

# Measles

## FactSheet For Parents and Caregivers



### What is measles?

Measles, also known as 'English measles', morbilli or rubeola; is a potentially serious, highly infectious disease caused by a virus.<sup>1</sup>

### How do you catch measles?

Measles is spread through the air by infectious droplets or direct contact with secretions from the nose or throat of infected persons,<sup>1</sup> for example by touching items or surfaces contaminated with secretions. The person with measles is most infectious during the first 2-4 days of symptoms and stays infectious until 3-4 days after the rash appears.<sup>1</sup> It usually takes 10-12 days from exposure to the first symptom.<sup>1</sup>

### How common is measles?

Measles has moved from first to third place in the list of most common vaccine-preventable causes of death among children throughout the world since the launch of the Measles Initiative in 2001.<sup>2</sup> The Measles Initiative's strong focus on immunisation to protect against measles contributed to a reduction in deaths from measles globally by 78% between 2000 and 2008.<sup>3</sup> In countries which have consistently very high immunisation coverage measles only occurs when it is brought in by those travelling from other countries.

In 1991 New Zealand had a large measles epidemic with 600 hospitalisations and seven deaths. The last epidemic was in 1997 with 2000 notifications, 300 hospitalisations and no deaths; the number of cases in this epidemic was reduced through an immunisation campaign.<sup>4</sup>

New Zealand continues to have outbreaks of measles, although at lower rates than previously. Due to higher immunisation rates in children by the age of two years outbreaks particularly affect unvaccinated older children, teenagers and adults.

### Who is most at risk of getting measles?

Anyone who has not received at least one dose of a measles containing vaccine e.g., the combined measles, mumps, rubella (MMR) vaccine.

### How serious is measles?

Complications from measles are common. The measles virus suppresses the immune system, lowering the body's ability to fight other infections.<sup>1</sup>

- Common complications include ear infections (7-9%), diarrhoea (8%), and pneumonia (1-6%).<sup>1</sup> Pneumonia accounts for nearly two thirds of measles deaths.<sup>1</sup>
- One in 1,000-2,000 cases develop encephalitis (inflammation of the brain), of these 15% die and approximately one third are left with permanent brain damage.<sup>1</sup>
- One in 100,000 cases will, many years later, develop subacute sclerosing panencephalitis (SSPE, a degenerative brain disease). This condition is always fatal.<sup>1</sup>
- Other complications include immune thrombocytopenic purpura (ITP, affecting the blood clotting) and inflammation of the small airways in the lungs, heart, kidneys or liver.<sup>1</sup>

- The risk of complications and death are higher in children under 5 years and adults over 20 years of age.<sup>1</sup>
- Measles during pregnancy increases the risk of miscarriage and premature labour.<sup>1</sup>
- Anyone who has a weakness of their immune system is at greater risk of very serious disease. These people are often unable to be immunised and rely on protection from those around them being immunised.
- Death occurs in approximately 1-3 in 1,000 reported cases of measles overall in western countries.<sup>1</sup>

### What are the symptoms of measles?

The illness begins with fever, cough, runny nose and conjunctivitis (inflammation in the eyes), which lasts for 2-4 days. It may be possible to see small white spots (Koplik spots) inside the mouth. A rash appears 2-4 days after the first symptoms, beginning at the hairline and gradually spreading down the body to the arms and legs. The rash lasts for up to one week.<sup>5</sup>

### How do you prevent measles?

Immunisation given on time is the best way to prevent measles.

In the event of a measles outbreak unimmunised children with no history of prior measles infection who have contact with infected cases are advised NOT to attend school or early childhood services for 14 days after the last contact.<sup>4</sup>

### Which vaccines protect against measles?

The measles vaccine was introduced in New Zealand in 1969 and replaced by the combined measles, mumps, rubella (MMR) vaccine in 1990.<sup>4</sup>

The combined measles, mumps, rubella vaccine is the only vaccine available in New Zealand to prevent measles.

### How effective is the MMR vaccine against measles?

After the first dose of the MMR vaccine about 90-95% of people will be protected against measles. After the second dose almost everyone is protected.<sup>5</sup>

### Do you need both doses?

Yes. It is recommended that two doses of the MMR vaccine are given after the age of 12 months (at least one month apart). If only one dose is given 5-10 people out of every 100 immunised will not be protected against measles.

### How safe is the MMR vaccine?

The risk of the MMR vaccine causing serious harm is extremely rare. The MMR vaccine is considerably safer than getting measles (or mumps or rubella). A table comparing the effects of measles with the side effects of the vaccine is on page three.

The MMR vaccine should NOT be given to people with a severe weakness of their immune system.<sup>5</sup>

### Can the MMR vaccine cause measles?

No. However, the vaccine may cause a fever and non-infectious rash around 7-12 days after immunisation.<sup>6</sup>

Healthy close contacts of pregnant women or those with an immune system weakness should be given the MMR vaccine.<sup>5</sup>

Breastfeeding is NOT a contraindication to vaccination of either the woman or the breastfeeding child.<sup>5</sup>

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### Can the MMR vaccine cause autism?

Extensive research has been conducted into whether the MMR vaccine contributes to the development of autism. There is no evidence that the MMR vaccine causes autism.<sup>5</sup> More detailed information is available on our website.

