

# Rotavirus

## FactSheet For Parents and Caregivers



### What is rotavirus?

Rotavirus is a highly contagious virus that causes a bowel (gut) infection with fever, vomiting and diarrhoea (gastroenteritis) in babies and young children. Without immunisation almost all children get a rotavirus infection before 5 years of age. It is the most common cause of diarrhoea (watery or loose stools/poos/tūtae) and dehydration in babies and young children in all countries. Adults can also get a rotavirus infection.

### How do you catch it?

Rotavirus generally occurs in winter and early spring. Large amounts of rotavirus are present in the stools of those with the infection and it is mainly spread by the faecal-oral route, for example incomplete hand washing after changing nappies, using the toilet or touching a contaminated surface and handling food or eating.

Rotavirus can survive on hands for at least 4 hours<sup>1</sup> and on inanimate objects, such as change tables, taps, door handles, toys and utensils for approximately 2 months.<sup>2</sup>

### What are the symptoms of rotavirus?

The illness begins with the sudden onset of fever, vomiting, and diarrhoea. The fever usually lasts for 1–2 days, vomiting for around 3–6 days and diarrhoea for around 5–6 days.

### How serious is it?

Feeling too sick to drink and loss of liquid from vomiting and diarrhoea can cause severe dehydration that needs medical treatment. In New Zealand rotavirus infection causes one child in 52 to be hospitalised by 3 years of age<sup>3</sup> and one child in 43 by 5 years of age.<sup>4</sup> In New Zealand death from rotavirus infection is rare.<sup>3,4</sup> Each time we are exposed to rotavirus we develop more protection against it; healthy adults with rotavirus infection usually have mild symptoms.

### Who is most at risk from rotavirus?

Most symptomatic infections occur in babies and children between 4–24 months of age.

### How do you prevent it?

The spread of rotavirus can be reduced by thorough hand washing using soap after changing nappies or cleaning up vomit, after using the toilet, before preparing food and before eating.

Children with diarrhoea or vomiting should not attend school or child care centres until they have not had any vomiting or loose stools for 24 hours. Immunisation against rotavirus prevents most rotavirus infections and almost all serious rotavirus illness. The vaccine is free on the National Immunisation Schedule for babies.

### What vaccines protect against rotavirus?

RotaTeq<sup>®</sup> was added to the National Immunisation Schedule in July 2014 and is free for babies at the 6 week, 3 months and 5 months of age immunisation visits.

It has been used in other parts of the world since 2006. It is a weakened live virus vaccine given by mouth that protects against the most common strains of rotavirus. The vaccine does not protect against gastroenteritis caused by other viruses or bacteria.

In clinical trials, three doses of RotaTeq<sup>®</sup> protected nine in 10 vaccine recipients against severe rotavirus infection, eight in 10 with rotavirus infection from needing to visit a doctor for treatment and 7–8 in 10 from any rotavirus infection.<sup>5</sup>

### How safe is the vaccine?

One or two babies in 100 may have mild vomiting or diarrhoea caused by the vaccine during the 7 days after immunisation.<sup>6</sup>

The weakened rotavirus from the vaccine may be found in stools for up to 28 days after the first immunisation and up to 15 days after the second and third doses.<sup>7</sup> However, after changing nappies caregivers only need to follow standard hygiene measures, i.e. wash their hands using soap and water and dry them well.

RotaTeq<sup>®</sup> can be given safely at the same time as the other immunisations at 6 week, 3 months and 5 months of age and can be given any time before or after a BCG immunisation. A baby living in a house with someone who is pregnant can be immunised.

### Rotavirus vaccines and bowel blockage (intussusception)

The first licensed rotavirus vaccine called Rotashield was removed from the international market in the late 1990s because it was associated with an increased risk of intussusception, a type of bowel (gut) blockage.

