



Feidhmeannacht na Seirbhíse Sláinte  
Health Service Executive



# Your child's immunisation

## A guide for parents



[www.immunisation.ie](http://www.immunisation.ie)

# Childhood immunisation schedule

The table below shows at what age the immunisations are given, where they are given and which vaccines are given.

**All the immunisations listed are free.**

AGE	WHERE	VACCINATION
<b>At Birth</b>	<b>Hospital or HSE Clinic</b>	<b>BCG</b>
<b>2 Months</b>	<b>GP Surgery Visit 1</b>	<b>6 in 1 + PCV</b>
<b>4 Months</b>	<b>GP Surgery Visit 2</b>	<b>6 in 1 + Men C</b>
<b>6 Months</b>	<b>GP Surgery Visit 3</b>	<b>6 in 1 + PCV + Men C</b>



- GP** General Practitioner
- BCG** Bacille Calmette-Guerin (TB) vaccine
- 6 in 1** Diphtheria, Haemophilus influenzae B (Hib), Hepatitis B, Pertussis (Whooping cough), Polio and Tetanus vaccine
- PCV** Pneumococcal conjugate vaccine
- Men C** Meningococcal C vaccine
- MMR** Measles, Mumps, Rubella vaccine
- Hib** Haemophilus influenzae B vaccine

AGE	WHERE	VACCINATION
<b>4</b> <b>12 Months</b>	<b>GP Surgery</b> <b>Visit 4</b>	<b>MMR</b> <b>+</b> <b>PCV</b>
<b>5</b> <b>13 Months</b>	<b>GP Surgery</b> <b>Visit 5</b>	<b>Men C</b> <b>+</b> <b>Hib</b>

## 5 Visits to your GP to be fully vaccinated

Your child needs 5 visits to your GP to be fully vaccinated. Please remember to bring your child's immunisation passport to each visit.



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- Diphtheria
- Haemophilus influenza B (Hib)
- Hepatitis B
- Measles
- Meningococcal C (Men C)
- Mumps
- Pertussis (Whooping cough)
- Pneumococcal disease
- Polio
- Rubella (German measles)
- Tetanus
- Tuberculosis (TB)

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# The childhood immunisation schedule

**In Ireland, all the recommended immunisations listed in the primary childhood immunisation schedule are free.**

**REMEMBER your child needs FIVE visits to your GP to complete their course of vaccines and be fully protected against serious diseases.**

## **Before immunisation**

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

## **Can I give my child anything beforehand?**

You can give your child a sugar based drink a few minutes before their vaccination. This has been shown to help to reduce pain at the injection site.

Do not give any pain relieving medicine to your child before they get their vaccines as this has been shown to reduce the effectiveness of some vaccines. These medicines should only be used if your child has a high fever (over 39.5°C) after vaccination.





**REMEMBER**  
**FIVE** visits to your GP

**12345**



# Birth

## What vaccines will my child get at birth?

When your child is born, a Health Service Executive (HSE) doctor will give your child the BCG vaccine at the maternity hospital or later at a HSE clinic. This vaccine protects against Tuberculosis (TB).

This vaccine is given in the left arm.



## What can I expect after vaccination?

Three to six weeks after the BCG vaccine, a small red pimple usually appears at the site of the injection. The pimple will remain for a number of weeks and there may be a slight discharge. A scab may form over the injection site. This is normal. The scab will heal and leave a small scar.

If you are worried about your child, please contact your public health nurse for advice.

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If your child does not get the BCG vaccine at birth you should make an appointment to attend your local HSE clinic. Your public health nurse will tell you how to do this.

## What happens next?

The HSE will write to tell you to arrange to visit your GP for the immunisations. If you do not hear from the HSE, you should arrange to visit your GP when your child is two months old.

**REMEMBER** your child needs **FIVE** visits to your GP to complete their course of vaccines and be fully protected against serious diseases. Please remember to bring your child's immunisation passport for their next visit.

