

SKILL I**Temperature****EQUIPMENT**

Thermometer appropriate for site (glass [mercury] or electronic) (Figures 1 and 2)

Lubricant (rectal)

Gloves, nonsterile (rectal)

Tissue

Centigrade (C)	Fahrenheit (F)
35.4	96.8
36.2	97.7
37.0	98.6
37.5	99.5
38.0	100.4
38.3	101.0
39.0	102.2
39.5	103.1
40.0	104.0

FIGURE 1 Centigrade and Fahrenheit temperature chart.

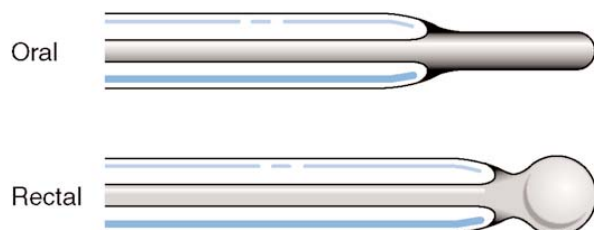


FIGURE 2 Oral and rectal thermometers.

GENERAL GUIDELINES FOR VITAL SIGNS

1. Check record for baseline and factors (age, illness, medications, etc.) influencing vital signs. *Provides parameters and helps in device and site selection.*
2. Gather equipment, including paper and pen, for recording vital signs. *Promotes organization and efficiency.*
3. Wash hands. *Reduces transmission of microorganisms.*
4. Prepare child and family in a quiet and nonthreatening manner. *Enhances cooperation and participation; reduces anxiety and fear, which can affect readings.*

NOTE: *Infants and young children may be quiet and more cooperative if vitals signs are obtained while child is sitting on caregiver's lap.*

ORAL TEMPERATURE**SAFETY**

1. Oral temperatures contraindicated in following circumstances:
 - a. Uncooperative or unconscious children.
 - b. Following oral surgery.
 - c. Children under 2 years of age.
2. Oral temperatures are inaccurate in children receiving oxygen therapy. *Oxygen cools the mouth and tachypnea leads to a low reading.*
3. Use a glass thermometer for children over 6 years of age.

PROCEDURE

1. Steps 1–4 of General Guidelines.
2. Select thermometer: glass with oral bulb (usually blue tipped) or electronic.
3. Prepare thermometer.
 - a. Glass thermometer.
 1. If stored in a chemical solution, remove from storage container and rinse under cool water. *Removes disinfectant, which can irritate oral mucosa and have an objectionable taste. Cool water prevents the expansion of mercury.*
 2. Use tissue to dry from bulb end toward fingertips. *Wipe from least to most contaminated.*
 3. Check mercury level. It should be 35° C (95° F) or below. *Must be below normal body temperature to ensure accurate reading.*
 4. If not below 35° C (95° F), grasp the nonbulb end of the thermometer firmly with thumb and forefinger and shake briskly by snapping the wrist in a downward motion.
 - b. Electronic thermometer.
 1. Remove from charger.
 2. Place disposable sheath over the probe. *Reduces transmission of microorganisms.*
 3. Grasp tip of probe stem, avoiding pressure on the ejection button. *Pressure on the ejection button releases the sheath from the probe.*
4. Place the tip of the thermometer under the tongue along the gumline to the posterior sublingual pocket. *Ensures contact with the large blood vessels under the tongue.*

continued

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5. Instruct the child to close mouth around the thermometer. *Maintains appropriate placement, decreases time needed to obtain accurate reading. Open mouth breathing produces an abnormally low reading.*
6. If electronic, turn on scanner and follow manufacturer's instructions.
7. Leave under tongue required amount of time. Stay with child while thermometer in place. *Reduces risk of injury.*
 - a. Glass thermometer: 3–5 minutes as specified by agency policy. *Allows sufficient time to register accurate results.*
 - b. Electronic thermometer: Will sound tone or beep when finished recording temperature.
8. Remove thermometer and read temperature.
 - a. Glass thermometer.
 1. Wipe with tissue away from fingers toward bulb end as necessary to read thermometer. *Wipe from most contaminated to least contaminated area.*
 2. Read at eye level. Rotate slowly until mercury level visualized. *Ensures accurate reading.*
 - b. Electronic thermometer: read digital display.
9. Clean and store thermometer.
 - a. Glass thermometer.
 1. Wipe toward bulb end of thermometer with soft tissue. Dispose of tissue in accordance with guidelines for handling body fluids. *Reduces spread of microorganisms; mucus on thermometer may interfere with effectiveness of disinfectant solution.*
 2. Cleanse with cool soapy water and rinse under cool water. Shake down the thermometer. *Mechanical cleansing removes secretions that promote growth of microorganisms. Hot water may cause coagulation of secretions and expansion of mercury in thermometer.*
 3. Store according to agency policy.
 4. Wash hands. *Reduces transmission of microorganisms.*
 - b. Electronic thermometer.
 1. Push ejection button and discard disposable sheath into an appropriate receptacle. *Reduces transmission of microorganisms.*
 2. Return probe to storage well.
 3. Wash hands. *Reduces transmission of microorganisms.*
 4. Return electronic thermometer to storage unit.

