



Childhood immunisation

Guidance notes for professionals
2018 edition

 **mmunisation**
the safest way to protect your children

 **Public Health
Agency**

General contraindications

Almost all individuals can be safely vaccinated with all vaccines. In very few individuals, vaccination is contraindicated.

All vaccines (No 1)

1. All vaccines are contraindicated in those who have had a true anaphylactic reaction to a previous dose or any component of the vaccine or latex if the bung contains latex. Severe local or general reaction to a preceding dose is no longer considered a contraindication.

Live vaccines may be temporarily contraindicated in (Nos 2–8)

2. Children who are receiving high dose corticosteroids, orally or rectally, (eg prednisolone or its equivalent 2 mg/kg/day for more than a week or 1 mg/kg/day for one month). Live vaccines should not be given until at least three months after treatment has ceased.
3. Children who are receiving immunosuppressive treatment, including chemotherapy or radiotherapy. Live vaccines should not be given until at least six months after treatment has ceased. For bone marrow transplant wait at least 12 months after immunosuppressive therapy ceased.
4. Children who are immunosuppressed as a result of disease or who have an impaired immunological mechanism, eg hypogammaglobulinaemia.
5. Children with malignant conditions.
6. Pregnancy – live vaccines should generally be delayed until after delivery, unless the risk from exposure to the disease outweighs the theoretical risk to the fetus.
7. Live vaccines should not be given within three months of receiving immunoglobulin.
8. Any infant who has been exposed to immunosuppressive treatment from the mother either in utero during pregnancy or via breastfeeding should not have any live vaccination for at least six months eg BCG and rotavirus cannot be given.

Deferral of immunisation (No 9)

9. If an individual is acutely unwell, immunisation may be postponed until they have fully recovered. Minor illness without fever or systemic upset are not valid reasons to postpone immunisation.

Children with HIV infection, unless they have severe immunosuppression, should be given all vaccines except BCG and yellow fever. Those with severe immunosuppression should not receive any live vaccines.

See Green Book chapter 6 for more details and seek advice from child's specialist clinician if clarification required.

Recommendations for giving more than one live vaccine, updated in 2015

| Vaccine combinations | Recommendations |
|---|---|
| Yellow fever and MMR | A four week minimum interval period should be observed between the administration of these two vaccines. Yellow fever and MMR should not be administered on the same day. |
| Varicella (and zoster) vaccine and MMR | If these vaccines are not administered on the same day, then a four week minimum interval should be observed between vaccines. |
| Tuberculin skin testing (Mantoux) and MMR | If a tuberculin skin test has already been initiated, then MMR should be delayed until the skin test has been read unless protection against measles is required urgently. If a child has had a recent MMR, and requires a tuberculin test, then a four week interval should be observed. |
| All currently used live vaccines (BCG, rotavirus, live attenuated influenza vaccine (LAIV), oral typhoid vaccine, yellow fever, varicella, zoster and MMR) and tuberculin (Mantoux) skin testing. | Apart from those combinations listed above, these live vaccines can be administered at any time before or after each other. This includes tuberculin (Mantoux) skin testing. |

General contraindications/Live vaccines

Specific contraindications

| | |
|------------------------------------|---|
| DTaP/ IPV/Hib /HepB | General contraindications Nos 1 and 9. The diphtheria, tetanus and polio containing vaccines may contain minuscule amounts of formaldehyde, neomycin and polymyxin B. |
| PCV | General contraindications Nos 1 and 9. |
| Rotavirus | <p>General contraindications Nos 1 to 9. Acute vomiting and/ or diarrhoea – postpone until recovered. Although the vaccine is a live attenuated virus, with the exception of severe combined immune-deficiency (SCID), the benefit from vaccination may exceed any risk in other forms of immunosuppression.</p> <p>Contraindicated in:</p> <ul style="list-style-type: none"> • previous history of intussusception; • 15 weeks and over – 1st dose; • 24 weeks and over – 2nd dose; • malformation of gastrointestinal tract that could predispose to intussusception; • rare hereditary problems of fructose intolerance, glucose-galactose malabsorption or sucrase-isomaltase insufficiency; • mother received immunosuppressive treatment either during pregnancy or while breastfeeding. |
| MenB | General contraindications Nos 1 and 9. |
| MMR | General contraindications Nos 1 to 9. A true anaphylactic reaction to neomycin, kanamycin or gelatin. All children with egg allergy should receive the MMR vaccination as a routine procedure in primary care. See advice on administration of live vaccines. |
| Hib/ MenC | General contraindications Nos 1 and 9. The vaccine components include tetanus toxoid. |
| dTaP/IPV DTaP/IPV | General contraindications Nos 1 and 9. The diphtheria, tetanus and polio containing vaccines may contain minuscule amounts of formaldehyde, neomycin and polymyxin B. |
| HPV | General contraindications Nos 1, 6 and 9. |

