

Fever in under 5s overview

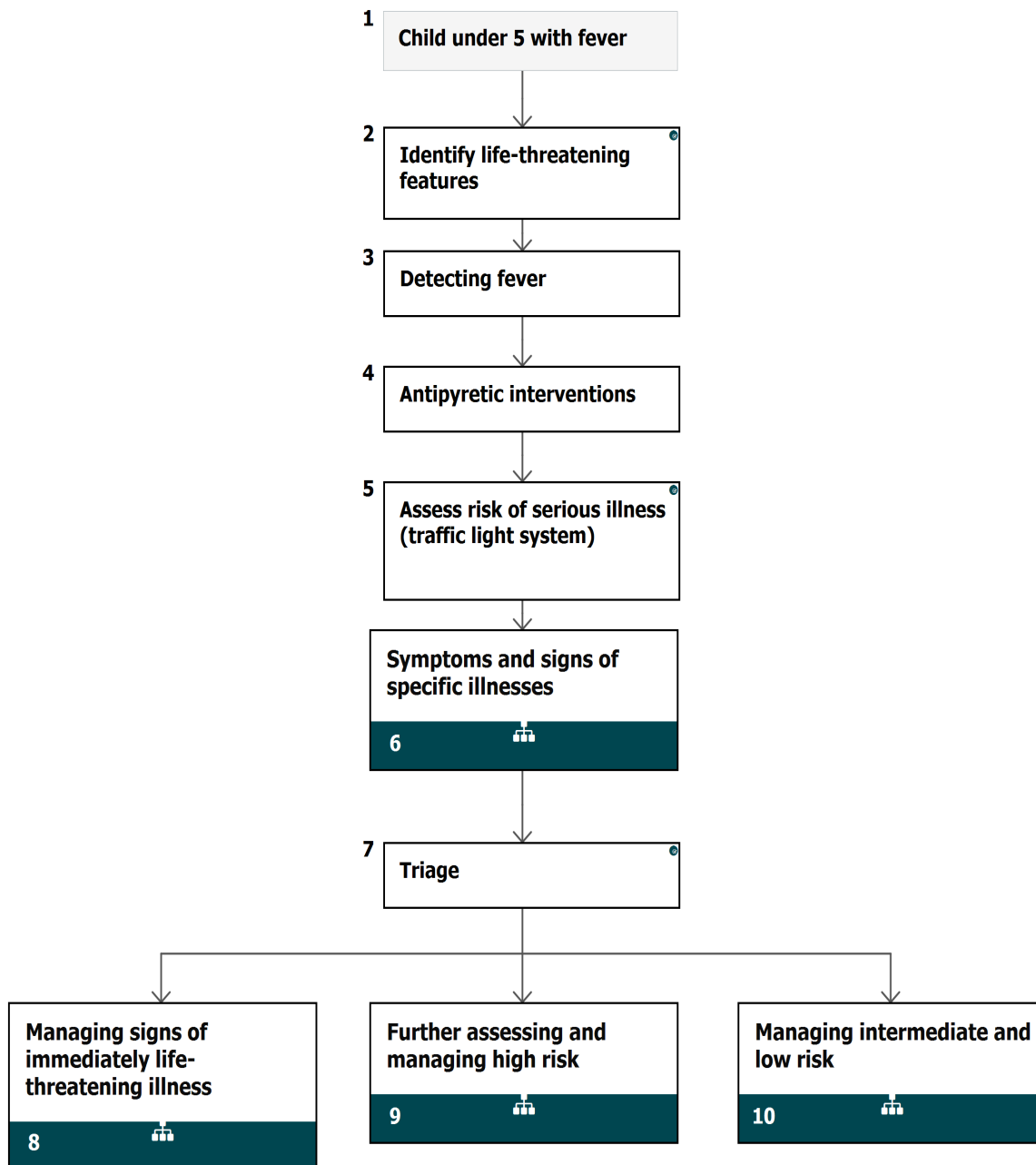
NICE Pathways bring together everything NICE says on a topic in an interactive flowchart. NICE Pathways are interactive and designed to be used online.