RECTAL TEMPERATURE**SAFETY**

1. Rectal temperature contraindicated in the following circumstances.
 - a. Infants < 1 month of age.
 - b. Premature infants.
 - c. Prolapsed rectum.
 - d. Following rectal surgery.
 - e. Severe diarrhea.
 - f. Bleeding tendency, e.g., leukemia, thrombocytopenia.
 - g. Imperforate anus.

PROCEDURE

Taking a rectal temperature is an intrusive procedure representing an invasion of the child's body; may cause an increase in fear of body mutilation, especially in toddlers and preschoolers. Take a rectal temperature only when necessary.

1. Steps 1–4 of General Guidelines.
2. Select thermometer: glass with rectal bulb (usually red tipped) or electronic.
3. Provide privacy for child.
4. Prepare thermometer as in Oral Temperature, step 3 of Procedure.
5. Lubricate the tip of the thermometer with a water-soluble gel. *Reduces friction and promotes ease of insertion. Minimizes irritation of mucus membranes in the anal canal.*
6. Place tissues in easy reach. *To wipe anus after removal of thermometer.*
7. Put on nonsterile gloves. *Reduces transmission of microorganisms; protects nurse from contact with body fluids.*
8. Position child. *Ensures visualization of anus.*
 - a. Infant: prone position or supine, grasping ankles with one hand and elevating the legs.
 - b. Older child: on side with upper knee flexed. *Flexing of the knee relaxes muscles and promotes ease of insertion.*
9. Separate buttocks to expose anal opening and gently insert thermometer. Instruct older child to take a deep breath. *Gentle insertion decreases discomfort and prevents trauma to mucous membranes. Taking a deep breath relaxes the anal sphincter.* (Figure 3)

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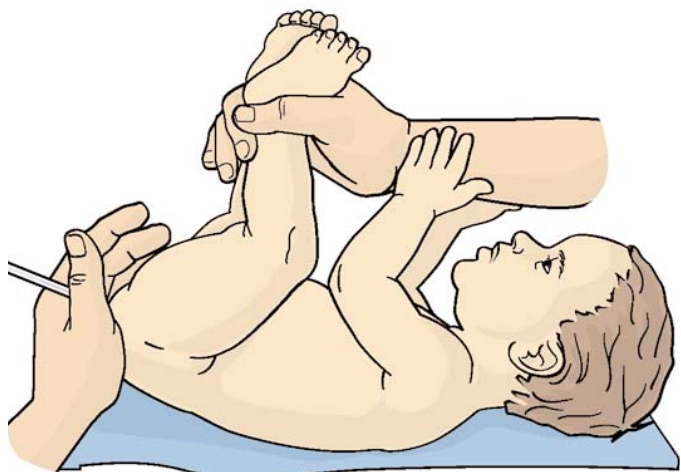
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FIGURE 3 Infant position when taking a rectal temperature.

NOTE: *If resistance is felt do not force. Remove thermometer and check temperature by another route.*

- a. Infant: insert $\frac{1}{4}$ to $\frac{1}{2}$ inch. *Inserting more than $\frac{1}{2}$ inch may cause rectal perforation.*
- b. Older child: insert 1– $1\frac{1}{2}$ inches.
10. If electronic, turn on scanner and follow manufacturer's instructions.
11. Leave thermometer in place required amount of time. Hold thermometer in place and do not leave child alone. *Reduces risk of injury.*
 - a. Glass thermometer: 3–4 minutes as specified by agency policy. *Allowing sufficient time for the thermometer to register results in a more accurate assessment of body temperature.*
 - b. Electronic thermometer: will sound a tone or beep when finished.
12. Remove thermometer gently in a straight line.
13. Wipe anal area to remove any lubricant and/or fecal material.
14. Read temperature as in Oral Temperature, step 8 of Procedure.
15. Reposition child in a comfortable position.
16. Clean and store thermometer as in Oral Temperature, step 9 of Procedure.

