A guide to

childhood immunisations

for babies up to 13 months of age

immunisation

the safest way to protect your child

‘The two public health interventions that have had the greatest impact on the world’s health are clean water and vaccines.’

World Health Organization

This guide describes all the routine childhood immunisations for babies up to 13 months of age.

Contents

Summary

Immunisation is the safest and most effective way of protecting your baby against serious diseases. By having your baby immunised at the recommended times, you are protecting them through early childhood against:

- diphtheria
- tetanus
- whooping cough (pertussis)
- Hib (*Haemophilus influenzae* type b)
- polio
- meningitis C (meningococcal group C)
- pneumococcal infection
- measles
- mumps, and
- rubella (German measles).

These diseases can be very serious. Immunising your child not only protects them, it also prevents the diseases spreading and protects other children who cannot be immunised because they have serious medical conditions.

The complete routine childhood immunisation programme is given on the back cover.

There is more detailed information on all the vaccines at **www.immunisation.nhs.uk**

Or, talk to your doctor, practice nurse or health visitor. You can also call **NHS Direct on 0845 4647.**

Common questions about immunisation

What is immunisation?

Immunisation is a way of protecting against serious diseases. Once we have been immunised, our bodies are better able to fight those diseases if we come into contact with them.

How do vaccines work?

Vaccines contain a small part of the bacterium or virus that causes a disease, or tiny amounts of the chemicals that the bacterium produces. Vaccines work by causing the body's immune system to make antibodies (substances that fight off infection and disease). If your child comes into contact with the infection, the antibodies will recognise it and be ready to protect him or her. Because vaccines have been used so successfully in the UK, diseases such as diphtheria have almost disappeared from this country.

There are some diseases that can kill children or cause lasting damage to their health. Immunisations are given to prepare your child's immune system to fight off those diseases if they come into contact with them.

When should my baby be immunised?

It is important that your baby has their immunisations at the right age – the first ones are given at two months old. They will be given further doses of these immunisations when they are three months old and four months old. Other immunisations are given at around 12 months and 13 months of age, then between three and five years of age (before your child starts school), and in their teenage years (see the table on the back cover of this leaflet).

Why are babies vaccinated so early?

These diseases can be particularly serious in young babies. It is important to make sure babies are protected as early as possible to prevent them catching the diseases.

Why does my baby need more than one dose of vaccine?

Most immunisations have to be given more than once to prepare your child's immunity. For example, three doses of DTaP/IPV/Hib vaccine are needed to provide protection in babies. Booster doses are then given later in life to provide longer-term protection.

How will I know when my baby's immunisations are due?

Your doctor's surgery or clinic will send you an appointment for you to bring your baby for their immunisation. Most surgeries and health centres run special immunisation or baby clinics. If you can't get to the clinic, contact the surgery to make another appointment. All childhood immunisations are free.

What happens at the appointment?

The doctor or nurse will explain the immunisation process to you, and answer any questions you have. The vaccine is injected into the muscle of the thigh.

What if I missed the appointment?

If you missed the appointment or delayed the immunisation, make a new appointment. The immunisation schedule can be picked up where it stopped without having to start again.

If some diseases have disappeared from this country, why do we need to immunise against them?

In the UK, these diseases are kept at bay by high immunisation rates. Around the world, more than 15 million people a year die from infectious diseases. More than half of these are children under the age of five. Most of these deaths could be prevented by immunisation. As more people travel abroad and more people come to visit this country, there is a risk that they will bring these diseases into the UK. The diseases may spread to people who haven't been immunised so your baby is at greater risk if he or she has not been immunised. Immunisation doesn't just protect your child, it also helps to protect your family and the whole community, especially those children who, for medical reasons, can't be immunised.

Remember, it's never too late to have your child immunised. Even if your child has missed an immunisation and is older than the recommended ages, talk to your doctor, practice nurse or health visitor to arrange for your child to be immunised.

How do we know that vaccines are safe?

Before they are allowed to be used, all medicines (including vaccines) are thoroughly tested to assess their safety and effectiveness. After they have been licensed, the safety of vaccines continues to be monitored. Any rare side effects that are discovered can then be assessed further. All medicines can cause side effects, but vaccines are among the very safest. Research from around the world shows that immunisation is the safest way to protect your child's health.

I am worried that my baby will be upset by having an injection.

Your baby may cry and be upset for a few minutes, but they will usually settle down after a cuddle.