They are updated regularly as new NICE guidance is published. To view the latest version of this NICE Pathway see:

<http://pathways.nice.org.uk/pathways/fever-in-under-5s>

NICE Pathway last updated: 30 October 2018

This document contains a single flowchart and uses numbering to link the boxes to the associated recommendations.



1 Child under 5 with fever

No additional information

2 Identify life-threatening features

First, healthcare professionals should identify any immediately life-threatening features, including compromise of the airway, breathing or circulation, and decreased level of consciousness.

Think 'Could this be sepsis?' and refer to NICE's recommendations on [sepsis](#) if a child presents with fever and symptoms or signs that indicate possible sepsis.

Quality standards

The following quality statement is relevant to this part of the interactive flowchart.

Meningitis (bacterial) and meningococcal septicaemia in children and young people

2. Monitoring

3 Detecting fever

Do not routinely use the oral and rectal routes to measure the body temperature of children aged 0–5 years.

In infants under the age of 4 weeks, measure body temperature with an electronic thermometer in the axilla.

In children aged 4 weeks to 5 years, measure body temperature by one of the following methods:

- electronic thermometer in the axilla
- chemical dot thermometer in the axilla
- infra-red tympanic thermometer.

Healthcare professionals who routinely use disposable chemical dot thermometers should consider using an alternative type of thermometer when multiple temperature measurements

are required.

Forehead chemical thermometers are unreliable and should not be used by healthcare professionals.

Subjective detection of fever by parents and carers

Reported parental perception of a fever should be considered valid and taken seriously by healthcare professionals.

4 Antipyretic interventions

Effects of body temperature reduction

Antipyretic agents do not prevent febrile convulsions and **should not** be used specifically for this purpose.

Physical interventions to reduce body temperature

Tepid sponging **is not recommended** for the treatment of fever.

Children with fever **should not** be underdressed or over-wrapped.

Drug interventions to reduce body temperature

Consider using either paracetamol or ibuprofen in children with fever who appear distressed.

Do not use antipyretic agents with the sole aim of reducing body temperature in children with fever.

When using paracetamol or ibuprofen in children with fever:

- continue only as long as the child appears distressed
- consider changing to the other agent if the child's distress is not alleviated
- do not give both agents simultaneously
- only consider alternating these agents if the distress persists or recurs before the next dose is due.

5 Assess risk of serious illness

Assess children with feverish illness for the presence or absence of symptoms and signs that can be used to predict the risk of serious illness using the [traffic light system for identifying risk of serious illness](#) [See page 12]. The traffic light system is also [available in colour](#).

When assessing children with learning disabilities, take the individual child's learning disability into account when interpreting the traffic light table.

Measure and record temperature, heart rate, respiratory rate and capillary refill time as part of the routine assessment of a child with fever.

Measure the blood pressure of children with fever if the heart rate or capillary refill time is abnormal and the facilities to measure blood pressure are available.

In children older than 6 months do not use height of body temperature alone to identify those with serious illness.

Do not use duration of fever to predict the likelihood of serious illness. However, children with a fever lasting more than 5 days should be assessed for Kawasaki disease (see [Kawasaki disease](#)).

Assess children with fever for signs of dehydration. Look for:

- prolonged capillary refill time
- abnormal skin turgor
- abnormal respiratory pattern
- weak pulse
- cool extremities.

Red – high risk

Recognise that children with any of the following symptoms or signs are in a high-risk group for serious illness:

- pale/mottled/ashen/blue skin, lips or tongue
- no response to social cues
- appearing ill to a healthcare professional
- does not wake or if roused does not stay awake

- weak, high-pitched or continuous cry
- grunting
- respiratory rate greater than 60 breaths per minute
- moderate or severe chest indrawing
- reduced skin turgor
- bulging fontanelle.

Recognise that children younger than 3 months with a temperature of 38°C or higher are in a high-risk group for serious illness.

Amber – intermediate risk or higher

Recognise that children with any of the following symptoms or signs are in at least an intermediate-risk group for serious illness:

- pallor of skin, lips or tongue reported by parent or carer
- not responding normally to social cues
- no smile
- wakes only with prolonged stimulation
- decreased activity
- nasal flaring
- dry mucous membranes
- poor feeding in infants
- reduced urine output
- rigors.

Recognise that a capillary refill time of 3 seconds or longer is an intermediate-risk group marker for serious illness ('amber' sign).

