Lecture 6

Vital Signs
Part 1
Theoretical

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Vital Signs

Definition:

Procedure that takes the sign of basic physiology that includes temperature , pulse, respiration and blood pressure. If any abnormality occurs in the body, vital signs change immediately.

Purpose:

1. To assess the client’s condition
2. To determine the baseline values for future comparisons.
3. To detect changes and abnormalities in the condition of the client.

What are the Vital signs?

1.Body temperature

2.Pulse

3. Respiration

4. Blood pressure

- Recently many health agencies (such as the Veterans Administration, American Pain Society, and The Joint Commission) designed **pain** as the fifth signs **(cardinal sings).**
- **Oxygen saturation** is also commonly measured at the same time as the traditional vital signs and could be considered the **sixth vital sign**.

Times to Assess Vital Signs

1. On admission.
2. When a client has a change in health status such as chest pain or feeling hot or faint.
3. Before and after surgery or an invasive procedure.
4. Before and after the administration of a medication .
5. Before and after any nursing intervention that could affect the vital signs.

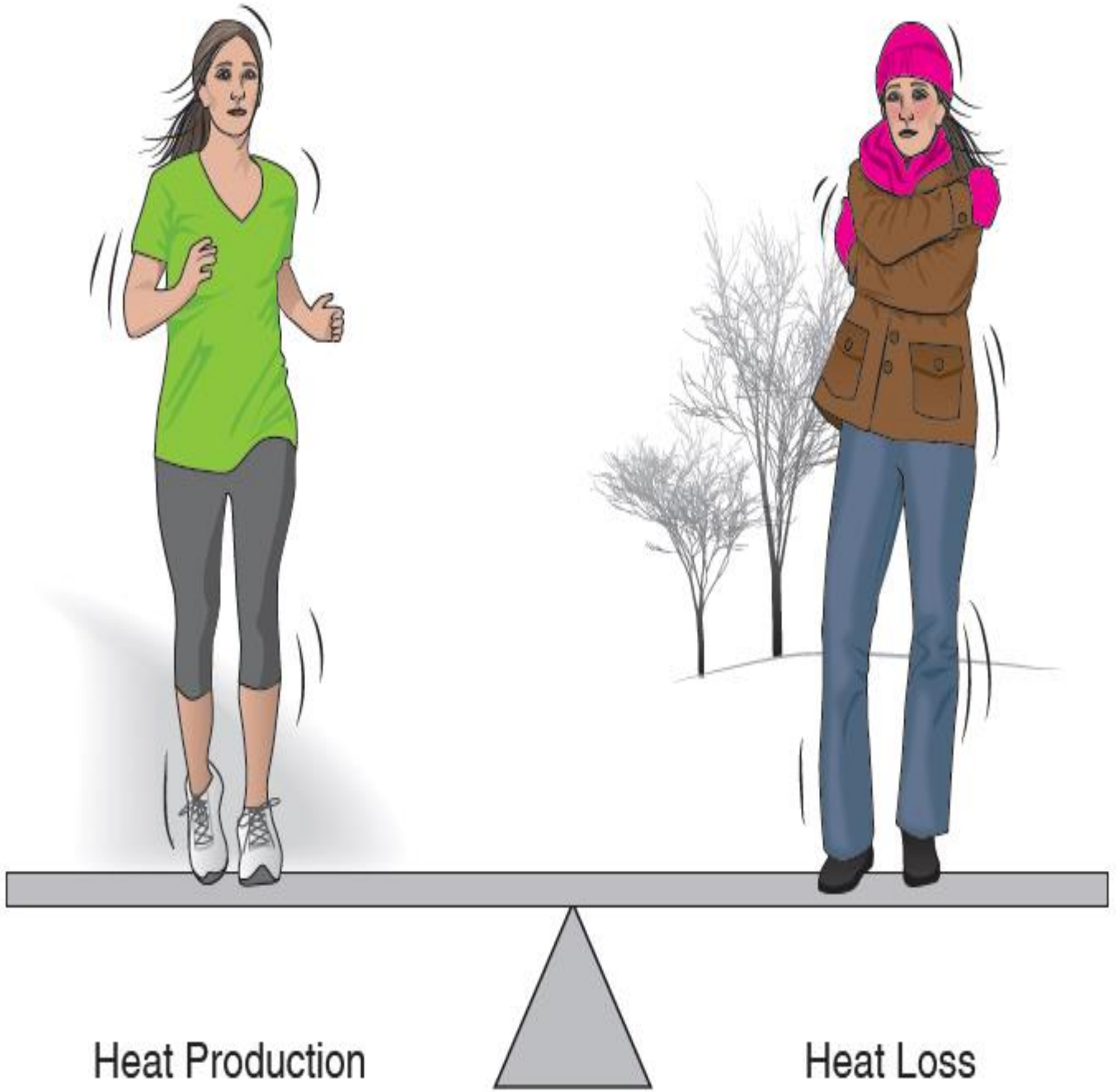
Equipment

1. Vital sign tray
2. Stethoscope
3. Sphygmomanometer
4. Thermometer
5. Second hand watch
6. Red, blue and black pen
7. Vital sign sheet
8. Cotton swab
9. Disposable gloves if available

Body Temperature

1- Body Temperature

Body temperature reflects the balance between the heat produced and the heat lost from the body, and is measured in heat units called degrees.



