

the safety of medicines depends on the availability of information from routine clinical practice.

The black triangle symbol identifies newly licensed medicines that require additional monitoring by the European Medicines Agency. Such medicines include new active substances, biosimilar medicines, and medicines that the European Medicines Agency consider require additional monitoring. The black triangle symbol also appears in the Patient Information Leaflets for relevant medicines, with a brief explanation of what it means. Products usually retain a black triangle for 5 years, but this can be extended if required.

### Medication errors

Adverse drug reactions where harm occurs as a result of a medication error are reportable as a Yellow Card or through the local risk management systems into the National Reporting and Learning System (NRLS). If reported to the NRLS, these will be shared with the MHRA. If the NRLS is not available and harm occurs, report using a Yellow Card.

### Adverse reactions to medical devices

Suspected adverse reactions to medical devices including dental or surgical materials, intra-uterine devices, and contact lens fluids should be reported. Information on reporting these can be found at: [www.mhra.gov.uk](http://www.mhra.gov.uk).

### Side-effects in the *BNF for Children*

The *BNF for Children* includes clinically relevant side-effects for most drugs; an exhaustive list is not included for drugs that are used by specialists (e.g. cytotoxic drugs and drugs used in anaesthesia). Where causality has not been established, side-effects in the manufacturers' literature may be omitted from the *BNF for Children*.

Recognising that hypersensitivity reactions (including anaphylactic and anaphylactoid reactions) can occur with virtually all drugs, this effect is not generally listed, unless the drug carries an increased risk of such reactions or specific management advice is provided by the manufacturer. Administration site reactions have been omitted from the *BNF for Children* (e.g. pain at injection site). The *BNF for Children* also omits effects that are likely to have little clinical consequence (e.g. transient increase in liver enzymes). Drugs that are applied locally or topically carry a theoretical or low risk of systemic absorption and therefore systemic side-effects for these drugs are not listed in the *BNF for Children* unless they are associated with a high risk to patient safety. Infections are a known complication of treatment with drugs that affect the immune system (e.g. corticosteroids or immunosuppressants); this side-effect is listed in the *BNF for Children* as 'increased risk of infection'. Symptoms of drug withdrawal reactions are not individually listed, but are collectively termed 'withdrawal syndrome'.

Description of the frequency of side-effects	
Very common	greater than 1 in 10
Common	1 in 100 to 1 in 10
Uncommon [formerly 'less commonly' in BNF publications]	1 in 1000 to 1 in 100
Rare	1 in 10 000 to 1 in 1000
Very rare	less than 1 in 10 000
Frequency not known	frequency is not defined by product literature or the side-effect has been reported from post-marketing surveillance data

For consistency, the terms used to describe side-effects are standardised using a defined vocabulary across all of the

drug monographs in the *BNF for Children* (e.g. postural hypotension is used for the term orthostatic hypotension).

### Special problems

**Symptoms** Children may be poor at expressing the symptoms of an adverse drug reaction and parental opinion may be required.

**Delayed drug effects** Some reactions (e.g. cancers and effects on development) may become manifest months or years after exposure. Any suspicion of such an association should be reported directly to the MHRA through the Yellow Card Scheme.

**Congenital abnormalities** When an infant is born with a congenital abnormality or there is a malformed aborted fetus doctors are asked to consider whether this might be an adverse reaction to a drug and to report all drugs (including self-medication) taken during pregnancy.

### Prevention of adverse reactions

Adverse reactions may be prevented as follows:

- never use any drug unless there is a good indication. If the patient is pregnant do not use a drug unless the need for it is imperative;
- allergy and idiosyncrasy are important causes of adverse drug reactions. Ask if the child has had previous reactions to the drug or formulation;
- prescribe as few drugs as possible and give very clear instructions to the child, parent, or carer;
- whenever possible use a familiar drug; with a new drug be particularly alert for adverse reactions or unexpected events;
- consider if excipients (e.g. colouring agents) may be contributing to the adverse reaction. If the reaction is minor, a trial of an alternative formulation of the same drug may be considered before abandoning the drug;
- obtain a full drug history including asking if the child is already taking other drugs *including over-the-counter medicines*; interactions may occur;
- age and hepatic or renal disease may alter the metabolism or excretion of drugs, particularly in neonates, which can affect the potential for adverse effects. Genetic factors may also be responsible for variations in metabolism, and therefore for the adverse effects of the drug;
- warn the child, parent, or carer if serious adverse reactions are liable to occur.

### Drug allergy (suspected or confirmed)

Suspected drug allergy is any reaction caused by a drug with clinical features compatible with an immunological mechanism. All drugs have the potential to cause adverse drug reactions, but not all of these are allergic in nature. A reaction is more likely to be caused by drug allergy if:

- The reaction occurred while the child was being treated with the drug, or
- The drug is known to cause this pattern of reaction, or
- The child has had a similar reaction to the same drug or drug-class previously.

A suspected reaction is less likely to be caused by a drug allergy if there is a possible non-drug cause or if there are only gastro-intestinal symptoms present.

The following signs, allergic patterns and timing of onset can be used to help decide whether to suspect drug allergy:

**Immediate, rapidly-evolving reactions** (onset usually less than 1 hour after drug exposure)

- Anaphylaxis, with erythema, urticaria or angioedema, and hypotension and/or bronchospasm. See also Antihistamines, allergen immunotherapy and allergic emergencies p. 174
- Urticaria or angioedema without systemic features