| | |
|--|--|
| <p>Td/IPV</p> | <p>General contraindications Nos 1 and 9. The diphtheria, tetanus and polio containing vaccines may contain minuscule amounts of formaldehyde, neomycin and polymyxin B. Normally allow a 10 year interval between the fourth and fifth dose (if the fourth dose has been given late, this interval can be reduced by a few years).</p> <p>DO NOT OVER-BOOST – the five doses give protection for life unless there is a high risk injury, or travel to a high risk country.</p> |
| <p>MenACWY</p> | <p>General contraindications Nos 1 and 9.</p> |
| <p>Live attenuated flu vaccine (LAIV) nasal spray</p> | <p>General contraindications Nos 1 to 7, and 9.</p> <p>Severe anaphylaxis to egg requiring intensive care.</p> <p>Immunosuppression; salicylate therapy; heavy nasal congestion.</p> <p>Severe asthma: defer vaccination in those with history of active wheezing or increased use of bronchodilators in the previous 72 hours. If condition has not improved after a further 72 hours offer inactivated flu vaccine.</p> <p>Currently taking or have been prescribed oral steroids in the past 14 days; high dose inhaled corticosteroids.</p> <p>Currently on or within 14 days of completing flu antiviral agents.</p> <p>There is a theoretical risk of transmission of live vaccine virus to very severely immunosuppressed contacts (eg bone marrow transplant recipients requiring isolation) for 1-2 weeks post vaccination. If contact with a very severely immunosuppressed person is unavoidable, consider using appropriate inactivated vaccine.</p> <p>See advice on administration of live vaccines.</p> |

Specific contraindications

False contraindications

THE FOLLOWING ARE NOT CONTRAINDICATIONS TO VACCINATION. These children **SHOULD** be immunised.

| |
|---|
| Prematurity, low birth weight or low attained weight |
| Neonatal jaundice |
| Asthma, eczema or hay fever, either personally or in the family |
| Stable neurological conditions, eg cerebral palsy, Down's syndrome |
| Family history of convulsions |
| Recent surgery, including tonsillectomy (nor is recent immunisation a contraindication to surgery) |
| Family history of adverse reactions following immunisation |
| Treatment with antibiotics or locally acting (topical or inhaled) steroids |
| Personal or family history of inflammatory bowel disease |
| 'Snuffly' or 'chesty' children without pyrexia |
| Mother pregnant |
| Previous history of pertussis, meningococcal, measles, rubella or mumps infection |
| Chronic disease – immunisation is especially important in these children |
| Contact with an infectious disease |
| Over the age given in immunisation schedules (with the exception of the Rotavirus vaccine, Hib vaccine, MenB and PCV – see point 4 on back cover) |
| Being breastfed |
| Severe local or general reaction (other than a true anaphylactic reaction) is no longer considered a contraindication. |

Epilepsy is not a contraindication to any vaccination. In particular, children whose epilepsy is well controlled may receive pertussis vaccination. If in doubt, specialist advice may be obtained – see inside back cover. In individuals with an evolving neurological condition, immunisation should be deferred until the neurological condition has resolved or stabilised.

Anaphylaxis

Anaphylactic reaction to vaccination is extremely rare (1:500,000 approximately).

A protocol for the management of anaphylaxis and an anaphylaxis pack must always be available whenever vaccines are given. This brief summary is not a substitute for a proper protocol.

