A summary of prescribing recommendations from NICE guidance

## Feverish illness in children

**NICE CG160; 2013**

This guideline covers the assessment and initial management of children <5 years old with feverish illness.

### Definition of terms
- **Fever**: a rise in body temperature above the normal daily variation
- **BP**: blood pressure
- **RR**: respiratory rate

### Detection of fever
- **Do NOT** routinely use oral and rectal routes to measure body temperature in children aged 0 to 5 years.
- To measure body temperature in children:
  - < 4 weeks old: use an electronic thermometer in the axilla (armpit),
  - aged 4 weeks to 5 years: use an electronic or chemical dot thermometer in the armpit OR an infra-red tympanic thermometer.

### Clinical assessment
- **Assessment** should consist of three stages:
  - first check for any immediately life-threatening features (compromised Airways, Breathing or Circulation, and Decreased level of consciousness).
  - use the traffic light system to assess the presence or absence of any signs/symptoms of serious illness.
  - look for a source of fever and check for symptoms and signs that are associated with specific diseases – see NICE pathway.

### Traffic light system – see Table 1

- **High risk**: children with fever and any of the signs or symptoms in the RED column.
- **Intermediate risk**: children with fever and any of the signs or symptoms in the AMBER column and NONE in the RED column.
- **Low risk**: children with fever and any of the signs or symptoms in the GREEN column and NONE in the AMBER/RED column.

See NICE pathway: Feverish illness in children

### Table 1: Traffic light system

<table>
<thead>
<tr>
<th>Colour</th>
<th>GREEN Low-risk</th>
<th>AMBER Intermediate risk</th>
<th>RED High risk</th>
</tr>
</thead>
<tbody>
<tr>
<td>Activity</td>
<td><em>Responds normally to social cues</em></td>
<td><em>Not responding normally to social cues</em></td>
<td><em>No response to social cues</em></td>
</tr>
<tr>
<td></td>
<td><em>Content/smiles</em></td>
<td><em>No smile</em></td>
<td><em>Appears ill to a healthcare professional</em></td>
</tr>
<tr>
<td></td>
<td><em>Stays awake or awakens quickly</em></td>
<td><em>Wakes only with prolonged stimulation</em></td>
<td><em>Does not wake or if roused does not stay awake</em></td>
</tr>
<tr>
<td></td>
<td><em>Strong normal cry/not crying</em></td>
<td><em>Decreased activity</em></td>
<td><em>Weak, high-pitched or continuous cry</em></td>
</tr>
<tr>
<td>Respiratory</td>
<td><em>Nasal flaring</em></td>
<td><em>Tachypnoea: RR &gt;50 breaths/minute age 6 to 12 months, RR &gt;40 breaths/minute age &gt;12 months</em></td>
<td><em>Grunting</em></td>
</tr>
<tr>
<td></td>
<td><em>Tachypnoea: RR &gt;60 breaths/minute age 3 months, &gt;150 breaths/minute age 2 to 5 years,</em></td>
<td><em>Oxygen saturation ≤95% in air</em></td>
<td><em>Tachypnoea: RR &gt;60 breaths/minute</em></td>
</tr>
<tr>
<td></td>
<td><em>Capillary refill time ≥3 seconds</em></td>
<td><em>Crackles in the chest</em></td>
<td><em>Moderate or severe chest indrawing</em></td>
</tr>
<tr>
<td>Circulation and hydration</td>
<td><em>Normal skin and eyes</em></td>
<td><em>Tachycardia: &gt;160 beats/minute age &lt;12 months,</em></td>
<td><em>Reduced skin turgor</em></td>
</tr>
<tr>
<td></td>
<td><em>Moist mucous membranes</em></td>
<td><em>&gt;150 beats/minute age 12 to 24 months,</em></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td><em>&gt;140 beats/minute age 2 to 5 years,</em></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td><em>Capillary refill time ≥3 seconds</em></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td><em>Dry mucous membranes</em></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td><em>Poor feeding in infants</em></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td><em>Reduced urine output</em></td>
<td></td>
</tr>
<tr>
<td>Other</td>
<td><em>None of the amber or red symptoms or signs</em></td>
<td><em>Age 3 to 6 months, temperature ≥39°C</em></td>
<td><em>Age &lt;3 months, temperature ≥38°C</em></td>
</tr>
<tr>
<td></td>
<td></td>
<td><em>Fever for ≥5 days</em></td>
<td><em>Non-blanching rash</em></td>
</tr>
<tr>
<td></td>
<td></td>
<td><em>Rigors</em></td>
<td><em>Bulging fontanelle</em></td>
</tr>
<tr>
<td></td>
<td></td>
<td><em>Swelling of a limb or joint</em></td>
<td><em>Neck stiffness</em></td>
</tr>
<tr>
<td></td>
<td></td>
<td><em>Non-weight bearing limb/not using an extremity</em></td>
<td><em>Status epilepticus</em></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td><em>Focal neurological signs</em></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td><em>Focal seizures</em></td>
</tr>
</tbody>
</table>

