are eligible for routine vaccination. The basic immunization should be received between 6 and 90 months of age, in general, twice at the age of three years with an interval of 6 to 28 days between shots, followed by an additional shot in the following year. An additional shot should be received at the age of nine years. On 1 April 2010 the Ministry of Health, Labor and Welfare issued a notice on Japanese encephalitis vaccinations, which are now again being actively recommended. Further information is available at the relevant office in the municipal governments.

9 Tuberculosis (TB)

Tuberculosis (TB)

More than 24,000 people contract this disease every year, and nearly 2,200 cases are fatal. Tuberculosis is one of the most dangerous infectious diseases in Japan. Babies should especially be watched carefully not to contract TB, since its complications, e.g., meningitis and miliary tuberculosis, have bad prognoses. It is recommended that BCG vaccination should be received at the earliest possible time after birth to prevent natural infection.

☆ *Who should receive BCG vaccine?*

Babies less than six months of age should receive BCG vaccine. It is desirable to have them immunized between the ages of three months and less than six months. In municipalities with special circumstances such as geographic conditions, transportation conditions, and the disasters, babies less than one year of age are vaccinated.

10 Influenza

Influenza

Influenza is different from common cold. It is a serious infectious disease with severe respiratory symptoms. This virus can spread on a global scale. Some cases may develop complications such as pneumonia, acute otitis media and encephalitis, which may lead to a more severe condition. Vaccination is an effective precautionary measure to prevent the disease progression. It is strongly recommended that babies, young children, the elderly, and those with chronic diseases receive influenza vaccine.

☆ *Who should receive influenza vaccine?*

You can receive the influenza vaccine at most medical facilities. The vaccination is recommended once or twice with a one- to four-week interval prior to the beginning of influenza season. Routine vaccination is recommended for those over the age of 65 years and those between the age of 60 and 65 years who suffer from serious diseases in the heart, kidney and/or respiratory organs.

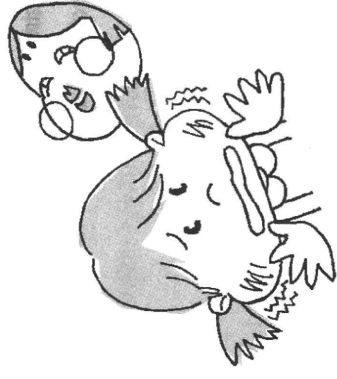
11 Mumps

Mumps

Mumps is characterized by fever and swollen parotid gland, caused by mumps virus, which is very virulent. This disease should not be taken lightly since the virus infects internal organs and nervous tissues throughout the body, resulting in complications such as aseptic meningitis, encephalitis, defective hearing, and testicular inflammation. It is important to be immunized with mumps vaccine.

☆ *Who should receive mumps vaccine?*

Optional mumps vaccinations can be received beginning at the age of 1 year. Because mumps often afflicts those aged 3 to 6, it is recommended that optional vaccinations be received before reaching the age of 3 years.



12 Varicella (Chicken Pox)

Varicella (chicken pox)

Varicella (chicken pox) is caused by varicella-zoster virus infection. People contract the disease mostly before reaching adulthood. Children with leukemia, malignancy, and nephrosis who are treated with steroid hormones have weak immunity. Therefore, if such children contract varicella-zoster virus, symptoms are prone to develop into critical conditions. When a woman in the early stage of pregnancy contracts varicella, miscarriage will very likely occur. If she is in a late stage of pregnancy, her newborn baby may not live. It is important to receive varicella vaccine.

☆ *Who should receive varicella vaccine?*

By the age of 5 years, 80% of children contract varicella. Children over 12 months of age can receive varicella vaccine.

13 Hepatitis A

Hepatitis A

Hepatitis A is orally contracted through water and food contaminated with hepatitis A virus. While it is generally an inapparent infection in babies, most adults develop symptoms such as fever over 38°C, general malaise, diarrhea, and jaundice, which usually take one to two months to cure. One of the rare complications is fulminant hepatitis.

☆ *Who should receive hepatitis A vaccine?*

Those who are at least 16 years old should receive two vaccinations at an interval of 2 to 4 weeks followed by a third vaccination 24 weeks after the initial vaccination. For those in a hurry to develop immunity, the two vaccinations at a 2-week interval will provide a degree of immunity, but the third vaccination is required for long-term immunity. There is always a risk of infection in developing countries but cases of food-borne infection also occur in Japan so caution is required.