Recognise that children aged 3–6 months with a temperature of 39°C or higher are in at least an intermediate-risk group for serious illness.

Recognise that children with tachycardia are in at least an intermediate-risk group for serious illness. Use the Advanced Paediatric Life Support (APLS)¹ criteria below to define tachycardia:

Age	Heart rate (bpm)
-----	------------------

¹ Advanced Life Support Group (2004) Advanced Paediatric Life Support: The Practical Approach (4th edn). Wiley-

<12 months	>160
12–24 months	>150
2–5 years	>140

Green – low risk

Recognise that children who have all of the following features, and none of the high- or intermediate-risk features, are in a low-risk group for serious illness:

- normal colour of skin, lips and tongue
- responds normally to social cues
- content/smiles
- stays awake or awakens quickly
- strong normal cry or not crying
- normal skin and eyes
- moist mucous membranes.

Quality standards

The following quality statements are relevant to this part of the interactive flowchart.

Fever in under 5s

1. Risk of serious illness
2. Measuring and recording vital signs

6 Symptoms and signs of specific illnesses

[See Fever in under 5s / Symptoms and signs of specific illnesses in children with fever](#)

7 Triage

Remote assessment

Healthcare professionals performing a remote assessment of a child with fever should seek to identify symptoms and signs of serious illness using the [traffic light system for identifying risk of serious illness \[See page 12\]](#) (also [available in colour](#)) and specific diseases (see the [summary of symptoms and signs suggestive of specific diseases \[See page 14\]](#)).

Life-threatening illness

Children whose symptoms or combination of symptoms suggest an immediately life-threatening illness (see [identify life-threatening features \[See page 3\]](#)) should be referred immediately for emergency medical care by the most appropriate means of transport (usually 999 ambulance).

Red – high risk features

Children with any 'red' features but who are not considered to have an immediately life-threatening illness should be urgently assessed by a healthcare professional in a face-to-face setting within 2 hours.

Amber – intermediate risk and no high risk features

Children with 'amber' but no 'red' features should be assessed by a healthcare professional in a face-to-face setting. The urgency of this assessment should be determined by the clinical judgement of the healthcare professional carrying out the remote assessment.

Green – low risk features only

Children with 'green' features and none of the 'amber' or 'red' features can be cared for at home with appropriate advice for parents and carers, including advice on when to seek further attention from the healthcare services.

Face to face assessment by a non-paediatric practitioner

Management by a non-paediatric practitioner should start with a clinical assessment as described in these recommendations. Healthcare practitioners should attempt to identify symptoms and signs of serious illness and specific diseases as summarised in the [traffic light system for identifying risk of serious illness \[See page 12\]](#) (also [available in colour](#)) and the

summary of symptoms and signs suggestive of specific diseases [See page 14].

Life-threatening illness

Children whose symptoms or combination of symptoms and signs suggest an immediately life-threatening illness (see identify life-threatening features [See page 3]) should be referred immediately for emergency medical care by the most appropriate means of transport (usually 999 ambulance).

Red – high risk features

Children with any 'red' features but who are not considered to have an immediately life-threatening illness should be referred urgently to the care of a paediatric specialist.

Amber – intermediate features

If any 'amber' features are present and no diagnosis has been reached, provide parents or carers with a 'safety net' or refer to specialist paediatric care for further assessment. The safety net should be 1 or more of the following:

- providing the parent or carer with verbal and/or written information on warning symptoms and how further healthcare can be accessed.
- arranging further follow-up at a specified time and place
- liaising with other healthcare professionals, including out-of-hours providers, to ensure direct access for the child if further assessment is required.

Green – low risk features only

Children with 'green' features and none of the 'amber' or 'red' features can be cared for at home with appropriate advice for parents and carers, including advice on when to seek further attention from the healthcare services.

Quality standards

The following quality statements are relevant to this part of the interactive flowchart.

