Sepsis: Risk stratification tools
How to use these tools

1. Think ‘could this be sepsis?’ – use the flowchart on the next page to decide if the person has suspected sepsis.

2. If sepsis is suspected, then use the algorithm appropriate to the person’s age group and the setting (either out of hospital or in hospital) to:
   • stratify their risk (low, moderate to high or high)
   • see what care NICE recommends.

Always refer back to the NICE guideline for recommendation details.
Could this be sepsis?

For a person of any age with a possible infection:

- Think **could this be sepsis?** if the person presents with **signs or symptoms that indicate infection**, even if they do not have a high temperature.
- Be aware that people with sepsis may have non-specific, non-localised presentations (for example, feeling very unwell).
- Pay particular attention to concerns expressed by the person and their family or carer.
- Take particular care in the assessment of people who might have sepsis if they, or their parents or carers, are unable to give a good history (for example, people with English as a second language or people with communication problems).

**Risk factors for sepsis**

- The very young (under 1 year) and older people (over 75 years) or very frail people.
- Recent trauma or surgery or invasive procedure (within the last 6 weeks).
- Impaired immunity due to illness (for example, diabetes) or drugs (for example, people receiving long-term steroids, chemotherapy or immunosuppressants).
- Indwelling lines, catheters, intravenous drug misusers, any breach of skin integrity (for example, any cuts, burns, blisters or skin infections).

**If at risk of neutropenic sepsis – refer to secondary or tertiary care**

**Additional risk factors for women** who are pregnant or who have been pregnant, given birth, had a termination or miscarriage within the past 6 weeks:

- gestational diabetes, diabetes or other comorbidities
- needed invasive procedure such as caesarean section, forceps delivery, removal of retained products of conception
- prolonged rupture of membranes
- close contact with someone with group A streptococcal infection
- continued vaginal bleeding or an offensive vaginal discharge.

**Assessment**

Assess people with suspected infection to identify:

- possible source of infection
- risk factors for sepsis (see right-hand box)
- indicators of clinical of concern such as new onset abnormalities of behaviour, circulation or respiration.

Healthcare professionals performing a remote assessment of a person with suspected infection should seek to identify factors that increase risk of sepsis or indications of clinical concern.

**SEPSIS SUSPECTED**

If sepsis is suspected, use a structured set of observations to assess people in a face-to-face setting.

Consider using early warning scores in acute hospital settings.

Parental or carer concern is important and should be acknowledged.

Stratify risk of severe illness and death from sepsis using the tool appropriate to age and setting.

**Sepsis not suspected**

- no clinical cause for concern
- no risk factors for sepsis.

Use clinical judgement to treat the person, using NICE guidance relevant to their diagnosis when available.
### High risk criteria

- **Behaviour:**
  - no response to social cues
  - appears ill to a healthcare professional
  - does not wake, or if roused does not stay awake
  - weak high-pitched or continuous cry

- **Heart rate:**
  - aged under 1 year: 160 beats per minute or more
  - aged 1–2 years: 150 beats per minute or more
  - aged 3–4 years: 140 beats per minute or more
  - heart rate less than 60 beats per minute at any age

- **Respiratory rate:**
  - aged under 1 year: 60 breaths per minute or more
  - aged 1–2 years: 50 breaths per minute or more
  - aged 3–4 years: 40 breaths per minute or more
  - grunting
  - apnoea
  - oxygen saturation of less than 90% in air or increased oxygen requirement over baseline

- **Mottled or ashen appearance**
- **Cyanosis of skin, lips or tongue**
- **Non-blanching rash of skin**
- **Temperature:**
  - aged under 1 year: 38°C or more
  - any age: less than 36°C

### Moderate to high risk criteria

- **Behaviour:**
  - not responding normally to social cues
  - no smile
  - wakes only with prolonged stimulation
  - decreased activity
  - parent or carer concern that child is behaving differently from usual

- **Heart rate:**
  - aged under 1 year: 150–159 beats per minute
  - aged 1–2 years: 140–149 beats per minute
  - aged 3–4 years: 130–139 beats per minute

