

# **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).



## Assessment

Assess people with suspected infection to identify:

- possible source of infection
- risk factors for sepsis (see right-hand box)
- indicators of clinical 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.



## 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.



## 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.



## 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 risk stratification tool: children aged under 5 years out of 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