Fever in under 5s

4. Safety net advice

Meningitis (bacterial) and meningococcal septicaemia in children and young people

1. 'Safety netting' information

8 Managing signs of immediately life-threatening illness

See Fever in under 5s / Managing feverish illness in children with signs of immediately life-threatening illness

9 Further assessing and managing high risk

See Fever in under 5s / Further assessing and managing feverish illness in children at high risk of serious illness

10 Managing intermediate and low risk

See Fever in under 5s / Managing feverish illness in children at intermediate and low risk of serious illness

Traffic light system for identifying risk of serious illness

Children with fever and **any** of the symptoms or signs in the red column should be recognised as being at high risk. Similarly, children with fever and any of the symptoms or signs in the amber column and none in the red column should be recognised as being at intermediate risk. Children with symptoms and signs in the green column and none in the amber or red columns are at low risk. The management of children with fever should be directed by the level of risk.

This traffic light table should be used in conjunction with NICE's recommendations on investigations and initial management in children with fever.

	Green – low risk	Amber – intermediate risk	Red – high risk
Colour (of skin, lips or tongue)	Normal colour	Pallor reported by parent/carer	Pale/mottled/ashen/blue
Activity	<p>Responds normally to social cues</p> <p>Content/smiles</p> <p>Stays awake or awakens quickly</p> <p>Strong normal cry/not crying</p>	<p>Not responding normally to social cues</p> <p>No smile</p> <p>Wakes only with prolonged stimulation</p> <p>Decreased activity</p>	<p>No response to social cues</p> <p>Appears ill to a healthcare professional</p> <p>Does not wake or if roused does not stay awake</p> <p>Weak, high-pitched or continuous cry</p>
Respiratory		<p>Nasal flaring</p> <p>Tachypnoea: respiratory rate: >50 breaths/minute, age</p>	<p>Grunting</p> <p>Tachypnoea: respiratory rate >60 breaths/minute</p> <p>Moderate or severe</p>

		<p>6–12 months</p> <p>>40 breaths/minute, age >12 months</p> <p>Oxygen saturation $\leq 95\%$ in air</p> <p>Crackles in the chest</p>	chest indrawing
Circulation and hydration	<p>Normal skin and eyes</p> <p>Moist mucous membranes</p>	<p>Tachycardia:</p> <p>>160 beats/minute, age <12 months</p> <p>>150 beats/minute, age 12–24 months</p> <p>>140 beats/minute, age 2–5 years</p> <p>Capillary refill time ≥ 3 seconds</p> <p>Dry mucous membranes</p> <p>Poor feeding in infants</p> <p>Reduced urine output</p>	Reduced skin turgor
Other	None of the amber or red symptoms or signs	<p>Age 3–6 months, temperature $\geq 39^{\circ}\text{C}$</p> <p>Fever for ≥ 5 days</p> <p>Rigors</p>	<p>Age <3 months, temperature $\geq 38^{\circ}\text{C}^*$</p> <p>Non-blanching rash</p> <p>Bulging fontanelle</p>

		Swelling of a limb or joint Non-weight bearing limb/not using an extremity	Neck stiffness Status epilepticus Focal neurological signs Focal seizures
*Some vaccinations have been found to induce fever in children aged under 3 months			

The traffic light system is also available in colour on the [NICE website](#).

Summary of symptoms and signs suggestive of specific diseases

Diagnosis to be considered	Symptoms and signs in conjunction with fever
Meningococcal disease	Non-blanching rash, particularly with 1 or more of the following: <ul style="list-style-type: none"> • an ill-looking child • lesions larger than 2 mm in diameter (purpura) • capillary refill time of ≥ 3 seconds • neck stiffness
Bacterial meningitis	Neck stiffness Bulging fontanelle Decreased level of consciousness Convulsive status epilepticus
Herpes simplex encephalitis	Focal neurological signs

	<p>Focal seizures</p> <p>Decreased level of consciousness</p>
Pneumonia	<p>Tachypnoea: respiratory rate:</p> <p>>60 breaths/minute, age 0–5 months</p> <p>>50 breaths/minute, age 6–12 months</p> <p>>40 breaths/minute, age >12 months</p> <p>Crackles in the chest</p> <p>Nasal flaring</p> <p>Chest indrawing</p> <p>Cyanosis</p> <p>Oxygen saturation $\leq 95\%$</p>
Urinary tract infection	<p>Vomiting</p> <p>Poor feeding</p> <p>Lethargy</p> <p>Irritability</p> <p>Abdominal pain or tenderness</p> <p>Urinary frequency or dysuria</p>
Septic arthritis	<p>Swelling of a limb or joint</p> <p>Not using an extremity</p>