- **Respiratory rate:**
  - aged under 1 year: 50–59 breaths per minute
  - aged 1–2 years: 40–49 breaths per minute
  - aged 3–4 years: 35–39 breaths per minute
  - oxygen saturation less than 92% in air or increased oxygen requirement over baseline
  - nasal flaring

- **Capillary refill time of 3 seconds or more**
- **Reduced urine output, or for catheterised patients passed less than 1 ml/kg of urine per hour**
- **Pallor of skin, lips or tongue**
- **Temperature:**
  - aged 3–6 months: 39°C or more
  - Leg pain
  - Cold hands or feet

### Low risk criteria

- Responds normally to social cues
- Content or smiles
- Stays awake or awakens quickly
- Strong normal cry or not crying
- No high risk or moderate to high risk criteria met
- Normal colour

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**Sepsis risk stratification tool: children aged under 5 years out of hospital**

If aged under 5 years and immunity compromised **AND** any moderate to high risk criteria met:

- Can definitive condition be diagnosed and treated in an out of hospital setting?
  - **NO**
  - **YES**

- **Send patient urgently for emergency care (setting with resuscitation facilities)**

- **Treat definitive condition and/or provide information to safety net**

- **Provide information about symptoms to monitor and how to access medical care**
Sepsis risk stratification tool: children aged under 5 years in hospital

High risk criteria
- Behaviour:
  - no response to social cues
  - appears ill to a healthcare professional
  - does not wake, or if roused does not stay awake
  - weak high-pitched or continuous cry
- Heart rate:
  - aged under 1 year: 160 beats per minute or more
  - aged 1-2 years: 150 beats per minute or more
  - aged 3-4 years: 140 beats per minute or more
  - heart rate less than 60 beats per minute at any age
- Respiratory rate:
  - aged under 1 year: 60 breaths per minute or more
  - aged 1-2 years: 50 breaths per minute or more
  - aged 3-4 years: 40 breaths per minute or more
  - grunting
  - apnoea
  - oxygen saturation of less than 90% in air or increased oxygen requirement over baseline
- Mottled or ashen appearance
- Cyanosis of skin, lips or tongue
- Non-blanching rash of skin
- Temperature:
  - aged under 3 months: 38°C or more
  - any age: less than 36°C

Moderate to high risk criteria
- Behaviour:
  - not responding normally to social cues
  - no smile
  - wakes only with prolonged stimulation
  - decreased activity
  - parent or carer concern that child is behaving differently from usual
- Heart rate:
  - aged under 1 year: 150-159 beats per minute
  - aged 1-2 years: 140-149 beats per minute
  - aged 3-4 years: 130-139 beats per minute
- Respiratory rate:
  - aged under 1 year: 50-59 breaths per minute
  - aged 1-2 years: 40-49 breaths per minute
  - aged 3-4 years: 35-39 breaths per minute
  - oxygen saturation less than 92% in air or increased oxygen requirement over baseline
  - nasal flaring
- Capillary refill time of 3 seconds or more
- Reduced urine output, or for catheterised patients passed less than 1 ml/kg of urine per hour
- Pallor of skin, lips or tongue
- Temperature:
  - aged 3-6 months: 39°C or more
- Leg pain
- Cold hands or feet

Low risk criteria
- Responds normally to social cues
- Content or smiles
- Stays awake or awakens quickly
- Strong normal cry or not crying
- No high risk or moderate to high risk criteria met
- Normal colour

1 or more high risk criteria met
Arrange immediate review by senior clinical decision maker (a paediatric qualified doctor of grade ST4 or above)
Carry out venous blood tests for the following:
  - blood gas for glucose and lactate
  - blood culture
  - full blood count
  - C-reactive protein
  - urea and electrolytes
  - creatinine
  - clotting screen
Give intravenous antibiotics without delay (within a maximum of 1 hour)
Discuss with consultant
Lactate over 4 mmol/L
Give intravenous fluid (bolus injection) without delay and within 1 hour
Discuss with critical care
 Carry out observations at least every 30 minutes or continuous monitoring in emergency department
Consultant to attend (if not already present) if the person does not improve
Lactate 2-4 mmol/L
Give intravenous fluid (bolus injection) without delay and within 1 hour
Lactate less than 2 mmol/L
Consider intravenous fluid (bolus injection) without delay and within 1 hour