Treatment

- Treat shock
- Maintain airway
- Adrenaline BP 1/1,000 (1mg/ml) by intramuscular injection

| Age | Volume of adrenaline 1 in 1000 |
|------------------|-----------------------------------|
| Under 6 months | 0.15 mL* |
| 6 months–6 years | 0.15 mL* |
| 6–12 years | 0.3 mL* |
| Over 12 years | 0.5 mL |

These doses may be repeated several times if necessary, at 5 minute intervals according to blood pressure, pulse and respiratory function.

* An appropriate syringe to measure these small volumes would need to be included in the pack available.

False contraindications/Anaphylaxis

Site of administration

- There is general agreement that infants under one year should receive all vaccines in the anterolateral aspect of the thigh, since the deltoid muscle is not sufficiently developed. Where it is necessary to give more than one injection in the same limb, the sites should be at least 2.5cm apart and it should be recorded in the notes which vaccine was given at which site.
- Around the age of one, there is an element of choice between the thigh and the deltoid muscle.
- For older children and adults, the deltoid muscle is the preferred site.
- It is now firmly recommended that the buttock is NOT used for vaccinations at any age.
- It is advised that the menB vaccine be given in the left thigh, ideally on its own, so that any local reactions can be monitored more accurately. If another vaccine needs to be administered in the same limb, then it must be given at least 2.5cm apart.
- The BCG vaccine must be administered strictly intradermal, normally into the lateral aspect of the left upper arm. No further immunisation should be given in the arm used for BCG immunisation for at least three months because of the risk of regional lymphadenitis.
- The sites at which each vaccine was given should be noted in the individual's health records.

Needle size

For babies, infants and children, a 25mm, 23G(blue) or 25G(orange) needle is recommended. Only in pre-term or very small babies is a 16mm needle suitable for intramuscular injection.

Storage and handling

- Manufacturer's instructions for storage and reconstitution of vaccine must be observed.
- Different vaccines should not be mixed in the same syringe unless it is clearly indicated that they can be.
- Vaccines must be stored in an appropriate refrigerator between 2° and 8°C, not frozen. A fridge maximum/minimum thermometer should be used. Vaccines should not be stored in the fridge door. Vaccine fridge temperatures should be recorded ideally twice daily but at least once daily, preferably in the morning.
- It is essential that reconstituted vaccines are used within the recommended period following reconstitution.
- Do not remove vaccines from a refrigerator until you are ready to use them.
- Do not expose vaccines to direct sunlight or place them near heat sources, eg radiators.
- Vaccines should be transported in an appropriate cold box.
- The expiry date of all vaccines in the fridge should be checked regularly and the shortest dated vaccines always used first. Ensure any expired vaccines are disposed of immediately using local disposal protocols.
- The above are summary points only. All sites where vaccines are stored should have a detailed cold chain policy.

Specialist advice

Further information

Immunisation is a vast subject. These notes are not comprehensive. Further information is available in the 'green book' – *Immunisation Against Infectious Disease* – previously published by TSO on behalf of the UK Health Departments. (These are the UK accepted immunisation guidelines). This is updated quite frequently so it is always best to check the online version at: www.gov.uk/government/collections/immunisation-against-infectious-disease-the-green-book

For information on which immunisations are required for someone with an unknown or incomplete immunisation status refer to: www.gov.uk/government/publications/vaccination-of-individuals-with-uncertain-or-incomplete-immunisation-status

Other useful sources of information on immunisation include the Public Health Agency website (where all leaflets and translations can be downloaded) pha.site/immunisationvaccine and the national immunisation website www.nhs.uk/vaccinations

Specialist advice

For local specialist advice please contact:

Public Health Agency Duty Room
Public Health Agency
12–22 Linenhall Street
Belfast BT2 8BS
Tel: 0300 555 0119

Email pha.immunisation@hscni.net for enquiries about immunisation leaflets, training and non-urgent immunisation issues.

Consultant Paediatricians

The following paediatricians can also provide expert advice and, for example, arrange immunisation in a hospital setting in the rare instances where this is required.

Dr S Christie

Belfast Health and Social Care Trust

The Royal Belfast Hospital for Sick Children
180 Falls Road, Belfast BT12 6BE. Tel: 028 9063 4763.