### Who should get the MMR vaccine?

#### Children:

The first dose of the MMR vaccine is due at 15 months of age and the second at 4 years of age. However, parents can request that the first MMR vaccine be given anytime from 12 months of age and the second anytime one month after the first.<sup>4</sup>

During an outbreak of measles a Medical Officer of Health may recommend that a baby in close contact with measles and aged 6-12 months of age have an extra MMR vaccine dose. When a baby this young has an MMR vaccine they still need two doses after they are 12 months old.<sup>4</sup>

#### Adults:

- Adults born prior to 1969 are expected to have been exposed to measles and are considered immune.<sup>4</sup>
- Those born between 1969 and 1981 should have a dose of the MMR vaccine if they are:
  - A student in post-secondary education.<sup>4</sup>
  - A healthcare worker and have not already had two doses of the MMR vaccine.<sup>4</sup>
  - Living or working in an institutional care setting.<sup>4</sup>
  - Travelling to a country with high rates of measles and do not have immunity.<sup>4</sup>
- Any woman of child bearing age who is not immune to rubella.<sup>4</sup>

### Can people with an egg allergy have the MMR vaccine?

Yes. Two studies of over 1200 children with severe egg allergy showed that these children safely received the MMR vaccine.<sup>1</sup> Those with anaphylaxis to egg can be vaccinated in general practice following the usual processes for safe immunisation.<sup>5</sup>

### Who should not have the MMR vaccine?

- Anyone who has experienced a severe allergy (anaphylaxis) to a previous dose of any measles containing vaccine or any of the vaccine components.<sup>5</sup>
- Anyone who is acutely unwell.<sup>5</sup> The presence of a minor infection is not a reason to delay immunisation.
- Anyone with a diagnosed weakness of their immune system.<sup>5</sup>
- Anyone who has received another live vaccine, including varicella (chicken pox) and BCG vaccines, within the previous month.<sup>5</sup>
- Women who are currently pregnant (women should delay pregnancy for one month after having the vaccine).<sup>5</sup>
- Babies under 12 months of age, except on the advice of a Medical Officer of Health during a measles outbreak.<sup>4</sup>

### Who should seek more advice before having the MMR vaccine?

- Anyone who has received human immunoglobulin or a blood transfusion within the previous 11 months.<sup>5</sup>
- Anyone who developed thrombocytopenia (ITP) after a previous dose of measles containing vaccine.<sup>5</sup>
- Anyone who is unsure if they have a weakness of their immune system or is taking medication to suppress their immune system.<sup>5</sup>
- People who are HIV positive.<sup>5</sup>

### What if a woman has MMR and then finds out she is pregnant?

Research in the US, Germany and the UK found no injury to the unborn child when the MMR vaccine was inadvertently given just before or during pregnancy.<sup>7</sup>

### Does the MMR vaccine contain thiomersal or mercury?

No. There are no preservatives in the MMR vaccine.

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Disease	Effects of disease	Side effects of the vaccine
A highly contagious viral illness causing fever, cough and rash.	<ul style="list-style-type: none"> <li>Otitis media (ear infection): 7-9 in 100.<sup>1</sup></li> <li>Diarrhoea: 8 in 100.<sup>1</sup></li> <li>Pneumonia: 1-6 in 100.<sup>1</sup></li> <li>Immune thrombocytopenic purpura (ITP, affecting the blood clotting) and inflammation of the small airways in the lungs, heart, kidneys or liver can occur.<sup>a,1</sup></li> <li>Encephalitis (brain inflammation): 1 in 1000-2000.<sup>1</sup></li> <li>Subacute sclerosing panencephalitis (SSPE, a degenerative brain disease): 1 in 100,000.<sup>1</sup></li> <li>The risk of complications and death are higher in children under 5 years and adults over 20 years of age.<sup>1</sup></li> <li>Maternal measles increases risk for miscarriage and premature labour.<sup>a,1</sup></li> <li>Overall death rate of 1-3 in 1000.<sup>1</sup></li> </ul>	<ul style="list-style-type: none"> <li>About 1-3 in 100 experience a fever, and 1-2 in 100 a rash, 7-12 days after immunisation.<sup>6</sup></li> <li>About 1-2 in 100 experience facial or 'under jaw' swelling 10-14 days after immunisation.<sup>8</sup></li> <li>Less than 1 in 100 children<sup>6</sup> but about 25 in 100 adult women experience temporary joint pain 1-3 weeks after immunisation.<sup>5</sup> Fever and swollen lymph nodes can also occur.<sup>5</sup></li> <li>About 1 in 40,000 develop immune thrombocytopenic purpura (ITP) within 6 weeks of immunisation.<sup>9</sup> The majority of cases recover with no long term health problems.<sup>10</sup></li> <li>Aseptic meningitis from the mumps component: (1 in 800,000-one million).<sup>8</sup> Long term harm from vaccine related aseptic meningitis is rare.<sup>a,8</sup></li> <li>Anaphylaxis: (1-3.5 in one million).<sup>1</sup></li> <li>Encephalitis: (less than 1 in one million).<sup>5</sup></li> </ul>

<sup>a</sup> Exact increases in risk for these complications have not been established through research.

Vaccines are prescription medicines. Talk to your doctor or nurse about the benefits or any risks.

### References

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