2 or more moderate to high risk criteria met
Carry out venous blood tests for the following:
  - blood gas for lactate
  - blood culture
  - full blood count
  - C-reactive protein
  - urea and electrolytes
  - creatinine
Clinic review and results review within 1 hour
Lactate over 2 mmol/L
escalate to high risk
Lactate 2 mmol/L or less
Definitive condition diagnosed?
If no definitive condition identified, repeat structured assessment at least hourly
Ensure review by a senior decision maker within 3 hours for consideration of antibiotics

Only 1 moderate to high risk criterion met
Clinic review and consider blood tests within 1 hour
Lactate over 2 mmol/L
Lactate 2 mmol/L or less
Definitive condition diagnosed?
YES
Can definitive condition be diagnosed and treated?
NO
Manage definitive condition. If appropriate, discharge with information depending on setting

Suspected sepsis, no high or high to moderate risk criteria met
Clinical assessment and manage according to clinical judgement

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High risk criteria

- **Behaviour:**
  - objective evidence of altered behaviour or mental state
  - appears ill to a healthcare professional
  - does not wake, or if roused does not stay awake

- **Respiratory rate:**
  - aged 5 years: 29 breaths per minute or more
  - aged 6–7 years: 27 breaths per minute or more
  - aged 8–11 years: 25 breaths per minute or more
  - oxygen saturation of less than 90% in air or increased oxygen requirement over baseline

- **Heart rate:**
  - aged 5 years: 130 beats per minute or more
  - aged 6–7 years: 120 beats per minute or more
  - aged 8–11 years: 115 beats per minute or more

- Mottled or ashen appearance
- Cyanosis of skin, lips or tongue
- Non-blanching rash of skin

Moderate to high risk criteria

- **Behaviour:**
  - not responding normally to social cues
  - decreased activity
  - parent or carer concern that child is behaving differently from usual

- **Respiratory rate:**
  - aged 5 years: 24–28 breaths per minute
  - aged 6–7 years: 24–26 breaths per minute
  - aged 8–11 years: 22–24 breaths per minute
  - oxygen saturation less than 92% in air or increased oxygen requirement over baseline

- **Heart rate:**
  - aged 5 years: 120–129 beats per minute
  - aged 6–7 years: 110–119 beats per minute
  - aged 8–11 years: 105–114 beats per minute

- Capillary refill time of 3 seconds or more
- Reduced urine output, or for catheterised patients passed less than 1 ml/kg of urine per hour
- Tympanic temperature less than 36°C
- Leg pain
- Cold hands or feet

Low risk criteria

- Normal behaviour
- No high risk or moderate to high risk criteria met

provide information about symptoms to monitor and how to access medical care

Treat definitive condition and/or provide information to safety net

Can definitive condition be diagnosed and treated in an out of hospital setting?

**YES**

**NO**
Sepsis risk stratification tool: children aged 5-11 years in hospital

**High risk criteria**
- **Behaviour**:
  - objective evidence of altered behaviour or mental state
  - appears ill to a healthcare professional
  - does not wake, or if roused does not stay awake
- **Heart rate**:
  - aged 5 years: 130 beats per minute or more
  - aged 6–7 years: 120 beats per minute or more
  - aged 8–11 years: 115 beats per minute or more
  - heart rate less than 60 beats per minute at any age
- **Respiratory rate**:
  - aged 5 years: 29 breaths per minute or more
  - aged 6–7 years: 27 breaths per minute or more
  - aged 8–11 years: 25 breaths per minute or more
  - oxygen saturation of less than 90% in air or increased oxygen requirement over baseline
- **Mottled or ashen appearance**
- **Cyanosis of skin, lips or tongue**
- **Non-blanching rash of skin**

Arrange immediate review by senior clinical decision maker (paediatric or emergency care ST4 or above or equivalent)

Carry out venous blood tests for the following:
- blood gas for glucose and lactate
- blood culture
- full blood count
- C-reactive protein
- urea and electrolytes
- creatinine
- clotting screen