14 Hepatitis B

Hepatitis B

Hepatitis B is a liver disease caused by hepatitis B virus, transmitted by direct contact with the blood or body fluids of an infected person. A person who is persistently infected with the virus is called “hepatitis B carrier.” A carrier has a high risk of developing chronic hepatitis, cirrhosis, and liver cancer. A baby born to a carrier also has a high risk of becoming a carrier. It is important to get vaccinated.

☆ *Who should receive hepatitis B vaccine?*

The national health insurance policy covers expenses of hepatitis B vaccines required for a baby born to a hepatitis B carrier mother. The following people should receive the vaccine: those who have chances of direct contact with blood, (e.g., those engaging in medical care services, ambulances and fire station), and technicians working at blood examination centers. Family members of a hepatitis B carrier are also possible recipients of the vaccine.

15 Pneumococcal Infections

Pneumococcal Infections

Pneumococcus is the causative organism for meningitis, bacteremia, pneumonia, bronchitis, and otitis media. Pneumococcus is also notable as the most common bacterial cause of pneumonia. The elderly and those with chronic lung disease are more susceptible to pneumonia and more likely to be affected severely. Pneumococcal meningitis among children results in sequelae more frequently than other bacterial meningitis, and often results in death. In recent years there has been an increase in pneumococcus resistant to penicillin and other antibiotics, complicating treatment. This makes prevention with vaccines all the more important.

☆ *Who should receive pneumococcal infections*

Two types of vaccines to prevent pneumococcus are currently sold in Japan. Pneumococcal polysaccharide vaccine is mainly used for adults and for those over 2 years of age with underlying diseases such as pulmonary or cardiac diseases, diabetes, or a history of splenectomy due to either disease or injury. Pneumococcal conjugate vaccine is used for children between 2 months and 9 years of age. Although the number of required shots differs depending on the age of the vaccinee, the standard schedule requires four shots.

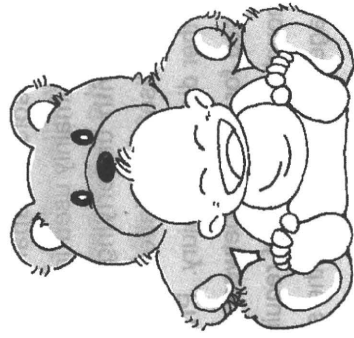
16 Haemophilus Influenzae type b (Hib)

Haemophilus Influenzae type b (Hib)

Haemophilus Influenzae type b (Hib) infects human-to-human by air-droplets. If infected, patients may show flu-like symptoms, however, it may cause inflammation on meninges, which cover brain and spinal code (meningitis). It is estimated about 600 babies suffer from Hib meningitis. 25% of those have sequela and 5% die. Although Hib meningitis is a very difficult disease to diagnose and treat, vaccine can prevent it.

☆ *Who should receive Hib vaccine?*

Babies can be vaccinated from the age of two month. As the number of vaccination, four times, is large, please be careful about missing the vaccination.



17. Cervical Cancer

Cervical Cancer

Cervical cancer is cancer made the vicinity of the entrance of the womb. Recently, it is young people in his thirties, and it exists from one's twenties in the increasing tendency. In cervical cancer, continued infection of the virus of oncogenic human papilloma virus (HPV) is a cause. Being infected to this virus is never special, and if it is a woman who has the sexual intercourse experience, has the possibility with which everyone is infected though is infected HPV the neck of womb by most having sexual intercourse. It is naturally excluded in case of almost even if it is infected with HPV. However, infection might continue without excluding the virus for a long term. With the case in the small portion, it develops disregarding it for several years between several decades.

☆ *Who should receive HPV vaccine?*

The vaccination object of the HPV vaccine is ten-year-old or more woman, and the upper bound is not provided. Vaccinating it by the age before the sexual debut is the most effective. Even the adult female thinks that there is a vaccination meaning enough from the following point of prevention of transmission because might it be naturally excluded in many cases even if it is infected with oncogenic HPV and it be infected it repeated many times. The vaccination that can be put in especially 45 years old is recommended.

