



Your Child's Immunisation

A guide for parents



Feidhmeannacht na Seirbhíse Sláinte
Health Service Executive

Children's immunisation timetable

The table below shows what immunisations are given, at what age, and where. All the immunisations listed are free.

At Birth	BCG (given in maternity hospital or at Health Service Executive clinics)	
1 injection		
2 months	Diphtheria	 6-in-1
	Tetanus	
2 injections	Whooping cough	
	Hib (haemophilus influenzae B)	
	Polio (inactivated poliomyelitis)	
Free from your GP	Hepatitis B	
	PCV (pneumococcal vaccine)	
4 months	Diphtheria	 6-in-1
	Tetanus	
2 injections	Whooping cough	
	Hib (haemophilus influenzae B)	
	Polio (inactivated poliomyelitis)	
Free from your GP	Hepatitis B	
	Meningococcal C	
6 months	Diphtheria	 6-in-1
	Tetanus	
3 injections	Whooping cough	
	Hib (haemophilus influenzae B)	
	Polio (inactivated poliomyelitis)	
Free from your GP	Hepatitis B	
	Meningococcal C	
	PCV (pneumococcal vaccine)	

12 months	Measles	}	MMR
2 injections	Mumps		
	Rubella		
Free from your GP	PCV (pneumococcal vaccine)		
13 months			
2 injections	Meningococcal C		
Free from your GP	Hib		
4 to 5 years	Diphtheria	}	4-in-1
2 injections	Tetanus		
	Whooping cough		
Free in school	Polio		
In counties Donegal, Sligo, Leitrim, Cavan, Monaghan, Louth, Meath and parts of north Dublin this vaccine may be given by your GP.	Measles	}	MMR
	Mumps		
	Rubella		
11 to 14 years			
1 injection	Tetanus, Diphtheria (low dose)	}	Td
Free in school			

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Mumps

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Pneumococcal

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Tetanus

TB (Tuberculosis)

Whooping cough (Pertussis)

Introduction

Immunisation is a simple, safe and effective way of protecting your child against certain diseases. The risks from having these diseases are far greater than the risk of any minor side effects from immunisation.

What causes infection?

Infections are caused by germs entering the body through cuts or by being breathed in or swallowed. The germs then cause diseases such as meningitis (infection of the lining around the brain), pneumonia (a lung infection) or septicaemia (blood poisoning).

What is a contagious disease?

A contagious disease is one that spreads from one person (someone who is infected or is a 'carrier') to another, often through coughs and sneezes. Carriers are people who 'carry' germs in their body but are not sick themselves. For example, 1 in 10 people carries meningococcal germs in their nose but only 1 in 10,000 gets sick with meningitis or septicaemia from those germs.

How does my child's body fight infection?

When germs infect your child's body, their immune system makes 'antibodies'. Antibodies do the following two things:

- Their first job is to attack and destroy the germs. However, because it takes the body time to make enough antibodies, the germs may damage your child's body before the antibodies can destroy them.
- Their second job is to stay in your child's body to protect them against future infections. If the same germs try to infect your child again, the antibodies will destroy the germs before they have a chance to make your child sick. This way of dealing with germs is called 'immunity'. It is why most people get diseases like measles or

chickenpox only once, even though they might be exposed to them many times.

The problem with getting natural immunity from germs is that your child has to get sick before they develop immunity. In fact, some germs could make your child very sick or even kill them before their body could produce enough antibodies to destroy the germs.

How do vaccines work?

When your child is given a vaccine, their body responds by making antibodies, the same as if they had caught the disease but without getting sick. Their body then produces antibodies to destroy the vaccine and these stay in your child's body and protect them against the actual disease.

What is in vaccines?

Vaccines contain active ingredients (the vaccine itself) and additives such as preservatives and stabilisers.

Active ingredients

Vaccines are made from the same germs that cause infections, but the germs in vaccines are either killed or weakened so that they won't make your child sick and are safe to use.

Additives

Vaccines may contain:

- a small amount of preservative to protect the vaccine from contamination
- other additives to make sure that the active vaccine ingredient is evenly mixed throughout the injection mixture and
- a small amount of aluminium salt, which helps the body to respond better to the vaccine.

The level of additives in vaccines is very low and within internationally recommended levels. These additives do not cause any serious health problems in babies and young children.

How long do vaccines take to work?