Give intravenous antibiotics without delay (within a maximum of 1 hour)

Discuss with consultant

**Moderate to high risk criteria**
- **Behaviour**:
  - not behaving normally
  - decreased activity
  - parent or carer concern that child is behaving differently from usual
- **Heart rate**:
  - aged 5 years: 120–129 beats per minute
  - aged 6–7 years: 110–119 beats per minute
  - aged 8–11 years: 105–114 beats per minute
- **Respiratory rate**:
  - aged 5 years: 24–28 breaths per minute
  - aged 6–7 years: 24–26 breaths per minute
  - aged 8–11 years: 22–24 breaths per minute
  - oxygen saturation less than 92% in air or increased oxygen requirement over baseline
- **Capillary refill time of 3 seconds or more**
- **Reduced urine output, or for catheterised patients passed less than 1 ml/kg of urine per hour**
- **Tympanic temperature less than 36°C**
- **Leg pain**
- **Cold hands or feet**

Carry out venous blood tests for the following:
- blood gas for glucose and lactate
- blood culture
- full blood count
- C-reactive protein
- urea and electrolytes
- creatinine

Clinician review and results review within 1 hour

**Low risk criteria**
- **Normal behaviour**
- **No high risk or moderate to high risk criteria met**

Suspected sepsis, no high or high to moderate risk criteria met

Carry out observations at least every 30 minutes or continuous monitoring in emergency department

Consultant to attend (if not already present) if the person does not improve

Lactate over 4 mmol/L

Give intravenous fluid (bolus injection) without delay and within 1 hour

Discuss with critical care

Lactate 2–4 mmol/L

Give intravenous fluid (bolus injection) without delay and within 1 hour

Lactate less than 2 mmol/L

Consider intravenous fluid (bolus injection) without delay and within 1 hour

Lactate over 2 mmol/L

escalate to high risk

Lactate 2 mmol/L or less

definitive condition diagnosed?

If no definitive condition identified, repeat structured assessment at least hourly

Ensure review by a senior decision maker within 3 hours for consideration of antibiotics

Can definitive condition be diagnosed and treated?

YES

NO

Manage definitive condition. If appropriate, discharge with information depending on setting

Can definitive condition be diagnosed and treated?

YES

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Manage definitive condition. If appropriate, discharge with information depending on setting

Can definitive condition be diagnosed and treated?

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Can definitive condition be diagnosed and treated?

YES

NO

Manage definitive condition. If appropriate, discharge with information depending on setting

Can definitive condition be diagnosed and treated?
Sepsis risk stratification tool: children and young people aged 12-17 years out of hospital

**High risk criteria**
- **Behaviour:**
  - objective evidence of altered behaviour or mental state
- **Respiratory rate:**
  - all ages: 25 breaths per minute or more OR
  - new need for 40% oxygen or more to maintain saturation more than 92% (or more than 88% in known chronic obstructive pulmonary disease)
- **Heart rate:**
  - all ages: more than 130 beats per minute
- **Systolic blood pressure:**
  - all ages: 90 mmHg or less OR
  - more than 40 mmHg below normal
- **Not passed urine in previous 18 hours, or for catheterised patients passed less than 0.5 ml/kg of urine per hour**
- **Mottled or ashen appearance**
- **Cyanosis of skin, lips or tongue**
- **Non-blanching rash of skin**

**Moderate to high risk criteria**
- **Behaviour:**
  - history from patient, friend or relative of new-onset altered behaviour or mental state
  - history of acute deterioration of functional ability
- **Impaired immune system**
- **Trauma, surgery or invasive procedures in the last 6 weeks**
- **Respiratory rate:**
  - all ages: 21–24 breaths per minute
- **Heart rate:**
  - all ages: 91–130 beats per minute
  - for pregnant women: 100–130 beats per minute
- **New-onset arrhythmia**
- **Systolic blood pressure 91–100 mmHg**
- **Not passed urine in the past 12–18 hours, or for catheterised patients passed 0.5–1 ml/kg of urine per hour**
- **Tympanic temperature less than 36°C**
- **Signs of potential infection:**
  - redness
  - swelling or discharge at surgical site
  - breakdown of wound

