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# Victorian Maternal and Child Health Clinical Practice Guidelines

## Abnormal temperature

OFFICIAL



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# Abnormal Temperature

## Key Messages

- A normal body temperature for a newborn/infant/child is 36.5°C – 37.9°C.<sup>1</sup>
- An abnormal body temperature for a newborn/infant/child refers to a body temperature **below 36.5°C and higher than 38°C**
- An abnormal body temperature can be a sign of viral/bacterial infection or illness.
- Newborns and young infants are at an increased risk of being unable to maintain a normal body temperature.
- A mild fever can occur after vaccination and may last up to three days, but other causes should be considered if the temperature is unusually high.
- Children who are teething may have a fever of up to 38°C. A temperature greater than 38°C should never just be attributed to teething.
- Digital probe thermometers are the most accurate. They measure temperature under the tongue or armpit.

## Background

Body temperatures outside the normal ranges of 36.5°C – 37.9°C may be indicative of underlying disease processes or clinical deterioration and should be identified in a timely manner.

Abnormal temperature, or a fever, is common in children and not always harmful. When assessing body temperatures, it is important to evaluate in the context of other vital signs, overall patient presentation and consideration of patient-specific and environmental factors.

The most common causes of a fever in children are viral infections, however, serious bacterial infections need to be considered.

The severity of the illness cannot be predicted by the degree of fever, its rapidity of onset, its response to antipyretics or the presence of febrile seizures; the appearance and aspects of the child's behaviour are the most useful indicator.

The most common serious bacterial infections found in children are **urinary tract infections**. Other serious bacterial infections to consider include:<sup>2</sup>

- Pneumonia
- Meningitis
- Bone and joint infections
- Skin and soft-tissue infections
- Mastoiditis
- Bacteraemia
- Sepsis.

## Definitions

- **Newborn:** an infant at the time of birth
- **Neonate** An infant in the first 28 days of life.
- **Infant:** From 0-12mths of age
- **Paediatric / Child: Children** up to the age of 18 years, excluding newborns.
- **Normothermia:** Body temperature within normal values.  
Note: exact normal temperature ranges differ between individuals and can be influenced by some genetic and chronic medical conditions. It is important to ascertain the baseline for individual patients to identify abnormal body temperature deviations.<sup>1</sup>
- **Pyrexia:** An elevated body temperature due to an increase in the body temperature's set point. This is usually caused by infection or inflammation. Pyrexia is also known as fever or febrile response. Some causes of fevers do not require medical treatment, whilst other causes need to be identified and treated.<sup>1</sup>
- **Low temperature:** A lowered body temperature, in which the body loses heat faster than it can produce heat.
- **Hypothermia:** An abnormally low body temperature, in which the body temperature drops below a safe level. Both low temperatures and hypothermia can be caused by environmental factors, complications, disease processes, or can be medically induced.<sup>1</sup>
- **Hyperthermia:** A higher-than-normal body temperature occurs when the body produces or absorbs more heat than it can release. This can result from impaired thermoregulation, a viral infection, or a severe bacterial infection.<sup>1</sup>
- **Heat stroke:** A presentation of severe hyperthermia in which thermoregulation is overwhelmed by excessive metabolic production and/or environmental heat, in combination with impaired heat loss.<sup>1</sup>

Classification	Neonates	Paediatric
Low temperature (hypothermia)	< 36.5°C	< 36°C
Normothermia	36.5°C - 37.5°C	36°C - 37.5°C
Low grade fever	37.6°C - 37.9°C	37.6°C - 37.9°C
Fever (hyperthermia)	> 38°C	> 38°C

- **Mild dehydration:** Dizziness or light-headedness; nausea or headaches, dark yellow or brown urine – urine should be pale yellow, fewer wet nappies, (Less than four wet nappies over 24 hours indicates risk of dehydration in babies under six months of age) or older children will not go to the toilet as much, dry lips, tongue, mouth or throat.<sup>3</sup>
- **Severe dehydration:** Extremely thirsty, lethargic or less active than usual, pale and have sunken fontanels, sunken eyes, tears may be absent when crying, cold (especially their hands or feet) breathing faster than usual and have a fast heart rate, irritable, drowsy or confused.<sup>3</sup>
- **Febrile convulsions** are seizures that occur due to a rapid rise of temperature. They occur in 3% of infants between the ages of 6 months and 5 years and although frightening, are not normally associated with long-term health problems. Occasionally however, a febrile convulsion will be associated with a more serious condition like meningitis, so in any case, it is important to see a doctor.<sup>4</sup>