### Other recommendations
- **Measure and record temperature, heart rate, respiratory rate and capillary refill time as part of routine assessment.**
- **Recognise that a capillary refill time of ≥3 seconds is an intermediate-risk marker for serious illness (‘amber’).**
- **Measure BP if the heart rate or capillary refill time are abnormal and facilities to measure BP are available.**
- **Do NOT use height of body temperature alone to identify those with serious illness in children ≥6 months old.**
- **Do NOT use duration of fever to predict the likelihood of serious illness. Children with a fever lasting >5 days should be assessed for Kawasaki disease.**
- **Recognise that children:**
  - <3 months old with a temperature of ≥38°C are at high-risk for serious illness,
  - aged 3 to 6 months with a temperature of ≥39°C are at least at intermediate-risk for serious illness,
  - with tachycardia are at least at intermediate-risk for serious illness.
- **Assess for signs of dehydration** – see Box 1 (over page)

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**Feverish illness in children**

- **A rising incidence of Kawasaki disease in the UK**
- The **traffic light system** to assess the presence or absence of any signs/symptoms of serious illness in children >6 months old.
- **Recognise that** children:
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  - with tachycardia are at least at intermediate-risk for serious illness.

**See NICE pathway: Feverish illness in children**

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**Traffic light system**

- **High risk**: children with fever and any of the signs or symptoms in the RED column.
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**Performing a ‘traffic light check’**

1. **A rising incidence of Kawasaki disease in the UK**
2. **The traffic light system** to assess the presence or absence of any signs/symptoms of serious illness in children >6 months old.
3. **Recognise that** children:
   - <3 months old with a temperature of ≥38°C are at high-risk for serious illness,
   - aged 3 to 6 months with a temperature of ≥39°C are at least at intermediate-risk for serious illness,
   - with tachycardia are at least at intermediate-risk for serious illness.

**See NICE pathway: Feverish illness in children**

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**Further reading**

- **NICE CG160**
- **Feverish illness in children**
- **Traffic light system**
- **Performing a ‘traffic light check’**

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Management by remote assessment or by a non-paediatric practitioner

- Children with signs/symptoms of serious illness should be referred immediately for emergency medical care (transport usually by 999 ambulance).
- Recommend referral or home care according to traffic light level of risk – see Table 2.

### Table 2

<table>
<thead>
<tr>
<th>Risk</th>
<th>Remote assessment</th>
<th>Non-paediatric practitioner</th>
</tr>
</thead>
<tbody>
<tr>
<td>RED</td>
<td>Refer for urgent face-to-face assessment within 2 hours.</td>
<td>Refer urgently for management by a paediatric specialist.</td>
</tr>
</tbody>
</table>
| AMBER    | Refer for face-to-face assessment. Use clinical judgement to determine urgency.    | If no diagnosis reached:  
  - send the child home with a ‘safety net’ (see Table 3)  
  OR  
  - refer to a paediatric specialist for further assessment. |
| GREEN    | Manage at home with appropriate care advice – see Table 3                         |                                                                                             |

### Pharmacological treatment

**Antipyretics**

- If the child appears distressed or is unwell give:  
  - paracetamol° OR ibuprofen
- Continue only as long as the child appears distressed.
- Do NOT give both agents simultaneously.
- Only consider alternating these agents if distress persists or recurs before the next dose is due.
- Consider changing to the other agent if the child’s distress is not alleviated.
- Do NOT routinely give antipyretic drugs with the sole aim:  
  - of reducing body temperature,
  - of preventing febrile convulsions.
- Tepid sponging is NOT recommended.
- Do NOT under or over dress a child with fever.

**Antibiotics**

- Do NOT prescribe oral antibiotics to children with fever without apparent source.
- Give parenteral antibiotics to children with suspected meningococcal disease at the earliest opportunity (either benzylpenicillin or a third-generation cephalosporin).

**Management by paediatric specialist**

- Seek to identify symptoms and signs of serious illness and specific diseases.
- Carry out investigations as per NICE pathway

**Children ≤3 months old**

- Give parenteral antibiotics to:  
  - infants aged <1 month old with fever,
  - all infants aged 1 to 3 months with fever and who appear unwell,
  - infants aged 1 to 3 months with a white blood cell count <5 x 10⁹/litre or >15 x 10⁹/litre.

### Immediate treatment of all children with fever

- Children with fever and shock: give immediate intravenous fluid bolus of 0.9% sodium chloride (20ml/kg). Monitor and give further boluses as necessary.
- Give oxygen if there are signs of shock, oxygen saturation is <92%, or as clinically indicated.
- Give immediate parenteral antibiotics e.g. cefotaxime° or ceftriaxone° to a child with fever and any of the following:
  - signs of shock,
  - is unrousable,
  - has signs of meningococcal disease.
- Consider parenteral antibiotics for children with fever and reduced levels of consciousness. Look for signs/symptoms of meningitis and herpes simplex encephalitis.
- When parenteral antibiotics are indicated a third-generation cephalosporin e.g. cefotaxime or ceftriaxone should be given until culture results are available. In infants <3 months also give an antibiotic active against listeria e.g. ampicillin or amoxicillin.
- Give IV acyclovir to children with fever and signs/symptoms of herpes simplex encephalitis.

### Signs of dehydration

- sunken fontanelle
- prolonged capillary refill time
- dry mouth
- abnormal skin turgor
- sunken eyes
- abnormal respiratory pattern
- absence of tears
- weak pulse
- poor overall appearance
- cool extremities

°See Summary of Product Characteristics for full prescribing information.

This bulletin summarises key prescribing points from NICE guidance. Please refer to the full guidance at www.nice.org.uk for further detail.

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