Will my baby have any side effects from the injection?

Some babies will have side effects. They may:

- have redness, swelling or tenderness where they had the injection (this will slowly disappear on its own)
- be a bit irritable and feel unwell, or
- have a temperature (fever). (See also page 21.)

What is fever?

A fever is a temperature over 37.5°C. Fevers are quite common in young children, but are usually mild. If your child's face feels hot to the touch and they look red or flushed, he or she may have a fever. You could check their temperature with a thermometer.

How to treat a fever

Keep your child cool by:

- making sure they don't have too many layers of clothes or blankets on, and
- giving them plenty of cool drinks

A dose of infant paracetamol or ibuprofen liquid may help reduce your child's fever. Read the instructions on the bottle very carefully. You may need to give a second dose four to six hours later.

Remember, never give medicines that contain aspirin to children under 16.

If you are worried about your child, trust your instincts. Speak to your doctor or call **NHS Direct on 0845 4647.**

Call the doctor immediately if, at any time, your child:

- has a temperature of 39°C or above, or
- has a fit.

If the surgery is closed and you can't contact your doctor, trust your instincts and go to the emergency department of your nearest hospital.

I'm worried that my baby may have allergies. Can he or she have the vaccine?

Yes. Asthma, eczema, hay fever, food intolerances and allergies do not prevent your child having any vaccine in the routine childhood immunisation programme. If you have any questions, speak to your doctor, practice nurse or health visitor.

Are some babies allergic to vaccines?

Very rarely, children can have an allergic reaction soon after immunisation. This reaction may be a rash or itching affecting part or all of the body. The doctor or nurse giving the vaccine will know how to treat this. It is not a reason to withhold further immunisations.

Even more rarely, children can have a severe reaction, within a few minutes of the immunisation, which causes breathing difficulties and can cause the child to collapse. This is called an anaphylactic reaction. A recent study has shown that only one anaphylactic reaction occurs in about a million immunisations. The people who give immunisations are trained to deal with anaphylactic reactions and children recover completely with treatment.

An anaphylactic reaction is a severe and immediate allergic reaction that needs urgent medical attention.

Do these childhood vaccines contain thiomersal?

None of the routine vaccines described in this leaflet contains thiomersal.

Are there any reasons why my baby should not be immunised?

There are very few reasons why babies cannot be immunised. The vaccines should not be given to babies who have had:

- a confirmed anaphylactic reaction to a previous dose of the vaccine, or
- a confirmed anaphylactic reaction to neomycin, streptomycin, or polymyxin B (antibiotics that may be added to vaccines in very tiny amounts).

In general, children who are 'immunosuppressed' should not receive live vaccines. Children who are immunosuppressed include those:

- whose immune system is suppressed because they are undergoing treatment for a serious condition such as a transplant or cancer, or
- who have any condition which affects the immune system, such as severe primary immunodeficiency.

If this applies to your child, you must tell your doctor, practice nurse or health visitor before the immunisation. They will need to get specialist advice on using live vaccines such as MMR and BCG. There are no other reasons why vaccines should definitely not be given.

What if my baby is ill on the day of the appointment?

If your baby has a minor illness without a fever, such as a cold, they should have their immunisations as normal. If your baby is ill with a fever, put off the immunisation until they have recovered. This is to avoid the fever being associated with the vaccine, or the vaccine increasing the fever your child already has.
If your baby:

- has a bleeding disorder, or
- has had a fit not associated with fever

speak to your doctor, practice nurse or health visitor before your child has any immunisation.

What are fits?

Fits are also called seizures or convulsions. Some are associated with fever and some are not. Seizures associated with fever (which may be called a febrile seizure or febrile convulsion) are rare in the first six months of life and are most common in the second year of life. After this age, the frequency falls and they are rare after the age of five years. Most children who have febrile seizures recover fully. When a seizure occurs within a short time after immunisation, it might not have been caused by the vaccine or the fever. It could be due to an underlying medical condition. If your baby has a fit after an immunisation, contact your doctor. He or she may refer you to a specialist for advice about further investigations and future immunisations.
If the surgery is closed or if you can't contact your doctor, go straight to the emergency department of your nearest hospital.

My baby was born early. When should premature babies have their first immunisation?

Premature babies may be at greater risk of infection. They should be immunised according to the recommended schedule from two months after birth, regardless of how premature they were.