At Birth

2 Months

4 Months





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A colorful graphic design featuring large, stylized numbers 2, 3, 4, and 5 in various colors (orange, blue, green, red) overlaid on a blue background. Below the numbers are three colored boxes containing the text '6 Months', '12 Months', and '13 Months'.

6 Months

12 Months

13 Months

# 2 Months

The HSE will write to tell you to arrange to visit your GP for the immunisations. If you do not hear from the HSE, you should arrange to visit your GP when your child is two months old.

## What vaccines will my child get at two months of age?

When your child is two months of age they will get two vaccines:

- the 6 in 1 vaccine to protect against diphtheria, haemophilus influenzae B (Hib), hepatitis B, pertussis (whooping cough), polio and tetanus; and
- the PCV vaccine to protect against pneumococcal disease.

The vaccines are given in your child's legs – one in the right leg and one in the left leg.

## What can I expect after vaccination?

Your child may have a sore leg or fever after vaccination. If they have a very high fever over 39.5°C you can give them plenty of fluids and paracetamol or ibuprofen. **Please see page 32 for further advice.**

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If you are worried about your child, please contact your GP, practice nurse or public health nurse for further advice.

## What happens next?

When your child has received their vaccines at two months you should make an appointment with your GP for your child's four month vaccines. You should also place a reminder in your phone or write the date of your child's next appointment on a calendar.

At Birth

1

2 Months

2

4 Months

# Visit 1



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**REMEMBER** your child needs **FOUR** more visits to your GP to complete their course of vaccines and be fully protected against serious diseases. Please remember to bring your child's immunisation passport for their next visit.

3

6 Months

4

12 Months

5

13 Months

# 4 Months

## What vaccines will my child get at four months of age?

When your child is four months of age they will get two vaccines:

- the 6 in 1 vaccine (this is the same vaccine that your child got when they were two months of age); and
- the Men C vaccine to protect against meningococcal C disease.

The vaccines are given in your child's legs – one in the right leg and one in the left leg.

## What can I expect after vaccination?

Your child may have a sore leg or fever after vaccination. If they have a very high fever over 39.5°C you can give them plenty of fluids and paracetamol or ibuprofen. **Please see page 32 for further advice.**

If you are worried about your child, please contact your GP, practice nurse or public health nurse for further advice.

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## What happens next?

When your child has received their vaccines at four months you should make an appointment with your GP to attend for your child's six month vaccines. You should also place a reminder in your phone or write the date of your child's next appointment on a calendar.

At Birth

2 Months

4 Months



Visit

2

13

**REMEMBER** your child needs **THREE** more visits to your GP to complete their course of vaccines and be fully protected against serious diseases. Please remember to bring your child's immunisation passport for their next visit.

3  
6 Months

4  
12 Months

5  
13 Months

# 6 Months

## What vaccines will my child get at six months of age?

When your child is six months of age they will get three vaccines:

- the 6 in 1 vaccine (this is the same vaccine that your child got when they were two months and four months old);
- the PCV vaccine (this is the same vaccine that your child got when they were two months old); and
- the Men C vaccine (this is the same vaccine that your child got when they were four months old).

The vaccines are given in your child's legs – two vaccines are given in one leg and one vaccine in the other leg.

## What can I expect after vaccination?

Your child may have a sore leg or fever after vaccination. If they have a very high fever over 39.5°C you can give them plenty of fluids and paracetamol or ibuprofen. **Please see page 32 for further advice.**

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If you are worried about your child, please contact your GP, practice nurse or public health nurse for further advice.

## What happens next?

When your child has received their vaccines at six months you should make an appointment with your GP to attend for your child's twelve month vaccines. You should also place a reminder in your phone or write the date of your child's next appointment on a calendar.

The HSE will send you a letter to tell you about the vaccines that your child should receive at twelve and thirteen months.

At Birth

2 Months

4 Months

Visit

3



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**REMEMBER** your child needs **TWO** more visits to your GP to complete their course of vaccines and be fully protected against serious diseases. Please remember to bring your child's immunisation passport for their next visit.