## Assessment

It is important to take a detailed history from the parent/carer and assess the following:<sup>2,5</sup>

- Parent/carer concern – reported abnormal temperature
- Environmental factors – observe clothing and appropriateness to environment; ask questions about home environment.
- Recent immunisations and medication administration – scheduled immunisations, antipyretics
- Breathing rate– normal or abnormal, grunting, chest indrawing, nasal flaring, increased effort required for breathing.
- Skin – pale, or mottled in colour, non-blanching rash
- Feeding/intake – identify refusal, poor feeding or decrease in fluid intake
- Output – signs of dehydration (see definitions above), vomiting, decrease urine output and bowel motions
- Neck stiffness, photophobia (sensitivity to light)
- Irritability – is the infant/child distressed and/or inconsolable
- Behaviour – lethargy, floppy tone, difficult to rouse from sleep
- Febrile convulsions

## Management

### Care at home:<sup>1,5-8</sup>

- Take a child's temperature at any time, but it is especially important to do so if the child is:
  - unwell and feels warmer than usual
  - irritable and crying
  - more sleepy than usual
  - in pain
  - refusing to drink
  - vomiting
- Observe for signs of dehydration (see definitions above) Observe for non-blanching skin rash (for more info on non-blanching skin rashes visit: [The Royal Children's Hospital Melbourne | Clinical Practice Guidelines - Petechiae and Purpura](#))
- Many children refuse to eat when they have a fever. Encourage the child to stay hydrated, by giving smaller amounts of fluid more often. For example:
  - if the breastfed child is younger than six months, offer extra breastfeeds.
  - if the formula-fed child is younger than six months, offer the usual amount of formula.
  - if the child is older than six months, keep breastfeeding or bottle-feeding. offer the child water or oral rehydration solutions.
- Dress the child in light cotton, comfortable clothing to avoid sweating or shivering
  - if the child is shivering, cover with a light blanket until the shivering stops and then remove the blanket.
  - a wet, lukewarm face washer to the forehead may be used for comfort only. **Do not** sponge or bathe to reduce temperature.

- **Paracetamol** can be used for mild to moderate pain in babies over one month old, children, adolescents and adults. However, if too much paracetamol is given to a child for too long, it may harm the child.
- **Ibuprofen** can be used for mild to moderate pain in children, adolescents and adults. It should not be used in children under three months of age or be given to children with bleeding disorders.
- **Never give aspirin** for pain to a child if they are under 12 years, unless it is advised by a doctor. It can cause a rare but serious illness called Reyes Syndrome.

#### Temperature measurements:

There are a number of ways to take a child's temperature and the results can vary depending on the type of thermometer used. Different methods include:

- infrared forehead thermometer
- under the arm (axillary) or under the tongue (oral) with a digital, mercury or alcohol thermometer
- ear (tympanic) thermometer
- plastic tape thermometers used on the forehead (these are not recommended as they are not reliable). (RCH Kids Health – fever in children)
- Read instructions for any thermometer device prior to use
- For more information on temperature measurement, visit: [Raising Children | Taking your child's temperature](#).

#### When to seek medical attention

- If the child is aged **0-3 months** has a fever, seek immediate medical attention. For example, take the child to a GP, urgent care centre, hospital emergency department or Victorian Virtual Emergency Department <https://www.vved.org.au/>
- If the **child of any age has a weak immune system and a fever**, seek immediate medical attention. For example, take the child to a GP or a hospital emergency department.
- It is important to seek medical attention if a parent is concerned, or has:
  - been more unwell than when last seen by a doctor
  - a temperature above 38°C and has not reduced following antipyretic medication and comfort measure
  - an abnormal temperature persisting beyond 24 hours with no obvious cause
  - become pale, drowsy (less alert than usual when awake) or lethargic
  - any signs of dehydration or refusing to drink
  - Less than four wet nappies over 24 hours indicates risk of dehydration in babies under six months of age.
  - prolonged vomiting or vomiting bile
  - has breathing difficulty, nasal flaring or grunting
  - a non-blanching rash or unexplained rash
  - distressed, irritable or in pain
  - febrile convulsion

