Body temperature
Measurement of body temperature:

Instruments used to measure body temperature:

1. Liquid-filled
   i) Range 95/110°F
   ii) Range 35/42°C

Medical thermometer has a notch to prevent mercury from returning back quickly.

2. Electronic (Electronic clinical thermometers)

3. Band thermometer
Normal Body temperature:
The ideal core body temperature is 98.6°F or 37.0°C. However, the value 98.2±1.3°F or 36.8±0.7°C is considered to be the normal body temperature (normo-thermia or euthermia) range for oral measurement. The differences between core temperature and measurements at different locations, known as clinical bias:

Temperature in the anus (rectum/rectal), vagina, or in the ear (otic) is about 37.6 °C (99.7 °F)

Temperature in the mouth (oral) is about 36.8 °C (98.2 °F)

Temperature under the arm (axillary) is about 36.4 °C (97.6 °F)
Variation in body temperature

1. Time of day: diurnal rhythm variation can result in a difference of at least 1:0°C depending upon the time of day or night when a temperature is taken. The lowest body temperature is measured around 3 a.m. in the morning, while the highest is recorded at around 6 p.m. in the afternoon. The time of day when the body temperature is likely to reproduce the most accurate and constant reading is between 12 noon and 6:00 pm.

2. An individual’s level of activity: exercise is associated with increase body temperature.

3. Age

4. Gender: Women tend to have higher rectal body temperatures, or temperatures taken directly inside the body cavity, than men,

5. Hormones: The hormones that increase body temperature (thermogenic hormone):
   A. Epinephrine.
   B. Thyroxin.
   C. Progesterone: it may cause increase body temperature during ovulation.

6. Body sit:
   A. Different site of body: Extremities and testes have lower temperature than the center of the body.
   B. Location of measurement: rectal has higher and axillary has lower temperature than oral.
Method of obtaining temperature

A. Oral Temperature:
To obtain an oral temperature, place the thermometer in the sublingual pocket and have the patient close his mouth around it. Instruct him not to bite down. Leave the thermometer in place 3 to 4 minutes and breath normally through the nose, furthermore, the patient should also refrain from talking. If the patient has been eating, drinking, smoking, brushing his teeth, or chewing gum within the past 15 minutes, wait at least 15 minutes to take the temperature.
B. Rectal temperature:
To obtain a rectal temperature, lubricate the bulb and the area up to 1 inch above it. Use a lubricated probe cover with an electronic thermometer. Turn the patient on his side, fold back the bedding and separate the buttocks so that you can easily see the anal opening. Insert the thermometer approximately 1.5 inches into the anus. Hold the thermometer in place for 3 to 4 minutes.
C. Axillary temperature:
To obtain an axillary temperature, place the thermometer in a dry axilla. Keep the arm close to the body to ensure contact with the bulb or probe for **5 minutes**. Clean the thermometer / dispose if the plastic cap. Thank the patient, and wash your hands.
Precautions:

1. Oral temperatures are contraindicated for an ① unconscious patient, ② for children/infants under the age of 10 years, or ③ when the patient must breathe through the mouth.

2. The rectal method of obtaining the temperature is contraindicated ① if the patient has diarrhea, ② rectal disease, or ③ has recently had rectal surgery.

3. Axilla site is recommended for children under the age of 10 years and elderly care patients.

4. It should be carefully noted that temperatures taken with the glass/mercury thermometer using the axilla site can read lower by at least 1:0°C by comparison to the Oral site; the reason is due to the round shape of the mercury ‘bulb end’ of the thermometer that cannot be in full contact with the flat surface of the axilla.

5. Rectum is only selected when either of the other two sites is not available.