

CHILDHOOD IMMUNISATION

Guidance notes for professionals



"It is every child's right to be protected against infectious diseases. No child should be denied immunisation without serious thought as to the consequences, both for the individual child and for the community".

Immunisation Against Infectious Disease

Be wise - immunise

Consent

Informed consent - either written or oral - must be obtained 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 usually given by the person with parental responsibility but a child under 16 years of age may give consent provided he or she understands fully the benefits and risks involved. If a competent child consents to treatment, a parent cannot over-ride 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, but it is likely that taking such a serious step will be rare.

General Contraindications

All vaccines (Nos 1-2)

1. Acute illness, especially fever ($>38^{\circ}\text{C}$). Postpone immunisation until recovered. (A cold without the child being acutely ill is not a contraindication).
 2. Severe local or general reaction to a preceding dose as defined in the 'green book'.
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Live vaccines only (Nos 3-8)

3. Children who are receiving high dose corticosteroids, orally or rectally, (eg prednisolone 2 mg/kg/day for more than a week). Live vaccines should not be given until at least three months after treatment has ceased.
4. 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.
5. Children who are immunosuppressed as a result of disease or who have an impaired immunological mechanism, eg hypogammaglobulinaemia.
6. Children with malignant conditions.
7. Pregnancy - live vaccines should not be given in pregnancy because of the theoretical possibility of harming the fetus unless the risk from exposure to the disease outweighs this theoretical risk.
8. An interval of three weeks should normally be allowed between the administration of two live vaccines. If this is not possible they should be given simultaneously in two different sites. Live vaccines should not be given within three months of receiving immunoglobulin.

Children with HIV infection, whether symptomatic or not, should be given all vaccines except BCG and yellow fever. IPV may be considered in place of OPV.

Consent/General Contraindications

Specific Contraindications

Hib (inactivated vaccine)	General contraindications Nos 1 and 2.
Diphtheria (toxoid)	General contraindications Nos 1 and 2.
Tetanus (toxoid)	<p>General contraindications Nos 1 and 2. In children the first booster dose should be given three years after the primary course. Thereafter allow a ten year interval before the fifth dose.</p> <p>DO NOT OVER-BOOST - once the 5 doses have been given this gives protection for life unless there is a high risk injury.</p>
Pertussis - whole cell (inactivated vaccine)	<p>General contraindications Nos 1 and 2. In children with an evolving neurological problem, vaccination should be delayed until the prognosis is clear. In cases of doubt or concern, specialist advice should be sought - see inside back cover. Whole cell pertussis vaccine should not be used for children over 1 year of age as it is more likely to cause local side effects.</p>
Pertussis - acellular (inactivated vaccine)	<p>General contraindications Nos 1 and 2. Whole cell vaccine is normally preferred to acellular vaccine in children under 1 year of age for the primary course as it gives a better immunological response.</p>

<p>Poliomyelitis (oral - live vaccine)</p>	<p>General contraindications Nos 1 to 8. Vomiting or diarrhoea. Where a household contact is immunosuppressed use inactivated vaccine by injection. Contacts of a recently immunised baby should be advised to wash their hands carefully after changing the baby's nappy. Any un-immunised contacts should be offered vaccine at the same time.</p>
<p>MMR (Measles, Mumps, Rubella) (live vaccine)</p>	<p>General contraindications Nos 1 to 8. Severe allergy to neomycin or kanamycin. There is evidence that MMR can be given safely to children even when they have had an anaphylactic reaction to eggs. If there is concern, specialist advice should be sought - see inside back cover.</p>
<p>BCG (live vaccine)</p>	<p>General contraindications Nos 1 to 8. Positive tuberculin test. Generalised septic skin conditions. HIV positive.</p>
<p>Meningococcal Group C (inactivated vaccine)</p>	<p>General contraindications Nos 1 and 2. Severe reaction to a preceding dose would include tetanus, diphtheria, Meningitis A&C, and Hib vaccine as they can contain the same component.</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	'Snuffly' or 'chesty' children without pyrexia
Neonatal jaundice	Mother pregnant
Asthma, eczema or hay fever, either personally or in the family	Previous history of pertussis, meningococcal, measles, rubella or mumps infection
Stable neurological conditions eg cerebral palsy, Down's syndrome	Chronic disease - immunisation is especially important in these children
Family history of convulsions	Contact with an infectious disease
Recent surgery including tonsillectomy (nor is recent immunisation contraindication to surgery)	Over the age given in immunisation schedules (with the exception of the Hib vaccine)
Family history of adverse reactions following immunisation	Personal or family history of inflammatory bowel disease
Treatment with antibiotics or locally acting (topical or inhaled) steroids	Being breastfed

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.

Anaphylaxis

Anaphylactic reaction to vaccination is extremely rare (1:250,000 approximately).