	Non-weight bearing
Kawasaki disease	<p>Fever for more than 5 days and at least 4 of the following:</p> <ul style="list-style-type: none"> • bilateral conjunctival injection • change in mucous membranes • change in the extremities • polymorphous rash • cervical lymphadenopathy

Glossary

Fever

an elevation of body temperature above the normal daily variation

Non-paediatric practitioner

a healthcare professional who has not had specific training or who does not have expertise in the assessment and treatment of children and their illnesses; this term includes healthcare professionals working in primary care, but it may also apply to many healthcare professionals in general emergency departments

Paediatric specialist

a healthcare professional who has had specific training or has recognised expertise in the assessment and treatment of children and their illnesses; examples include paediatricians, or healthcare professionals working in children's emergency departments

Remote assessment

refers to situations in which a child is assessed by a healthcare professional who is unable to examine the child because the child is geographically remote from the assessor (for example, telephone calls to NHS 111), therefore, assessment is largely an interpretation of symptoms rather than physical signs

Social cues

a child's response to social interaction with a parent or healthcare professional, such as response to their name, smiling and/or giggling

WBC

white blood cell count

Sources

Fever in under 5s: assessment and initial management (2013 updated 2017) NICE guideline CG160

Your responsibility

Guidelines

The recommendations in this guideline represent the view of NICE, arrived at after careful consideration of the evidence available. When exercising their judgement, professionals and practitioners are expected to take this guideline fully into account, alongside the individual needs, preferences and values of their patients or the people using their service. It is not mandatory to apply the recommendations, and the guideline does not override the responsibility to make decisions appropriate to the circumstances of the individual, in consultation with them and their families and carers or guardian.

Local commissioners and providers of healthcare have a responsibility to enable the guideline to be applied when individual professionals and people using services wish to use it. They should do so in the context of local and national priorities for funding and developing services, and in light of their duties to have due regard to the need to eliminate unlawful discrimination, to advance equality of opportunity and to reduce health inequalities. Nothing in this guideline should be interpreted in a way that would be inconsistent with complying with those duties.

Commissioners and providers have a responsibility to promote an environmentally sustainable health and care system and should assess and reduce the environmental impact of implementing NICE recommendations wherever possible.

Technology appraisals

The recommendations in this interactive flowchart represent the view of NICE, arrived at after careful consideration of the evidence available. When exercising their judgement, health professionals are expected to take these recommendations fully into account, alongside the individual needs, preferences and values of their patients. The application of the recommendations in this interactive flowchart is at the discretion of health professionals and their individual patients and do not override the responsibility of healthcare professionals to make decisions appropriate to the circumstances of the individual patient, in consultation with the patient and/or their carer or guardian.

Commissioners and/or providers have a responsibility to provide the funding required to enable the recommendations to be applied when individual health professionals and their patients wish to use it, in accordance with the NHS Constitution. They should do so in light of their duties to have due regard to the need to eliminate unlawful discrimination, to advance equality of opportunity and to reduce health inequalities.

Commissioners and providers have a responsibility to promote an environmentally sustainable health and care system and should assess and reduce the environmental impact of implementing NICE recommendations wherever possible.

Medical technologies guidance, diagnostics guidance and interventional procedures guidance

The recommendations in this interactive flowchart represent the view of NICE, arrived at after careful consideration of the evidence available. When exercising their judgement, healthcare professionals are expected to take these recommendations fully into account. However, the interactive flowchart does not override the individual responsibility of healthcare professionals to make decisions appropriate to the circumstances of the individual patient, in consultation with the patient and/or guardian or carer.

Commissioners and/or providers have a responsibility to implement the recommendations, in their local context, in light of their duties to have due regard to the need to eliminate unlawful discrimination, advance equality of opportunity, and foster good relations. Nothing in this interactive flowchart should be interpreted in a way that would be inconsistent with compliance with those duties.

Commissioners and providers have a responsibility to promote an environmentally sustainable health and care system and should assess and reduce the environmental impact of implementing NICE recommendations wherever possible.