3

6 Months

4

12 Months

5

13 Months

# 12 Months

The HSE will write to tell you about the vaccines that your child should receive at twelve and thirteen months. You should arrange to visit your GP for the immunisations. If you do not hear from the HSE you should arrange to visit your GP when your child is twelve months old.

## What vaccines will my child get at twelve months of age?

When your child is twelve months old they will get two vaccines:

- the PCV booster (this is the same vaccine that your child got when they were two months and six months of age); and
- the MMR vaccine to protect against measles, mumps and rubella.

These vaccines can be given in either the arm or the leg.

## What can I expect after vaccination?

Your child may have a sore arm or leg or fever after vaccination.

Your child may have a mild rash with fever (mini-measles) 6-10 days after vaccination. This is not contagious.

Your child may get swelling of their salivary glands under the jaw (mini-mumps) three weeks after vaccination. This is not contagious.

If they have a very high fever over 39.5°C you can give them plenty of fluids and paracetamol or ibuprofen. **Please see page 32 for further advice.**

If you are worried about your child please contact your GP, practice nurse or public health nurse for further advice.

## What happens next?

When your child has received their vaccines at twelve months you should make an appointment with your GP to attend for your child's thirteen month vaccines. You should also place a reminder in your phone or write the date of your child's next appointment on a calendar.

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At Birth

2 Months

4 Months



# Visit

# 4



17

**REMEMBER** your child needs **ONE** more visit to your GP to complete their course of vaccines and be fully protected against serious diseases. Please remember to bring your child's immunisation passport for their next visit.

3  
6 Months

4  
12 Months

5  
13 Months

# 13 Months

## What vaccines will my child get at thirteen months of age?

When your child is thirteen months old they will get two vaccines:

- the Men C booster vaccine (this is the same vaccine that your child got when they were four and six months of age); and
- the Hib booster vaccine (your child got this vaccine previously as one of the components of the 6 in 1 vaccine).

These vaccines can be given in either the arm or the leg.

## What can I expect after vaccination?

Your child may have a sore arm or leg or fever after vaccination. If they have a very high fever over  $39.5^{\circ}\text{C}$  you can give them plenty of fluids and paracetamol or ibuprofen. **Please see page 32 for further advice.**

If you are worried about your child please contact your GP, practice nurse or public health nurse for further advice.

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At Birth

2 Months

4 Months



Visit

5

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Your child has now completed the childhood schedule and does not need any more vaccines until they are 4-5 years old. Keep your child's immunisation passport safe for future vaccinations.

3

6 Months

4

12 Months

5

13 Months

# Infections and how vaccines protect against them

**Immunisation is a simple, safe and effective way of protecting your child against certain diseases. The risks from having these diseases are much 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).

## **20 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 through coughs and sneezes. Carriers are people who 'carry' germs in their body but are not sick themselves. For example, 1 in 10 people carry meningococcal germs 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, your child's 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.

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### **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.

### **Why does my child need more than one dose of a vaccine?**

More than one dose of the same vaccine is given in the first few years of a child's life. The extra doses improve the antibody response and give better long term protection. Booster doses of some vaccines are also given to school children to give better long term protection.



# The schedule explained

## **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 pertussis (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 properly.

## **How serious are these diseases?**

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Any of them can kill a child or an adult. 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, meningitis, 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.

## **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. The number of injections is reduced by the use of combination vaccines where several vaccines are combined into one injection.

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

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### **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.

**Your child needs to get the vaccines at the right age so that they are protected from serious diseases when they are most vulnerable.**

### **GET THE VACCINES ON TIME EVERY TIME**



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

Basically, one of two things could happen:

- If your child goes through life without ever being exposed to these diseases, nothing would happen.
- If your child is exposed to any of these diseases, as a child or as an adult, there is a good chance that he or she will get the disease.

Your child could

- 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 others who are not protected, such as children who are too young to be vaccinated. Many people could get very sick and some could die if not enough people in your community are protected.

