

BCG IMMUNISATION

See also **Tuberculosis (investigation and management following exposure in pregnancy)** guideline

INDICATIONS

- All babies (aged ≤ 12 months) with a parent or grandparent who was born in a country where the annual incidence of TB is $\geq 40/100,000$

Countries with incidence of TB $\geq 40/100,000$

| | | | | |
|--------------------------|-------------------|------------------|--------------------------|--------------|
| Afghanistan | Ecuador | Korea DPR | Niger | Taiwan |
| Algeria | El Salvador | Korea (Rep. of) | Nigeria | Tanzania |
| Angola | Equatorial Guinea | Kyrgyzstan | Niue | Thailand |
| Azerbaijan | Eritrea | Lao PDR | Northern Mariana Islands | Timor-Leste |
| Bangladesh | Eswatini | Lesotho | Pakistan | Turkmenistan |
| Benin | Ethiopia | Liberia | Palau | Tuvalu |
| Bhutan | Fiji | Libya | Papua New Guinea | Uganda |
| Bolivia | Gabon | Lithuania | Paraguay | Ukraine |
| Botswana | Gambia | Madagascar | Peru | Uzbekistan |
| Brazil | Georgia | Malawi | Philippines | Vanuatu |
| Brunei | Ghana | Malaysia | Romania | Venezuela |
| Burkina Faso | Greenland | Mali | Russia | Vietnam |
| Burundi | | Marshall Islands | Rwanda | Yemen |
| Cambodia | Guinea | Mauritania | Sao Tome and Principe | Zambia |
| Cameroon | Guinea-Bissau | Micronesia | Senegal | Zimbabwe |
| Cape Verde | Guyana | Moldova | Sierra Leone | |
| Central African Republic | Haiti | Mongolia | Singapore | |
| Chad | Hong Kong | Morocco | Solomon Islands | |
| China | India | Mozambique | Somalia | |
| Congo | Indonesia | Myanmar | South Africa | |
| Congo DR | Iraq | Namibia | South Sudan | |
| Côte d'Ivoire | Kazakhstan | Nauru | Sri Lanka | |
| Djibouti | Kenya | Nepal | Sudan | |
| Dominican Republic | Kiribati | Nicaragua | Tajikistan | |

https://worldhealthorg.shinyapps.io/tb_profiles

BCG vaccine to be given to eligible baby:

- Once aged 28 days
- On receipt of screen negative severe combined immune deficiency (SCID) result (or 'SCID not offered' result)

Tuberculin testing not necessary aged < 6 yr unless baby has been in recent contact with TB or has resided in high-incidence country for > 3 months

CONTRAINDICATIONS

- SCID screen positive or screen performed and result pending
- Temperature $> 38^{\circ}\text{C}$ or acutely unwell
- Severe eczema (give at suitable lesion-free site)
- Baby in household where an active TB case suspected or confirmed, see **Tuberculosis (investigation and management following exposure in pregnancy)** guideline
- Immunodeficient or on high-dose corticosteroids
 - defer BCG until 3 months after stopping corticosteroids if given prednisolone 1 mg/kg/day for > 2 weeks, 2 mg/kg/day for 1 week, (or equivalent doses of another corticosteroid, e.g. dexamethasone 150 micrograms = prednisolone 1 mg)
- Maternal immunosuppressive treatment during pregnancy or breastfeeding
 - Biologics including anti-TNF α (e.g. etanercept, infliximab, adalimumab) for conditions such as arthritis or inflammatory bowel disease, postpone BCG until aged 6 months
 - immune-modulation therapy for treatment of COVID in pregnancy e.g. tocilizumab and sarilumab, postpone BCG until aged 6 months
- HIV positive, living in UK

- if mother HIV positive and high risk of HIV transmission [see **Human immunodeficiency virus (HIV)** guideline] and exclusively formula feeding, give vaccine only after baby is confirmed HIV uninfected at aged 12–14 weeks
- if mother HIV positive and very low risk or low risk of HIV transmission [see **Human immunodeficiency virus (HIV)** guideline] BCG can be given to baby when indicated
- if high risk of TB exposure and maternal HIV viral load <50 copies/mL after 36 weeks' gestation, BCG can be given at birth
- encourage maternal HIV testing but do not withhold BCG if mother declines testing unless mother from sub-Saharan Africa, in which case refer to HIV team for counselling about testing

