





## Information on Measles, Mumps, Rubella & Varicella (MMRV) Vaccine / Measles, Mumps & Rubella (MMR) Vaccine

### ● Measles

Measles was a common childhood infection prior to the introduction of measles vaccine. Affected persons will present initially with fever, cough, runny nose, red eyes and white spots inside the mouth. This is followed 3 to 7 days later by a red blotchy skin rash, which usually spreads from face to the rest of the body. The rash usually lasts 4 - 7 days, but can persist for up to 3 weeks leaving with brownish staining and sometimes fine skin peeling. In severe cases, lung, gut and brain can get involved and lead to serious consequences or even death.

Measles infection in pregnancy can result in adverse pregnancy outcomes, including pregnancy loss, preterm birth, and low birth weight, but there is no evidence to support an increased risk of congenital defects. Moreover, neonates who get infected because the mother had measles shortly around the period of delivery are at an increased risk of subacute sclerosing panencephalitis (a very rare but fatal disease of the central nervous system) in later life.

### ● Mumps

Mumps is an acute contagious viral disease characterised by painful swelling of the salivary glands, usually at the cheek(s). Sometimes, there may be complications like deafness, or infection of the brain, pancreas, testicles or ovaries.

### ● Rubella

Rubella is an acute contagious viral disease usually presents with a diffuse rash, fever, headache, malaise, enlargement of lymph nodes, upper respiratory symptoms and conjunctivitis. The rash usually lasts for about 3 days, but some patients may not have rash at all. Arthralgia or arthritis occurs more commonly in adult women with rubella. Rubella infection can also cause anomalies in the developing foetus. Congenital rubella syndrome, characterised by deafness, cataract, heart malformations, mental retardation etc., is likely to occur in infants born to women who got infected during the first 3 months of pregnancy.

### ● Chickenpox (varicella)

Chickenpox is an acute infectious disease caused by the varicella-zoster virus. It predominantly affects children under 12 years of age. Patient usually presents with fever and itchy skin rashes. Rashes develop in crops over a period of 5 days on body, then spread to the face, arms and legs. Infection in early pregnancy may be associated with congenital malformation of the fetus. Although almost all persons develop lifelong immunity after chickenpox infection, the virus may remain latent in the body and recur many years later as herpes zoster (shingles).

**The above four types of diseases can all be effectively prevented by immunisation.**

---

### (I) Who should get MMRV/MMR vaccine?

Varicella vaccine has been incorporated into the Hong Kong Childhood Immunisation Programme and is applicable to children **born on or after 1 Jan 2013**. The Department of Health provides three doses of vaccines to these children. Details are as follows:

- (1) MMR vaccine and varicella vaccine are given to all children at one year of age in Maternal and Child Health Centres.
- (2) MMRV vaccine is given to all students at schools by the Department. A mop-up campaign is arranged for primary school students who have not completed the vaccination.

For those **born before 1 Jan 2013**, the Department of Health provides two doses of MMR vaccine to children instead.

### (II) Children with the following conditions should not receive MMRV/MMR vaccine

- (1) Leukaemia, lymphoma or other forms of malignancies.
- (2) Active untreated tuberculosis.
- (3) Under treatment that will weaken immunity, such as steroids, irradiation or cytotoxic drugs.
- (4) Immunodeficiency states, such as AIDS or hypogammaglobulinemia.
- (5) Severe allergic reaction to neomycin, gelatin, sorbitol or any contents of this vaccine.
- (6) Severe allergic reaction to MMR, varicella vaccine or any content of these vaccine.
- (7) History of injection of immunoglobulin or blood transfusion within the past one year.
- (8) **History of injection of live vaccine within the past four weeks**, including BCG vaccine, oral polio vaccine, **live attenuated influenza vaccine (nasal spray)**.
- (9) Pregnancy.

Apart from the above, students with history of injection of varicella vaccine within the past 3 months should not receive MMRV.