## 24 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. Diphtheria still occurs in some Asian countries. In 2010 a large polio epidemic took place in Eastern Europe. Polio still occurs in Pakistan, Nigeria, India and Afghanistan.

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.

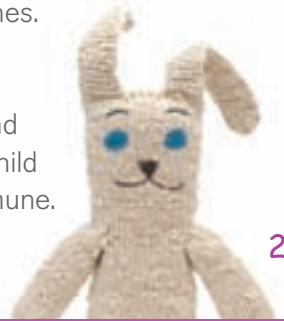




If your child is not immunised, they are at a greater risk of getting these infections when they are older. Some infections are more serious in teenagers or adults than in children. For example, mumps in teenage boys or young men may cause swelling of the testicles and if a woman catches rubella during the early stages of pregnancy, this may cause major birth defects in the baby. Measles can be more serious 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 recommended doses of vaccine
BCG vaccine	Up to 80%
Diphtheria vaccine	95%
Hepatitis B vaccine	98%
Hib vaccine	95 to 100%
MMR vaccine	95%
Men C vaccine	90%
Pertussis (whooping cough) vaccine	80 to 85%
Pneumococcal vaccine (PCV)	90%
Polio vaccine	99%
Tetanus vaccine	Almost 100%

## In a school of 1,000

### NO MMR vaccine ✗

- 1,000 cases of measles
- 40 children get pneumonia
- 50 children get an ear infection
- 1-2 children die

### Vaccinated with MMR ✓

- 50 cases of measles
- 2 children get pneumonia
- 2-3 children get an ear infection

# Vaccine contents & safety

## What is in vaccines?

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

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## 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.





### 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 Agency. They are allowed to be used only after they have been shown to be both effective and safe.**

### What about 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. One 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 Organization, agree that there is no link between MMR and autism.

# Common questions about immunisation

## **Are there any reasons to delay immunisation?**

There are very few medical reasons to delay immunisation. If your child has a high temperature, the immunisation should be put off until your child is better. However, babies and children with minor coughs and colds, or those on antibiotics, can be immunised safely and effectively.

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

## **28 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 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.

Children with stable neurological conditions such as cerebral palsy or Down syndrome should be immunised as normal.

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.

### **What if my child has asthma, eczema or hay fever?**

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).

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.

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### **Can my child get the MMR and other vaccines if they are allergic to eggs?**

In the past it was believed that children who were allergic to eggs could not get the MMR vaccine. The MMR vaccine can be given to children with an egg allergy. 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.

Flu vaccine should not be given to those who have a severe allergy to eggs.



### **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. If they get a high fever (over 39.5°C) after they have been vaccinated give them paracetamol or ibuprofen.

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

### **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 one of these diseases?**

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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 two 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?**

Yes. 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.



### **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 vaccines.

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



# Common questions after immunisation

## What common reactions can my child get after being vaccinated and what should I do?

Common Reaction	What to do
Soreness, swelling and redness in the area where the injection was given	<ul style="list-style-type: none"><li>• Give paracetamol or ibuprofen to relieve aches and pains</li><li>• Make sure clothes are not too tight or rubbing against the area where the injection was given</li></ul>
Fever (over 39.5°C)	<ul style="list-style-type: none"><li>• Do not overdress your baby</li><li>• Make sure their room isn't too hot</li><li>• Give extra fluids to drink</li><li>• Give paracetamol or ibuprofen to lower the fever</li></ul>
Headache or irritability	<ul style="list-style-type: none"><li>• Give paracetamol or ibuprofen to relieve aches and pains</li></ul>

**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.**

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Children do NOT usually need to take any medicine when they are given a vaccine. However, if your child gets a fever (over 39.5°C) or is sore where the injection was given, you may give them paracetamol or ibuprofen.

Remember, after having the MMR vaccine a fever may happen about 6 to 10 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 6 to 10 days later (mini measles). 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.

