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BCG vaccination

BCG is a vaccination that protects against infection with tuberculosis (TB). BCG stands for Bacillus Calmette-Guérin.

The BCG vaccine used to be part of the standard vaccination programmes in most countries. But it is no longer routinely used in many countries, including the UK.

The vaccine is still widely used in countries with high rates of TB, including those in Africa and some Asian countries.

What is tuberculosis?

Tuberculosis is a bacterial infection that mainly damages the lungs. It is one of the top ten causes of death worldwide.

The disease is spread from person to person in droplets of fluid when someone coughs or sneezes.

TB doesn't spread as easily as some diseases, such as colds and flu. To become infected, you usually have to spend a long time in close company with someone who has TB.

The infection spreads most easily in places with cramped, overcrowded housing. Most deaths from TB happen in Africa, the Indian subcontinent, China, and other parts of Asia, including South-East Asia.

TB is especially dangerous in areas with high rates of **HIV**, as people with weakened immune systems find it harder to fight the infection.

TB can be treated with **antibiotics**. But the disease can be hard to cure, and some people need to take antibiotics for many months. Even then, some strains of TB are **drug resistant**. This means that some antibiotics don't work on these strains.

Symptoms of TB include:

- severe coughing, which can include coughing up blood
- chest pain
- fever and night sweats

- loss of appetite, and
- weakness and fatigue.

If it is not treated, TB can affect other parts of the body, including the bones and kidneys.

TB is not common in developed countries. But it can be present in communities:

- where people have family who came from countries where TB is more common, and
- where people have recently arrived from countries where there are high levels of the disease.

Who needs the BCG vaccination?

Children at high risk

The BCG vaccine is usually given to children who are at risk of being infected with TB.

Whether your child is offered the BCG vaccine depends on where you live. For example, in the UK, babies up to 1 year old are given this vaccine if:

- they were born in parts of the UK with rates of TB that are higher than the rest of the country, such as some areas of London
- they have a parent or grandparent from a country where there are high rates of TB.

Older children might also be offered the vaccine if they:

- have recently arrived from a country with high levels of TB
- they have recently had contact with someone infected with TB, or
- are going to live for at least 3 months in an area with high rates of TB, or where there are problems with TB that is resistant to drug treatment.

Young people and adults

The BCG vaccine is not usually given to people aged over 16 years, because it doesn't work very well in adults.

But some adults might be offered this vaccine if they are thought to have an increased chance of getting TB. For example, you should be offered this vaccine if you:

- work in a laboratory and come into contact with human tissue, such as blood, urine, and tissue samples
- work with animals that are known to sometimes carry TB, such as cattle and monkeys
- work in a prison and have direct contact with prisoners
- work with homeless people
- work in a facility for refugees or asylum seekers
- are a healthcare worker who is likely to come into contact with people who might have TB.

If you wish to have a BCG vaccination, or if you wish your child to have it, you will need to speak to your doctor, who will assess whether you need the vaccine.

For example, if in the UK, you will not be given the vaccine unless you are thought to have an increased chance of getting TB.

Is there anyone who should not have the vaccine?

People who have already had TB, or who are currently infected with the disease, should **not** have the vaccine. This is because:

- it won't help, and
- it can cause unpleasant side effects.

This means that, before being given the vaccine, you will need to have a test called the **tuberculin skin test** or **Mantoux test**.

This involves injecting a small amount of a substance similar to TB just under the skin. If your skin reacts to the injection, it's likely that you have been exposed to TB before, and you should not have the vaccine.

If the test is negative you can have the vaccine.

Other people who should not have the BCG vaccine include:

- people who have already had a BCG vaccination
- people who have ever had a severe allergic reaction to any of the ingredients of the vaccine. You should tell your doctor about any allergies you or your child have before you have the vaccine
- children under 2 years old who live in a home where someone has active TB or is suspected of having it
- people with a septic skin condition at the site where the injection would usually be given
- pregnant women
- people with a weakened immune system (this is called being immunocompromised), either because of a medical condition, or because they are taking medication that can weaken (suppress) the immune system
- people who are severely ill. You should wait until you have recovered before you have the vaccine
- people who have cancer that affects their bone marrow, white blood cells, or lymph nodes, such as lymphoma or leukemia.

How is the vaccination given?

The BCG vaccine is given in the same way as many other vaccines, as an injection in the upper arm.

Is it safe?

The most common side effect of the BCG injection is a small scar at the injection site in the upper arm.

Over several weeks after the injection you might notice a blister appear. This might then ooze and form a crusty scab. You should leave it uncovered and allow it to heal. If you or your child has a more severe skin reaction, tell your doctor.

Other common temporary side effects of the BCG vaccine can include:

- a headache
- fever, and
- swollen glands.

More serious side effects include abscesses and swelling in some bones. But these are rare.

Allergic reactions to the vaccine

Some people have an allergic reaction to the BCG vaccine. But the medical staff who give you the vaccine will be trained in treating allergic reactions.

Even so, you should tell the medical staff before you have the vaccination if you or your child has any allergies.

How well does the vaccine work?

The vaccine is about 70% to 80% effective against the most severe types of TB, including TB meningitis that affects children. This means that it works for between 70 and 80 in every 100 children.

It is less effective against TB that affects the lungs, which is the most common type of TB in adults. And it is less effective in adults in general, against all types of TB.

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