Does my baby have to be immunised?

In the UK, parents can decide whether or not to have their children immunised. Vaccination is recommended because it gives your baby protection against serious diseases, most of which can kill. Around the world, many children are now routinely protected with vaccines. Because of this, some of the world's most serious diseases may soon disappear.

How long do I have to wait before I can take my baby swimming?

Contrary to popular belief, you can take your baby swimming at any time before and after their immunisation.

Are there other ways to immunise my baby?

There is no other proven, effective way to immunise your child. The Faculty of Homeopathy (the registered organisation for doctors qualified in homeopathy) follows the Department of Health guidelines and advises parents to have their children immunised with standard vaccines, unless there are medical contraindications. For more information, visit **www.trusthomeopathy.org**

Why is the immunisation programme changed from time to time?

Immunisation programmes are regularly reviewed to make sure that all children are offered protection against preventable diseases. As new vaccines become available, or research shows that giving existing vaccines at different times improves protection, the programme will be changed. Recent changes to the UK programme have been:

- introducing a new pneumococcal vaccine (PCV) at two and four months, with a booster at 13 months
- changing the timing of the MenC immunisations, to include a booster dose at 12 months, and
- adding a booster dose of Hib vaccine at 12 months.

The childhood immunisation programme

The childhood immunisation programme

Immunisations are given to babies at two, three and four months of age, with further doses given at 12 and 13 months.

Immunisations at two, three and four months of age

You will be offered DTaP/IPV/Hib, MenC and PCV for your baby during the first four months of their life – see the table on page 19. The vaccines are described below, together with the diseases they protect against.

DTaP/IPV/Hib vaccine

Your baby should be immunised with DTaP/IPV/Hib vaccine when they are two, three and four months old.

The DTaP/IPV/Hib vaccine protects against five different diseases – diphtheria, tetanus, pertussis (whooping cough), polio and *Haemophilus influenzae* type b (Hib). Your child should have a Hib booster (in combination with MenC) at 12 months of age; boosters against diphtheria, tetanus, pertussis and polio before they start school; and a further tetanus, diphtheria and polio booster between the ages of 13 and 18 years.

How effective is the DTaP/IPV/Hib vaccine?

Studies have shown that DTaP/IPV/Hib vaccine is very effective in protecting your baby against these five serious diseases. Further doses are needed to extend this protection as your child grows up.

The routine primary immunisation programme for babies at two, three and four months of age

Each vaccination is given as a single injection into the muscle of the thigh.

When to immunise	Diseases protected against	Vaccine given
Two months old	Diphtheria, tetanus, pertussis, polio, *Haemophilus influenzae* type b (Hib) and pneumococcal infection	DTaP/IPV/Hib and PCV
Three months old	Diphtheria, tetanus, pertussis, polio, *Haemophilus influenzae* type b (Hib) and meningitis C	DTaP/IPV/Hib and MenC
Four months old	Diphtheria, tetanus, pertussis, polio, *Haemophilus influenzae* type b (Hib), meningitis C and pneumococcal infection	DTaP/IPV/Hib, MenC and PCV

What is diphtheria?

Diphtheria is a serious disease that usually begins with a sore throat and can quickly cause breathing problems. It can damage the heart and nervous system and, in severe cases, it can kill. Before the diphtheria vaccine was introduced in this country, there were up to 70,000 cases of diphtheria a year, causing up to 5000 deaths.

What is tetanus?

Tetanus is a disease affecting the nervous system which can lead to muscle spasms, cause breathing problems and can kill. It is caused when germs that are found in soil and manure get into the body through open cuts or burns. Tetanus cannot be passed from person to person.

What is pertussis (whooping cough)?

Whooping cough is a disease that can cause long bouts of coughing and choking making it hard to breathe. Whooping cough can last for up to ten weeks. Babies under one year of age are most at risk from whooping cough. For these babies, the disease is very serious and can kill. It is not usually so serious in older children. Before the pertussis vaccine was introduced, the average number of cases of whooping cough reported each year in the UK was 120,000, and 92 children died in the year before the vaccine was introduced.

What is polio?

Polio is a virus that attacks the nervous system which can cause permanent paralysis of muscles. If it affects the chest muscles or the brain, polio can kill. Before the polio vaccine was introduced, there were as many as 8000 cases of polio in the UK in epidemic years. Because of the continued success of the polio vaccination, there have been no cases of natural polio infection in the UK for over 20 years (the last case was in 1984).

