Fever in children under 5

NICE 2019 NG143, NICE 2022 QS64, Paediatrics for Primary Care (and anyone else): Understanding Traffic Lights - (gppaedstips.blogspot.com)

Red Whale
GEMS
Guidelines & Evidence Made Simple

IMPORTANT: higher-risk children are not covered by this guideline.
Have a low threshold for asking specialist advice in children with comorbidities, e.g. *cystic fibrosis, cerebral shunts, immunosuppression, sickle cell disease, children with tropical diseases, children with recurring or prolonged fever (*NICE 2019 NG143).

Measure the fever → *Clinical assessment* → *Risk stratify* → *Identify a cause* → *Plan management* → *Safety-net*

Measure the fever
How?

- **Infants <4w old**: use an electronic thermometer in the axilla.
- **Children aged 4w to 5y**: use any of an electronic thermometer in the axilla, chemical dot thermometer in the axilla or tympanic thermometer.
- Parental reports of a fever should be considered valid and taken seriously, even without measurement.
- **Do not use oral, rectal or forehead thermometers**.

What about infrared non-contact thermometers?
- NICE does not comment on this technology.
- Temperature varied by >1°C compared with axillary and tympanic thermometers, a potentially clinically significant difference (BJGP 2020; 70(693):e236).

Clinical assessment

- **Identify any immediately life-threatening features and think, "Could this be sepsis?".**
- Document pulse, respiratory rate, oxygen saturations and capillary refill time.
- Look for signs of dehydration.
- Look for *other* signs of a sick child: poor response to social cues; a drowsy, unresponsive child; weak, high-pitched or continuous crying.
- Parental concern and clinician gut instinct are red flags (Lancet 2010;375:834).
- Some vaccines can cause fever: following careful assessment, if no other concerns, post-immunisation fever may be managed in the community.

Risk stratify

NICE risk stratifies clinical markers into traffic light categories.
More recent UK studies comment that:

- The NICE categorisations ***overestimate the risk*** of serious illness ***in the red group*** and ***underestimate the risk in the amber group*** (BJGP 2022; 72(719):e398). Children falling into the green traffic light category were very unlikely to develop serious illness. Very few children needed admission (~ 2%).
- The National Paediatric Early Warning Score and the Liverpool quick Sequential Organ Failure Assessment (LqSOFA) score do not perform well at identifying children at risk of admission (BJGP 2025;75:e98).

*It is normal for children to **swing** between categories of severity during the same illness. We want to catch the ones who are **sliding** downhill and getting worse.*
So, we need to consider the trajectory of the illness (see GEMS p2).

Holistic assessment of the unwell child, including gut feeling, remains a valuable part of our diagnostic toolkit, alongside measurement of clinical observations and a good safety-net.

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NICE traffic light system for risk stratifying.
If you suspect sepsis, follow the NICE sepsis guidance as thresholds for admission vary slightly.
Take account of how any learning difficulties might affect interpretation of risk scores.

Are the 'traffic lights' changing?

Ask yourself: is this child scoring amber but 'turning red', or scoring amber but 'turning green'?
With the 'amber child' in mind, think about your next steps. *You could...*

- *Send them home with advice and a safety-net?*
- *Send them home with a plan for later review (either face to face or remotely)?*
- *Treat them in the surgery (for example, giving SABA via spacer or a dose of antipyretic) and monitor?*
- *Refer in?*

➢ **The choice you make may depend on which way the traffic light is changing!**

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Clinical features	Green (low risk)	Amber (intermediate risk)	Red (high risk) = REFER
Colour	Normal colour	Pallor reported by parent	Pale/mottled/ashen/blue
Activity	Responds normally Content/smiles Stays awake or wakens quickly Normal cry/no crying	Not responding normally No smile Wakes only after prolonged stimulation Decreased activity	No response to social cues Appears ill to health professional Does not wake Weak, high-pitched or continuous cry
Respiratory	-	Nasal flaring Tachypnoea: 6–12m: >50/minute; >12m: >40/minute Oxygen sats ≤95% in air Crackles in chest	Grunting Tachypnoea >60 breaths/min Moderate or severe chest indrawing
Circulation and hydration	Normal skin and eyes Moist mucus membranes	Tachycardia: <12m: >160bpm; 12–24m: >150bpm; 2–5y: >140bpm Capillary refill time ≥3sec Dry mucus membranes Poor feeding in infants Reduced urine output	Reduced skin turgor
Other features	None of the red or amber symptoms or signs	Age 3–6m: T ≥39°C Fever ≥5d Rigors Swelling of a limb or joint Non-weight-bearing limb	Age <3m: T ≥38°C Non-blanching rash Bulging fontanelle Neck stiffness Status epilepticus Focal neurological signs