**Low risk criteria**
- **Normal behaviour**
- **No high risk or moderate to high risk criteria met**
- **No non-blanching rash**
High risk criteria

- Behaviour:
  - objective evidence of new altered mental state
- Heart rate:
  - all ages: more than 130 beats per minute
- Respiratory rate:
  - all ages: 25 breaths per minute or more OR
  - new need for 40% oxygen or more to maintain saturation more than 92% (or more than 88% in known chronic obstructive pulmonary disease)
- Systolic blood pressure:
  - all ages: 90 mmHg or less OR
  - more than 40 mmHg below normal
- Not passed urine in previous 18 hours, or for catheterised patients passed less than 0.5 ml/kg of urine per hour
- Mottled or ashen appearance
- Cyanosis of skin, lips or tongue
- Non-blanching rash of skin

1 or more high risk criteria met

Arrange immediate review by senior clinical decision maker (paediatric or emergency care ST4 or above or equivalent)

Carry out venous blood tests for the following:
- blood gas for glucose and lactate
- blood culture
- full blood count
- C-reactive protein
- urea and electrolytes
- creatinine
- clotting screen

Give intravenous antibiotics without delay (within a maximum of 1 hour)

Discuss with consultant

Lactate over 4 mmol/L OR systolic blood pressure less than 90 mmHg

Give intravenous fluid (bolus injection) without delay and within 1 hour

Discuss with critical care

Carry out observations at least every 30 minutes or continuous monitoring in emergency department

Consultant to attend (if not already present) if the person does not improve

Moderate to high risk criteria

- Behaviour:
  - history from patient, friend or relative of new onset of altered behaviour or mental state
  - history of acute deterioration of functional ability
  - Impaired immune system (illness or drugs, including oral steroids)
  - Trauma, surgery or invasive procedures in the last 6 weeks
  - Respiratory rate: 21–24 breaths per minute
  - Heart rate:
    - all ages: 91–130 beats per minute
    - for pregnant women, 100–130 beats per minute
  - New-onset arrhythmia
  - Systolic blood pressure 91–100 mmHg
  - Not passed urine in the past 12–18 hours, or for catheterised patients passed 0.5–1 ml/kg of urine per hour
  - Tympanic temperature less than 36°C
  - Signs of potential infection:
    - redness
    - swelling or discharge at surgical site
    - breakdown of wound

2 or more moderate to high risk criteria met OR systolic blood pressure of 91–100 mmHg

Carry out venous blood tests for the following:
- blood gas for glucose and lactate
- blood culture
- full blood count
- C-reactive protein
- urea and electrolytes
- creatinine
- clotting screen

Clinic review and results review within 1 hour

Lactate less than 2 mmol/L

Consider intravenous fluid (bolus injection) without delay and within 1 hour

Ensure review by a senior decision maker within 3 hours for consideration of antibiotics

Low risk criteria

- Normal behaviour
- No high risk or moderate to high risk criteria met
- No non-blanching rash

Only 1 moderate to high risk criterion met

Clinic review and consider blood tests within 1 hour

Lactate 2 mmol/L or less and no acute kidney injury

If no definitive condition identified, repeat structured assessment at least hourly

Manage definitive condition. If appropriate, discharge with information depending on setting

Suspected sepsis, no high or high to moderate risk criteria met

Clinical assessment and manage according to clinical judgement

Can definitive condition be diagnosed and treated?

YES

NO

Sepsis risk stratification tool: children and young people aged 12-17 in hospital

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Sepsis risk stratification tool: people aged 18 years and over out of hospital

**High risk criteria**
- Behaviour:
  - objective evidence of altered behaviour or mental state
- Respiratory rate:
  - 25 breaths per minute or more OR
  - new need for 40% oxygen or more to maintain saturation more than 92% (or more than 88% in known chronic obstructive pulmonary disease)
- Heart rate:
  - more than 130 beats per minute
- Systolic blood pressure:
  - 90 mmHg or less OR
  - more than 40 mmHg below normal
- Not passed urine in previous 18 hours, or for catheterised patients passed less than 0.5 ml/kg of urine per hour
- Mottled or ashen appearance
- Cyanosis of skin, lips or tongue
- Non-blanching rash of skin

