Fever in children aged less than 5 years

A fever is defined as a temperature greater than 38 degrees celsius

Height and duration of fever do not identify serious illness. However fever in children younger than 3 months, or a fever ≥ 39°C in children aged 3-6 months, puts these children in the high risk (red) group

Response to antipyretics does not differentiate between serious and non-serious illness

Reported parental perception of fever should be considered valid and taken seriously

Measuring temperature

- Age less than 4 weeks: Axillary thermometry (use a digital thermometer)
- Age 4 weeks to 5 years: Tympanic or axillary thermometry
- Over 5 years: Tympanic thermometry.
- Rectal thermometry. Reserved for children who are very unwell in resus, or with significant hypothermia.

Document which method you use

Assessing feverish children

1) Vital sign measurement in all children

- Temperature (see above)
- Heart rate
- Respiratory rate
- Oxygen saturations
- An assessment of perfusion (colour, cap refill)
- Blood pressure in children with abnormal heart rate or perfusion
- Glasgow coma scale or assessment of alertness
- If appropriate do a bedside glucose

2) Fully assess the child

3) Look particularly for

- Signs of severity of illness: Use vital signs and the NICE traffic light system
- Evidence of / pointers towards a source of the fever: Use the table below
- If you can't find an obvious source the child has "fever without source."
    - The causes of fever without source include viral illnesses, UTI, occult pneumonia, occult meningitis, other hidden infections, occult bacteraemia, tropical diseases
    - Just because you can't find a source doesn't mean the child isn't sick.

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Treatment of Fever

- Don't under or over dress children with fever
- Tepid sponging doesn't work
- Antipyretics are for symptom control. You don't need to treat fever for fever's sake: take time to explain this to parents
    - Use either paracetamol OR ibuprofen.
    - Paracetamol is our first choice agent unless there are particular indications / contraindications or parental preference
    - If the first choice agent doesn't work then you can try the 2nd choice
    - Try to stick with one antipyretic or the other. Don't use both drugs together or routinely alternate: neither of these approaches is better than just one drug.
        - Alternating the agents should only be considered if distress persists or recurs before the next dose of the primary medication is due

Advice for parents if the child is discharged

- Offer regular fluids
- Use antipyretics as described above
- How to identify a non-blanching rash
- Look for signs of dehydration and increase fluids / seek advice if they detect such signs
- Check the child during the night
- Keep the child off nursery or school whilst the child's fever persists and parents to notify school of the illness

- Seek further advice if
    - The child has a fit
    - The child develops a non-blanching rash
    - Parents are concerned about possible dehydration
    - The parent feels they are less well than when they previously sought advice
    - The parent is more worried than when they previously sought advice
    - The fever lasts longer than 5 days
    - The parent or carer is distressed or feels they can no longer look after the child

These guidelines are based on, and compliant with NICE CG160, May 2013 "Feverish Illness in children"

The NICE traffic light system

Any red feature means the child scores red

Any amber feature and no red features means the child scores amber

	Green – low risk	Amber – intermediate risk	Red – high risk
Colour	• Normal colour of skin, lips and tongue	• Pallor reported by parent/carer	• Pale/mottled/ashen/blue
Activity	• Responds normally to social cues • Content/smiles • Stays awake or awakens quickly • Strong normal cry/not crying	• Not responding normally to social cues • Wakes only with prolonged stimulation • Decreased activity • No smile	• No response to social cues • Appears ill to a healthcare professional • Unable to rouse or if roused does not stay awake • Weak, high-pitched or continuous cry
Respiratory		• Nasal flaring • Tachypnoea: RR > 50 breaths/minute age 6–12 months RR > 40 breaths /minute age > 12 months • Oxygen saturation ≤ 95% in air • Crackles	• Grunting • Tachypnoea: RR > 60 breaths/minute • Moderate or severe chest indrawing
Circulation and hydration	• Normal skin and eyes • Moist mucous membranes	• Tachycardia: HR >160 age <12 months HR > 150 age 12-24 months HR > 140 age 2-5 years • Dry mucous membranes • Poor feeding in infants • CRT ≥ 3 seconds • Reduced urine output	• Reduced skin turgor
Other	• **None** of the amber or red symptoms or signs	• Age 3–6 months, temperature ≥ 39°C • Fever for ≥ 5 days • Rigors	• Age 0–3 months, temperature ≥ 38°C
		• Swelling of a limb or joint • Non-weight bearing/not using an extremity	• Non-blanching rash • Bulging fontanelle • Neck stiffness • Status epilepticus • Focal neurological signs • Focal seizures