What is Hib?

Hib is an infection caused by *Haemophilus influenzae* type b bacteria. It can lead to a number of major illnesses such as blood poisoning (septicaemia), pneumonia and meningitis. The Hib vaccine only protects your baby against the type of meningitis caused by the *Haemophilus influenzae* type b bacteria – it does not protect against any other type of meningitis. The illnesses caused by Hib can kill if they are not treated quickly. Before the Hib vaccine was introduced, there were about 800 cases of Hib in young children every year.

There are several types of meningitis that can be caused by bacteria and viruses (see the section on meningitis and septicemia).

After immunisation with DTaP/IPV/Hib

Your baby might get some of the following side effects, which are usually mild.

- It is quite normal for your baby to be miserable for up to 48 hours after having the injection.
- Your baby could develop a mild fever (see page 10).
- You might notice a small lump where your baby had the injection. This may last for a few weeks but will slowly disappear.

If you think your baby has had any other reaction to the DTaP/IPV/Hib vaccine and you are concerned about it, talk to your doctor, practice nurse or health visitor.

Parents and carers can also report suspected side effects of vaccines and medicines through the Yellow Card Scheme. This can be done on-line by visiting www.yellowcard.gov.uk or by calling the Yellow Card hotline on Freephone 0808 100 3352 (available Monday to Friday 10am to 2pm).

Pneumococcal vaccine (PCV)

Your baby should be immunised with PCV when they are two and four months old.

What is pneumococcal infection?

Pneumococcal (pronounced new-mo-cock-al) infection is one of the commonest causes of meningitis but it also causes ear infections (otitis media), pneumonia and some other serious illnesses.

PCV provides some protection against one of the commonest causes of meningitis, and also against other conditions such as severe ear infections (otitis media), and pneumonia caused by pneumococcal bacteria. This vaccine does not protect against all types of pneumococcal infection and does not protect against meningitis caused by other bacteria or viruses (see the meningitis and septicaemia section on page 35).

After immunisation with PCV

Out of every ten babies immunised, one or two may get swelling, redness or tenderness at the injection site or get a mild fever (see also pages 10 and 21).

MenC vaccine

Your baby should be immunised with MenC vaccine when they are three and four months old.

This vaccine protects against meningitis and septicaemia (blood poisoning) caused by 'meningococcal group C' bacteria. Before the vaccine was introduced, this disease caused about 1500 cases and 150 deaths each year. MenC vaccine does not protect against meningitis caused by other bacteria or by viruses (see page 35).

How effective is the MenC vaccine?

Since the vaccine was introduced, the number of babies under the age of one with group C disease has fallen by about 95%. A booster dose of MenC in the second year of life is needed to provide longer-term protection.

Both meningitis and septicaemia are very serious. See page 35 for descriptions of the diseases, their signs and symptoms, and what to do about them.

After immunisation with MenC vaccine

Your baby may have redness, swelling or tenderness where they had the injection. About half of all babies who have the vaccine may become irritable, and about one in 20 could get a mild fever (see also pages 10 and 21).

Immunisations around 12 and 13 months of age

Your child will need a dose of the combined Hib/MenC vaccine at 12 months of age to boost their protection against *Haemophilus influenzae* type b (Hib) and meningococcal C infections. This booster will protect your child through early childhood. Your child will have their first dose of MMR vaccine at 13 months to protect against measles, mumps and rubella, and the PCV booster to provide longer-term protection against pneumococcal infections such as meningitis, pneumonia and otitis media – see the table on page 25. Your child will need a second dose of MMR vaccine before starting school.

The routine primary immunisations for babies at 12 and 13 months of age

Each vaccination is given as a single injection into the muscle of the thigh or upper arm.

Hib/MenC vaccine

Your baby should be immunised with their booster dose of Hib/MenC vaccine when they are 12 months old.

This booster dose provides longer-term protection against two causes of meningitis and septicaemia.

After immunisation with Hib/MenC booster

Your baby may have redness, swelling or tenderness where they had the injection. About half of all babies who have the vaccine may become irritable, and about one in 20 could get a mild fever (see also pages 10 and 21).

When to immunise	Diseases protected against	Vaccine given
Around 12 months	*Haemophilus influenzae* type b (Hib) meningococcal C infections	Hib/MenC booster
Around 13 months	Measles, mumps and rubella and pneumococcal infections	MMR and PCV booster

MMR vaccine

Your baby should be immunised with their first dose of MMR vaccine at around 13 months of age.