**Following clinical presentation and assessment, a review by a general practitioner, paediatrician, ambulance or emergency department may be required, as clinically indicated.**

## Medications

If a child over the age of 3 months has a temperature greater than 38°C and is otherwise well and happy, it is not necessary to give fever reducing medication.<sup>9</sup> See [RCH fact sheet - Fever in Children](#)

The recommended dosage for medicine is calculated based on a child's weight. The ages provided on the medicine packaging/bottle are a guide only. If you do not know the child's weight, give the dose listed for their age. However, if the child is substantially lighter than most children their age, give the dose recommended for younger children (i.e. the next age bracket down).

### Paracetamol

- May be used four to six hours apart if the child's temperature is above 38°C or the child is unhappy and uncomfortable
  - no more than four doses should be administered in a 24-hour period
  - do not repeat the paracetamol dose if the child is vomiting
  - do not administer paracetamol to babies under 1 month of age
  - paracetamol in suppository form is not recommended for children.

### Ibuprofen

- May be used six to eight hours apart if the child is over three months of age. No more than three doses should be administered in a 24-hour period.
- Do not use ibuprofen if the child is dehydrated, has been vomiting, has a history of asthma or bleeding disorders.
- Do not give aspirin to a child under 12 years of age.

*Note: The Maternal and Child Health Line does not recommend alternating paracetamol and ibuprofen together. There is no proven benefit from this practice and the Maternal and Child Health Line takes a conservative approach.*

## Referrals

Depending on clinical presentation and assessment:

- Refer to General Practitioner
- Refer to Paediatrician
- Call Ambulance Victoria
- Attend local urgent care centre, emergency department or Victorian Virtual Emergency Department

## Information for health professionals

- [NICE guidelines - UK | Neonatal infection: Antibiotics for prevention and treatment](#)
- [NICE guidelines - UK | Fever in under 5s: Assessment and initial management](#)
- [NICE guidelines - UK | Suspected sepsis: recognition, diagnosis and early management](#)
- [Royal Children's Hospital - Clinical Practice Guidelines | Febrile child](#)
- [Royal Children's Hospital - Clinical Practice Guidelines | Temperature Management](#)

- [Royal Children's Hospital - Clinical Practice Guidelines | Febrile Seizure](#)
- [Royal Children's Hospital - Clinical Practice Guidelines | Assessment and management of sepsis](#)
- [Royal Children's Hospital - Clinical Practice Guidelines | Recognition of the seriously unwell neonate and young infant](#)
- [SA Health - Fact Sheet | Babies and young children hot weather](#)
- [SA Health - Guideline | Neonatal sepsis presenting from the community](#)
- [WA Health - Guideline | Thermoregulation](#)
- [WA Health - Guideline | Neonatal Air Transport](#)
- [WA Health - Guideline | Neonatal Sepsis](#)
- [WA Health - Sepsis Calculator](#)

## Information for families

### Kids Health Information

- [Kids Health Information | Pain relief for children – paracetamol and ibuprofen](#)

### Raising Children Network

- [Raising Children's Network | Taking your child's temperature](#)
- [Raising Children's Network | Fever](#)
- [Taking your child's temperature: a guide | Raising Children Network](#)

### Royal Children's Hospital fact sheets

- [Royal Children's Hospital | Fact Sheet | Fever in Children](#)
- [Kids Health Info : Pain relief for children – paracetamol and ibuprofen](#)