NOTE: *Need to remove gloves before washing hands.*

AXILLARY TEMPERATURE

SAFETY

1. There are no age restrictions for taking an axillary temperature.

PROCEDURE

1. Steps 1–4 of General Guidelines.
2. Select thermometer: glass or electronic. Follow agency guidelines regarding type of thermometer to use, oral or rectal.
3. Expose axillary area.
4. Make sure axillary skin is dry. Pat dry if necessary. *Prevents a false low reading.*
5. Prepare thermometer as in Oral Temperature, step 3 of Procedure.
6. Place tip of thermometer under the child's arm, well up into the axilla. Bring the child's arm down close to the body and hold in place. *Ensures more accurate measurement; allows thermometer tip to rest against superficial blood vessels in axilla; brings skin surfaces together, thus reducing air around the tip of the thermometer that might affect temperature reading.* (Figure 4)



FIGURE 4 Positioning when taking an axillary temperature.

continued

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7. Leave in place required amount of time.
 - a. Glass thermometer: 6–10 minutes according to agency policy. *Allowing sufficient time for the thermometer to register results in a more accurate assessment of body temperature.*
 - b. Electronic thermometer: will sound a tone or beep when finished.
8. Remove thermometer and read as in Oral Temperature, step 8 of Procedure.
9. Clean and store thermometer as in Oral Temperature, step 9 of Procedure.

TYMPANIC TEMPERATURE

SAFETY

1. Do not use in infected or draining ear or if lesion or incision is adjacent to ear.
2. Further study needed regarding accuracy of tympanic temperature with otitis media, sinusitis, or in premature infants with small ear canal.

PROCEDURE

1. Steps 1–4 of General Guidelines.
2. Select contact infrared tympanic thermometer.
3. Remove probe cover from container and attach probe cover to probe tip. *Prevents contamination.*
4. Position child for access to ear. Turn head to one side. Pull pinna down and back for a child under 3 years of age and up and back for a child over 3 years of age. *Provides access to ear canal.*

NOTE: Do not use ear on side child has been lying on. Ear in contact with a surface can build up heat and give abnormally high reading.

5. Gently insert probe tip into the external ear canal. Use firm pressure to obtain an adequate seal. *Prevents trauma to the ear canal and ensures accurate temperature reading.* (Figure 5)

NOTE: A better seal (thus a more accurate assessment of body temperature) is generally achieved using the right hand to take a temperature from the right ear and the left hand to take a temperature from the left ear.

6. Quickly achieve a seal making sure the probe tip is aimed toward the tympanic membrane. As soon as the probe is in place press the scan button. *Measures temperature by measuring infrared energy from tympanic membrane. Pressure of the probe in the ear canal can*

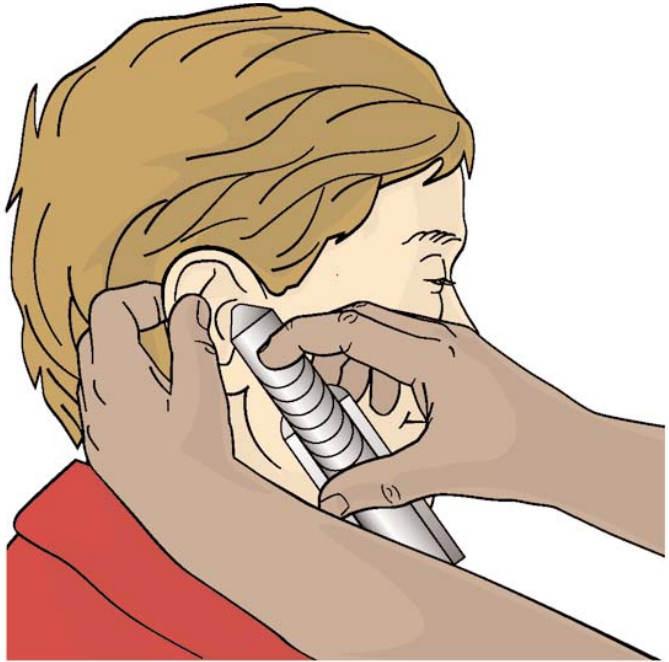


FIGURE 5 Insertion of temperature probe into child's ear canal.

draw down the temperature, leading to an abnormally low reading.

7. Remove probe after temperature is displayed. Read display.
8. Remove probe cover and discard; replace probe in storage container. *Prevents probe damage.*
9. Return tympanic thermometer to charging unit.
10. Wash hands. *Reduces transmission of microorganisms.*

DOCUMENTATION

1. Temperature
2. Route and for tympanic temperature which ear used.
3. Device used.
4. Who notified if finding of concern.