MMR protects your child against measles, mumps and rubella (German measles).

What is the MMR vaccine?

The MMR vaccine contains weakened versions of live measles, mumps and rubella viruses. Because the viruses are weakened, people who have had the vaccine cannot infect other people.

How and when is the vaccine given?

The vaccine is injected into the muscle of the thigh or upper arm. It is given to a child at around 13 months of age after the immunity the baby got from their mother fades. It is given again when children are aged between three and five years.

How effective is the MMR vaccine?

MMR has been responsible for almost wiping out the three diseases in young children since it was introduced in the UK in 1988.

What is measles?

Measles is caused by a very infectious virus. Nearly everyone who catches it will have a high fever, a rash and generally be unwell. Children often have to spend about five days in bed and could be off school for ten days. Adults are likely to be ill for longer. It is not possible to tell who will be seriously affected by measles. The complications of measles affect one in every 15 children. The complications include chest infections, fits, encephalitis (infection of the brain), and brain damage. In very serious cases, measles kills. In 1987 (the year before the MMR vaccine was introduced in the UK), 86,000 children caught measles and 16 died.

How is it spread?

Measles is one of the most infectious diseases known. A cough or a sneeze can spread the measles virus over a wide area. Because it's so infectious, the chances are your child will get measles if he or she is not protected.

What is mumps?

Mumps is caused by a virus which can lead to fever, headache, and painful, swollen glands in the face, neck and jaw. It can result in permanent deafness, viral meningitis (infection of the lining of the brain) and encephalitis. Rarely, it causes painful swelling of the testicles in males and the ovaries in females. Mumps lasts about seven to ten days. Before the MMR vaccine was introduced, about 1200 people a year in the UK went into hospital because of mumps.

How is it spread?

Mumps is spread in the same way as measles. It is about as infectious as flu.

What is rubella?

Rubella (German measles) is a disease caused by a virus. In children it is usually mild and can go unnoticed. It causes a short-lived rash, swollen glands and a sore throat. Rubella is very serious for unborn babies. It can seriously damage their sight, hearing, heart and brain. This condition is called congenital rubella syndrome (CRS). Rubella infection in the first three months of pregnancy causes damage to the unborn baby in nine out of ten cases. In many of the cases, pregnant women caught rubella from their own, or their friends', children. In the five years before the MMR vaccine was introduced, about 43 babies a year were born in the UK with congenital rubella syndrome.

How is it spread?

Rubella is spread in the same way as measles and mumps. It is about as infectious as flu.

After vaccination with MMR

The three different viruses in the vaccine act at different times and may produce the following side effects after the first dose.

- Six to ten days after the immunisation, as the measles part of the vaccine starts to work, about one in ten children may develop a fever and some develop a measles-like rash and go off their food (for advice on treating a fever, see page 11).
- About one in every 1000 immunised children may have a fit caused by a fever. This is called a 'febrile convulsion' (see page 14). However, if a child who has not been immunised gets measles, they are five times more likely to have a fit.
- Rarely, children may get mumps-like symptoms (fever and swollen glands) about three weeks after their immunisation as the mumps part of the vaccine starts to work.
- Very rarely, children may get a rash of small bruise-like spots in the six weeks after the vaccination. This is usually caused by the measles or rubella parts of the vaccine. If you see spots like these, take your child to the doctor to be checked. He or she will tell you how to deal with the problem and how to protect your child in the future.
- Fewer than one child in a million develops encephalitis (swelling of the brain) after the MMR vaccine, and there is very little evidence that it is actually caused by the vaccine. However, if a child catches measles, the chance of developing encephalitis is between one in 200 and one in 5000.

Side effects after the second dose are even less common and usually milder (see also page 21).

Egg allergies

The MMR vaccine can safely be given to children who have had a severe allergy (anaphylactic reaction) to egg. If you have any concerns, talk to your health visitor, practice nurse or doctor.

MMR and autism

There have been many stories in the media linking MMR with autism. Some parents delayed their child's MMR immunisation or didn't have it at all – resulting in outbreaks of measles. However, independent experts from around the world have found no credible scientific evidence for such a link. There is now a large amount of evidence showing that there is no link.

MMR is the safest way to protect your child against measles, mumps and rubella.