### **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.



# The diseases and the vaccines that protect against them

The table on the next few pages sets out:

- the description of the **diseases**
- the **effects** of the disease and
- the possible **side effects** of the vaccine

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Disease	Effects of disease	Side effects of vaccine
<p><b>Diphtheria</b> – 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"> <li>• 1 in 15 will die.</li> <li>• The bacteria release a toxin (poison) which can lead to paralysis and heart failure.</li> </ul>	<p>Of the people who are immunised:</p> <ul style="list-style-type: none"> <li>• 1 in 10 have redness and swelling where the injection was given or have a fever.</li> </ul> <p>Serious side effects are very rare.</p>
<p><b>Haemophilus influenzae B (Hib)</b> – 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"> <li>• 1 in 20 people who have Hib meningitis will die;</li> <li>• 1 in 4 people who recover from Hib meningitis will have permanent brain damage or deafness; and</li> <li>• 1 in 100 people who have epiglottitis (swelling in the throat that causes choking) will die.</li> </ul>	<p>Of the people who are immunised:</p> <ul style="list-style-type: none"> <li>• 1 in 5 have discomfort, redness or swelling where the injection was given; and</li> <li>• 1 in 50 will have a fever.</li> </ul>
<p><b>Hepatitis B</b> – a contagious virus that is spread by contact with the blood or other body fluid of an infected person and causes liver disease. 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"> <li>• 1 in 4 will die from scarring of the liver (cirrhosis) or liver cancer.</li> </ul>	<p>Of the people who are immunised:</p> <ul style="list-style-type: none"> <li>• 1 in 10 have discomfort, redness or swelling where the injection was given, or will have a fever</li> </ul> <p>Serious side effects are very rare.</p>




Disease	Effects of disease	Side effects of vaccine
<p><b>Measles</b> – 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"> <li>• 1 or 2 in 1,000 will die;</li> <li>• 1 in 20 will get an ear infection;</li> <li>• 1 in 25 will get pneumonia or bronchitis;</li> <li>• 1 in 200 will have convulsions (fits); and</li> <li>• 1 in 6 will get diarrhoea.</li> <li>• 1 in 1,000 will develop encephalitis (inflammation of the brain). For every 10 children who develop encephalitis:               <ul style="list-style-type: none"> <li>• 1 will die; and</li> <li>• up to 4 will have brain damage.</li> </ul> </li> <li>• 1 in 8,000 children under two years of age get SSPE (brain degeneration), which may be many years after measles and is always fatal.</li> <li>• 1 in 6,000 will get a blood clotting problem</li> </ul>	<p>Of the people who are immunised:</p> <ul style="list-style-type: none"> <li>• 1 in 10 will have discomfort, redness or swelling where the injection was given, or will have a fever;</li> <li>• 1 in 20 will get a rash six to ten days later (this is not contagious);</li> <li>• 1 in 1,000 will have a convulsion (fit);</li> <li>• 1 in a million may develop encephalitis (inflammation of the brain);</li> <li>• 1 in 22,000 will get a temporary blood clotting problem</li> </ul>

# The diseases and the vaccines that protect against them

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- the description of the **diseases**
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Disease	Effects of disease	Side effects of vaccine
<p><b>Meningococcal C (Men C)</b> – contagious bacteria that spread by saliva or close contact with an infected person or carrier and cause 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"> <li>• 1 in 15 will die</li> <li>• 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.</li> </ul>	<p>Of the babies who are immunised:</p> <ul style="list-style-type: none"> <li>• 1 in 20 babies will get redness or swelling where the injection was given;</li> <li>• 1 in 20 babies will get a fever;</li> <li>• 1 in 2 babies will become irritable; and</li> <li>• 1 in 100 may get a tummy upset or vomit.</li> </ul>
<p><b>Mumps</b> – 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"> <li>• 1 in 20 will get viral meningitis;</li> <li>• 1 in 1,000 will get encephalitis (brain inflammation);</li> <li>• 4 in 10 men who have mumps will get swollen testicles;</li> <li>• 1 in 3 will get a fever, a headache, and swollen salivary glands under the jaw; and</li> <li>• 1 in 20,000 may become deaf.</li> </ul>	<p>Of the people who are immunised:</p> <ul style="list-style-type: none"> <li>• 1 in 100 may develop swelling of the salivary glands under the jaw; and</li> <li>• 1 in 3 million may develop mild encephalitis (inflammation of the brain).</li> </ul>
	<p>Mumps can also rarely cause infertility in men.</p>	