It usually takes a few weeks for vaccines to work, so your child will not be protected immediately. Also, most vaccines need to be given several times to build up long-lasting protection. For example, a child who gets only one or two doses of the whooping cough vaccine is only partly protected against that disease and may still catch whooping cough.

Are vaccines safe?

The vaccines used in Ireland are safe. All medicines can cause side effects, but with vaccines these are usually mild, like a sore arm or leg or a slight fever. Serious side effects to vaccines are extremely rare.

Research from around the world shows that immunisation is the safest way to protect your child's health. Your doctor or nurse can discuss the risks with you before giving your child their vaccines.

All the recommended vaccines used to protect children in Ireland are licensed by the Irish Medicines Board or the European Medicines Evaluation Agency. They are allowed to be used only after they have been **shown** to be both effective and safe.

What about all the scare stories?

We know that vaccines don't cause autism, diabetes, multiple sclerosis, allergies, asthma or attention deficit disorder (commonly known as hyperactivity). However, when things happen to our children around the same time as they are immunised we can wrongly presume that there is a link. For example, the signs of autism usually become noticeable at about the age when children are given the MMR vaccine, but one does not cause the other. Because most children get immunised, those who

have conditions such as autism, asthma or attention deficit disorder will probably have been immunised as well. Studies to see if children who have been immunised are more likely to have these conditions have shown that there is no link between the conditions and vaccines.

Extensive research into the MMR vaccine, involving thousands of children, was carried out in the UK, the USA, Sweden, and Finland. This research showed that there is no link between MMR and autism. A recent study looked at every child born in Denmark from 1991 to 1998. During that time, 82% of children born in Denmark received the MMR vaccine. The researchers looked at the records of over half a million children and found the risk of autism was the same in immunised children as in children who had not been immunised. Experts from around the world, including the World Health Organisation, agree that there is no link between MMR and autism.

Experts from around the world, including the World Health Organisation, also agree that there is no link between the MMR vaccine and inflammatory bowel disease.

Over the past 30 years, more than 500 million doses of MMR vaccine have been given in over 90 countries.

What immunisations are recommended in Ireland?

The BCG vaccine is recommended at birth or as soon as possible. It protects against TB (tuberculosis).

Vaccines are recommended when your child is 2, 4 and 6 months to protect against eight different diseases – diphtheria, hepatitis B, haemophilus influenzae B (hib), meningococcal C disease (Men C), polio, pneumococcal disease, tetanus and whooping cough (pertussis). These diseases are explained in the table on pages 27 to 32. From September 2008, it is possible to give six of the vaccines in one injection and the pneumococcal (PCV) or Men C vaccine is given in another limb at the same time. At the six-month visit the 6-in-1, PCV and Men C are given at the same time.

The MMR vaccine, which protects against measles, mumps and rubella, is recommended at 12 months. A PCV booster is also recommended at 12 months.

Hib and Men C boosters are recommended at 13 months.

When children are aged 4 or 5 years, they need booster vaccines to stay protected against diphtheria, polio, tetanus and whooping cough. A second dose of the MMR vaccine is also recommended at this time as some children do not respond to the first dose.

When children are aged 11 to 14 years, another booster is recommended to provide long-lasting protection against tetanus and diphtheria.

Are too many vaccines given?

Some parents worry that giving several vaccines at once will overload their child's immune system, or that the vaccines may not work properly. However, there is nothing to worry about as your child's immune system can easily cope with vaccines. Studies have shown that vaccines are just as safe and just as effective when they are given together as when they are given separately. For example, if your child received single injections instead of the combined MMR vaccine, they would be exposed to the diseases of measles, mumps or rubella for a longer period and would have to have six injections instead of two.

A number of injections are needed to give your child the fullest possible protection, so it is important to complete the course.

Why are vaccines given at such an early age?

Vaccines are given at an early age because young babies are most vulnerable to these diseases and need to be protected as early as possible. For example, babies younger than 6 months are at the highest risk for serious complications of whooping cough (6 out of 10 need to go into hospital, and 9 out of 10 deaths from whooping cough are in this age group). The MMR vaccine is not usually recommended for children under 12 months because it may not work as well.

The ages at which vaccines are recommended are chosen to give your child the earliest and best protection against disease.

How serious are these diseases?

Any of them can kill a child. It's easy to forget how serious they are

because – thanks largely to vaccines – we don't see them nearly as much as we used to.

Measles used to kill thousands of people in Europe and the United States every year. In the 1940s and 1950s, tens of thousands of children were crippled or killed by polio. As recently as the mid-1980s, 100 children a year in Ireland suffered from meningitis and other serious complications as a result of Hib infection.