Pneumococcal vaccine (PCV)

Your child should be immunised with their booster dose of PCV at 13 months of age.

This vaccination provides longer-term protection against pneumococcal infection.

After immunisation with the PCV booster

Out of ten babies immunised, one or two may get swelling, redness or tenderness at the injection site or get a mild fever (see also page 21).

Won't giving my baby MMR and PCV at the same time overload their immune system?

No. From birth, babies' immune systems protect them from the germs that surround them. Without this protection, babies would not be able to cope with the tens of thousands of bacteria and viruses that cover their skin, nose, throat and intestines. This protection carries on throughout life.

In theory, a baby could respond effectively to around 10,000 vaccines at any one time. The baby's immune system can and does easily cope with the MMR and pneumococcal vaccines at the same time.

Other immunisations

BCG vaccine

Protecting babies against tuberculosis (TB)

The BCG vaccine is not part of the immunisation programme for all children. The BCG vaccine is offered to those babies who are more likely than others to come into close and prolonged contact with someone with TB. If the vaccination is offered, it is usually while you and your baby are still in hospital, but it can be given later.

What is TB?

TB is an infection that usually affects the lungs. It can also affect other parts of the body, such as the lymph glands, bones, joints and kidneys. Most cases can be cured with treatment. TB can also cause a very serious form of meningitis.

After immunisation

A blister or sore may appear where the injection is given. If it does appear, it will heal gradually, and it is best if you do not cover it up. The sore may leave a small scar. If you are worried or think the sore has become infected, see your doctor (see also page 21).

Although TB is no longer common in the UK, worldwide it kills around two million people a year.

Hepatitis B vaccine

Protecting babies against hepatitis B

The hepatitis B vaccine is not part of the routine childhood immunisation programme. The vaccine is currently given to babies whose mothers are hepatitis B positive to prevent the babies developing the disease.

- The first dose is given shortly after birth.
- A second dose is given when the baby is a month old.
- A third dose is given at two months old.
- A booster dose is given when the baby is 12 months old to provide longer-term protection.

A blood test is taken at 12 months to check that the baby has not developed hepatitis B disease.

What is hepatitis?

Hepatitis is an infection of the liver caused by hepatitis viruses. Hepatitis B vaccine protects against the B type of the virus, but it does not protect against hepatitis caused by other types of the virus.

The hepatitis B virus is passed through infected blood from mothers to their babies.

If you are pregnant and have hepatitis B, or if you get the disease during your pregnancy, you could pass it on to your baby. Your baby may not be ill immediately after birth but they have a high chance of becoming a carrier and developing serious liver disease later in life. Some people carry the virus in their blood without knowing it.

Pregnant women in the UK are offered a hepatitis B test during their antenatal care. If you have hepatitis B, you should have your baby vaccinated after birth to prevent him or her from becoming infected. It is safe to breastfeed your baby as long as the baby receives his or her vaccines on time.

After immunisation

The side effects of the hepatitis B vaccine are usually quite mild. There could be some redness, soreness or tenderness where the injection is given. This lasts for a few days (see also page 21).

For further information, visit **www.immunisation.nhs.uk** and enter 'hepatitis B' in the search box.

Watch out for meningitis and septicaemia

Both meningitis and septicaemia are very serious. It is important that you recognise the signs and symptoms and know what to do if you see them. Early symptoms of meningitis and septicaemia may be similar to a cold or flu (fever, vomiting, irritability and restlessness). However, individuals with meningitis or septicaemia can become seriously ill within hours, so it is important to know the signs and symptoms of these conditions.

What is meningitis?

Meningitis is infection of the lining of the brain. Meningitis can be caused by several types of bacteria or viruses.

Infection with meningococcal bacteria can also cause diseases such as meningitis, septicaemia (blood poisoning), pericarditis (inflammation of the lining of the sac that contains the heart) and arthritis (swelling of the joints).

What is septicaemia?

Septicaemia is a very serious condition when the blood stream is infected. The signs of cold hands and feet, pale skin, vomiting and being very sleepy or difficult to wake can come on quickly. If you suspect septicaemia, get help urgently.

In babies, the main symptoms of meningitis may include:

- a high-pitched, moaning cry
- irritable when picked up
- a bulging fontanelle
- drowsy and less responsive – being difficult to wake
- floppy and listless or stiff with jerky movements
- refusing feeds, vomiting
- skin that is pale, blotchy or turning blue, and
- fever.