18 Vaccinations Required for Overseas Travel

Vaccinations Required for Overseas Travel

Although there are numerous infectious diseases around the world, when you receive the vaccines available in Japan before going abroad according to proper guidance, the risk of contracting such diseases can be minimized. Especially when your child goes to study abroad, or when you and your family move to a foreign country for work-related purposes, it is recommended that you receive vaccines according to a well-planned vaccination schedule before leaving Japan. More detailed information is available at embassies, local quarantine offices, and the web sites listed below.

- Information about infectious diseases overseas, by the Ministry of Health, Labour and Welfare Quarantine Station:
 - ▶ <http://www.forth.go.jp/>
- Japan Labour Health and Welfare Organization:
 - ▶ <http://www.rofuku.go.jp/sanpo/kinrosyashien/index.html>
- Information collected from doctors who are stationed at overseas Japanese Government establishments, the Ministry of Foreign Affairs:
 - ▶ <http://www.mofa.go.jp/mofaj/toko/medi/index.html>
- Safety information provided by the Ministry of Foreign Affairs :
 - ▶ <http://www.anzen.mofa.go.jp/>

19. Vaccination Instructions

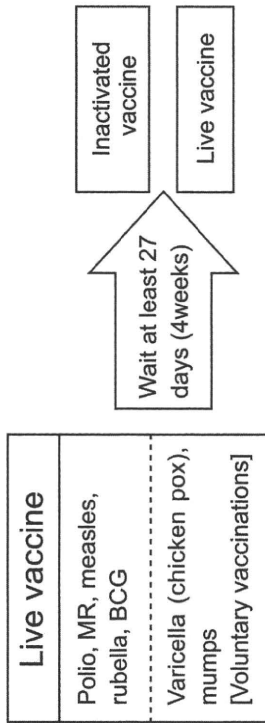
Vaccination Instructions

Before and after your child receives a vaccine, it is important to closely monitor his general health condition. If you have any concerns, you should consult your family doctor or a public health nurse.

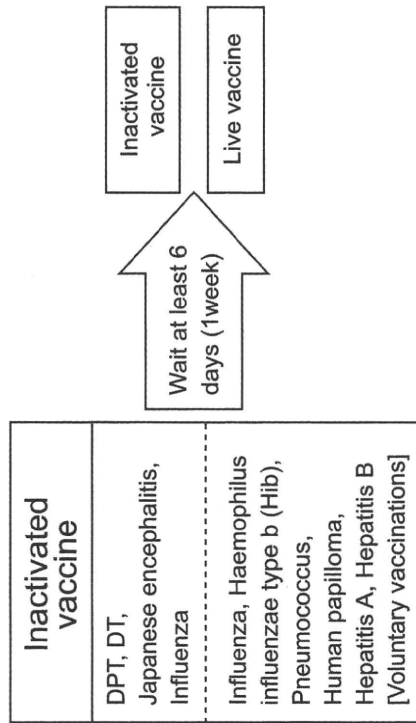
☆ *Before vaccination*

- ① Read vaccination notices and immunization program brochures carefully before vaccination. If you have any questions, be sure to ask the on-site staff before vaccination.
- ② Bathe and clean your child on the day before vaccination.
- ③ Dress your child in clean clothes.
- ④ Bring your vaccination consent form, maternity passbook, official notices and any other required documents as instructed by your municipality.
- ⑤ On the day of vaccination carefully monitor your child's condition and complete all necessary information on the vaccination consent form. Follow the instructions of your doctor, nurse, or public health official when receiving the vaccination.

20 Vaccination Intervals



(At least 27 days, counting from the day following the administration of a live vaccine, must lapse before another type of vaccine can be administered.)



(At least 6 days, counting from the day following the administration of an inactivated vaccine, must lapse before another type of vaccine can be administered.)

☆ After vaccination

- ① Remain on site for 30 minutes after vaccination and closely monitor your child's condition. If you must leave the site immediately after vaccination, be sure to have a way to contact your doctor because sudden adverse reactions commonly occur during this period.
- ② For four weeks in the case of live vaccines and one week in the case of inactivated vaccines, carefully monitor your child's condition including the location where the vaccine was administered. If you have any concerns, consult your doctor, nurse or public health official.
- ③ Do not let your child take part in strenuous activities on the day of vaccination, including before the vaccination.
- ④ The child may take a bath or shower on the day of vaccination but do not rub the region where the vaccine was injected.

Protect your child's health by undergoing vaccinations with proper knowledge.

*However, multiple vaccinations that have not been combined in advance may be administered simultaneously if a doctor deems it necessary.

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