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NHS Trust

Emergency Department

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The source of the fever

Diagnosis to be considered	Symptoms and signs <u>in conjunction with fever</u>
Meningococcal disease	Non-blanching rash, particularly with one or more of the following: • an ill-looking child • lesions larger than 2 mm in diameter (purpura) • a capillary refill time of ≥ 3 seconds • neck stiffness
Meningitis[1]	Neck stiffness Bulging fontanelle Decreased level of consciousness Convulsive status epilepticus
Herpes simplex encephalitis	Focal neurological signs Focal seizures Decreased level of consciousness
Pneumonia	Tachypnoea (RR > 60 breaths per minute age 0–5 months, RR > 50 breaths per minute age 6–12 months; RR > 40 breaths per minute age > 12 months) Crackles Nasal flaring Chest indrawing Cyanosis Oxygen saturation ≤ 95%
Urinary tract infection[2]	Vomiting Poor feeding Lethargy Irritability Abdominal pain or tenderness Urinary frequency or dysuria Offensive urine or haematuria
Septic arthritis	Swelling of a limb or joint Not using an extremity Non-weight bearing
Kawasaki disease[3]	Fever for more than 5 days and at least four of the following: • bilateral conjunctival injection • change in mucous membranes • change in the extremities • polymorphous rash • cervical lymphadenopathy

[1]Classical signs of meningitis are often absent in babies + children<2y. See table for when to consider an LP

[2]Perform urinalysis in all 'amber' + 'red' children. See table below.

[3]Some young children with Kawasaki disease do not fulfil these criteria. See local paediatric guideline for atypical Kawasaki disease.

Catches when you are hunting for a source

- Red ears: Is this really otitis media? Diagnosis of otitis media requires inflammation AND effusion.
- Pink throats: Is this really tonsilitis or pharyngitis?
- Vomiting: Vomiting is a non-specific symptom of many illnesses, not just gastroenteritis. This is particularly true for young babies who vomit with a fever.
- Severity out-of-keeping with presumed source: It is possible to have, for example, otitis media AND meningitis. Does what you are seeing fit with the clinical diagnosis?

Management of febrile illness in children aged 3 months or less

Children with fever and signs of shock, menigococcal disease, or other indicators of critical illness: treat aggressively in resus, with early involvement of the paediatric + critical care teams

For other children:

Vital signs and assess as above

Then, within your level of competence, commence investigations and management OR seek senior ED or paediatric input to help

Investigations which will be required

- FBC
- Blood culture
- CRP
- Clean catch urine for MC&S (don't just dip it: send it)
- CXR if respiratory signs
- Stool specimen if diarrhoea
- LP if under 1 month, 1-3 months and unwell, 1-3 months and WC <5 or >15

Management

- Admit to CAU
- Start parenteral antibiotics in any child who is under 1 month, 1-3 months and unwell, 1-3 months and WC <5 or >15. For fever without source use cefotaxime and amoxicillin, otherwise follow Trust guidelines

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Management of febrile illness in children aged 3 months to 5 years

Children with fever and signs of shock, menigococcal disease, or other indicators of critical illness: treat aggressively in resus, with early involvement of the paediatric + critical care teams

For other children: Work to your level of clinical competence when commencing investigations or initiating treatment OR seek senior ED or paediatric input as appropriate

If you find a focus manage appropriately based on the clinical state of the child. Remember to take social circumstances, parental anxiety and instinct, distance from hospital, and time of day, into consideration when considering disposition. Response to antipyretics doesn't differentiate serious from non-serious illness

Green features only/ no concerns over vital signs, child appears well and no source identified

- Perform urine dipstick +/- MC&S
- Assess for signs and symptoms of pneumonia
- Do not perform routine blood tests or CXR

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- If diagnosis made treat child appropriately
- If no source identified manage child at home with appropriate advice, safety net, and follow up (usually GP)

Amber features only and no source identified

- Perform (unless deemed unnecessary by an experienced paediatrician / ED consultant)
  - Urine dipstick +/- MC&S
  - FBC
  - CRP
  - Blood cultures
  - CXR if fever > 39 and WC > 20
- Consider
  - LP if child < 1 yr old

Any red features and no source identified

- Perform
  - Urine dipstick +/- MC&S
  - FBC
  - CRP
  - Blood cultures
  - U&E and blood gas
- Consider
  - CXR irrespective of temp and WC
  - LP in all ages

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All children need to be assessed by a senior emergency or paediatric doctor, (ST4, senior specialty doctor, or consultant)

Start sepsis bundle / IV antibiotics if meet the sepsis bundle criteria, you feel there is clinical justification, or based on the results of investigations. For fever without source use cefotaxime, otherwise follow Trust guidelines

All red children will require admission, as will most amber children. The remaining amber children will require a period of observation at a minimum. The decision to discharge a child with any amber features should only be taken by a senior emergency physician or paediatrician