SPECIAL CASES

- No need to delay routine vaccinations
- BCG can be given simultaneously with other vaccines [including rotavirus vaccine oral or palivizumab (Synagis®) (IM but not in same arm)]
- no further immunisation should be given in arm used for BCG immunisation for ≥3 months due to risk of regional lymphadenitis
- if not given at same time, leave 4 weeks before giving other injectable live vaccines
- Premature babies to have their BCG at appropriate chronological age
- Do not delay for minor illnesses without fever/systemic upset

PROCEDURE

Consent

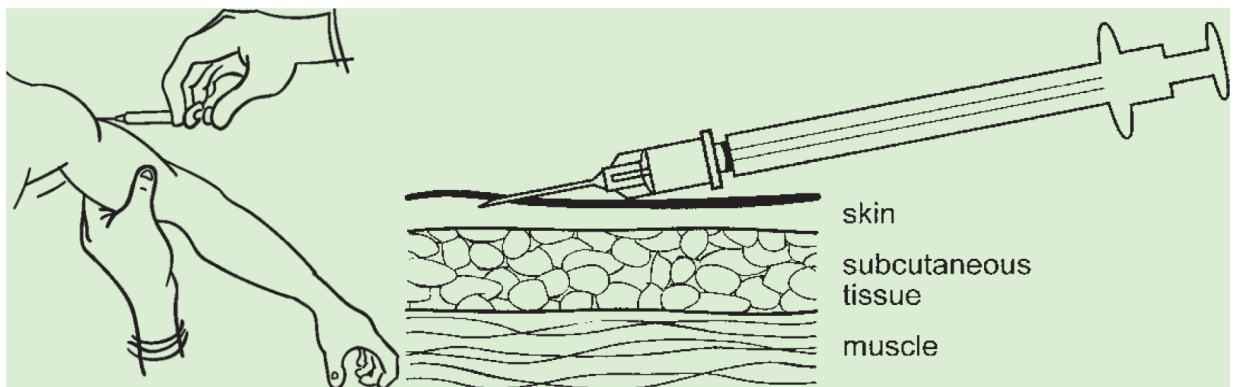
- Midwife to record at booking if risk factor present
- Postnatal check for risk factor
- Ensure baby within inclusion group
- Give mother information on vaccine
- Give appropriate language leaflet **TB, BCG vaccine and your baby**, available from <https://www.gov.uk/government/publications/tb-bcg-and-your-baby-leaflet> order line: 0300 123 1002
- Department of Health guidelines state written consent is not required but follow local practice

Reconstitution

- Use only solvent provided with BCG vaccine AJV for reconstitution
- Using a syringe fitted with a long needle, transfer volume of solvent given on label to the vial
- Carefully invert vial a few times to completely resuspend the lyophilised BCG. **DO NOT SHAKE**
- Use product immediately after reconstitution

Injection

Only staff trained to give intradermal injections to give BCG



- **Dose: 0.05 mL via intradermal injection (Note: vial contains 20 doses)**
- Hold arm at 45° to body
- At insertion of deltoid muscle near middle of left upper arm
- If skin is clean, no further cleaning is necessary
- If skin is visibly dirty, clean with soap and water
- Stretch skin between thumb and forefinger
- Introduce needle bevel upwards approximately 2 mm into superficial layers of dermis almost parallel to skin
- Injection to be given slowly
- If considerable resistance not felt, remove needle and reinsert before giving more vaccine
- Correctly given intradermal injection results in a tense blanched bleb

DOCUMENTATION

- Enter on BCG page in online Child Health Record or in Red Book and tear out yellow copy for Child Health

SEQUELAE

- Scar
 - within 2–6 weeks a small papule will appear
 - sometimes this ulcerates and can ooze
 - site need not be protected from water
 - do not cover with an impervious dressing
 - can take several months to heal
 - occasionally persists as keloid (particularly if given superior to insertion of deltoid)
- Adenitis:
 - a minor degree of adenitis can occur in the weeks following BCG
 - no treatment indicated
- Rare sequelae:
 - local abscess
 - chronic suppurative lymphadenopathy
 - disseminated disease, if immunocompromised
 - osteitis, refer to infectious diseases specialist

Refer to paediatric TB team if:

- Severe local reactions
 - abscesses or drainage at the injection site **or**
 - regional suppurative lymphadenitis with draining sinuses

Refer disseminated BCG infection to paediatric TB specialist