These diseases have not changed. They can still cause pneumonia, choking, brain damage and heart problems in children who are not protected. These diseases still kill children in many parts of the world, even in Ireland.

What will happen if my child doesn't get these vaccines?

Basically, one of two things could happen.

- get mildly ill and have to stay inside for a few days; or
- get very sick and have to go into hospital or, at worst, die.

Your child could also spread those diseases to other children and adults who are not protected. Many people could get very sick and some could die if not enough people in your community are protected.

What are my child's chances of being exposed to these diseases?

Some of these diseases are very rare in Ireland today, so the chances of exposure are small, but others are still fairly common. Some of the diseases are rare in Ireland but common elsewhere in the world, so your child could get those diseases while travelling abroad.

You shouldn't assume your child is completely safe from diseases, even the rare ones. For example, while diphtheria is rare in Ireland, there has been a recent epidemic in Eastern Europe and it is still common in Asia.

With increased travel to and from these countries, it is possible that these diseases will become more common. If enough people don't get immunised, epidemics will definitely follow.

If your child is not immunised, they are at a greater risk of getting these infections when they are older. Some infections are more serious in teenagers or adults than in children. For example, mumps in teenage boys or young men may cause swelling of the testicles and if a woman catches rubella during the early stages of pregnancy, this may cause major birth defects in the baby. The serious complications from measles are also increased in adults.

Do vaccines always work?

Vaccines work most of the time, but not always. Most childhood immunisations protect 90% to 99% of the children who get them, but sometimes a child will not respond to certain vaccines. This is another reason why it's important for all children to be immunised. A child who has not responded to immunisation depends on the immunity of others around them for protection. Your child could be infected by a child who hasn't been immunised, but not by one who is immune.

Effectiveness of vaccines

Vaccine	Percentage of children immune after getting the vaccine
BCG vaccine	up to 80%
Diphtheria vaccine	95%
Hepatitis B	98%
Hib vaccine	95 to 100%
MMR vaccine	95%
Men C vaccine	90% (after three doses)

Vaccine	Percentage of children immune after getting the vaccine
Pneumococcal vaccine (PCV)	90%
Polio vaccine (inactivated polio vaccine)	99% (after three doses)
Tetanus vaccine	almost 100%
Whooping cough vaccine	80 to 85%

Will immunisations still work if my child doesn't get them at the right time?

Yes. Most of these vaccines can be given at any age, and a child who misses one injection in a course of injections does not have to start again. The vaccines already given will still work and your child will still develop protection. Just ask your GP (general practitioner).

If none of the children in a school of 500 pupils had been immunised, and there was an outbreak of measles, nearly every student would come down with measles and 20 children would get pneumonia. There is a 50% chance that one child in the school would develop encephalitis (inflammation of the brain) as a result of measles. If every child was immunised correctly with the MMR vaccine, on average there would be one case of encephalitis every 2000 years caused by the immunisation.



How do I get my child immunised?

In Ireland, all the recommended childhood immunisations listed in the timetable are free of charge.

- **When a baby is born**, a Health Service Executive (HSE) doctor will give your baby the BCG vaccine at the maternity hospital or later at a HSE clinic.
- **When your child is 2, 4 and 6 months old**, your child will receive the 6-in-1 (to protect against diphtheria, hib, hepatitis B, polio, tetanus and whooping cough) and either PCV to protect against pneumococcal disease or Men C to protect against meningococcal C (or both). The HSE will let you know about the first visit. You should arrange to visit your GP for the immunisations. If you do not hear from the HSE, perhaps because you have moved house, you should arrange to visit your GP at the appropriate time.
- **When your child is 12 months**, they receive an MMR (measles, mumps and rubella) vaccination and a PCV booster. The HSE will tell you about this and ask you to go to your GP.
- **When your child is 13 months** they receive men C and hib boosters. The HSE will tell you about this and ask you to go to your GP.
- **When your child is aged 4 to 5 years**, a HSE doctor or nurse will give the 4-in-1 booster (to protect against diphtheria, whooping cough, tetanus and polio) and a second dose of the MMR vaccine in your child's primary school. The HSE will let you know the date of immunisations. If your child misses that immunisation in school, the HSE may arrange for your child to be immunised at a clinic or ask you to visit your GP.
- **In counties Donegal, Sligo, Leitrim, Cavan, Monaghan, Louth, Meath and parts of North Dublin when your child is 4 to 5 years**, the 4-in-1 booster and a second dose of the MMR is available for free from your GP. The HSE will let you know about this when your child is due for immunisation.