There are two kinds of body temperature:

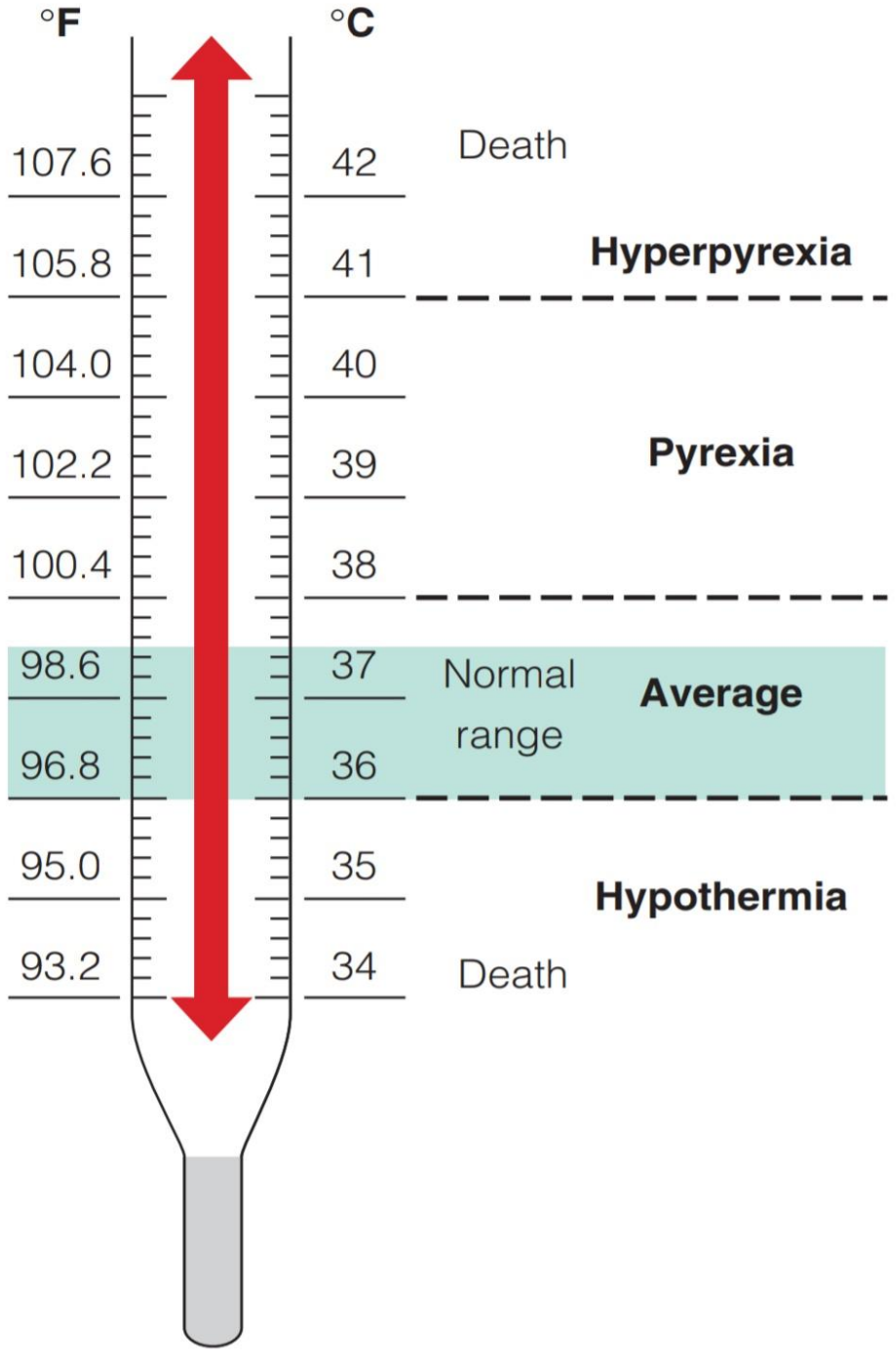
1. **Core temperature:** is the temperature of the deep tissues of the body, such as the abdominal cavity and pelvic cavity (oral and rectal).
2. **Surface temperature:** is the temperature of the skin, the subcutaneous tissue, and fat. It, by contrast, rises and falls in response to the environment.

❖ Control body temperature : by (hypothalamus)

Factors that affect body temperature are the following:

1. **Age.**
2. **Diurnal variations.**
3. **Exercise.**
4. **Hormones.**
5. **Stress.**
6. **Environment.**

- **The normal range** for Body Temperature in adults between (36°C and 37.5°C) .
- **Pyrexia:-** is a body temperature above the normal range (38°C – 40.9°).
- **Hyperpyrexia:-** A very high fever, such as 41°C and more.
- **Hypothermia** is a body temperature below (36°C).



