

MEASURING BODY TEMPERATURE

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Introduction

Body temperature should be measured and recorded regularly with precision, consistency and diligence. Practitioners should be acutely aware of individual's temperature because it serves as a useful indicator of change in their clinical condition. A review has illustrated that none of the methods for measuring temperature at the bedside is perfect (Davie and Amoore, 2010). Once a site and a method have been selected, they must be used consistently to ensure accuracy.

Indications for measurement

There are many clinical indications for measuring body temperature (Dougherty and Lister, 2011; Pocock and Richards, 2009). They include:

-  To obtain a the baseline temperature to enable comparisons to be made with future recordings
-  To enable close observation in resolving hypothermia/hyperthermia
-  To observe and monitor patients for changes indicating an infection
-  To monitor the effect of treatment for antimicrobial therapy for infection
-  Before and during a blood transfusion to monitor for signs of a reaction
-  A digital monitor should be used to record the temperature of the body. Glass mercury thermometers are at risk of breaking.
-  Ear temperature is accepted as the most accurate measure of core temperature and will reflect problems sooner.
-  Axillary or underarm temperature only measures skin temperature and therefore is not a reliable indicator of body temperature.
-  Oral temperatures are influenced by drinking, eating and breathing.
-  Rectal temperatures give an accurate core temperature reading but pose a risk of cross-infection, trauma and is unpleasant for the individual.

Procedure

- a) **Digital thermometer:** Always check that the lens is clean and not cracked and that the lens probe is free from smudges / debris. Use a dry lint swab to clean if required. Calibrate to the manufacturer's instructions. Give a clear explanation of the procedure to the Individual before gaining a valid consent and taking their temperature. Wash and dry hands and use a clean disposable probe cover between each separate procedure.
- b) **Post procedure** record the results on the appropriate observation forms and take any action as required. Remove the disposable probe cover and discard following your infection control guidelines. Wipe the thermometer clean and return to base unit. Wash and dry your hands before and after each procedure.
- c) **Oral** - Place under the tongue; Wait until the digital thermometer beeps or approximately 5 minutes for a manual thermometer; Remember not to take an oral temperature right after eating or drinking because it will alter the results.
- d) **Axillary** - Place under the arm with the tip in the deepest crease; Wait until the digital thermometer beeps or approximately 5 minutes for a manual thermometer.
- e) **Rectal** - Use lubrication, such as petroleum jelly and place tip in anal opening; Wait until the digital thermometer beeps or approximately 5 minutes for a manual thermometer; this method should be used for infants or those whose temperature cannot be taken any other way.

- f) **Tympanic** -If the person is wearing a hearing aid, remove it and wait 10 minutes before taking the temperature. Ensure that the person has not been lying on their side for the previous 20 minutes. If a person is lying on their side only take from the exposed ear. Inspect the ear canal for the presence of ear drainage e.g. blood, compacted ear wax (cerumen), foreign bodies as the presence of these substances can affect the accuracy of the reading (the presence of normal ear wax does not affect the reading). Place the disposable cover over the probe, ensuring the manufacturer’s instructions are followed. Take a reading from both ears and take the greater of the readings. Align the probe tip with the ear canal and gently advance into the ear canal until the probe lightly seals the opening ensuring a snug fit. Press and release Scan button and remove the probe from the ear as soon as the thermometer display reads “DONE” or indicated by a bleep. A new probe cover must be used for each ear to prevent cross – contamination.
- g) **Temporal** - Press button down and sweep probe across forehead; this is fairly new technology, but seems to be relatively accurate and very quick and easy to use. Refer to “normal range” scale in manufacturers guidelines when results are obtained.

-  Observations should continue until a stable, normal reading is reached for the Individual. Temperature recordings should be made at least 4 hourly if they are outside normal limits.
-  Before using many temperature recording or warming device, staff must be trained in their use, comply with the organisational infection control policy and check that the devices are regularly maintained and calibrated as required by manufacturer
-  A full understanding of the device is required to understand any adjustments that have to be made or that are made automatically by the device.

h) **Temperature readings**

Term	Definition
Hypothermia	Core temperature <35°C Metabolic rate falls. Subcategories: Mild: 32°C-35°C Moderate: 28°C-32°C Severe: <28°C
Fever	Fever is a rise in temperature >38°C and is a normal response to infection, inflammation or drug therapy. Hypothalamus is functioning normally but the set point is raised beyond the normal level by pyrogens.
Hyperthermia	Core temperature >40°C and body temperature is out of control. Associated with injury/damage to the head resulting in hypothalamic failure

Further guidance
NICE guidelines [CG65] Published date: April 2008