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	0.05 ml
6 months - 6 years	0.12 ml
6-12 years	0.25 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.

Please take particular note of the dosage for under 6 months which is 0.05 ml **not** 0.5 ml. 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.
 - Over the age of one there is an element of choice.
 - For older children and adults, the deltoid muscle is the preferred site.
 - Do not use the gluteal muscle for vaccination, as it is highly unlikely that the vaccine will reach the muscle, and this may result in poor immune response to the vaccine (this has been demonstrated with the hepatitis B vaccine.) In addition there is a risk of damage to underlying structures such as the sciatic nerve.
 - The deltoid muscle is also easier to access in most patients and results in less embarrassment for older children and adults.
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Storage and Handling

- Manufacturer's instructions for storage and reconstitution of vaccine must be observed.
- Vaccines should not be mixed in the syringe unless it is clearly indicated that they can be.
- Vaccines must be stored in an appropriate refrigerator between 2° and 4°C, not frozen. A fridge thermometer should be used. Vaccines should not be stored in the fridge door.
- 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.
- Any unused vaccine in multi dose containers must be discarded.
- Do not expose vaccines to direct sunlight or place them near heat sources, eg radiators.
- Vaccines should be transported in an appropriate cold box.

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 1996* published by HMSO on behalf of the UK Health Departments. (These are the UK accepted immunisation guidelines).

Specialist Advice

For local specialist advice please contact:

Consultants in Communicable Disease Control

Dr B Morgan/

Dr P Donaghy

Eastern Health and Social
Services Board
12-22 Linenhall Street
Belfast BT2 8BS
Tel: 028 9032 1313

Dr V Tohani

Southern Health and Social
Services Board
Tower Hill
Armagh BT61 9DR
Tel: 028 3741 0041

Dr M Devine

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County Hall
182 Galgorm Road
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Tel: 028 2566 2209

Dr R Smithson

Western Health and Social
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15 Gransha Park
Clooney Road
Londonderry BT47 6TG
Tel: 028 7186 0086

Consultant Paediatricians

Dr P Jackson

The Royal Belfast Hospital
for Sick Children
180 Falls Road
Belfast BT12 6BE
Tel: 028 9026 3306

Dr C Shepherd

Craigavon Area Hospital
Group Trust
68 Lurgan Road
Portadown BT63 5QQ
Tel: 028 3833 4444

Dr J Nicholson

United Hospitals Trust
Antrim Hospital
45 Bush Road
Antrim BT41 2RL
Tel: 028 9442 4504

Dr J O'Donohoe

Sperrin Lakeland Health and
Social Services Trust
Erne Hospital
Enniskillen BT74 6AY
Tel: 028 6632 4711

Dr D Walsh

Causeway Health and Social
Services Trust
Causeway Hospital
4 Newbridge Road
Coleraine BT52 1TP
Tel: 028 7034 6056

Dr M Quinn

Altnagelvin Health and Social
Services Trust
Altnagelvin Area Hospital
Glenshane Road
Londonderry BT47 6SB
Tel: 028 7134 5171

Other useful sources of information on immunisation include the DHSSPS website on www.dhsspsni.gov.uk/phealth and the national immunisation website on www.immunisation.org.uk

Recommended Routine Immunisation Schedule for Infants and Children

Age	Vaccine
2 months	1st Diphtheria/Tetanus/Whole Cell Pertussis/Hib 1st Men C 1st Polio - oral
3 months	2nd Diphtheria/Tetanus/Whole Cell Pertussis/Hib 2nd Men C 2nd Polio - oral
4 months	3rd Diphtheria/Tetanus/Whole Cell Pertussis/Hib 3rd Men C 3rd Polio - oral
12-15 months	Measles/Mumps/Rubella
4-5 years (or 3 years after primary course)	Diphtheria/Tetanus/Acellular Pertussis (DTaP) (booster) Polio - oral (booster) Measles/Mumps/Rubella (booster)
10-14 years	BCG if Heaf negative (Grade 0 or 1)
14-18 years	Tetanus/Diphtheria low-dose (Td) (booster) Polio - oral (booster)

Note

1. Premature infants should begin immunisation two months after birth, the same time as full term infants.
2. No other booster doses are required during infancy, childhood or adolescence.
3. Children aged between 14 and 18 years should be offered MMR if they have not had at least 2 doses of a measles containing vaccine, **of which at least one is MMR.**
4. 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 vaccine and the dose normally offered between 14 and 18 years omitted.
5. Apart from Hib which is not licensed for use beyond 5 years of age it is never too late to catch up with any of the other vaccines. Therefore, a child of any age should be offered all vaccines required to bring them up to date with the vaccine schedule. Children recommencing a course only need to complete it, they do not need to restart it, however long the gap has been.

