

# Assessing Body Temperature

## Overview

- Establish baseline data.
- Determine if core temperature is within normal range.
- Determine changes in core temperature in response to specific therapies (e.g., antipyretic medication, immunosuppressive therapy, invasive procedures)
- Monitor patients who are at risk for temperature alterations (those exposed to extreme temperatures; patients at risk for or with a diagnosis of infection; patients with a leukocyte count below 5000 or above 12,000).
- Most common sites for measuring body temperature are sublingual, rectal, axillary, and tympanic.
- Site most often used for body temperature measurement is sublingual.

## Preparation

- Assess patient to determine appropriate method to obtain body temperature.
- For an oral temperature, obtain reading 15 to 30 minutes after ingestion of hot or cold food or fluids or smoking.
- Oral route is contraindicated if patient is unable to hold thermometer properly or if there is a risk that patient may bite thermometer.
- Rectal thermometer must be held securely in place and never left unattended.

## Fahrenheit to Centigrade Conversion Table

Fahrenheit (°F)	Centigrade (°C)
96.8	36.0
97.7	36.5
98.6	37.0
99.5	37.5
100.4	38.0
101.0	38.3
102.2	39.0
103.1	39.5
104.0	40

**Note:** To convert degrees F to degrees C subtract 32, then multiply by 5/9.  
To convert degrees C to degrees F multiply by 9/5, then add 32.

## Special Considerations

### *Pediatric Patients*

- Oral temperature measurement is not used on infants or small children.
- Rectal temperature measurement is contraindicated in newborns.
- Prevent infants and young children from kicking their legs or rolling to their side while the thermometer is in place.
- Tympanic membrane thermometers quickly obtain a child's temperature and may provide less of a threat to the child.

### *Elderly Patients*

- Disturbances in temperature regulation that normally occur with aging can cause the older adult to have a lower-than-normal body temperature.

## Equipment

- Oral, rectal, axillary, or tympanic thermometer
- Probe covers if electronic thermometer is used
- Lubricant and tissue if rectal site is used
- Towel if axillary site is used

## Procedure

### **Oral Temperature Assessment**

- Wash hands and apply disposable gloves. *Reduces transmission of microorganisms.*
- Explain procedure to patient. *Reduces anxiety and promotes cooperation.*
- Hold color-coded end of glass thermometer between fingertips. *Prevents contamination of bulb.*
- Slowly rotate thermometer at eye level to read mercury level. *Mercury is to be below 96\_F (35.5\_C). Thermometer reading must be below patient's actual temperature before use.*
- If mercury is higher than desired level, shake thermometer downward. Hold upper end of thermometer securely between thumb and forefinger and stand away from solid objects. Sharply flick wrist downward until mercury is at appropriate level. *Brisk shaking lowers mercury level in the glass tube. Standing in an open area away from objects prevents the breakage of the thermometer.*
- Place thermometer in a plastic sheath according to agency policy. *Prevents spread of microorganisms.*
- Ask patient to open mouth and gently place thermometer at the base of the tongue to the right or left of the frenulum, in the posterior sublingual pocket. *Reflects the core temperature of the blood in the larger blood vessels.*
- Ask patient to close the lips, not the teeth, around the thermometer. *Maintains the proper position of the thermometer. Biting could cause the thermometer to break and can injure the oral mucosa and cause mercury poisoning.*
- Leave the thermometer in place for 3 minutes or according to agency policy. *Minimum amount of time recommended obtaining an accurate reading with this type of thermometer.*
- Carefully remove thermometer, discard plastic sheath, and read results at eye level. *Gentle handling prevents discomfort to patient and ensures an accurate reading.*

### **Rectal Temperature Assessment**

- Wash hands and apply disposable gloves. *Reduces transmission of microorganisms.*
- Explain procedure to patient. *Reduces anxiety and promotes cooperation.*
- Draw curtains around the patient's bed and/or close the door. Keep the patient's upper body and lower extremities covered. *This maintains privacy for the patient and minimizes patient embarrassment.*
- Assist patient into Sims' position, with the upper leg flexed to expose anal area. Children may be placed in a prone position. *This provides for optimal exposure of the anal area for correct placement of the thermometer.*
- Squeeze a liberal amount of water-soluble lubricant onto a tissue. Apply lubricant to the thermometer. *Insertion of the thermometer into the lubricant container would contaminate contents of the container. Use of lubrication minimizes trauma to the rectal mucosa during insertion.*
- With the nondominant hand, raise the patient's upper buttock to expose the anus. *Full retraction of the buttocks completely exposes anus.*

□ Gently insert the thermometer into the anus in the direction of the umbilicus. Insert the thermometer 1 1/2 in. (3.5 cm) for adults and 1/2 in. (1.2 cm) for infants or children. Do not force the thermometer. Ask the patient to take a deep breath and blow out. Insert the thermometer as the patient takes in a breath. If resistance is felt, immediately remove the thermometer. *Proper insertion of the thermometer ensures adequate exposure to the blood vessels in the rectal wall. Gentle insertion prevents trauma to the mucosa or the breakage of the thermometer. Having the patient take a deep breath helps to relax the anal sphincter.*

□ Hold the thermometer in place for a minimum of 2 minutes or according to agency policy. It may be necessary to hold patient's legs. *Holding the thermometer in place prevents injury to the patient.*

### ***Axillary Temperature Assessment***

□ Wash hands and apply disposable gloves. *Reduces transmission of microorganisms.*

□ Explain procedure to patient. *Reduces anxiety and promotes cooperation.*

□ Draw curtains around the bed and/or close the door. *Provides privacy and minimizes embarrassment for the patient.*

□ Assist the patient into a supine or sitting position. Move clothing away from the patient's shoulder and arm. Be sure the axillary area is dry. *Provides optimal exposure of the patient's axilla.*

□ Place the thermometer into the center of the patient's axilla, lower the arm over the thermometer, and place the patient's forearm across the chest. *Maintains the proper position of the thermometer against the blood vessels in the axilla.*

□ Hold the thermometer in place for; 5 to 10 minutes or according to agency policy. *The recommended time varies among agencies; 5 minutes is the time most often recommended for children.*

□ Remain with the patient and hold the thermometer in place if the patient is unable to do so. *Prevents injury to the patient.*

□ Remove the thermometer, remove plastic sheath, and read results at eye level. Wash the thermometer in tepid, soapy water, rinse in cold water, and dry. Shake down the thermometer and return it to its container. *Cleaning the thermometer after use reduces the spread of infection.*

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