### (III) Points to note before MMR/MMRV immunisation

- (1) Student with a mild cold or cough on the day of vaccination can receive the vaccine. (Students with symptoms of upper respiratory tract infection should wear surgical masks.) However, vaccination should be postponed until recovery if the student has a fever.
- (2) Student with mild reaction (e.g. localised rash) after egg ingestion can be vaccinated in the usual manner. Student with **severe reaction after egg ingestion** (e.g. difficulty in breathing or coma) should consult doctor

- before receiving this vaccination.
- (3) Student with a history of cerebral injury, or with individual or family history of convulsions, should also consult doctor before receiving this vaccination.
  - (4) **Female recipients of MMR/MMRV vaccine should not get pregnant within three months after vaccination.** The Maternal and Child Health Centres of the Department of Health can provide contraceptive service if required.

**Points to note before MMRV immunisation in addition**

- (5) Students can receive MMRV according to the Hong Kong Childhood Immunisation Programme regardless of their history of varicella infection. Prior history of varicella infection is not contraindication to MMRV or varicella vaccine. Moreover, varicella disease at less than 12 months of age has been associated with an increased risk of a second episode of varicella. If students have history of clinician diagnosed chickenpox or herpes zoster (shingles) and their parents do not wish these students to receive MMRV, parents should clearly document this medical history in the Immunisation Record (DH6).
- (6) Eligible students **aged 13 or above** should receive MMR and Varicella Vaccine instead of MMRV.
- (7) Students should avoid use of salicylates (e.g. aspirin) for 6 weeks after vaccination.
- (8) Rarely, the varicella virus in the vaccine may transmit from vaccine recipients who develop a varicella-like rash to susceptible high-risk individuals (e.g. immunocompromised, pregnant women without immunity to chickenpox, newborn infants of mothers without immunity to chickenpox, all newborn infants born at less than 28 weeks gestation). However, it is not a contraindication for a child to receive varicella vaccine just because there is high risk individual in the same household. A pregnant mother or other household pregnant member is also not a contraindication for immunisation of a child in the household. No precautions are needed following immunisation of a child who does not develop a rash. However, if the child develops a rash post-vaccination, high risk individuals should avoid close contact with the child until the rash has resolved.

**(IV) Possible reactions after immunisation**

Some students may have the following adverse reactions after MMRV immunisation:

- (1) Mild and short lasting conditions:
  - Injection site reactions including pain, redness, swelling or bruising. Parents may apply cold compress to relieve the symptoms.
  - Fever. Parents can provide the student with anti-fever medication to relieve the symptoms if indicated.
  - Irritability, vomiting and diarrhea
  - Upper respiratory infection.
  - Rash on face or body or at injection site, up to a month after vaccination.
  - Transient joint pain.
- (2) Uncommon conditions:
  - Increased risk of febrile seizures has been reported in children under 2 years old receiving MMRV. However, there is no evidence on association between febrile seizure and MMRV vaccine among children aged 4-6 years old.
  - Herpes zoster (shingles) following varicella vaccination has been reported. The majorities of cases have been mild and without sequelae. Current data suggests children vaccinated may have a lower risk of herpes zoster compared to those with natural varicella infection,
- (3) Severe but extremely rare conditions:
  - Severe allergic reactions.
  - Infections of the brain or its coverings after receiving MMR-containing vaccine have been reported. However these conditions are very rare and usually do not have long lasting ill effects on the students after recovery.

Some students may have the following adverse reactions within 2 weeks after MMR immunisation:

- (1) Mild conditions:
  - Fever may last for 1-2 days. Parents can provide the student with anti-fever medication to relieve the symptoms if indicated.
  - Rash on face or body may last for 2 days.
  - Transient swelling of salivary glands or lymph nodes.
  - Transient joint pain.
- (2) Severe but extremely rare conditions:
  - Severe allergic reactions.
  - Infections of the brain or its coverings after receiving MMR vaccine have been reported. However these conditions are very rare and usually do not have long lasting ill effects on the students after recovery.

School Immunisation Teams  
Centre for Health Protection  
Department of Health