The main symptoms of septicaemia may include:

- rapid or unusual patterns of breathing
- skin that is pale, blotchy or turning blue
- fever with cold hands and feet
- shivering
- vomiting, refusing feeds
- red or purple spots that do not fade under pressure (**do the glass test** explained on page 38)
- pain or irritability from muscle aches or severe limb or joint pain
- floppiness, and
- severe sleepiness.

In older children, adolescents and adults, the main symptoms of meningitis may include:

- a stiff neck (check that they can kiss their knees or touch their forehead with their knees)
- a very bad headache (this alone is not a reason to get medical help)
- a dislike of bright lights
- vomiting
- a fever
- drowsy, less responsive and confused, and
- a rash

The main symptoms of septicaemia may include:

- sleepiness, less responsive, vacant or confused (a late sign in septicaemia)
- severe pains and aches in the arms, legs and joints
- very cold hands and feet
- shivering
- rapid breathing
- red or purple spots that do not fade under pressure (**do the glass test** explained on page 38)
- vomiting
- a fever, and
- diarrhoea and stomach cramps.

The signs and symptoms of meningitis and septicaemia are listed on the previous pages. It is important to remember that not everyone will develop all the symptoms listed. If an individual develops some of the symptoms listed, especially red or purple spots, get medical help **urgently**. If you can't get in touch with your doctor, or are still worried after getting advice, trust your instincts and take your child to the emergency department of your nearest hospital.

The 'glass test'

Press the side of a clear drinking glass firmly against the rash so you can see if the rash fades and loses colour under pressure. If it doesn't change colour, contact your doctor immediately.

Where can I get more information?

The Meningitis Research Foundation and the Meningitis Trust both provide information on meningitis.

Phone the Meningitis Research Foundation's free 24-hour helpline on 080 8800 3344 or visit the website at **www.meningitis.org**

Phone the Meningitis Trust's 24-hour helpline on 0845 6000 800 or visit the website at **www.meningitis-trust.org**

You can also ask your doctor, practice nurse or health visitor for advice, or call **NHS Direct on 0845 4647**.

Travel advice for children

If your child is going abroad, make sure their routine immunisations are up to date. Your child may also need extra immunisations.

Contact your doctor's surgery or a travel clinic well in advance for up-to-date information on the immunisations your child may need. Courses of most travel vaccines can be given over a four-week period, but more time will be needed if a primary (first) course of the DTaP/IPV/Hib vaccine has to be given. If you find that you have less time before departure, it is still worth attending a clinic to make sure you get as much protection as possible as well as information about reducing the risks of ill health abroad.

Your child may need to be immunised against other diseases such as yellow fever, and have a vaccination certificate as proof, before they can enter some countries. The yellow fever vaccination certificate becomes valid and effective ten days after the vaccination is given.

Watch out for malaria

Malaria is a serious infection that you can catch from mosquito bites. It is a major problem in tropical countries. If you are travelling to an area where there is malaria, your child will need protection.

Avoiding mosquito bites

You should do all you can to prevent your child from getting bitten by mosquitoes.

- During the day and night, use clothes that cover the arms and legs.
- Use insect repellent on the skin and a mosquito net soaked in insecticide.

Use an insect repellent suitable for children. Ask your pharmacist for advice.

There isn't an immunisation against malaria, but your doctor will be able to give you advice on taking anti-malarial drugs.

Anti-malarial drugs do not provide complete protection. but are important when travelling to some parts of the world. They can be quite difficult to take but some are made especially for children.

For more information

You can get *Health advice for travellers*, an information leaflet produced by the Department of Health, from the post office or by contacting the DH Publications order line on 08701 555 455, any time, quoting T7 Health advice for travellers.

You can also get further information on the Department of Health website at **www.dh.gov.uk**

Glossary of terms

This glossary describes some of the terms relevant to your child's immunisations.

Acellular pertussis vaccine
Whooping cough vaccine containing only parts of the pertussis bacterial cells which can produce immunity in the person receiving the vaccine.

Anaphylactic reaction
An immediate and severe allergic reaction which needs urgent medical attention.