Intussusception occurs when one part of the bowel folds into another part. It is one of the most common causes of bowel blockage in children under 2 years old with most cases occurring in the first year of life.<sup>8</sup> The frequency varies between different countries, for example before rotavirus vaccines for every 100,000 babies under 1 year old in the U.S. intussusception occurred around 30–36 times, in Australia 81 times and in Vietnam 304 times.<sup>9</sup> In New Zealand intussusception occurred around 65 times in every 100,000 babies.<sup>10</sup> For nine in 10 cases the cause is not known. Medical procedures are used first to treat intussusception but sometimes an operation is needed.<sup>8</sup>

Because of the experience with Rotashield the newer vaccines on the world market have undergone the largest, most stringent clinical trials for vaccines. Over 70,000 children participated in the RotaTeq<sup>®</sup> clinical trials. The clinical trials showed no increased risk of intussusception.<sup>11</sup>

Continued safety monitoring of rotavirus vaccines after they were being used worldwide has identified that there may be a small increase in the risk of developing intussusception during the week following the first vaccine dose and a smaller risk after the second dose.<sup>9,12</sup> Australian data estimates there may be an additional 5–6 cases of intussusception versus 2,180 rotavirus infections prevented in children under 5 years old for every 100,000 babies receiving RotaTeq<sup>®</sup>.<sup>9</sup> For New Zealand's smaller population RotaTeq<sup>®</sup> immunisation is expected to prevent around 1,200 rotavirus related hospitalisations.<sup>4</sup>

Although the risk of intussusception after rotavirus immunisation is very small, it is recommended that parents seek medical advice if their baby develops intermittent crying/screaming episodes, pulling their knees towards their chest and vomiting, or pink or red coloured jelly-like stools (poos/tūtae).

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### Who should have the vaccine?

Babies should receive RotaTeq® at 6 weeks, 3 months and 5 months of age.

They can have food or liquid, including breast milk, before and after immunisation. The dose does not have to be given again if they spit it out.

### Can babies catch-up missed doses of RotaTeq®?

Yes, but only if the first dose of RotaTeq® is given before baby is 15 weeks old. If a baby does not have their first dose before they are 15 weeks old they cannot have any doses of RotaTeq®.

When a baby has their first RotaTeq® immunisation before 15 weeks old the second and third doses can be given any time before baby is 8 months old providing there are at least 4 weeks between each of the doses.

No doses of RotaTeq® can be given once a baby is 8 months old.

### Are all three vaccine doses needed?

Yes. All three doses of RotaTeq® are needed for maximum protection from rotavirus. However, two doses of vaccine, and to a lesser extent one dose of vaccine, provide some protection against rotavirus infection.<sup>13</sup>

### Who should not have the vaccine?

Any baby with a serious medical condition affecting the immune system called combined severe combined immunodeficiency (SCID), or who has previously had intussusception, or had anaphylaxis (a severe allergic reaction) to any component of the rotavirus vaccine or to a previous dose of the RotaTeq® should not be given the vaccine.

RotaTeq® should be postponed for any baby with moderate to very high fever, vomiting or diarrhoea.

When immunisations have been delayed, the first dose must be given before 15 weeks of age (i.e. up to and including 14 weeks and 6 days old) and the final dose must be given before 8 months of age.

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

Further medical advice should be sought for any baby suspected or known to have a weakened immune system, for example due to HIV/AIDS or treatment with long term steroids, or any baby who has cancer or who is undergoing treatment for cancer.

The vaccine should be administered with caution to a baby who lives with someone who is immunocompromised or receiving immunosuppressive therapy. Hand washing after changing nappies is important to stop the spread of the vaccine virus.

Disease	Effects of disease	Side effects of the vaccine
A highly contagious virus causing a bowel (gut) infection with fever, vomiting and diarrhoea (gastroenteritis)	<ul style="list-style-type: none"> <li>Fever, vomiting, and severe diarrhoea.</li> <li>Babies and young children can become dehydrated very quickly.</li> <li>In New Zealand rotavirus infection results in one child in 52 being hospitalised by 3 years of age<sup>3</sup> and one child in 43 being hospitalised by 5 years of age.<sup>4</sup> Death is rare.</li> </ul>	<ul style="list-style-type: none"> <li>1–2 babies in 100 may have mild vomiting or diarrhoea during the 7 days after immunisation.<sup>6</sup></li> <li>The weakened rotavirus from the vaccine may be in stools (poos/tūtae) for up to 28 days after the first immunisation and up to 15 days after the second and third doses.<sup>7</sup></li> <li>It is possible that an additional 5–6 babies in every 100,000 immunised may develop intussusception (a type of bowel obstruction) after immunisation with RotaTeq®.<sup>9</sup></li> </ul>

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

### References

The list of references is available in a separate document on the rotavirus disease page on our website [www.immune.org.nz](http://www.immune.org.nz).