AL-mustaqbal university

College Of Health and Medical Techniques

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Lab 5

Methods of Measuring Temperature, Blood Pressure, and Heart Rate

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Introduction

Vital signs such as **body temperature, blood pressure, and heart rate** are essential indicators of human health. They help in diagnosing diseases and monitoring bodily functions. These measurements rely on various tools and techniques, ranging from traditional to modern methods. This lecture aims to provide a practical explanation of how to accurately measure each of these vital signs.

First: Measuring Body Temperature

1. The Concept and Importance of Body Temperature

The normal body temperature ranges between **36.5 - 37.5°C** and serves as a crucial indicator of health status. An increase or decrease in temperature may signal an infection or other health disorders.

2. Tools for Measuring Body Temperature

- **Mercury Thermometer:** Placed under the tongue or in the armpit but is less commonly used due to mercury hazards.

- **Digital Thermometer:** Uses electronic sensors to measure temperature accurately.

- **Infrared Thermometer:** Measures temperature from the ear or forehead without direct contact.

- **Temporal Artery Thermometer:** Measures temperature from the temporal artery in the forehead.

3. Practical Steps for Measuring Body Temperature

1. **Choose the appropriate tool** based on accuracy and patient age.
2. **Prepare the thermometer:** Clean and disinfect it if reusable.
3. **Place the thermometer correctly:**
   - Under the tongue (for adults).
   - In the armpit (for young children).
   - In the ear or forehead (for quick measurements).
4. **Wait according to the device instructions, then read and record the result.**

Second: Measuring Blood Pressure

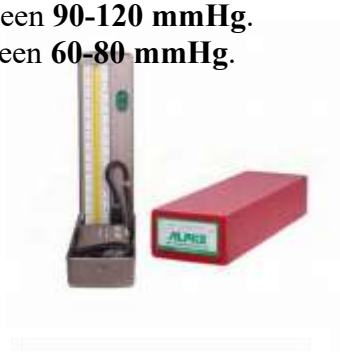
1. The Concept and Importance of Blood Pressure

Blood pressure is the force exerted by blood on the walls of blood vessels. It is measured in two values:

- **Systolic Pressure:** The pressure during heart contraction, normally between **90-120 mmHg**.
- **Diastolic Pressure:** The pressure during heart relaxation, normally between **60-80 mmHg**.

2. Tools for Measuring Blood Pressure

- **Mercury Sphygmomanometer:** The most accurate type but requires skill to use.



- **Electronic Blood Pressure Monitor:** Easy to use and provides quick, accurate results.

- **Aneroid Sphygmomanometer:** Used with a stethoscope and relies on manual inflation of the cuff.

3. Practical Steps for Measuring Blood Pressure

1. **Choose the appropriate device** and ensure the cuff fits the patient's arm size.
2. **Position the patient comfortably:** Sit quietly for 5 minutes before measurement.
3. **Place the cuff around the arm:** At heart level, about 2 cm above the elbow.
4. **Inflate the cuff:** Using the air pump until it exceeds the expected pressure by 30 mmHg.
5. **Release the air slowly:** Listen for arterial sounds using the stethoscope for manual measurement, or wait for the reading from an electronic device.
6. **Record the final values and compare them to normal ranges.**