Assessing Body Temperature

❖ **The most common sites for measuring body temperature are:-**

1. Oral. (2-3) minute.
2. Rectal. (2) minute (-0.6)
3. Axillary. (5-6) minute (+0.6)
4. Skin/temporal artery.
5. Tympanic.

❖ **Normal temperature**

1. Oral ; 37 c
2. Axillary ; 36.5 c
3. Rectal ; 37.6 c

To convert from Celsius to Fahrenheit

F = (Celsius temperature * 9/5) + 32

For example, when the Celsius reading is 40:

F = (40 * 9/5) + 32 = (72 + 32) = 104.

To convert from Fahrenheit to Celsius

C = (Fahrenheit temperature – 32) * 5/9

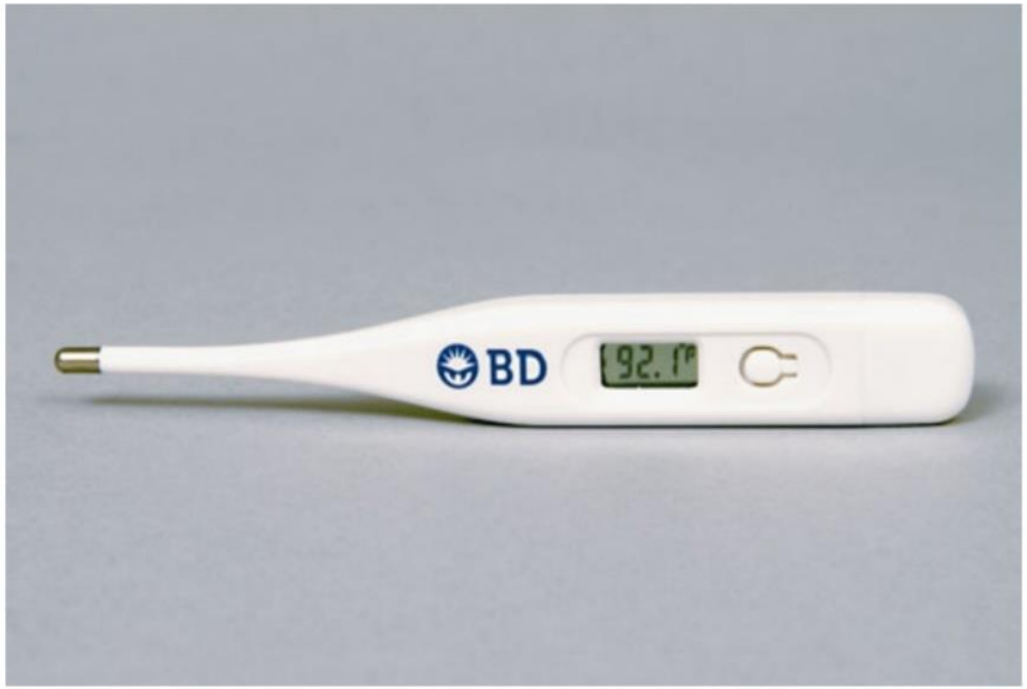
For example, when the Fahrenheit reading is 100:

C = (100 – 32) * 5/9 = (68) * 5/9 = 37.8

Types of Thermometer

1- Glass mercury thermometer :- (Orally)

2- Electronic thermometer:- (Axillary)



3- Tympanic Thermometer

4- Temporal artery thermometer

5- A temperature sensitive skin tape

1 Oral thermometer placement

3 Placing the bulb of the thermometer in the center of the axilla.

Figure 28.10 A pacifier thermometer

Contraindication for oral temperature

1. Child under age 3 years
2. Old age people
3. Unconscious patient
4. Mental ill patient
5. Oral surgery, lesion or ulcer
6. Nasal obstruction
7. Patient has cough
8. Patient has nasogastric (NG) Tube
9. Patient has vomiting

