



Body Temperature

Medical Measurements Lab 1

Fourth Stage

Supervised by

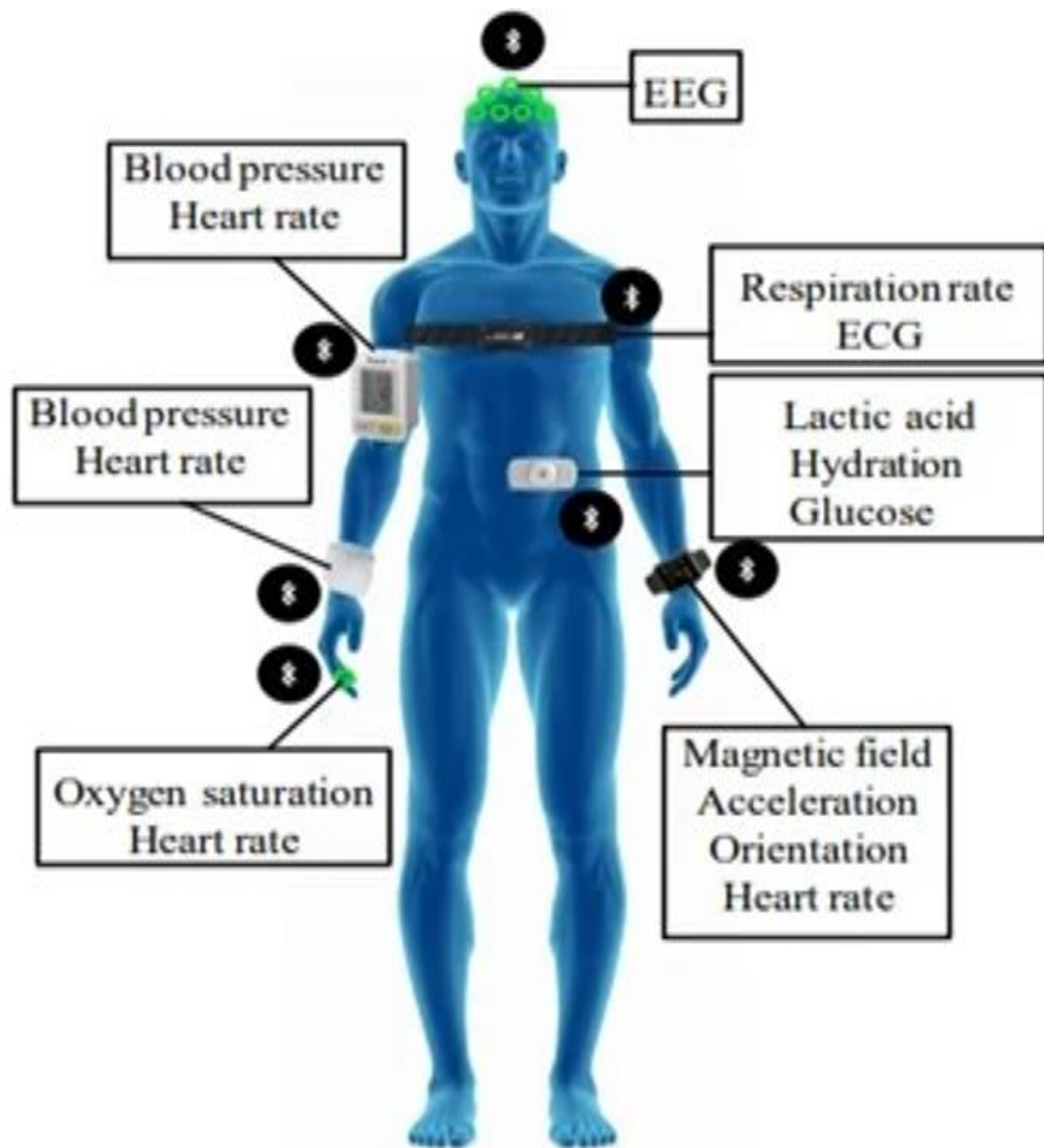
Asst. lec.Hiba Diaa Alrubaie

Body Temperature

- Body temperature is one of the key vital signs used to assess health and is an indicator of the body's internal state. It reflects the balance between heat produced by metabolic processes and heat lost to the environment. Normal body temperature can vary depending on factors like the time of day, activity level, and individual differences, but it's generally around **36.5–37.5°C (97.7–99.5°F)**.

Medical sensors

Medical sensors are specialized devices used to detect and monitor various physiological parameters and biological conditions in healthcare applications. They play a critical role in modern medicine by enabling continuous monitoring, diagnosis, and data collection for patient care.



Temperature Sensor

- A **temperature sensor** is a device used to measure temperature and convert it into an electrical signal or digital output. In medical applications, temperature sensors are vital for monitoring body temperature and other temperature-sensitive physiological processes.

Types of Temperature Sensors:

1. Thermocouples:

- Consist of two different metals joined at one end. The temperature difference between the joined end and the open ends generates a voltage, which is proportional to the temperature.
- Widely used for a broad temperature range.

2. Resistance Temperature Detectors (RTDs):

- Measure temperature by correlating the resistance of a material (usually platinum) with temperature.
- Known for high accuracy and stability, often used in clinical environments.

3. Thermistors:

- Temperature-sensitive resistors, where resistance decreases (NTC) or increases (PTC) with temperature.
- Used in applications requiring precise measurements over a limited range, such as medical thermometers.

4. Infrared Temperature Sensors:

- Measure the temperature from a distance by detecting infrared radiation emitted by an object.
- Often used in non-contact thermometers (e.g., forehead or ear thermometers).