- **When your child is in the 5th or 6th class of primary school,** a HSE doctor may give the BCG vaccine and a second dose of MMR to children who have not already got these vaccines. The HSE will let you know the date of the immunisations. If your child misses that immunisation in school, the HSE may arrange for your child to be immunised at a clinic or ask you to visit your GP. (However, the BCG vaccine is not given by GPs.)
- **When your child is aged 11 to 14 years,** it is recommended that a HSE doctor or nurse gives them a tetanus and low-dose diphtheria vaccine in school. The HSE is in the process of introducing this new programme.



Before your child is immunised, the doctor or nurse will check with you that your child is well and able to get the vaccines. If you have any worries or questions about your child's immunisations, ask the doctor or nurse before your child is immunised. You can also ask for further information from your Public Health Nurse at your local HSE clinic.

There are 12 diseases that can be prevented by routine childhood immunisation – tuberculosis, diphtheria, haemophilus influenzae type b (hib), hepatitis B, polio, tetanus, whooping cough, meningococcal C (men C) disease, pneumococcal disease, measles, mumps, and rubella. All of these diseases can cause serious complications and sometimes death. These immunisations are all given as injections. Immunisation helps children stay healthy by preventing serious infection.



Your questions answered

There are very few reasons why your child should not get a vaccine. If you are not sure about something talk to the doctor or nurse before your child is immunised.

What if my child has a high temperature or a fever?

If your child has a high temperature, the immunisation should be put off until your child is better. However, babies with minor coughs and colds, or those on antibiotics, can be immunised safely and effectively.

What if my child has epilepsy or has had convulsions (fits)?

These children should still be immunised if their condition is stable.

Some children get fits (febrile convulsions) if they have a high temperature or a fever. You may give these children paracetamol or ibuprofen. (See page 22 for details.)

Children with a family history of fits or epilepsy should be immunised as normal.

What if my child was premature, had a low birth weight or had jaundice?

It is important that premature babies are protected because they are more vulnerable to certain infections. In general, premature babies should be immunised as normal. If your child had a very low birth weight, you should discuss their immunisation needs with your paediatrician. Babies who had jaundice after being born and those who are being breast-fed should be immunised as normal.

What if my child has asthma, eczema, hay fever or is allergic to eggs?

Children with asthma, eczema, hay fever and allergies should be immunised, even if they have a severe allergy to eggs (for example, hives (red itchy bumps), swelling of the mouth or throat, difficulty breathing, wheezing, low blood pressure and shock). The only exception is the flu vaccine, which should not be given to those who have a severe allergy to eggs.

The MMR vaccine can be given to children with a severe egg allergy, as severe allergy to the MMR vaccine is extremely rare even in these children. Your child simply disliking eggs or having diarrhoea or stomach pains after eating eggs is not a reason to avoid the MMR immunisation, and you do not need to take any special precautions. If you have any doubts, talk to the doctor or nurse giving the immunisation.

Children taking steroids by inhaler or in a low-dose steroid cream should be immunised as normal. If you have any doubts, talk to the doctor or nurse giving the immunisation.

My child was unwell after the last dose of vaccine. Should they get the next dose?

Some children may be unwell after their immunisation. Usually there is no reason not to finish the course of vaccine. However, if your child had a severe allergic reaction (that is, shock or difficulty breathing), they should not get that vaccine again until you know why this happened. In this situation, talk to the doctor about the reaction.

What if someone else in the family had a reaction to the immunisation?

Immunisations should not be missed if a family member had any reaction to a vaccine, as this type of reaction does not run in families.

What if my child has recently had, or is due to have, surgery?

Do not put the immunisation off if your child is due to have, an operation or has recently had one. Having surgery is not a reason to put off immunisation, and a recent immunisation is not a reason to put off surgery.

What if my child has already had whooping cough, measles, rubella, mumps, hib, pneumococcal or men c?

You should still immunise your child against these diseases, even if they have had them. It is important to be protected against all the diseases the vaccine covers, even if the child has caught one of the diseases before. This is very important as children under 2 years do not get enough natural immunity following illness with hib, Men C or pneumococcal disease and so should still be immunised.

Can my child be immunised while they are in close contact with someone who is pregnant?

