

BCG Vaccine

Information for Health Professionals



This resource explains who should and shouldn't have the BCG vaccine, when the vaccine should be given, and who can give the vaccine. It also describes the vaccine's efficacy and possible side effects. See the back page for sources of more information about tuberculosis (TB) and the BCG vaccine.

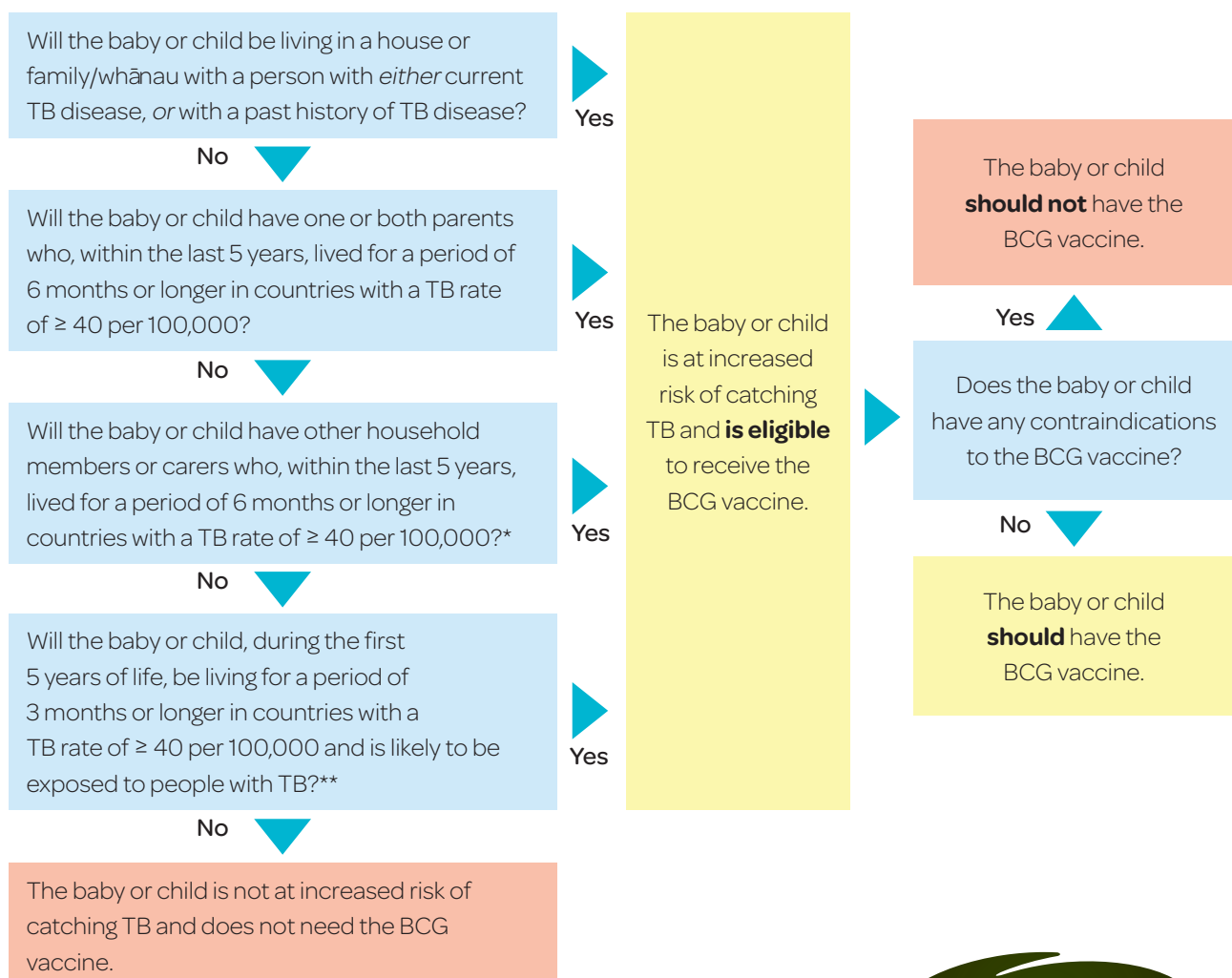
Please Note:

- You should screen all women during pregnancy to assess whether their baby is at increased risk of catching TB.
- The BCG vaccine is free for all babies and children aged less than 5 years who are at increased risk of catching TB.

Who should have the BCG vaccine?

Use the flowchart below to assess whether the baby or child is at increased risk of catching TB, and whether they should have the BCG vaccine.

See the centre pages of this resource for a list of countries with TB rates of ≥ 40 per 100,000 and the back page for a list of contraindications to the BCG vaccine.



* Household members would include regular visitors from high TB incidence countries who come to live in the household for prolonged periods – a baby or child in such a household would be eligible for the BCG vaccine if such prolonged periods were likely to add up to 6 months or longer over a 5-year period.