**Moderate to high risk criteria**
- Behaviour:
  - history from patient, friend or relative of new-onset altered behaviour or mental state
  - history of acute deterioration of functional ability
- Impaired immune system
- Trauma, surgery or invasive procedures in the last 6 weeks
- Respiratory rate:
  - 21–24 breaths per minute
- Heart rate:
  - 91–130 beats per minute
  - for pregnant women: 100–130 beats per minute
- New-onset arrhythmia
- Systolic blood pressure 91–100 mmHg
- Not passed urine in the past 12–18 hours, or for catheterised patients passed 0.5–1 ml/kg of urine per hour
- Tympanic temperature less than 36°C
- Signs of potential infection:
  - redness
  - swelling or discharge at surgical site
  - breakdown of wound

**Low risk criteria**
- Normal behaviour
- No high risk or moderate to high risk criteria met

ANY high risk criteria met
- Send patient urgently for emergency care (setting with resuscitation facilities)

Can definitive condition be diagnosed and treated in an out of hospital setting?
- YES
- NO

Treat definitive condition and/or provide information to safety net

Provide information about symptoms to monitor and how to access medical care
Sepsis risk stratification tool: people aged 18 and over in hospital

**High risk criteria**

- **Behaviour:**
  - objective evidence of new altered mental state

- **Heart rate:**
  - more than 130 beats per minute

- **Respiratory rate:**
  - 25 breaths per minute or more OR
  - new need for 40% oxygen or more to maintain saturation more than 92% (or more than 88% in known chronic obstructive pulmonary disease)

- **Systolic blood pressure:**
  - 90 mmHg or less OR
  - more than 40 mmHg below normal

- Not passed urine in previous 18 hours, or for catheterised patients passed less than 0.5 ml/kg of urine per hour

- Mottled or ashen appearance

- Cyanosis of skin, lips or tongue

- Non-blanching rash of skin

1 or more high risk criteria met

Arrange immediate review by senior clinical decision maker (emergency care ST4 or above or equivalent)

Carry out venous blood tests for the following:

- blood gas for glucose and lactate
- blood culture
- full blood count
- C-reactive protein
- urea and electrolytes
- creatinine
- clotting screen

Give intravenous antibiotics without delay (within a maximum of 1 hour)

Discuss with consultant

**Moderate to high risk criteria**

- **Behaviour:**
  - history from patient, friend or relative of new onset of altered behaviour or mental state

- **Immune system:**
  - history of acute deterioration of functional ability

- **Impaired immune system:**
  - illness or drugs, including oral steroids

- **Trauma, surgery or invasive procedures in the last 6 weeks**

- **Resting respiratory rate:**
  - 21–24 breaths per minute

- **Heart rate:**
  - 91–130 beats per minute

- **Systolic blood pressure:**
  - 91–100 mmHg

- New-onset arrhythmia

- Not passed urine in the past 12–18 hours, or for catheterised patients passed 0.5–1 ml/kg of urine per hour

- Tympanic temperature less than 36°C

- Signs of potential infection:
  - redness
  - swelling or discharge at surgical site
  - breakdown of wound

2 or more moderate to high risk criteria met OR systolic blood pressure of 91–100 mmHg

Clinicar review and consider blood tests within 1 hour

If no definitive condition identified, repeat structured assessment at least hourly

Ensure review by a senior decision maker within 3 hours for consideration of antibiotics

**Low risk criteria**

- Normal behaviour

- No high risk or moderate to high risk criteria met

- No non-blanching rash

Carry out venous blood tests for the following:

- blood gas for glucose and lactate
- blood culture
- full blood count
- C-reactive protein
- urea and electrolytes
- creatinine
- clotting screen

Clinicar review and results review within 1 hour

Carry out observations at least every 30 minutes or continuous monitoring in emergency department

Consultant to attend (if not already present) if the person does not improve

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Table 1 Risk stratification tool for adults, children and young people aged 12 years and over with suspected sepsis