Dr L McFetridge

Northern Health and Social Care Trust

Antrim Area Hospital, 45 Bush Road, Antrim BT41 2RL.
Tel: 028 9442 4509.

Dr S Mizra

Northern Health and Social Care Trust

Causeway Hospital, 4 Newbridge Road, Coleraine BT52 1HS.
Tel: 028 7034 6056.

Dr J Lewis

Southern Health and Social Care Trust

Daisy Hill Hospital, 5 Hospital Road, Newry BT35 8DR.
Tel: 028 3083 5000.

Dr G Mackin

Western Health and Social Care Trust

South West Acute Hospital, 124 Irvinestown Road, Enniskillen
BT74 6DN. Tel: 028 6638 2000.

Dr B O'Connor

South Eastern Health and Social Care Trust

Paediatric Asthma and Allergy Service, Ulster Hospital, Upper
Newtownards Road, Dundonald BT16 1RH. Tel: 028 9055 3172.

Consent

Informed consent – which can be either written or oral (depending on local Trust policy) – must be obtained and recorded in the notes at the time of each immunisation, after the child's fitness and suitability have been established.

It is important that the person giving consent is fully informed about the vaccine at the time they give consent. Written material is available to assist in this, but is not a substitute for an opportunity to discuss the issues with a health professional.

Consent is given by the person with parental responsibility; however, this person does not necessarily need to be present at the time the immunisation is given. Although the decision to immunise must be taken by the person with parental responsibility, they can arrange for someone else (eg grandparent or childminder) to bring the child to be immunised. You do not need consent in writing – if they have received all the relevant information and arranged for another person to bring the child, the circumstances indicate they have consented.

A child under 16 years may give consent provided he or she understands fully the benefits and risks involved. If a competent child consents to treatment, a parent cannot override that consent. Obviously they should be encouraged to involve the person with parental responsibility in the decision. Legally, a parent can consent if a competent child refuses.

Routine childhood immunisation programme

| When to immunise | Diseases vaccine protects against | How it is given |
|--------------------------------------|---|---|
| 2 months old | Diphtheria, tetanus, pertussis (whooping cough), polio and Hib, hepatitis B (6 in 1) | One injection |
| | Pneumococcal infection | One injection |
| | Rotavirus | Orally |
| | Meningococcal B infection | One injection |
| 3 months old | Diphtheria, tetanus, pertussis, polio, Hib and hepatitis B (6 in 1) | One injection |
| | Rotavirus | |
| 4 months old | Diphtheria, tetanus, pertussis, polio, Hib and hepatitis B (6 in 1) | One injection |
| | Pneumococcal infection | One injection |
| | Meningococcal B infection | One injection |
| Just after the first birthday | Measles, mumps and rubella | One injection |
| | Pneumococcal infection | One injection |
| | Hib and meningococcal C infection | One injection |
| | Meningococcal B infection | One injection |
| Every year from 2 years old up to P7 | Influenza | Nasal spray or injection |
| 3 years and 4 months old | Diphtheria, tetanus, pertussis and polio | One injection |
| | Measles, mumps and rubella | One injection |
| Girls 12 to 13 years old | Cervical cancer caused by human papillomavirus types 16 and 18 and genital warts caused by types 6 and 11 | Two or three injections over six months |
| 14 to 18 years old | Tetanus, diphtheria and polio | One injection |
| | Meningococcal ACWY | One injection |

Note

1. Premature infants should begin immunisation eight weeks after birth, the same time as full term infants.
2. Children aged between 14 and 18 years should be offered MMR if they have not had at least two doses of MMR.
3. Teenagers being treated for tetanus-prone wounds, and who have received their fourth dose of tetanus vaccine approximately 10 years earlier, should be given the Td/IPV vaccine and the dose normally offered between 14 and 18 years omitted.
4. Hib is not licensed for use beyond 10 years and PCV is not routinely used for children over two years of age. Rotavirus vaccine should not be given at 15 weeks or over for the first dose or 24 weeks or over for the second dose. Men B vaccine should not be given as part of the routine schedule after two years old. Apart from these, it is never too late to catch up with any of the other vaccines so ensure they are offered to children of any age that have missed out. However long the gap, children continuing a course only need to complete it not restart it.



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