** A baby or child is eligible for the BCG vaccine if they are likely to stay in a high TB incidence country for prolonged periods during their first 5 years of life and be exposed to people with TB, if such periods were likely to add up to 3 months or longer.



their best protection

Countries with tuberculosis incidence of ≥ 40 per 100,000 population (2013 World Health Organization estimates*)

Country/Territory	World Health Organization Region	Estimated number of cases	Estimated rate per 100,000 population
Afghanistan	Eastern Mediterranean	58,000	189
Algeria	Africa	32,000	81
Angola	Africa	69,000	320
Armenia	Europe	1,500	49
Azerbaijan	Europe	8,000	85
Bangladesh	South East Asia	350,000	224
Belarus	Europe	6,500	70
Benin	Africa	7,200	70
Bhutan	South East Asia	1,300	169
Bolivia (Plurinational State of)	The Americas	13,000	123
Bosnia and Herzegovina	Europe	1,700	46
Botswana	Africa	8,400	414
Brazil	The Americas	93,000	46
Brunei Darussalam	Western Pacific	240	58
Burkina Faso	Africa	9,100	54
Burundi	Africa	13,000	128
Cabo Verde	Africa	710	143
Cambodia	Western Pacific	61,000	400
Cameroon	Africa	52,000	235
Central African Republic	Africa	17,000	359
Chad	Africa	19,000	151
China	Western Pacific	980,000	70
China, Hong Kong SAR	Western Pacific	5,500	76
China, Macao SAR	Western Pacific	500	88
Congo	Africa	17,000	382
Côte d'Ivoire	Africa	35,000	170
Democratic People's Republic of Korea	South East Asia	110,000	429
Democratic Republic of the Congo	Africa	220,000	326
Djibouti	Eastern Mediterranean	5,400	619
Dominican Republic	The Americas	6,200	60
Ecuador	The Americas	8,800	56
Equatorial Guinea	Africa	1,100	144
Eritrea	Africa	5,800	92
Ethiopia	Africa	210,000	224
Fiji	Western Pacific	500	57
Gabon	Africa	7,100	423
Gambia	Africa	3,200	173
Georgia	Europe	5,000	116
Ghana	Africa	17,000	66
Greenland	Europe	110	194
Guatemala	The Americas	9,200	60
Guinea	Africa	21,000	177
Guinea-Bissau	Africa	6,600	387
Guyana	The Americas	870	109
Haiti	The Americas	21,000	206
Honduras	The Americas	4,400	54
India	South East Asia	2100,000	171
Indonesia	South East Asia	460,000	183
Iraq	Eastern Mediterranean	15,000	45
Kazakhstan	Europe	23,000	139
Kenya	Africa	120,000	268
Kiribati	Western Pacific	510	497
Kosovo**			44
Kyrgyzstan	Europe	7,800	141
Lao People's Democratic Republic	Western Pacific	13,000	197
Latvia	Europe	1,000	50
Lesotho	Africa	19,000	916
Liberia	Africa	13,000	308
Libya	Eastern Mediterranean	2,500	40
Lithuania	Europe	2,000	65
Madagascar	Africa	53,000	233

Country/Territory	World Health Organization Region	Estimated number of cases	Estimated rate per 100,000 population
Malawi	Africa	26,000	156
Malaysia	Western Pacific	29,000	99
Maldives	South East Asia	140	40
Mali	Africa	9,200	60
Marshall Islands	Western Pacific	190	354
Mauritania	Africa	4,500	115
Micronesia (Federated States of)	Western Pacific	190	188
Mongolia	Western Pacific	5,100	181
Morocco	Eastern Mediterranean	34,000	104
Mozambique	Africa	140,000	552
Myanmar	South East Asia	200,000	373
Namibia	Africa	15,000	651
Nauru	Western Pacific	4.7	47
Nepal	South East Asia	43,000	156
Nicaragua	The Americas	3,400	55
Niger	Africa	18,000	102
Nigeria	Africa	590,000	338
Northern Mariana Islands	Western Pacific	38	70
Pakistan	Eastern Mediterranean	500,000	275
Palau	Western Pacific	9.2	44
Panama	The Americas	1800	48
Papua New Guinea	Western Pacific	25,000	347
Paraguay	The Americas	3,000	44
Peru	The Americas	38,000	124
Philippines	Western Pacific	290,000	292
Qatar	Eastern Mediterranean	870	40
Republic of Korea	Western Pacific	48,000	97
Republic of Moldova	Europe	5,500	159
Romania	Europe	19,000	87
Russian Federation	Europe	130,000	89
Rwanda	Africa	8,100	69
Sao Tome and Principe	Africa	180	91
Senegal	Africa	19,000	136
Sierra Leone	Africa	19,000	313
Singapore	Western Pacific	2,600	47
Solomon Islands	Western Pacific	520	92
Somalia	Eastern Mediterranean	30,000	285
South Africa	Africa	450,000	860
South Sudan	Africa	17,000	146
Sri Lanka	South East Asia	14,000	66
Sudan	Eastern Mediterranean	41,000	108
Swaziland	Africa	17,000	1382
Taiwan (ROC)***		12,600	55
Tajikistan	Europe	8,200	100
Thailand	South East Asia	80,000	119
Timor-Leste	South East Asia	5,600	498
Togo	Africa	5,000	73
Turkmenistan	Europe	3,800	72
Tuvalu	Western Pacific	23	228
Uganda	Africa	62,000	166
Ukraine	Europe	44,000	96
United Republic of Tanzania	Africa	81,000	164
Uzbekistan	Europe	23,000	80
Vanuatu	Western Pacific	160	62
Viet Nam	Western Pacific	130,000	144
Yemen	Eastern Mediterranean	12,000	48
Zambia	Africa	60,000	410
Zimbabwe	Africa	78,000	552