Disease	Effects of disease	Side effects of vaccine
<p><b>Pertussis</b> (Whooping cough) – contagious bacteria that spread by close contact with an infected person and cause 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"> <li>• 1 in 500 will die from pneumonia or brain damage (90% of deaths are in children under the age of 6 months);</li> <li>• 1 in 125 will have fits (1 in 70 if under 6 months old);</li> <li>• 1 in 1000 will get encephalitis (1 in 500 if under 6 months old);</li> <li>• 1 in 20 will get pneumonia (1 in 10 if under than 6 months old); and</li> <li>• 1 in 5 will need to go into hospital.</li> </ul>	<p>Of the people who are immunised:</p> <ul style="list-style-type: none"> <li>• 1 in 10 have redness and swelling where the injection was given or have a fever;</li> <li>• about 1 in 2,500 may cry for more than three hours after the immunisation; and</li> <li>• 1 in 12,500 may have a convulsion (fit).</li> </ul> <p>Serious side effects are very rare.</p>
<p><b>Pneumococcal disease</b> – contagious bacteria that spread by close contact with an infected person or carrier and cause invasive disease such as pneumonia, meningitis and septicaemia.</p>	<p>Of those who are infected and develop invasive disease:</p> <ul style="list-style-type: none"> <li>• 1 in 3 will develop pneumonia;</li> <li>• 1 in 3 will develop meningitis; and</li> <li>• 1 in 10 will die.</li> </ul>	<p>Of the people who are immunised:</p> <ul style="list-style-type: none"> <li>• 1 in 10 will have discomfort or swelling where the injection was given or have a fever</li> </ul> <p>Serious side effects are very rare.</p>


# The diseases and the vaccines that protect against them

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Disease	Effects of disease	Side effects of vaccine
<p><b>Polio</b> – 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"> <li>• Up to 1 in 100 will become paralysed;</li> <li>• 1 in 20 patients who become paralysed will die; and</li> <li>• 1 in 2 of those with paralysis whom survive will be permanently paralysed.</li> </ul>	<ul style="list-style-type: none"> <li>• No serious side effects have been recorded for inactivated polio vaccine, which has been used for over 40 years.</li> <li>• There may be a little redness or soreness where the injection was given.</li> </ul>
<p><b>Rubella</b> (German measles) – 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 in early pregnancy.</p>	<p>Of the people who get rubella:</p> <ul style="list-style-type: none"> <li>• 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;</li> <li>• 1 in 3,000 get thrombocytopenia (bruising or bleeding of the skin);</li> <li>• 1 in 6,000 get encephalitis (inflammation of the brain);</li> <li>• about 1 in 2 will get a rash and painful swollen glands; and</li> <li>• more than half of women with rubella get painful joints.</li> </ul>	<p>Of the people who are immunised:</p> <ul style="list-style-type: none"> <li>• 1 in 10 will have discomfort, redness or swelling where the injection was given or will have a fever;</li> <li>• 1 in 20 get swollen glands, a stiff neck, or joint pains;</li> <li>• 1 in 20 get a rash (which is not contagious);</li> <li>• 1 in 22,000 get bruising or bleeding; and</li> <li>• 1 in 1 million may get encephalitis (inflammation of the brain).</li> </ul>




Disease	Effects of disease	Side effects of vaccine
<p><b>Tetanus</b> – 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"> <li>• 1 in 10 people will die</li> </ul> <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"> <li>• 1 in 10 will have redness and swelling where the injection was given or have a fever.</li> </ul> <p>Serious side effects are very rare</p>
<p><b>Tuberculosis (TB)</b> – 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"> <li>• most people will get a blister and scarring on the arm where the BCG injection was given;</li> <li>• 1 in 100 may get small swollen glands under the arm;</li> </ul> <p>and</p> <ul style="list-style-type: none"> <li>• up to 1 in 1,000 may get an infection, which responds to treatment.</li> </ul>

# School vaccination programme

Children need to get booster doses of some vaccines in school to protect them against these diseases.

