Patient Care

Body Temperature

Medical Radiologic Technology Program

Body Temperature

- **Body Temperature** is the physiologic balance between heat produced in the body (by chemical processes that result from metabolic activity) and heat lost to the environment.

- A patient whose body temperature is elevated above normal limits is said to have a **fever** or **pyrexia**.

- A patient whose body temperature is below normal limits is said to have **hypothermia**.

Factors that Affect Body Temperature

- Environment – slightly higher in hot environment
- Time of day – lower in the morning
- Infection/disease/injury
- Age – decreases slightly with age
- Emotional status – increases with stress
- Menstrual cycle – higher during time of ovulation
- Physical activity – slight increase but plateaus
- Site of measurement – oral vs. rectal

Normal Body Temperature

- Normal oral temperature range for adults is 36–38 degrees Celsius or 96.8–99.8 degrees Fahrenheit (Allow + or - 0.5–1° variation in temp for normal ranges)

Table 1.1: Normal Adult Temperatures by Site

Site of Measurement	Normal	Time Required
Oral	37° C (98.6° F)	1–2 min.
Tympanic	36.4° C (97.6° F)	2–3 sec.
Rectal	37.5° C (99.6° F)	1–2 min.
Axillary Temporal Artery	36.4–36.7° C (97.6–98° F)	1–2 min.

Normal Body Temperature (cont'd)

Table 1.2: Normal Temperature Range for Children

Age	Normal Range
3 months–3 yrs	37.2–37.7° C (99–99.7° F)
5–13 yrs	36.7–37° C (97.8–98.6° F)

- Death can occur above and below normal temp!

Body Temperature Locations

- Oral – not always appropriate. Depends on patient and their condition. WHY?
- Axillary – patient preferred, but it's slower and less accurate.
- Rectal – accurate and faster but has patient contraindications.
- Tympanic and Temporal artery – common for children and confused patients.

Oral Temperature

- Easily accessible site

- Should not be used for patients who:
  - May be injured during the procedure by biting down on the thermometer
  - Are unable to hold the thermometer under the tongue with closed lips for the specified period of time

Axillary Temperature

- Safest method
- Non-invasive
- Commonly used for infants
- Somewhat unreliable
  - Time and placement precision needed to be accurate
- Electronic, disposable or glass thermometer with a blunt tip may be used

Rectal Temperature

- Provides the most reliable reading
- Should not be used if the patient is restless or has rectal pathology
- Use thermometer with a blunt tip
- Least preferred method by the patient

How to Chart Temperature

- When recording patient's temperature, take the reading and then record that reading followed by O, AX, T or R to indicate site at which the temperature was taken.
  - Oral – O
  - Axillary – AX
  - Tympanic – T
  - Rectal – R
    - E.g., a tympanic temperature of 97.6° F is written as 97.6 T
- It is important to chart the time at which the temperature was taken!

Types of Thermometers

1. Digital/electronic – used to take oral, axillary and rectal temperatures
2. Tympanic
3. Temporal artery
4. Disposable

Taking a Rectal Temperature-Theroy

- Wash your hands and put on clean gloves.
- Obtain a thermometer with a blunt tip.
- Place the patient in the Sim's position and cover with a sheet. Ensure the patient's privacy.
- Lubricate the thermometer tip.
- Separate the patient's buttocks with the heel of the hand so that the rectum is clearly visible.
- Gently insert the tip of the thermometer into the rectum 1–1.5 inches and hold in place for 1–2 minutes. **Do not leave patient unattended.**
- Remove and wipe the thermometer. Return the patient to a comfortable position.
- Record the reading and alert radiologist of abnormalities.
- Dispose of the thermometer as appropriate.
- Remove your gloves and wash your hands.

Disposable Thermometers

- Used primarily for children, ICU and isolation patients

- They consist of a "strip of temperature" *-sensitive paper with adhesive backing that may be attached to the forehead*