* Source: <http://www.who.int/tb/country/data/download/en/> accessed 3/12/2014.

** 2010 data from The Global Fund to Fight Aids, Tuberculosis and Malaria. *Expanding Tuberculosis Prevention and Treatment Activities in Kosovo: Grant Performance Report* (<http://portfolio.theglobalfund.org/en/Grant/Index/KOS-405-G01-T>) accessed 8/11/2012.

*** 2011 data from Centers for Disease Control, Department of Health, R.O.C. (Taiwan): 2012 Annual Report (<http://www.cdc.gov.tw/uploads/files/201208/67addf76-0493-4d7b-aa72-cd51bef6654.pdf>) accessed 8/11/2012.

BCG vaccine contraindications

The BCG vaccine should not be given to babies or children:

- receiving corticosteroids or other immune-suppressive treatment, including radiotherapy
- suffering from malignant conditions such as lymphoma, leukaemia, Hodgkin's disease or other tumours of the reticulo-endothelial system
- in whom an immune compromising disease is known or suspected, such as individuals with hypogammaglobulinaemia*
- known or suspected to be infected with HIV, including neonates with suspected HIV infection (ie, if the mother has HIV**)
- with a positive Mantoux test or who have a positive Interferon Gamma Release Assay (IGRA)
- with a significant fever
- with generalised septic skin conditions (for eczema, choose a site free from lesions)
- living in a household where a possible case of active TB is being investigated. (The baby or child can receive the BCG vaccine if testing confirms they are not already infected with TB.)

NOTES:

* Primary immune deficiencies in children are often not detected until after the first few weeks of life (ie, after the BCG vaccine is given). A family history of immune deficiency should be sought and, if present, discussed with a paediatrician before vaccination.

** Neonates whose mothers have HIV infection **must not** be given BCG (or any other live vaccine) until the baby has been shown to be HIV negative, which can only be confirmed at 12–18 months of age. Discuss with the child's paediatrician prior to vaccinating.

More information

For Health Professionals

- The Ministry of Health – www.health.govt.nz
 - the Tuberculosis chapter of the *Immunisation Handbook*
 - *Guidelines for Tuberculosis Control in New Zealand 2010*
 - the Tuberculosis chapter of the *Communicable Diseases Control Manual*.
- Your local Medical Officer of Health, gazetted BCG vaccinator or public health service.
- The Immunisation Advisory Centre – www.immune.org.nz or 0800 IMMUNE (0800 466 863).

When to give BCG vaccine

- Neonates should receive the BCG vaccine before they leave hospital, or as soon as possible following discharge from hospital.
- If the baby or child missed vaccination at birth, they can be vaccinated anytime up to five years of age. If older than six months of age, a pre-vaccine Mantoux test is required to detect if the baby or child is already infected with TB.

Who can give the BCG vaccine?

Only gazetted BCG vaccinators are able to administer the BCG vaccine. Contact your local public health service to find out who your local gazetted vaccinators are, and the requirements for becoming gazetted.

BCG vaccine efficacy

While the BCG vaccine does not prevent TB infection, it does help protect against severe or disseminated forms of childhood TB, particularly miliary and meningeal disease. Evidence suggests that the BCG vaccine is less effective in older children and adults. Therefore, the BCG vaccine is recommended and funded for those babies and children less than five years of age who are at increased risk of TB.

Expected responses and adverse events

Most babies and children develop local reactions to the BCG vaccine, followed by healing and scar formation within three months. Many develop low-grade adenitis that can take several months to resolve. Refer to the *Immunisation Handbook* for rarer complications. Report adverse events to the Centre for Adverse Reactions Monitoring (CARM; online reporting at <http://otago.ac.nz/carm>).

For Parents, Family and Whānau

- BCG vaccine information for parents (Code HE2205; plus community language translations) – available from www.healthed.govt.nz or the Authorised Provider at your DHB.
- Ministry of Health – www.health.govt.nz/tuberculosis

immunise

their best protection