There is no problem with giving routine immunisations to a child who is in close contact with someone who is pregnant. In fact, immunising the child will protect the mother from being exposed to diseases like rubella.

What if my child has a serious disease?

It is very important that children with serious diseases are immunised because they are often more at risk from complications of infections.

However, care is needed if the child's illness, or its treatment, may lower their immunity. Immunisation should be carefully considered for children with cancer or an immune deficiency disorder, or who are taking medicines which may reduce their ability to fight infection. Discuss this with your doctor.

Children who have had a blood transfusion or received blood products should not get their MMR vaccine until three months after the transfusion. Children with stable neurological conditions such as cerebral palsy or Down syndrome should be immunised as normal.

Do some children also need other vaccines?

Yes. Children who have had their spleens removed or have cystic fibrosis, an immune deficiency, chronic heart, lung, liver or kidney disease, sickle cell disease or diseases such as diabetes are more vulnerable to some infections. If your child has any long-term illness, ask your doctor if they need to be immunised against diseases like flu or hepatitis A.

If you are travelling to another country, remember to find out if your child needs any special vaccine.

If you are worried about whether your child is fit to be immunised, talk to the doctor or nurse before putting off the immunisation.

Immunisation against infectious disease has saved more lives than any other public health intervention apart from providing clean water.



What should I do if my child has any side effects after getting the vaccine?

Common reactions	What to do
Soreness, swelling and redness in the area where the injection was given	<ul style="list-style-type: none">■ Give paracetamol or ibuprofen to relieve aches and pains.■ Make sure clothes are not too tight or rubbing against the area where the injection was given.
Fever	<ul style="list-style-type: none">■ Do not overdress your baby.■ Make sure their room isn't too hot.■ Give extra fluids to drink.■ Give paracetamol or ibuprofen to lower the fever.
Headache or irritability	<ul style="list-style-type: none">■ Give paracetamol or ibuprofen to relieve aches and pains.

Remember, if your child is very unwell after getting a vaccine, they may be sick for some other reason talk to your GP about this.

Children do not usually need to take any medicine when they are given a vaccine. However, if your child gets a fever or is sore where the injection was given, you may give them paracetamol or ibuprofen.

If your child has fits when they have a high temperature, give them **paracetamol** or **ibuprofen** before the immunisation and for 48 hours afterwards to reduce the chance of a fever. Remember, after having the MMR vaccine a fever may happen about 6 to 12 days later, so give paracetamol or ibuprofen then.

The dose of paracetamol or ibuprofen recommended for your child is written on the bottle according to the child's age.

Please ask your pharmacist for sugar-free mixture of paracetamol or ibuprofen suitable for your child's age.

Using paracetamol or ibuprofen over a long period without advice from a doctor may be harmful.

What if my child has an allergic reaction to vaccines?

Serious allergic reactions to vaccines are extremely rare. About one person out of one million may have a serious allergic reaction. Signs of a serious allergic reaction include difficulty breathing, hoarseness, wheezing, hives, paleness, weakness, a fast heartbeat, dizziness, and swelling of the throat. If the reaction is treated quickly, the child will recover fully. Doctors and nurses who give immunisations are trained to deal with allergic reactions.

What if my child suffers any side effects from vaccines?

Most side effects from vaccines are limited to tenderness and swelling or pain where the injection was given or a fever. Children usually recover from these minor side effects within a day or two. Most of these minor side effects happen in the first day or two after immunisation. However, after the MMR vaccine, some children may get a fever or a rash six to 12 days later. This is not contagious.

The Irish Medicines Board monitors all reported side effects of vaccines. This also happens in other countries so that new and rare side effects can be detected quickly and any necessary action taken.

If your child has any side effects after immunisation, let your GP know so that he or she can report it to the Irish Medicines Board.

Comparison of the effects of diseases and the side effects of vaccines

The table on the next few pages set out:

- the disease immunisation is recommended for
- the possible side effects of the disease and
- the possible side effects of the vaccine.

