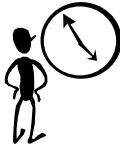


BODY TEMPERATURE... one of the vital signs



Temperature

- Balance between:
 - Heat produced by metabolism, burning of fuel by cells and muscles
 - Heat lost through skin and lungs
- °F – Fahrenheit scale
- °C – Celsius scale
- Circadian rhythm / pattern
 - Lowest in AM
 - Highest in PM
- Daily variation of 1 – 3 degrees

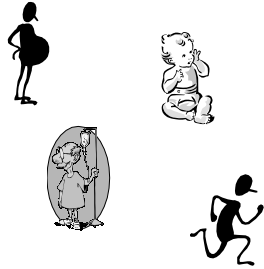


Average Temperature Variations

- Oral: 97.6° - 99.6°
- Tympanic (aural) = oral reading
- Rectal: 1° higher than oral
- Axillary: 1° lower than oral

Temperature affected by...

- Age
- Gender
- Illness / infection
- Environment
- Hydration
- Emotions / crying
- Menstrual cycle / pregnancy
- Exercise
- Time of day



4 body areas to measure temperature...

- Mouth (oral)
 - Most common
 - Do not use for:
 - Unconscious
 - Mouth breather
 - Small child
 - Confused
 - Oxygen therapy except nasal prongs
 - Coughing
 - Seizure precautions
 - Oral surgery



4 body areas to measure temperature...

- Rectal
 - Most accurate, core body temperature
 - Do not use if:
 - Hemorrhoids
 - Diarrhea
 - Fecal impaction
 - Rectal bleeding
 - Rectal surgery
 - Rectal or colon disease
 - Colostomy
 - Combative behavior



4 body areas to measure temperature...

- **Tympanic (aural)**
Accuracy affected by:
 - Positioning of probe
 - Increased cerumen
- **Axillary or groin**
 - Use only when patient's condition does not permit use of another route



The Ear

The glass thermometer...

- **Mercury in tube expands in relation to heat & moves up the inner column**
- **3 types of glass thermometers:**
 - Oral – long slender bulb
 - Security – short bulb, not as fat as rectal
 - Rectal – marked with red dot at end of stem

Figure 14.10
Glass Thermometers
(a) Long bulb for oral and axillary use (b) Stubby bulb for rectal use



Reading the glass thermometer

- **Starts at 96°**
- **Each long line indicates a 1 degree elevation**
- **Every other degree (long line) is marked with a number (96, 98, 100, 102, etc.)**
- **Between each long line are 4 shorter lines indicating 2/10 or 0.2 degrees**
- **Hold at eye level**
- **Rotate up & down looking at apex of prism for column or mercury**
- **Take reading where mercury ends**

Measuring an oral temperature...

- Shake thermometer down to 96°
- Assess if patient has had anything to eat, drink, or has smoked within 15 min.
- Glove if using glass or digital thermometer
- Insert thermometer into sheath
- Place in sublingual pocket
- Held in place with lips closed for 3 – 5 min.
- Temperature is assumed to be oral if no symbol is present

Measuring a rectal temperature...

- Assist patient into Sims' position
- Shake down thermometer
- Don gloves, place sheath on thermometer & lubricate
- Expose anus, insert gently $\frac{1}{2}$ to $1 \frac{1}{2}$ inches and HOLD in place 3 – 5 minutes
- Remove, wipe from stem to bulb
- Record an ® after the reading

Measuring an axillary temperature...

- Glove
- Pat area dry
- Place bulb in center of axilla
- Fold arm across chest
- Hold in place for 10 minutes
- Record an (Ax) after reading

Cleaning glass thermometers

- Wash in cold water and soap
- Dry, check for chips, shake down
- Carefully place in disinfecting container
- Cover with disinfectant
- Cover container and label with date & time
- Soak required length of time per agency policy / procedure

Electronic thermometer...

- Quick
- Insert probe into sheath
- Blue probe for oral
 - Hold in place or have patient hold if able
- Red probe for rectal
- When buzzer signals take reading

Measuring temperature using a tympanic thermometer

- Make sure lens is clean and intact
- Place clean cover on probe
- For adults
 - Gently pull pinna back and up
- For children
 - Gently pull pinna back and down
- Insert probe until it seals ear canal
- Direct probe toward tympanic membrane
- Press activation button
- Record as tympanic reading

Terminology...

- Afebrile
- Febrile
- Hypothermia
- Hyperthermia
- Conversion between °F and °C
 - °F to °C $^{\circ}\text{C} = (^{\circ}\text{F} - 32) / 1.8$
 - °C to °F $^{\circ}\text{F} = (^{\circ}\text{C} \times 1.8) + 32$