DTaP/IPV vaccine
A combined vaccine that protects against four different diseases – diphtheria, tetanus, pertussis (whooping cough) and polio. It contains acellular pertussis vaccine and inactivated polio vaccine. It is given to young children aged three years four months to five years as a pre-school immunisation.

dTaP/IPV vaccine
A combined vaccine that protects against four different diseases – diphtheria, tetanus, pertussis (whooping cough) and polio. It contains low-dose diphtheria vaccine, acellular pertussis vaccine and inactivated polio vaccine. It is an alternative to the DTaP/IPV vaccine that is given to pre-school children aged three years four months to five years.

DTaP/IPV/Hib vaccine
A combined vaccine that protects against five different diseases – diphtheria, tetanus, pertussis (whooping cough), polio and *Haemophilus influenzae* type b (Hib). It contains acellular pertussis vaccine and inactivated polio vaccine.

Fontanelle
Space between the bones at the top of a baby's skull.

Hib/MenC vaccine
A combined vaccine that protects against *Haemophilus influenzae* type b infections and meningococcal C infections.

Inactivated polio vaccine (IPV)
Polio vaccine made from viruses that have been killed.

MenC vaccine
A single vaccine that protects against meningococcal C infections

Neomycin
An antibiotic put into vaccines to prevent contamination by bacteria.

Pneumococcal conjugate vaccine (PCV)
A vaccine that protects against infections caused by seven types of pneumococcal bacteria.

Polymyxin B
An antibiotic put into vaccines to prevent contamination by bacteria.

Streptomycin
An antibiotic put into vaccines to prevent contamination by bacteria.

Td/IPV vaccine
A combined vaccine that protects against three different diseases – tetanus, diphtheria, and polio. It contains tetanus, low-dose diphtheria and inactivated polio vaccine. It is given to young people aged 13 to 18 years to top up their levels of protection against the three diseases.

Vaccine Damage Payment Scheme

Most immunisations are given without any trouble at all, but very rarely there may be problems. The Vaccine Damage Payment Scheme is designed to ease the present and future burdens of the person affected by the vaccination and their family. It covers all the vaccines described in this booklet except hepatitis B vaccine. There are several conditions that need to be met before a payment can be made. If you need more information, please contact:

Vaccine Damage Payments Unit
Department for Work and Pensions
Palatine House
Lancaster Road
Preston
PR1 1HB
Phone: 01772 899944
E-mail: **CAU-VDPU@dwp.gsi.gov.uk**

If you want more advice on immunisation, speak to your doctor, practice nurse or health visitor, or call **NHS Direct on 0845 4647**.

For more information or to ask questions, visit **www.immunisation.nhs.uk** or **www.mmrthefacts.nhs.uk**

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If you need more copies of this booklet, please contact us and quote *A guide to childhood immunisations for babies up to 13 months of age.*
DH publications orderline
E-mail: dh@prolog.uk.com
Phone: 08701 555 455
Fax: 01623 724 524
Textphone: 08700 102 870 (8am to 6pm Monday to Friday)

www.immunisation.nhs.uk

Routine childhood immunisation programme

Each vaccination is given as a single injection into the muscle of the thigh or upper arm

When to immunise	Diseases protected against	Vaccine given
Two months old	Diphtheria, tetanus, pertussis (whooping cough), polio and *Haemophilus influenzae* type b (Hib) Pneumococcal infection	DTaP/IPV/Hib and Pneumococcal conjugate vaccine (PCV)
Three months old	Diphtheria, tetanus, pertussis, polio and *Haemophilus influenzae* type b (Hib) Meningitis C (meningococcal group C)	DTaP/IPV/Hib and MenC
Four months old	Diphtheria, tetanus, pertussis, polio and *Haemophilus influenzae* type b (Hib) Meningitis C Pneumococcal infection	DTaP/IPV/Hib, MenC and PCV
Around 12 months	*Haemophilus influenza* type b (Hib) and meningitis C	Hib/MenC
Around 13 months	Measles, mumps and rubella (German measles) Pneumococcal infection	MMR and PCV
Three years four months to five years old	Diphtheria, tetanus, pertussis and polio Measles, mumps and rubella	DTaP/IPV or dTaP/IPV and MMR
Thirteen to eighteen years old	Tetanus, diphtheria and polio	Td/IPV

Non-routine immunisations

When to immunise	Diseases protected against	Vaccine given
At birth (to babies who are more likely to come into contact with TB than the general population)	Tuberculosis	BCG
At birth (to babies whose mothers are hepatitis B positive)	Hepatitis B	Hep B