Disease	Effects of disease	Side effects of vaccine
<p>Diphtheria – contagious bacteria that spread by close contact with an infected person or carrier and cause a sore throat and severe breathing difficulties.</p>	<p>Of the people who get diphtheria:</p> <ul style="list-style-type: none"> ■ 1 in 15 will die. ■ The bacteria release a toxin (poison) which can lead to paralysis and heart failure. 	<p>Of the people who are immunised:</p> <ul style="list-style-type: none"> ■ 1 in 10 have redness and swelling where the injection was given or have a fever. <p>Serious side effects are very rare.</p>
<p>Hib (<i>haemophilus influenzae B</i>) – contagious bacteria that spread by close contact with an infected person and cause meningitis (inflammation of the lining around the brain), epiglottitis (swelling in the throat that causes choking), septicaemia (blood poisoning) and osteomyelitis (infection of the bone).</p>	<p>Of the people who get hib disease:</p> <ul style="list-style-type: none"> ■ 1 in 20 people who have hib meningitis will die; ■ 1 in 4 people who recover from hib meningitis will have permanent brain damage or deafness; and ■ 1 in 100 people who have epiglottitis (swelling in the throat that causes choking) will die. 	<p>Of the people who are immunised:</p> <ul style="list-style-type: none"> ■ 1 in 5 have discomfort, redness or swelling where the injection was given; and ■ 1 in 50 will have a fever.

Disease	Effects of disease	Side effects of vaccine
<p>Hepatitis B – a viral disease that is spread through contact with the blood or other body fluid of an infected person and causes liver disease.</p>	<p>Children have a higher risk of having hepatitis B infection for life.</p> <p>Of those who have hepatitis B infection for life</p> <ul style="list-style-type: none"> ■ 1 in 4 will die from scarring of the liver (cirrhosis) or liver cancer. 	<p>Of the people who are immunised:</p> <ul style="list-style-type: none"> ■ 1 in 10 have discomfort, redness or swelling where the injection was given, or will have a fever <p>Serious side effects are very rare.</p>
<p>Measles – a highly contagious virus that is spread by close contact with an infected person and causes fever, a cough and a rash.</p>	<p>Of the people who get measles:</p> <ul style="list-style-type: none"> ■ 1 or 2 in 1000 will die; ■ 1 in 20 will get an ear infection; ■ 1 in 25 will get pneumonia or bronchitis; ■ 1 in 200 will have convulsions (fits); and ■ 1 in 6 will get diarrhoea. ■ 1 in 1000 will develop encephalitis (inflammation of the brain). For every 10 children who develop encephalitis: <ul style="list-style-type: none"> ● 1 will die; and ● up to 4 will have brain damage. ■ 1 in 8000 children under two years get SSPE (brain degeneration), which may be many years after measles and is always fatal. ■ 1 in 6000 will get a blood-clotting problem 	<p>Of the people who are immunised:</p> <ul style="list-style-type: none"> ■ 1 in 10 will have discomfort, redness or swelling where the injection was given, or will have a fever; ■ 1 in 20 will get a rash six to 12 days later (this is not contagious); ■ 1 in 1000 will have a convulsion (fit); ■ 1 in a million may develop encephalitis (inflammation of the brain); ■ 1 in 22,000 will get a temporary blood-clotting problem.

Disease	Effects of disease	Side effects of vaccine
<p>Men C (<i>meningococcal C disease</i>) – contagious bacteria that spread by saliva or close contact with an infected person or carrier and causes meningitis or septicaemia, or both. (The men C vaccine does not protect against other types of meningitis including that due to meningococcal B disease.)</p>	<p>Of the people who get men C disease:</p> <ul style="list-style-type: none"> ■ 1 in 15 will die ■ 1 in 10 people who recover from meningococcal disease will have a major disability such as deafness, brain damage or loss of fingers, toes, hands, feet, arms or legs. 	<p>Of the babies who are immunised:</p> <ul style="list-style-type: none"> ■ 1 in 20 babies will get redness or swelling where the injection was given; ■ 1 in 20 babies will get a fever; ■ 1 in 2 babies will become irritable; and ■ 1 in 100 may get a tummy upset or vomit.
<p>Mumps – a contagious virus that is spread by close contact with an infected person and causes swollen neck glands and a fever.</p>	<p>Of the people who get mumps:</p> <ul style="list-style-type: none"> ■ 1 in 20 will get viral meningitis; ■ 1 in 1000 will get encephalitis (brain inflammation); ■ 4 in 10 men who have mumps will get swollen testicles; ■ 1 in 3 will get a fever, a headache, and swollen salivary glands under the jaw; and ■ 1 in 20,000 may become deaf. <p>Mumps can also rarely cause infertility in men.</p>	<p>Of the people who are immunised:</p> <ul style="list-style-type: none"> ■ 1 in 100 may develop swelling of the salivary glands under the jaw; and ■ 1 in 3 million may develop mild encephalitis (inflammation of the brain).