Contraindication for rectal temp

1- Rectal surgery

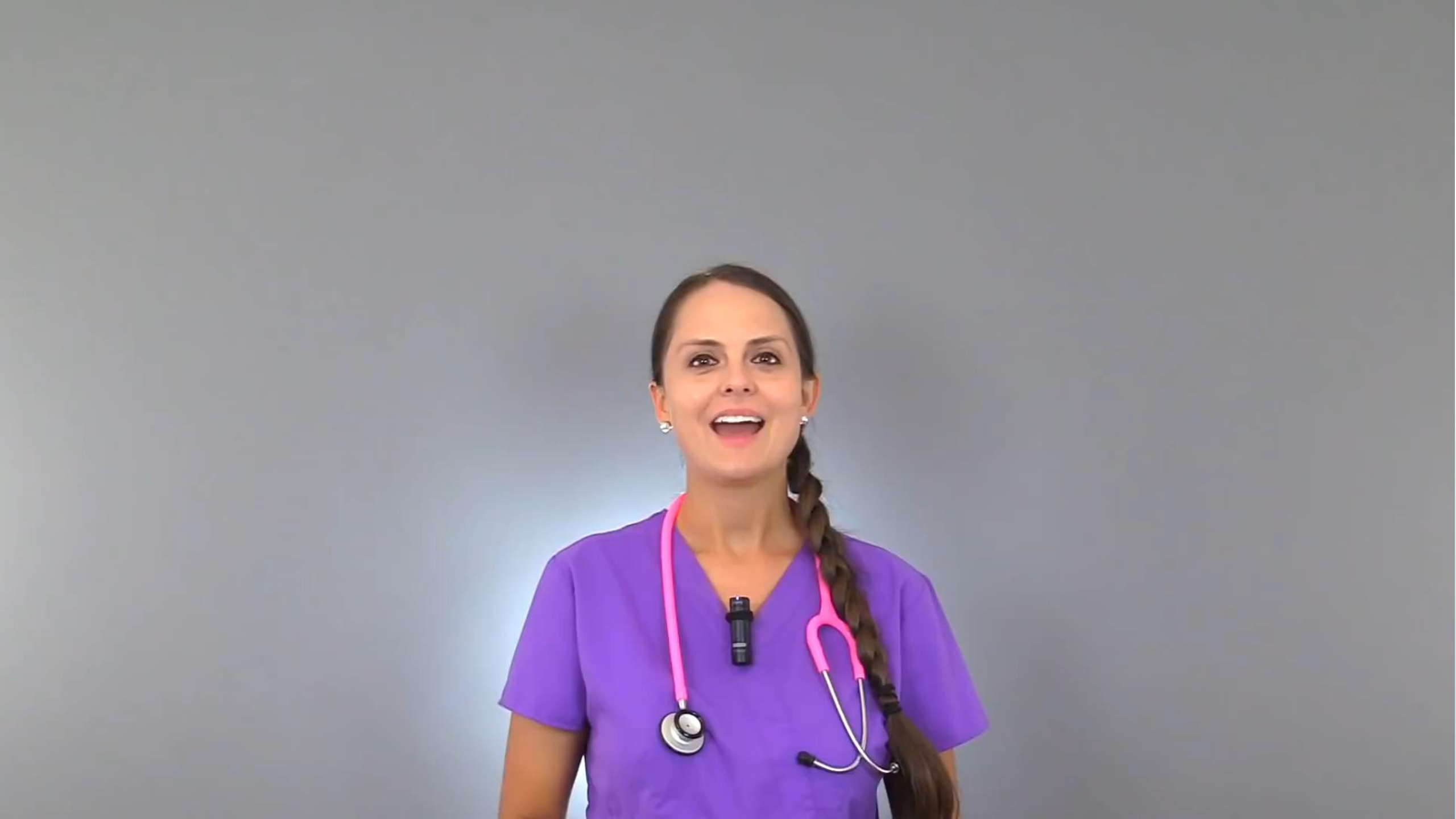
2- Diarrhea

3- Rectal disorder (bleeding)

4- Neonates- can cause rectal perforation and ulceration.

Procedure to checking temperature:

1. Wash your hands.
2. Prepare all required equipment's.
3. Introduce your self and explain procedure to client.
4. Provide for client privacy.
5. Place the client in the appropriate position (e.g., lateral or Sims' position for inserting a rectal thermometer).
6. Place the thermometer.
7. Wait the appropriate amount of time.
8. Remove the thermometer .
9. Read the temperature and record it on your worksheet



Pulse

2- Pulse

- The **pulse** is a wave of blood created by contraction of the left ventricle of the heart. number of times the heart beats in 1 minute.

- The rate of the pulse is expressed in beats per minute (beat/min).

Factors Affecting the Pulse

1- Age

2- ***Sex.***

3- Exercise

4- Fever

5- Medications.

6- Hypovolemia/dehydration.

7- Stress

8- Position and sleep.

9- Pathology

Pulse Sites

1. Radial
2. Temporal
3. Carotid
4. Apical (central)
5. Brachial
6. Femoral
7. Popliteal
8. Dorsalis Pedi’s
9. Posterior tibial

