

**Ministry of Higher Education and Scientific Research  
Al-Mustaqbal University College  
Intelligent of Medical Systems Department**



**Subject: Practical Physiology**

**Class: 1<sup>st</sup>**

**Laboratory: 4 and 5**

**Lecture Title: Bleeding and Clotting Time**

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# Determination of Bleeding and Clotting Time

## Introduction

The bleeding and clotting time indicate the conditions of the blood clotting mechanisms. The latter gives information on the intrinsic clotting mechanisms while the former shows the mutual effects of blood and injured tissue.

Determination of the bleeding time starts with the puncture of the finger pad. Wipe off the blood with a piece of filter paper every 20 seconds, and stop the timer when the wound is dry for the 3rd time. Normal bleeding time is between 1 to 3 minutes.

In order to measure the clotting time, drop the first clear drop of blood onto the inert parafilm (or onto a glass surface covered by paraffin) and start the timer. Draw a sterile needle through the drop in every 20 seconds. Stop the timer when the first fibrin fibre appears. Normal clotting time is between 5 to 8 minutes on paraffinated surfaces, but can be much faster on less smooth surfaces.

## Bleeding time (BT)

The bleeding time is the most basic test to evaluate thrombocytes function.

**DUKE method:** A sterile disposable needle or a special lancet is used for pricking. The fingertip is wiped off with alcohol and pricked in 3-4 mm depth. The blood drops are wiped off with a piece of filter paper every 30 sec, until the blood no longer stains the paper.

**Normal value:** 1-3 min

A prolonged bleeding time indicates deficiency or decreased number of thrombocytes (thrombocytopenia) or impaired blood vessels. The depth of the puncture or incision can be a source of error.

### **Clotting time (CT)**

**LEE-WHITE method:** Approximately 5-6 ml of venous blood is collected. The blood is immediately distributed in 3 test tubes that were prewarmed in a 37°C waterbath. Blood clotting is tested by tipping the tube back and forth every 30 seconds. The clotting time is measured when the blood does not flow out of the test tubes when tilted horizontally. The clotting time is calculated by averaging the results obtained with the 3 test tubes.

**The normal value:** 5-8 min.

Blood clotting time longer than 10 min is pathological. This test measures the endogenous way of blood coagulation.

#### **VIQ**

1. What is the purpose of BT determination?
2. What is the normal time for BT?
3. What is the purpose of CT determination?
4. What is the normal time for CT?
5. What are the meaning of prolonged BT?