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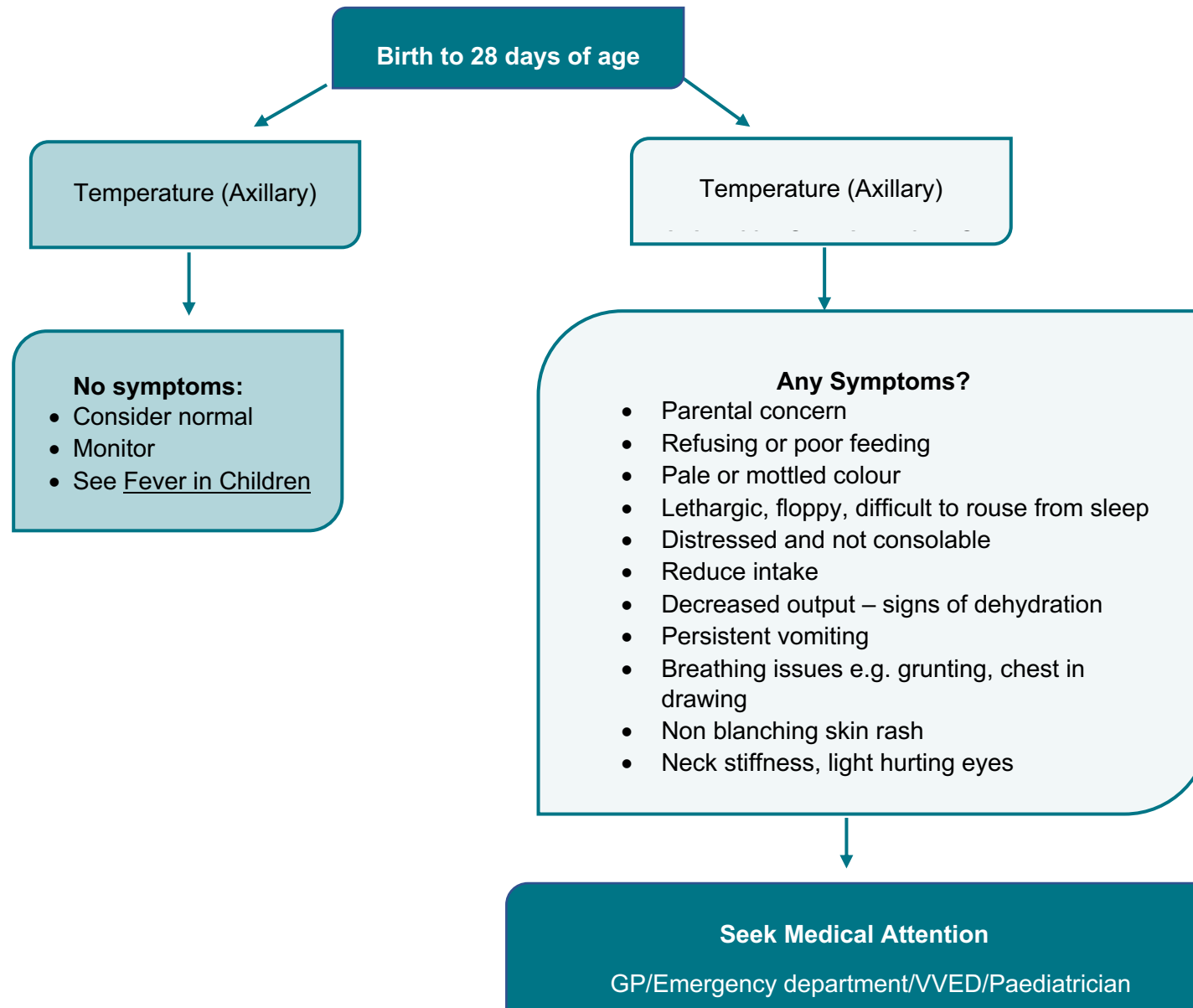
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# Abnormal temperature flowchart



**29 days to 3 months of age**

**Temperature (Axillary)**  
**36 °C - 37.4 °C**

**No symptoms**

- Consider normal
- Monitor
- [Fever in children](#)

**No signs of illness**

- Check environmental factors
- Any recent immunisations and medication?
- Re-check temperature in 1 hour

**Temperature (Axillary)**  
**Below 36 °C or 37.5 °C to 37.9 °C**

**With signs suggestive of illness**

- Parental concern
- Refusing or poor feeding
- Pale or mottled colour
- Lethargic, floppy, difficult to rouse from sleep
- Distressed and not consolable
- Reduced intake
- Decreased output – signs of dehydration
- Persistent vomiting
- Breathing issues e.g., grunting, chest in-drawing
- Non blanching skin rash
- Neck stiffness, light hurting eyes

**Temperature (Axillary)**  
**above 38 °C**

**With NO signs of illness**

Advice to include:

- [Fever in children](#)
- Medications
- Seek Medical Attention - if elevated abnormal temperature for longer than 24 hours – GP, Paediatrician, Emergency dept.

**Seek Medical Attention**

GP/Emergency department/VVED/Paediatrician