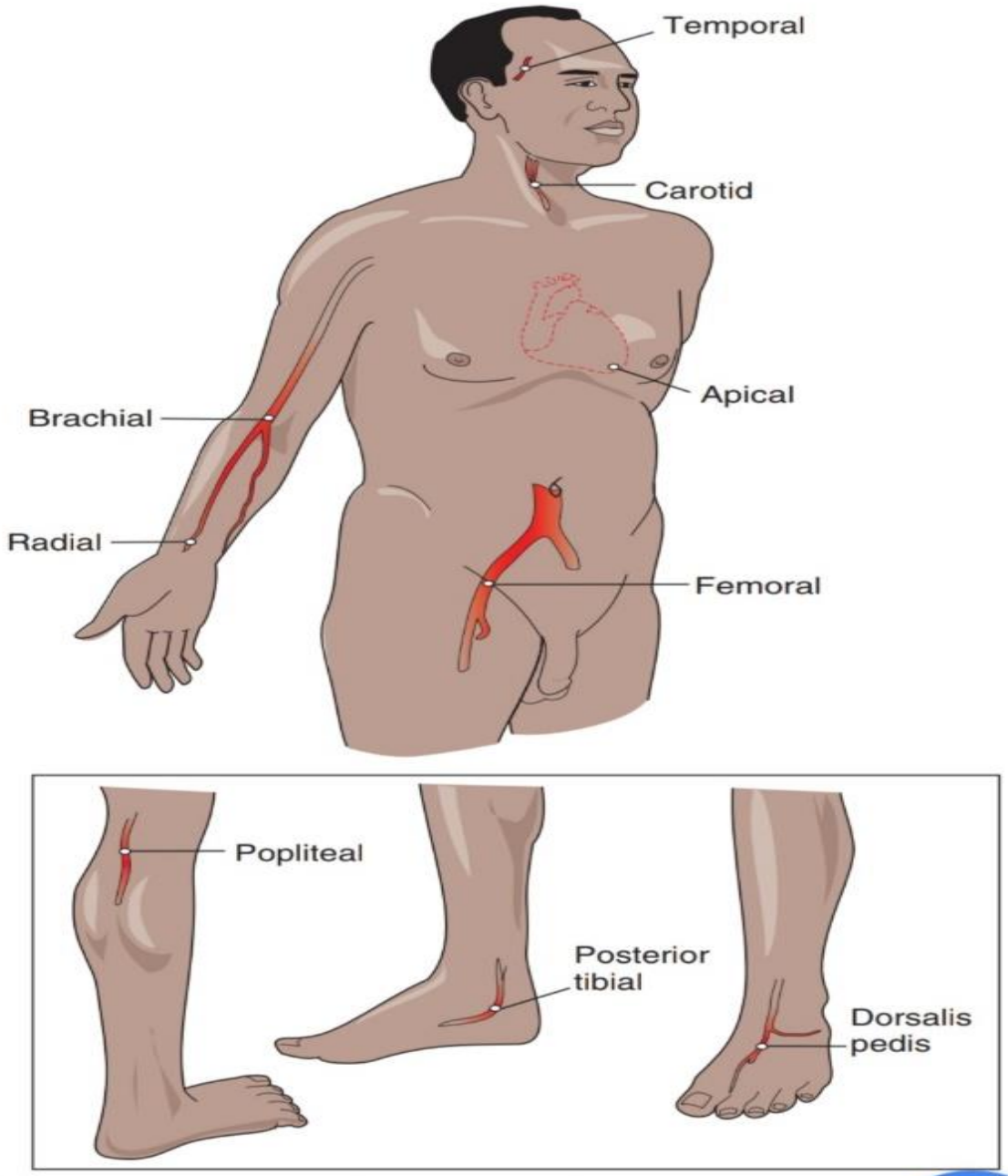
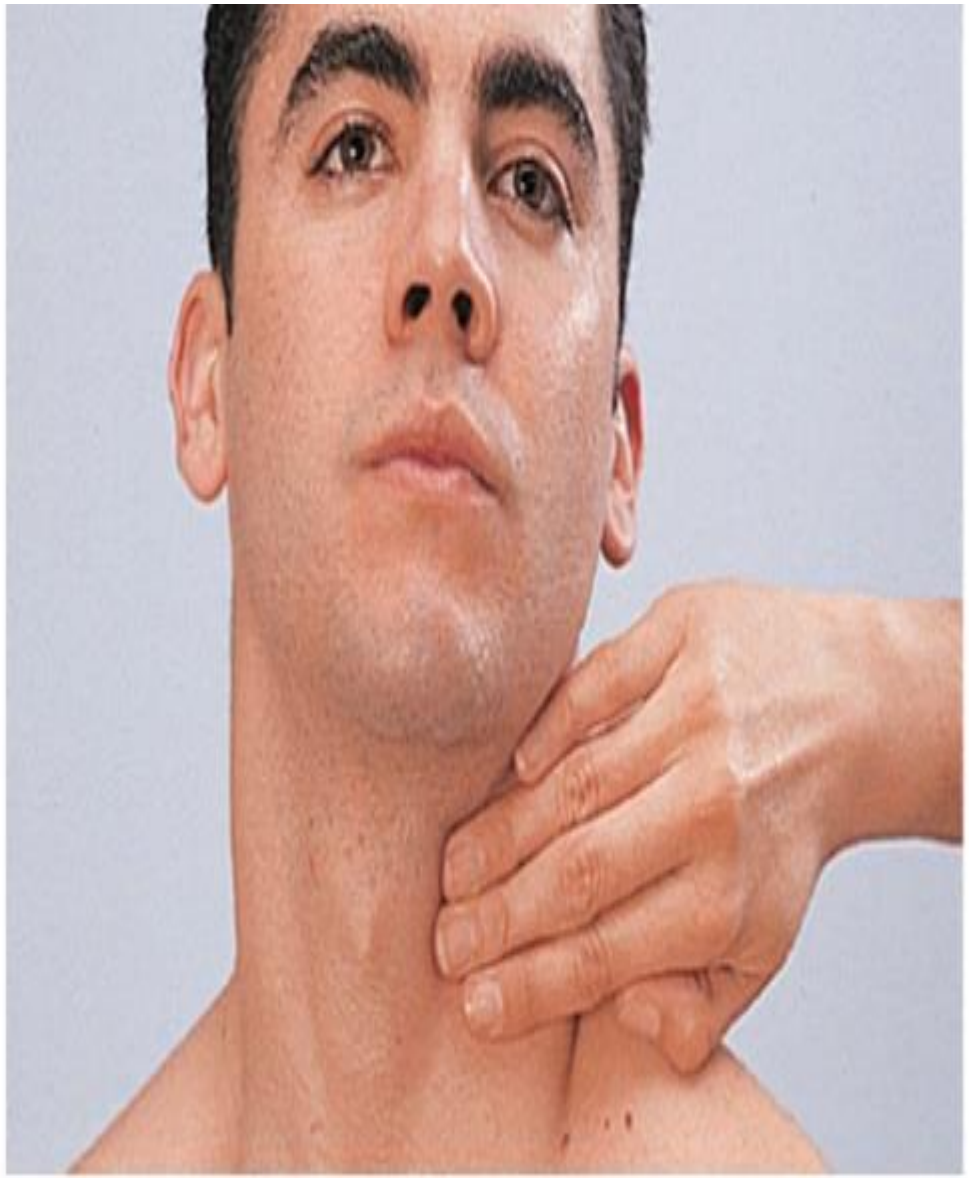