<table>
<thead>
<tr>
<th>Category</th>
<th>High risk criteria</th>
<th>Moderate to high risk criteria</th>
<th>Low risk criteria</th>
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</thead>
<tbody>
<tr>
<td>History</td>
<td>Objective evidence of new altered mental state</td>
<td>History from patient, friend or relative of new onset of altered behaviour or mental state</td>
<td>Normal behaviour</td>
</tr>
<tr>
<td></td>
<td></td>
<td>History of acute deterioration of functional ability</td>
<td></td>
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<tr>
<td></td>
<td></td>
<td>Impaired immune system (illness or drugs including oral steroids)</td>
<td></td>
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<tr>
<td></td>
<td></td>
<td>Trauma, surgery or invasive procedures in the last 6 weeks</td>
<td></td>
</tr>
<tr>
<td>Respiratory</td>
<td>Raised respiratory rate: 25 breaths per minute or more</td>
<td>Raised respiratory rate: 21–24 breaths per minute</td>
<td>No high risk or moderate to high risk criteria met</td>
</tr>
<tr>
<td></td>
<td>New need for oxygen (40% FiO₂ or more) to maintain saturation more than 92% (or more than 88% in known chronic obstructive pulmonary disease)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Blood pressure</td>
<td>Systolic blood pressure 90 mmHg or less or systolic blood pressure more than 40 mmHg below normal</td>
<td>Systolic blood pressure 91–100 mmHg</td>
<td>No high risk or moderate to high risk criteria met</td>
</tr>
<tr>
<td>Circulation and hydration</td>
<td>Raised heart rate: more than 130 beats per minute</td>
<td>Raised heart rate: 91–130 beats per minute (for pregnant women 100–130 beats per minute) or new onset arrhythmia</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Not passed urine in previous 18 hours.</td>
<td>Not passed urine in the past 12–18 hours</td>
<td></td>
</tr>
<tr>
<td></td>
<td>For catheterised patients, passed less than 0.5 ml/kg of urine per hour</td>
<td>For catheterised patients, passed 0.5–1 ml/kg of urine per hour</td>
<td></td>
</tr>
<tr>
<td>Temperature</td>
<td>Tympanic temperature less than 36°C</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Skin</td>
<td>Mottled or ashen appearance</td>
<td>Signs of potential infection, including redness, swelling or discharge at surgical site or breakdown of wound</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Cyanosis of skin, lips or tongue</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Non-blanching rash of skin</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Table 2 Risk stratification tool for children aged 5–11 years with suspected sepsis

<table>
<thead>
<tr>
<th>Category</th>
<th>Age</th>
<th>High risk criteria</th>
<th>Moderate to high risk criteria</th>
<th>Low risk criteria</th>
</tr>
</thead>
<tbody>
<tr>
<td>Behaviour</td>
<td>Any</td>
<td>Objective evidence of altered behaviour or mental state&lt;br&gt;Appears ill to a healthcare professional&lt;br&gt;Does not wake or if roused does not stay awake</td>
<td>Not behaving normally&lt;br&gt;Decreased activity&lt;br&gt;Parent or carer concern that the child is behaving differently from usual</td>
<td>Behaving normally</td>
</tr>
<tr>
<td>Respiratory</td>
<td>Any</td>
<td>Oxygen saturation of less than 90% in air or increased oxygen requirement over baseline</td>
<td>Oxygen saturation of less than 92% in air or increased oxygen requirement over baseline</td>
<td>No high risk or moderate to high risk criteria met</td>
</tr>
<tr>
<td></td>
<td>Aged 5 years</td>
<td>Raised respiratory rate: 29 breaths per minute or more</td>
<td>Raised respiratory rate: 24–28 breaths per minute</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Aged 6–7 years</td>
<td>Raised respiratory rate: 27 breaths per minute or more</td>
<td>Raised respiratory rate: 24–26 breaths per minute</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Aged 8–11 years</td>
<td>Raised respiratory rate: 25 breaths per minute or more</td>
<td>Raised respiratory rate: 22–24 breaths per minute</td>
<td></td>
</tr>
<tr>
<td>Circulation and hydration</td>
<td>Any</td>
<td>Heart rate less than 60 beats per minute</td>
<td>Capillary refill time of 3 seconds or more&lt;br&gt;Reduced urine output&lt;br&gt;For catheterised patients, passed less than 1 ml/kg of urine per hour</td>
<td>No high risk or moderate to high risk criteria met</td>
</tr>
<tr>
<td></td>
<td>Aged 5 years</td>
<td>Raised heart rate: 130 beats per minute or more</td>
<td>Raised heart rate: 120–129 beats per minute</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Aged 6–7 years</td>
<td>Raised heart rate: 120 beats per minute or more</td>
<td>Raised heart rate: 110–119 beats per minute</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Aged 8–11 years</td>
<td>Raised heart rate: 115 beats per minute or more</td>
<td>Raised heart rate: 105–114 beats per minute</td>
<td></td>
</tr>
<tr>
<td>Temperature</td>
<td>Any</td>
<td>Tympanic temperature less than 36°C</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Skin</td>
<td>Any</td>
<td>Mottled or ashen appearance&lt;br&gt;Cyanosis of skin, lips or tongue&lt;br&gt;Non-blanching rash of skin</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other</td>
<td>Any</td>
<td>Leg pain&lt;br&gt;Cold hands or feet</td>
<td></td>
<td>No high or moderate to high risk criteria met</td>
</tr>
</tbody>
</table>