Post-immunisation fever **may** be managed in the community IF no other concerns after careful assessment

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Try to identify a cause

Clearly, there will be MANY children with viral infections, tonsillitis, otitis media and gastroenteritis. NICE does not specifically refer to these but reminds us to consider the following…

Diagnosis to consider	Symptoms or signs in conjunction with fever
Meningococcal disease	Non-blanching rash, particularly with 1 or more of: • An ill-looking child. • Lesions >2mm in diameter (purpura). • Capillary refill time ≥3sec. • Neck stiffness. **Read more** in: *Meningitis: bacterial meningitis and meningococcal septicaemia.*
Bacterial meningitis	Neck stiffness. Bulging fontanelle. Decreased level of consciousness. Convulsive status epilepticus. **Read more** in: *Meningitis: bacterial meningitis and meningococcal septicaemia.*
Herpes simplex encephalitis	Focal neurological signs. Focal seizures. Decreased level of consciousness. **Read more** in: *Oral herpes, including primary herpetic gingivostomatitis.*
Pneumonia	Tachypnoea. Crackles in chest. Nasal flaring. Chest indrawing. Cyanosis. Oxygen saturations ≤95% in air. **Read more** in: *Pneumonia in children.*
Urinary tract infection	Vomiting. Poor feeding. Lethargy. Irritability. Abdominal pain or tenderness. Urinary frequency or dysuria. **Read more** in: *Urinary tract infections in children.*
Septic arthritis	Swelling of a limb or joint. Not using an extremity. Not weight-bearing. **Read more** in: *Paediatric MSK problems: red flags and normal variants.*
Kawasaki disease	Fever for 5 days or longer, and **may** have some of the following: • Bilateral conjunctival injection. • Change in mucous membranes (injected pharynx, dry cracked lips, strawberry tongue). • Change in the extremities (oedema/erythema/desquamation). • Polymorphous rash. • Cervical lymphadenopathy. **Read more** in: *Kawasaki disease.*

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Management plan

REMOTE ASSESSMENT

Children with:

- **Immediately life-threatening illness: arrange emergency treatment, usually by a 999 ambulance.**
- **Red** features but not felt to be immediately life-threatening: **see face to face within 2h.**
- **Amber** features: **see face to face** (urgency at clinician's discretion).
- **Green** features only: can be cared for at home with appropriate advice and safety-netting.

FACE-TO-FACE ASSESSMENT

Children with:

- **Immediately life-threatening illness: arrange emergency treatment, usually by a 999 ambulance.**
- **Meningococcal disease suspected:** give IM benzylpenicillin (*as per NICE CG102*) and admit by 999 ambulance.
- **Red** features: refer urgently to paediatrics.
- **Amber** features:
  - If a diagnosis can be reached, treat or refer as appropriate – *this is where our clinical acumen comes in!*
  - If a diagnosis cannot be reached, either safety-net and reassess at a specific time and place OR refer for paediatric assessment.
- **Green** features only: can be cared for at home with appropriate advice and safety-netting.

Some DOs and DON'Ts

- **DO NOT prescribe antibiotics for children with fever and no apparent source.**
- **DO test urine if appropriate** (any child <3m with a fever and children >3m with features of a UTI or no clear focus).
- **DO NOT routinely chest X-ray children with clinical symptoms and signs of pneumonia who do not require admission.**

Antipyretics

- Use to ease distress, not to treat a number on a thermometer.
- Antipyretics do not prevent febrile convulsions.
- Do not recommend tepid sponging (risk of peripheral shutdown, causing core temperature to rise).
- Consider using paracetamol **or** ibuprofen in children with fever who appear distressed.
- Do not give both agents simultaneously, but consider alternating agents if distress persists or recurs before the next dose is due.

Safety-net

We need to be more specific than "come back if you are concerned…"

A safety-net should include (BMJ 2022;378:e069094):

- What to expect.
- What to look out for: red and amber flags.
- When and how to seek further help.
- Any diagnostic uncertainty.

Combining written **and** verbal advice improved parental recollection and reduced reconsultation rates and antibiotic use (BJGP 2025;75:e90).

The NICE guideline includes specific advice that parents who are caring for their child at home should seek further medical advice if the child:

- Has a fit.
- Develops a non-blanching rash.
- Is less well than when last reviewed.
- Has a fever which lasts longer than 5d.

Or if the parent is concerned that they are unable to look after them.