Figure 29–13 ■ Nine sites for assessing pulse.

1 Assessing pulses: **A** Radial



1 **C** Carotid

B Brachial

1 D Femoral

1 E Popliteal

1 F Tibial

Location of apical pulse

In an adult, this is located on the left side of the chest, about 8 cm (3 in.) to the left of the sternum (breastbone) at the fifth intercostal space (area between the ribs).

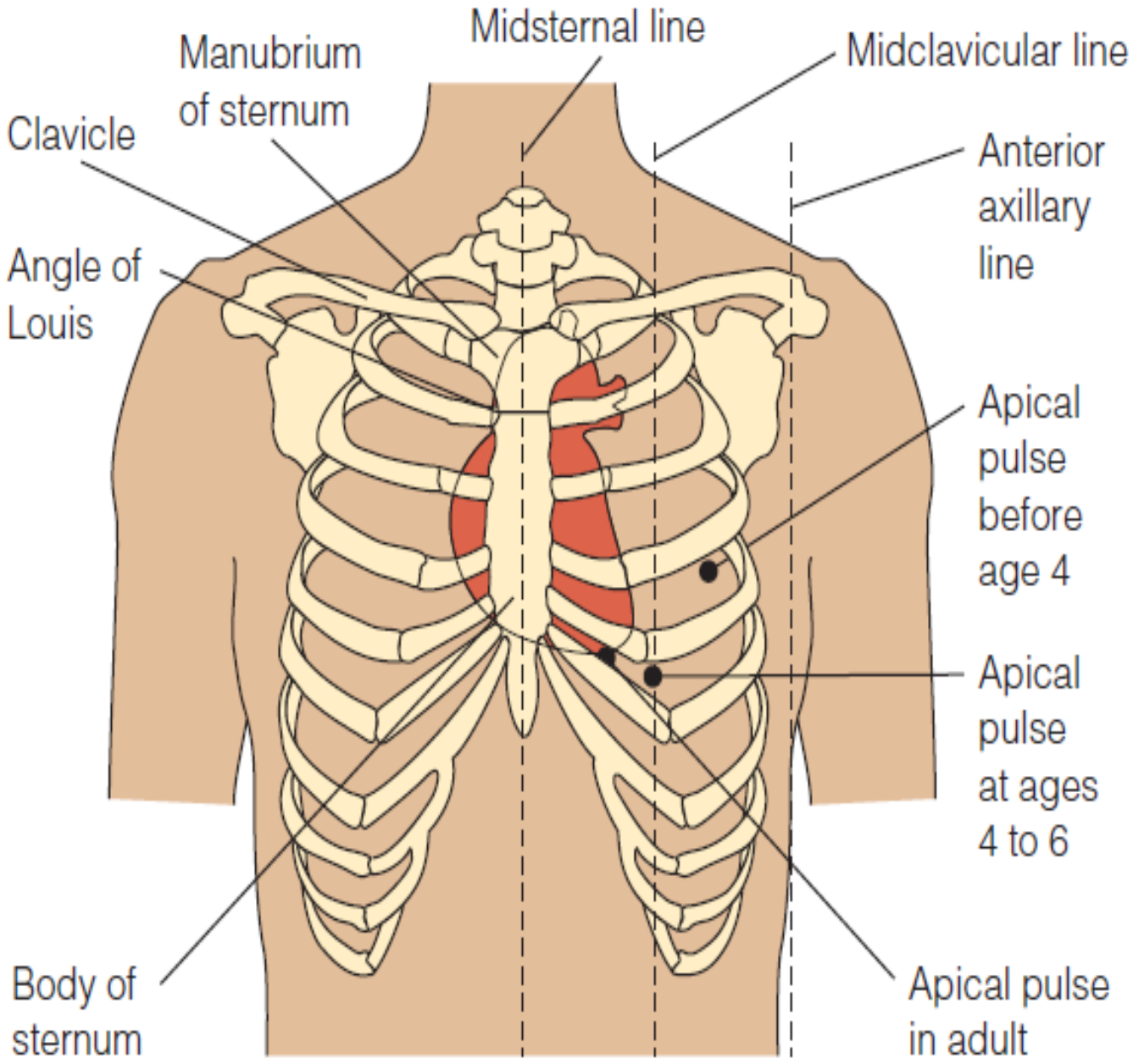
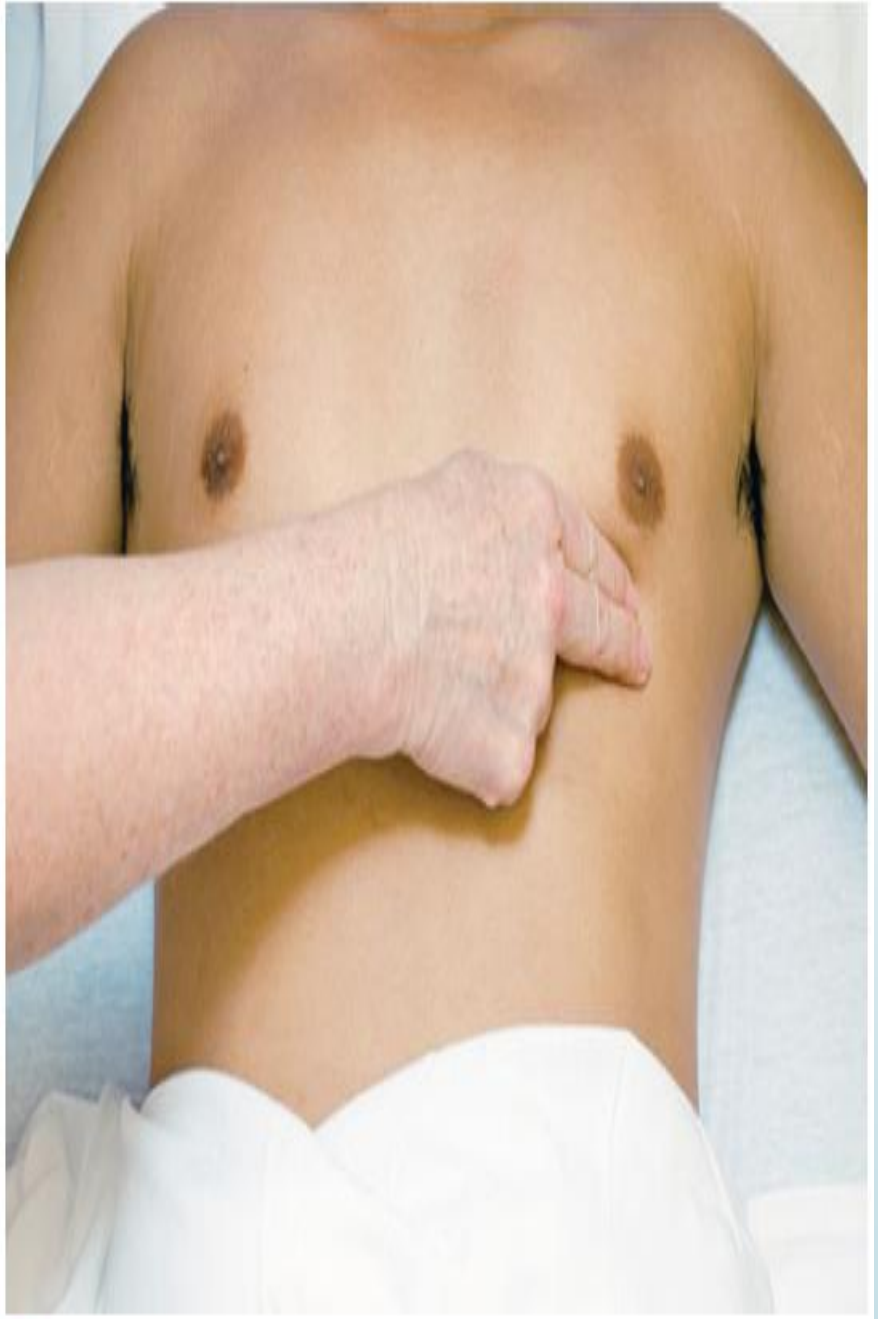


Figure 29–14 ■ Location of the apical pulse for a child under 4 years, a child 4 to 6 years, and an adult.