Sepsis: recognition, diagnosis and early management

NICE guideline NG51 [https://www.nice.org.uk/guidance/ng51](https://www.nice.org.uk/guidance/ng51)

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Table 3 Risk stratification tool for children aged under 5 years with suspected sepsis

<table>
<thead>
<tr>
<th>Category</th>
<th>Age</th>
<th>High risk criteria</th>
<th>Moderate to high risk criteria</th>
<th>Low risk criteria</th>
</tr>
</thead>
</table>
| **Behaviour**              | Any       | No response to social cues
Appears ill to a healthcare professional
Does not wake, or if roused does not stay awake
Weak high-pitched or continuous cry |
|                            | Under 1 year | Raised respiratory rate: 60 breaths per minute or more |
|                            | 1–2 years   | Raised respiratory rate: 50 breaths per minute or more |
|                            | 3–4 years   | Raised respiratory rate: 40 breaths per minute or more |
|                            | Any        | Bradycardia: heart rate less than 60 beats per minute |
|                            | Under 1 year | Rapid heart rate: 160 beats per minute or more |
|                            | 1–2 years   | Rapid heart rate: 150 beats per minute or more |
| **Respiratory**            | Any       | Grunting
Apnoea
Oxygen saturation of less than 90% in air or increased oxygen requirement over baseline |
|                            | Under 1 year | Oxygen saturation of less than 92% in air or increased oxygen requirement over baseline Nasal flaring |
|                            | 1–2 years   | |
|                            | 3–4 years   | |
| **Circulation and hydration** | Any       | Capillary refill time of 3 seconds or more
Reduced urine output
For catheterised patients, passed less than 1 ml/kg of urine per hour |
<p>|                            | Under 1 year | Rapid heart rate: 150–159 beats per minute |
|                            | 1–2 years   | Rapid heart rate: 140–149 beats per minute |</p>
<table>
<thead>
<tr>
<th>Age Group</th>
<th>Risk</th>
<th>Symptoms</th>
</tr>
</thead>
<tbody>
<tr>
<td>3–4 years</td>
<td>Rapid heart rate: 140 beats per minute or more</td>
<td>Rapid heart rate: 130–139 beats per minute</td>
</tr>
<tr>
<td>Skin</td>
<td>Any</td>
<td>Mottled or ashen appearance</td>
</tr>
<tr>
<td>Temperature</td>
<td>Any</td>
<td>Less than 36°C</td>
</tr>
<tr>
<td>Under 3 months</td>
<td>38°C or more</td>
<td></td>
</tr>
<tr>
<td>3–6 months</td>
<td>39°C or more</td>
<td></td>
</tr>
<tr>
<td>Other</td>
<td>Any</td>
<td>Leg pain</td>
</tr>
</tbody>
</table>

This table is adapted from NICE’s guideline on fever in under 5s.