Disease	Effects of disease	Side effects of vaccine
<p>Pneumococcal disease – a bacterial disease spread by close contact with an infected person or carrier and causes pneumonia, meningitis and septicaemia</p>	<p>Of those who are infected:</p> <ul style="list-style-type: none"> ■ 1 in 3 will develop pneumonia; ■ 1 in 3 will develop meningitis; and ■ 1 in 10 will die. 	<p>Of the people who are immunised:</p> <ul style="list-style-type: none"> ■ 1 in 10 will have discomfort or swelling where the injection was given or have a fever <p>Serious side effects are very rare.</p>
<p>Polio – a contagious virus that is spread by close contact with an infected person or their faeces (poo). It causes fever, headache and vomiting and may progress to paralysis.</p>	<p>Of the people who get polio:</p> <ul style="list-style-type: none"> ■ Up to 1 in 100 will become paralysed; ■ 1 in 20 patients who become paralysed will die; and ■ 1 in 2 of those with paralysis whom survive will be permanently paralysed. 	<ul style="list-style-type: none"> ■ No serious side effects have been recorded for inactivated polio vaccine, which has been used for over 40 years. ■ There may be a little redness or soreness where the injection was given.

Disease	Effects of disease	Side effects of vaccine
<p>Rubella – a contagious virus that is spread by close contact with an infected person and causes a rash, fever and swollen glands. It may cause major birth defects in the baby if the mother gets rubella it in early pregnancy.</p>	<p>Of the people who get rubella:</p> <ul style="list-style-type: none"> ■ 9 in 10 babies will have a major birth defect (such as deafness, blindness, brain damage or heart defects) if the mother got rubella in early pregnancy; ■ 1 in 3000 get thrombocytopenia (bruising or bleeding of the skin); ■ 1 in 6000 get encephalitis (inflammation of the brain); ■ about 1 in 2 will get a rash and painful swollen glands; and ■ more than half of women with rubella get painful joints. 	<p>Of the people who are immunised:</p> <ul style="list-style-type: none"> ■ 1 in 10 will have discomfort, redness or swelling where the injection was given or will have a fever; ■ 1 in 20 get swollen glands, a stiff neck, or joint pains; ■ 1 in 20 get a rash (which is not infectious); ■ 1 in 22,000 get bruising or bleeding; and ■ 1 in 1 million may get encephalitis (inflammation of the brain).
<p>Tetanus – bacteria from soil which release a toxin and causes painful muscle spasms, convulsions and lockjaw.</p>	<p>Of the people who get tetanus:</p> <ul style="list-style-type: none"> ■ 1 in 10 people will die <p>The risk is greatest for the very young or old.</p>	<p>Of the people who are immunised:</p> <ul style="list-style-type: none"> ■ 1 in 10 will have redness and swelling where the injection was given or have a fever. <p>Serious side effects are very rare.</p>

Disease	Effects of disease	Side effects of vaccine
<p>TB (<i>tuberculosis</i>) – contagious bacteria that infect the lungs and spread by close contact with an infected person. It causes coughing, sweating, weight loss and tiredness. TB may also infect the brain or other parts of the body, but this type of TB is not contagious.</p>	<p>People who get TB will need many months of treatment to cure it. In the past, many people in Ireland died of TB.</p>	<p>Of the people who are immunised:</p> <ul style="list-style-type: none"> ■ most people will get a blister and scarring on the arm where the BCG injection was given; ■ 1 in 100 may get small swollen glands under the arm; and ■ up to 1 in 1000 may get an infection, which responds to treatment.
<p>Whooping cough (<i>pertussis</i>) – contagious bacteria that spread by close contact with an infected person and causes a ‘whooping’ cough and vomiting. The disease can last up to three months.</p>	<p>Of the people who get whooping cough:</p> <ul style="list-style-type: none"> ■ 1 in 500 will die from pneumonia or brain damage (90% of deaths are in children under the age of 6 months); ■ 1 in 125 will have fits (1 in 70 if less than 6 months old); ■ 1 in 1000 will get encephalitis (1 in 500 if less than 6 months old); ■ 1 in 20 will get pneumonia (1 in 10 if less than 6 months old); and ■ 1 in 5 will need to go into hospital. 	<p>Of the people who are immunised:</p> <ul style="list-style-type: none"> ■ 1 in 10 have redness and swelling where the injection was given or have a fever; ■ about 1 in 2500 may cry for more than three hours after the immunisation; and ■ 1 in 12,500 may have a convulsion (fit). <p>Serious side effects are very rare.</p>



Further information

The information given in this booklet is the most up-to-date information available at this time. It comes from the following sources.