- When your child is aged 4 to 5 years, they will get two vaccines:
  - the 4 in 1 booster to protect against diphtheria, pertussis (whooping cough), polio and tetanus; and
  - a second dose of the MMR vaccine to protect against measles, mumps and rubella.

These vaccines are usually given by a HSE doctor or nurse in school or in some areas by your GP.

- When your child is aged 11 to 14 years, they will get a tetanus and low-dose diphtheria booster vaccine.

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This vaccine is usually given by a HSE doctor or nurse in school.

- When your daughter is in first year of second level school, (about 12 years of age) she will get the HPV (Human Papillomavirus) vaccine, to protect against cervical cancer.

Three doses of this vaccine will be given over 6-12 months.

This vaccine is given by a HSE doctor or nurse in school.

When these vaccines are given in school the HSE will let you know the date of immunisations. If your child misses that immunisation in school, the HSE will arrange for your child to be vaccinated at a clinic.

**In Ireland, all the recommended childhood immunisations listed in the school immunisation schedule are free.**

For further information please see

**[www.immunisation.ie](http://www.immunisation.ie)**





# Further information



The information given in this booklet is the most up to date information available at this time. Additional information including links to the Immunisation Guidelines for Ireland and links to immunisation resources in other countries is available at [www.immunisation.ie](http://www.immunisation.ie)

You can get further information about immunisations from:

## **HSE**

National Immunisation Office  
Unit 8/9 Manor St Business Park  
Manor Street, Dublin 7.  
Phone: 01 867 6108  
Website: [www.immunisation.ie](http://www.immunisation.ie)

## **Health Protection Surveillance Centre**

25-27 Middle Gardiner Street  
Dublin 1.  
Phone: 01 876 5300  
Website: [www.hpsc.ie](http://www.hpsc.ie)

# Notes



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1. The first step in the process of creating a new product is to identify a market need. This can be done through market research, which involves gathering information about the target market and its needs. This information can be used to develop a product that meets the needs of the market.

2. The second step is to develop a business plan. This plan should outline the company's goals, the products it will offer, and the marketing strategy it will use to reach its target market. It should also include financial projections and a timeline for the project.

3. The third step is to secure funding. This can be done through a variety of sources, including venture capitalists, angel investors, and crowdfunding. It is important to have a solid business plan in place before approaching potential investors.

4. The fourth step is to develop a prototype. This is a physical model of the product that can be used to test the design and make any necessary adjustments. It is important to have a prototype that is as close to the final product as possible.

5. The fifth step is to conduct a pilot test. This involves selling the product to a small group of customers and gathering feedback. This feedback can be used to make any necessary adjustments to the product or the marketing strategy.

6. The sixth step is to launch the product. This involves selling the product to a larger market. It is important to have a strong marketing strategy in place to ensure that the product reaches its target market.

7. The seventh step is to monitor the product's performance. This involves tracking sales, customer feedback, and other key metrics. This information can be used to make any necessary adjustments to the product or the marketing strategy.

8. The eighth step is to scale the product. This involves expanding the product's reach to new markets. This can be done through a variety of methods, including increasing the number of sales channels and expanding the marketing budget.

9. The ninth step is to continue to improve the product. This involves staying up-to-date on the latest trends in the market and making any necessary adjustments to the product. This can be done through ongoing market research and customer feedback.

10. The tenth step is to exit the business. This involves selling the company or its assets. It is important to have a solid exit strategy in place before starting the business.



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[www.immunisation.ie](http://www.immunisation.ie)

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