

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 three diseases.

In the US, DTaP is usually given to children in a series of five doses. Vaccination schedules can vary between countries. So in some countries children might get this vaccine, or a similar one, at different ages.

What is the DTaP vaccination?

DTaP is designed to give protection against infection by **diphtheria**, **tetanus**, and **pertussis**. In the US it's usually given in five doses, beginning when babies are two months old

Giving multiple doses in a planned schedule gives children the best possible protection against these infections.

The recommended full schedule for this vaccine in the US is one dose at each of these ages:

- two months
- four months
- six months
- 15 to 18 months, and
- four to six years.

What is diphtheria?

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

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

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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 programs have made tetanus very rare in developed countries.

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.

While vaccination programs 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 room**.

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 these at various stages as a baby and young child.

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.

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 DTaP vaccine.

Is there anyone who shouldn't have the vaccine?

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

- 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.

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Your child might not be able to have the vaccine if he or she has a **fever** on the day of the vaccination appointment.

Your doctor might think it's okay to have the vaccine if the fever is mild. Otherwise, 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.

People with certain **neurological conditions** (illnesses that affect the nervous system) might not be able to have this vaccine. If this affects you or your child, your doctor should discuss it with you.

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:

- diarrhea
- nausea, 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 acetaminophen can help. But always be careful not to give more than the recommended dose.

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

How is the vaccination given?

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

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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 programs, but diphtheria, and tetanus are now almost unheard of in developed countries.

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