1 Second intercostal space.

2 Third intercostal space.



3 Fifth intercostal space, MCL.

Pulse Assessment

1- Rate

* Normal **(60 ---100)** beat/ Minute

2- rhythm

* Regular

* Irregular

3- Volume -Strength

* Bounding or strong pulse

* Normal pulse

* weak or threatening pulse

* Absent of pulse

TABLE 28.2 Variations in Pulse and Respirations by Age

Age	Pulse Average (and Ranges)	Respirations Average (and Ranges)
Newborn	130 (80–180)	35 (30–60)
1 year	120 (80–140)	30 (20–40)
5–8 years	100 (75–120)	20 (15–25)
10 years	70 (50–90)	19 (15–25)
Teen	75 (50–90)	18 (15–20)
Adult	80 (60–100)	16 (12–20)
Older adult	70 (60–100)	16 (15–20)

Variances in Pulse Rate

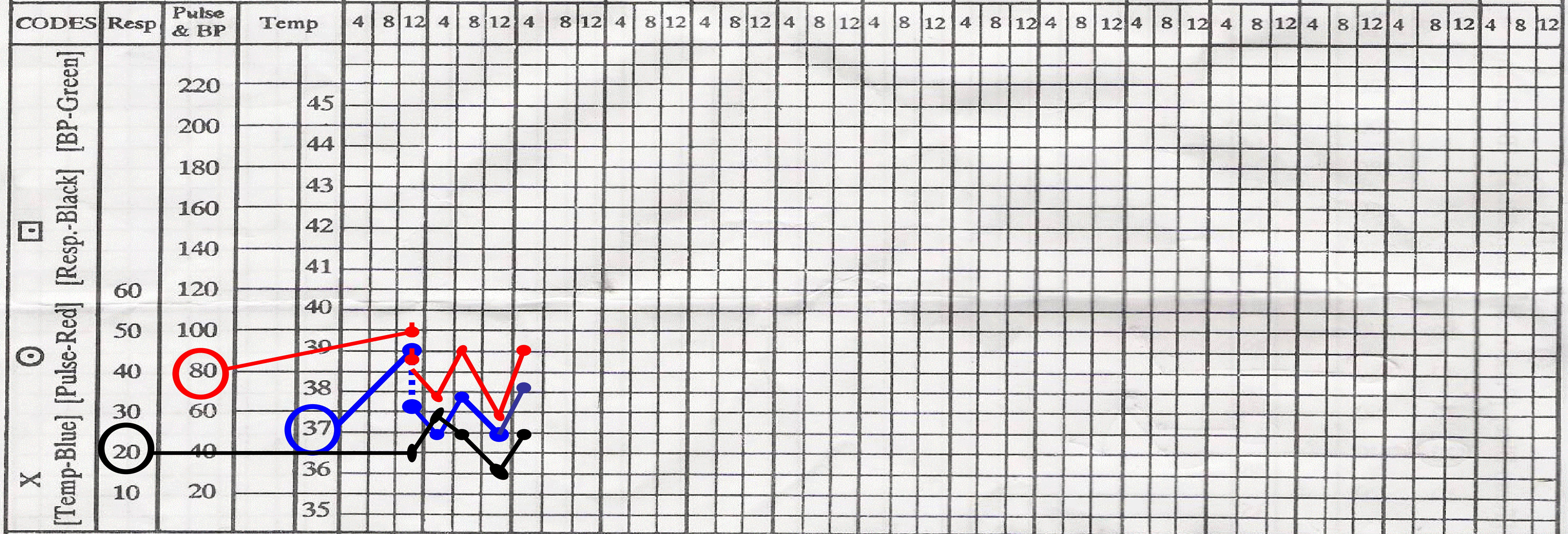
- **Tachycardia**: pulse rate more than 100 bpm (beat per minuet)
- **Bradycardia**: pulse rate less than 60 bpm
- **Dysrhythmia** (arrhythmia): irregular rhythm

Procedure to checking pulse rate

1. Wash your hands.
2. Prepare all required equipment's.
3. Introduce your self and explain procedure to client.
4. Provide for client privacy.
5. Select the pulse point. Normally, the radial pulse is taken.
6. Assist the client to a comfortable resting position.
7. Assess the pulse rhythm and volume for 1 minute.
8. Document the pulse rate, rhythm, and volume and your actions in the client record.

VITAL SIGNS CHART استمارة العلامات الحيوية

DATE:	10/10/1428	11/10/1428						
DAY OF HOSPITALIZATION	1	2						
Post-operative Day		1						
ALLERGIES :	iodine	iodine						
	AM PM	AM PM	AM PM	AM PM	AM PM	AM PM	AM PM	AM PM



Blood Pressure

WEIGHT

Thanks