Immunisation Guidelines for Ireland, 2008 Edition.

Available from (www.ndsc.ie/hpsc/A-Z/VaccinePreventable/Vaccination/Publications/ImmunisationGuidelines/)

MMR Discussion Pack – Ireland, 2002.

Available from (www.immunisation.ie/en/Publications/PDFFile_10446_en.pdf)

Epidemiology and Prevention of Vaccine – Preventable Diseases. The Pink Book 10th Edition. January 2008

Available from (www.cdc.gov/vaccines/pubs/pinkbook/default.htm)

Parents Guide to Childhood Immunization – American Academy of Paediatrics, 2002

Available from (www.cdc.gov/vaccines/pubs/parents-guide/default.htm)

Understanding Childhood Immunisation. Immunise Australia Programme. July 2000

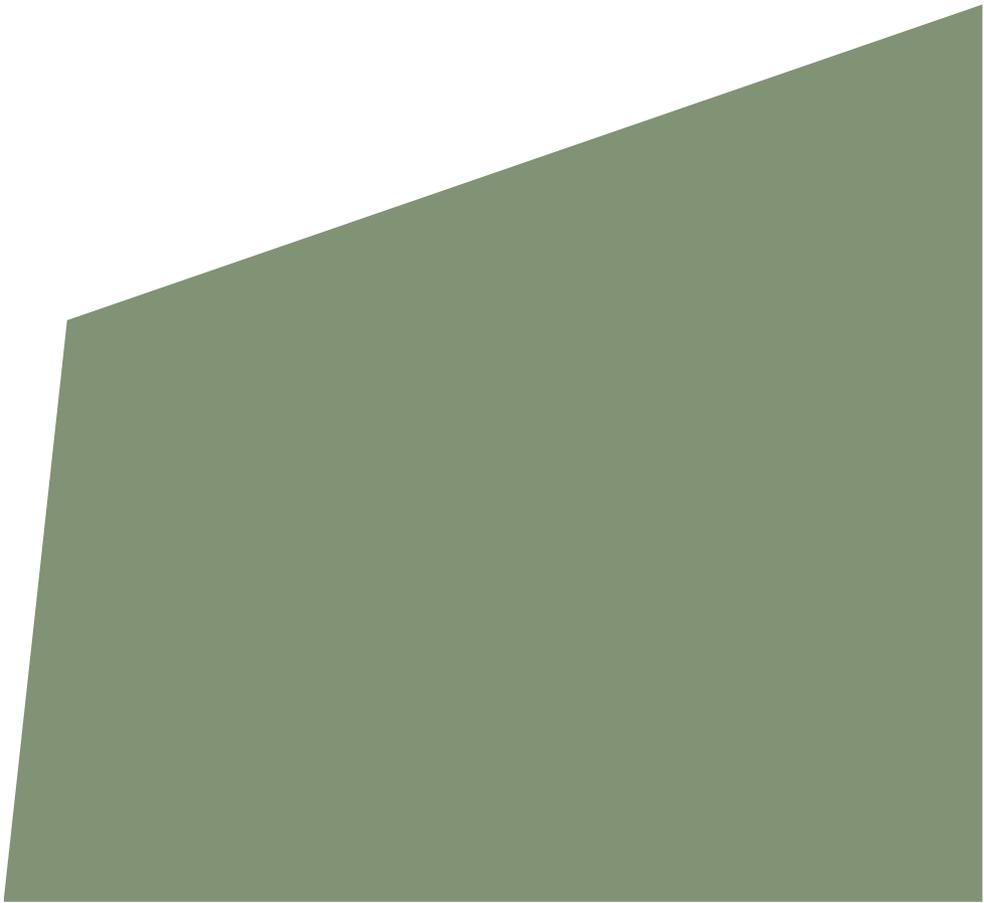
Available from (www.health.gov.au/internet/immunise/publishing.nsf/content/uci)

You can get further information about immunisations from:

HSE National Immunisation Office
Unit 8/9 Manor St Business Park
Manor St
Dublin 7
Phone: 01 867 6108
Website: www.immunisation.ie

Health Protection Surveillance Centre
25-27 Middle Gardiner Street
Dublin 1.
Phone: 01 876 5300
Website: www.hpsc.ie







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