

Patient information from BMJ

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DTaP vaccine (diphtheria, tetanus, polio, and pertussis)

The DTaP vaccine is a single injection designed to protect against four diseases.

In the UK, DTaP is usually given to children at the age of three years old. It boosts the vaccinations that children were given first as babies against diphtheria, tetanus, polio, and pertussis.

Vaccination schedules can vary between countries. So in some countries children might get this vaccine, or a similar one, at a different age.

What is the DTaP vaccination?

People are usually given their first vaccinations against **diphtheria, tetanus, polio, and pertussis** as young babies, as part of what is sometimes called the **6-in-1 vaccine**.

As well as the four diseases mentioned above, the 6-in-1 vaccine covers:

- hepatitis B, and
- Hib (*Haemophilus influenzae* type B).

Some vaccines give protection for life. But others only protect against infection for a number of years. At three years old, children need to have some of their vaccinations boosted.

For this reason, the DTaP vaccination is sometimes called the **4-in-1 pre-school booster**.

Vaccine variations

It's worth noting that vaccination schedules can vary between countries, and vaccines with similar names can be slightly different.

For example, in the US, DTaP stands for diphtheria, tetanus, and pertussis. The polio vaccine is given separately.

What is diphtheria?

Diphtheria is an infection that can cause breathing problems, heart failure, paralysis, and death.

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Because of vaccination programmes it has almost disappeared from developed countries, including the UK, the US, and Western Europe. But it is still common in developing countries where vaccination rates are low.

What is tetanus?

Infection with **tetanus** causes symptoms including muscle pain and breathing problems. You might sometimes hear it called **lockjaw**, because it can make it hard to open your mouth.

You can become infected with tetanus if bacteria get into a wound. Vaccination programmes have made tetanus very rare in developed countries.

What is polio?

Polio is an infection that can cause muscle weakness and paralysis. It used to be common all over the world.

Because of successful vaccination programmes, polio has disappeared from most of the world and is now only found in a few countries in Asia.

What is pertussis?

Pertussis is more commonly known as **whooping cough**. It is an infection that causes symptoms like those of a cold, as well as coughing that's followed by a gasping sound.

Pertussis can lead to serious problems, such as dehydration, pneumonia, and seizures (fits).

While vaccination programmes have made whooping cough much less common, it is still sometimes found in developed countries.

- If your child has symptoms of whooping cough **seek medical advice immediately**.
- If your child seems to be having trouble breathing, or if your child's lips turn blue, **call an ambulance or go to the nearest emergency department**.

Who needs the DTaP vaccination?

For the best overall protection from these diseases, people need several doses of vaccination during their life.

You should have had three of these doses as a **baby**. And there is another booster for diphtheria, tetanus, and polio at age 14, which is often called the **3-in-1 teenage booster**.

But you might need another booster later if you:

- travel to certain countries
- have certain types of injury, or
- are unsure of your previous vaccination status. If you're not sure if you had all the recommended doses as a child, it won't do you any harm to have another.

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The DTaP vaccination is also recommended for **pregnant women**. Antibodies against pertussis (whooping cough) produced when mothers have the vaccine can be passed onto newborn babies.

This protects the babies in the first weeks of life when they are most vulnerable to the disease, until they receive the first dose of the 6-in-1 vaccine.

Is there anyone who shouldn't have the vaccine?

Your child should not have the vaccine if he or she:

- has a **high temperature (fever)** on the day of the vaccination appointment. You can rearrange the appointment when your child is well. But your child can have the vaccine if he or she has a minor illness, such as a cold, without a fever
- is **allergic** to any of the ingredients of the vaccine
- has had an allergic reaction to any ingredients of the vaccine before. You should tell the medical staff about any allergies your child has before they have the vaccination.

Is it safe?

The vaccine has been well tested to ensure its safety. It's also safe to give alongside other vaccines, such as the **MMR** (measles, mumps, and rubella) vaccine.

As with many vaccines, DTaP can cause side effects in some children. These side effects are usually mild and don't last long. The most common ones are:

- pain, redness, and swelling where the injection was given (called the injection site)
- irritability and restlessness
- reduced appetite
- increased crying, and
- fever.

Less common side effects include:

- diarrhoea
- nausea (feeling sick), and
- swollen or aching joints.

Rare side effects include:

- a rash at the injection site, and
- swollen glands.

Extremely rarely, a child will have a severe allergic reaction to the vaccine. But the medical staff giving the vaccine will have been trained in how to treat this.

If your child has a fever after having the vaccine, liquid paracetamol can help. But always be careful not to give more than the recommended dose.

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If your child's fever doesn't get better after a second dose of liquid paracetamol, call your doctor.

How is the vaccination given?

As with many vaccines, DTaP is given as an injection into the upper arm.

How well does the vaccine work?

The DTaP vaccine works extremely well. It offers almost total protection for children who are vaccinated.

Pertussis infection still sometimes happens despite vaccination programmes, but diphtheria, tetanus, and polio are now almost unheard of in developed countries, and polio has disappeared from all but a few countries.

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