

BCG vaccination

The Bacillus Calmette-Guerin (BCG) vaccine contains a live weakened strain of Tuberculosis (TB) bacteria. It triggers the immune system to protect against the disease.

The vaccine is 70 to 80% effective against the most severe forms of TB, such as TB meningitis in children.

It is less effective in preventing respiratory disease, which is the more common form of TB in adults.

The BCG vaccine is not very effective in adults (16 years or over) and is therefore not usually recommended for people aged over 16 years, unless the risk of exposure is great (such as potential risk through occupational exposure).

1. Who can have the BCG vaccine?

The aim of the UK BCG immunisation programme is to immunise those at increased risk of developing severe disease and/or of exposure to TB infection.

Many people require a tuberculin test (Mantoux) before BCG vaccine can be given.

BCG immunisation should be offered to:

a) **Babies up to 1 year old who:**

- Are born in areas of the UK where TB rates are higher than in the rest of the country.
- Have a parent or grandparent who was born in a country where there's a high rate of TB.

b) **Older children who have an increased risk of developing TB, such as:**

- Children who have recently arrived from a country with high levels of TB
- Children who have come into close contact with somebody infected with respiratory TB.

c) **BCG for adults:**

- BCG vaccination is rarely given to anyone over the age of 16 because it does not work very well in adults
- It may be given to those aged 16-35 years who are at risk of TB through their work, such as some healthcare, laboratory and veterinary workers, or specific workers who have regular contact with high risk groups.

d) **Travellers and those going to reside abroad:**

- BCG may be required for previously unvaccinated, tuberculin-negative individuals according to the destination and the nature of travel. Speak to your health advisor to see if BCG should be considered.

2. Contraindications

The vaccine should not be given to those who:

- Have had a BCG vaccination already
- Have a history of TB
- Have a Mantoux test result of 5mm or more
- Are less than 2 years of age in a household where an active TB case is suspected or confirmed
- Are infants, born to a mother who received immunosuppressive biological therapy during pregnancy
- Are receiving/have received in the past 6 months, immunosuppressive chemotherapy, radiotherapy or immunosuppressive therapy for a solid organ transplant
- Are receiving/have received in the past 12 months - immunosuppressive biological therapy
- Are receiving/have received immunosuppressive medications in the past 3 months
- Have had a confirmed anaphylactic reaction to a component of the vaccine
- BCG vaccine is absolutely contraindicated in all HIV-positive persons regardless of CD4 cell count, ART use, viral load, and clinical status (BHIVA 2015).
- There must be an interval of at least 3 months before another vaccination can be given into the same arm as the BCG.

3. What should you expect after the BCG vaccination?

Reactions to the BCG vaccine are uncommon and generally mild. The expected reaction to the vaccination (seen in around 95% of patients) include:

- a slight swelling, redness and tenderness at the injection site followed by a local lesion
- some weeks later this lesion evolves into a small ulcer
- after some months this ulcer will heal leaving a small, flat scar
- a slight swelling of the lymph nodes in the armpit may be experienced.

4. Uncommon side effects

(may affect up to 1 in 100 people):

- Fever
- Swelling of lymph nodes in the armpit larger than 1 cm across
- Inflammation of lymph nodes, sometimes with oozing ulcers and pus
- An oozing ulcer at the injection site
- Headache

5. Rare side effects

(may affect up to 1 in 1,000 people):

- Abscess at the injection site
- Infection with the bacteria from the vaccine can occur. The infection can spread throughout the body, including the bones.

Allergic reactions (including anaphylactic reactions), more severe local reactions such as abscess formation, and disseminated BCG complications (such as osteitis or osteomyelitis) are rare and should be managed by a specialist.

All serious or unusual adverse reactions possibly associated with BCG vaccination (including abscess and keloid scarring) should be recorded and reported to the Commission on Human Medicines through the [Yellow Card](#) scheme.

6. Care of the injection site

It is not necessary to protect the site from becoming wet during washing and bathing.

The injection site is best left uncovered to help healing. The ulcer should be encouraged to dry, and abrasion (by tight clothes, for example) should be avoided. Should any oozing occur, a temporary dry dressing may be used until a scab forms.

Do not use cream, oils or ointments on the pimple, even if there is a discharge.

It is essential to leave the site open to the air. If absolutely essential (e.g. to permit swimming), an impervious dressing may be used but it should be applied only for a short period as it may delay healing and cause a larger scar.

This leaflet is based on information from:

<https://www.gov.uk/government/publications/tuberculosis-the-green-book-chapter-32>

<https://www.nhs.uk/conditions/vaccinations/bcg-tuberculosis-tb-vaccine/>

<https://www.medicines.org.uk/emc/files/pil.9890.pdf>