Infectious diseases that affect children

Between the ages of 0 and 6 months, infants have a low risk of contracting infectious diseases due to antibodies they receive from their mothers during pregnancy.
However, after 6 months, these antibodies decrease, making infants more susceptible to infections.
In this guide, we introduce some of the more common infectious diseases that can be prevented through vaccination.

● Measles (hashika in Japanese)

Measles is caused by the measles virus,
which is highly contagious. A person without immunity who comes into contact with an infected individual has nearly a 100% chance of contracting the virus.
Measles primarily spreads through airborne transmission. It can also spread through droplet transmission via the coughs and sneezes of an infected person, as well as through contact transmission when contaminated hands touch the mouth or nose.

Signs and symptoms:

The incubation period lasts 10 to 12 days, after which a fever of around 38˚C and cold-like symptoms develop for 2 to 4 days. This is followed by a fever of 39˚C or higher and a rash.
Common complications include pneumonia and middle ear infections. Encephalitis and blindness may rarely develop, and in severe cases, they can lead to death.

Prevention:

Vaccination is the most effective way to prevent infection.
The measles and rubella combination vaccine (MR vaccine) is administered as part of the routine vaccination programs.
Current guidelines recommend that the MR vaccine be administered in two doses: the first at one year of age and the second in the year before the child enters elementary school.

● Rubella (fushin in Japanese)

Rubella is caused by the rubella virus.

Signs and symptoms:

The incubation period lasts 2 to 3 weeks, after which a fever develops. Usually, the following day, a small red rash appears on the face before spreading to the rest of the body.
In some cases, lymph nodes behind the ears and at the back of the head may

swell and become painful.

Prevention:

Vaccination is the most effective way to prevent infection.

The MR vaccine is administered as part of the routine vaccination programs.

Current guidelines recommend that the MR vaccine be administered in two doses: the first at one year of age and the second in the year before the child enters elementary school.

Other:

If a mother is infected with rubella during pregnancy and the fetus becomes infected, it can result in stillbirth or miscarriage, or the baby may be born with a condition known as congenital rubella syndrome. Therefore, pregnant women and women of childbearing age should take special precautions to avoid the infection.

- **Chickenpox (mizuboso in Japanese)**

Chickenpox is caused by the varicella zoster virus.

It can be spread through droplet transmission via the coughs and sneezes of an infected person, as well as through contact transmission from blister fluid or mucus.

The contagious period of chickenpox begins 1 to 2 days before the onset of the rash and continues until all blisters have formed scabs.

Signs and symptoms:

The incubation period lasts 10 to 21 days. Chickenpox typically results in an extremely itchy rash.

The rash first appears on the scalp and face, before new rashes spread to the chest, arms and legs, and then to the rest of the body.

Chickenpox rashes begin as red spots (erythema), which develop into a slightly pointed raised bumps (papules). These papules then become fluid-filled blisters (vesicles), and finally, scabs (crusts) form as the blisters break open.

In some cases, a fever of around 38˚C or tiredness develops for 2 to 3 days. However, these symptoms are usually comparatively mild.

Prevention:

Vaccination is the most effective way to prevent infection. The chickenpox vaccine is administered as part of the routine vaccination programs.

Current guidelines recommend that the vaccine be administered in two doses between the ages of 12 and 36 months.

- **Rotavirus (rotauirusu in Japanese)**

The rotavirus causes acute gastroenteritis.

It is primarily transmitted through the fecal-oral route via contaminated hands and fingers.

Signs and symptoms:

The incubation period lasts 2 to 4 days, after which severe diarrhea, vomiting, abdominal pain, and fever may develop.

Symptoms are most severe during the first infection, especially in infants, who are at higher risk of severe dehydration. In some cases, hospitalization may be required.

Prevention:

Vaccination is the most effective way to prevent infection. The rotavirus vaccine is administered as part of the routine vaccination programs.

Rotavirus vaccines are for oral administration only. The dosage and intervals between doses depend on the specific to the brand of the rotavirus vaccine.

- **Mumps (otafukukaze in Japanese)**

Mumps is caused by the mumps virus.

It is commonly seen in children aged 3 to 6 who have recently started attending kindergarten or other group settings, but it can also affect individuals of other ages.

Once infected, lifelong immunity is typically acquired. However, some individuals may contract mumps for the first time in adulthood.

Signs and symptoms:

The incubation period lasts about 2 to 3 weeks, after which the parotid glands (which produce saliva) under the ears become inflamed, causing swelling. Swelling typically occurs on both sides of the face, though it may sometimes affect only one side.

Prevention:

Vaccination is the most effective way to prevent infection.

Current guidelines recommend that the mumps vaccine be administered in two doses: the first at one year of age and the second in the year before the child enters elementary school.

- **Influenza (infuruenza in Japanese)**

Influenza is a respiratory infection caused by the influenza virus.

Compared to the common cold, influenza is more likely to cause systemic symptoms.

It primarily spreads through droplet transmission via the coughs and sneezes of an infected person, and can also spread through contact transmission when contaminated hands touch the mouth or nose.

Signs and symptoms:

The incubation period lasts 1 to 3 days, after which a fever of 38°C or higher develops, accompanied by headaches, coughing, a sore throat, a runny nose, muscle pain, and joint pain.

Gastrointestinal symptoms, such as vomiting and diarrhea, may also occur. In children and individuals with weakened immune systems, influenza can lead to complications such as pneumonia or encephalitis.

Prevention:

Effective preventive measures include frequent hand-washing, proper ventilation, and ensuring that infected individuals cover their mouths and noses with masks or handkerchiefs when coughing or sneezing.

Although vaccines do not provide complete protection against infection, they help prevent both the onset and severity of illness.