

## Chernecky & Berger: Laboratory Tests and Diagnostic Procedures, 5th ed.

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Bleeding Time, Mielke—Blood

**Norm.**

2.5–8 minutes.

**Increased.**

Anemia (aplastic, pernicious), collagen diseases, congenital heart disease, disseminated intravascular coagulopathy, drug sensitivity, ethyl alcohol ingestion along with aspirin, factor deficiency (I, II, V, VII, VIII, IX, XI), fibrinolytic activity, Glanzmann's disease, hemorrhagic disease of the newborn, Hodgkin's disease, hypothyroidism, idiopathic thrombocytopenic purpura, infections (measles, mumps, streptococcal), leukemia (acute), liver disease (severe), mononucleosis (infectious), multiple myeloma, purpura hemorrhagica, scurvy, thrombasthenia, thrombocytopathy, thrombocytopenia purpura (secondary because of allergy), von Willebrand's disease, and uremia. Drugs include anticoagulants (oral), indomethacin, phenylbutazone, and platelet aggregation inhibitor drugs (aspirin, clopidogrel, eptifibatide). Herbs or natural remedies that may inhibit platelet activity include feverfew (*Tanacetum parthenium*), *Ginkgo biloba*, garlic, ginger, and ginseng.

**Decreased.**

Not clinically significant.

**Description.**

The duration of active bleeding from a standardized superficial incision of the skin is measured. It is particularly helpful as an indicator of platelet abnormality, either in the number or from the function of the platelets. This method is more sensitive than the Duke bleeding time because a blood pressure cuff is used to increase venous pressure and ensure capillary filling without interfering with venous return. Because the template standardizes the length and depth of the incision, this is the most accurate manual method for measuring bleeding time. An automated Surgicutt instrument is available to further standardize the incision.

**Professional Considerations**

Consent form NOT usually required.

### Risks

Bleeding, hematoma, infection, ecchymoses, scar, or keloid formation.

### Contraindications

In clients who require upper-extremity restraints, have edematous or very cold arms, or are prone to keloid formation. The test should not be performed if there are contraindications to placing or inflating a blood pressure cuff on the arm (casts, rash, dressings, arteriovenous fistula). Other contraindications include platelet count  $<50,000/\text{mm}^3$ , severe bleeding disorders, skin infectious diseases, and senile skin changes, or if the client has taken medications containing acetyl groups within 7 days before the test.

#### Preparation

1. See Client and Family Teaching .
2. Obtain a blood pressure cuff and a manometer, alcohol wipes, a stopwatch, a template, and filter paper.
3. Screen client for the use of herbal preparations or natural remedies such as feverfew (*Tanacetum parthenium*), *Ginkgo biloba*, garlic, ginger, and ginseng.

#### Procedure

1. Cleanse the volar aspect of the forearm with an alcohol wipe and allow it to dry completely. Choose a site with no superficial veins.
2. Place the blood pressure cuff on the upper arm and inflate to 40 mm Hg.
3. *Manual incision:* Using a specially calibrated template to pass the blade through, make two incisions 9 mm long and 1 mm deep on the site that was cleansed with alcohol. Start timing with the stopwatch.
4. *Automated incision:* Place the Surgicutt instrument on the site that was cleansed with alcohol and start the stopwatch at the same time as the device is triggered. The device will make a standardized puncture incision 5 mm long by 1 mm deep. Repeat at a second site.
5. Remove the blood from the wound by gently blotting with the filter paper, without exerting pressure on the wound, every 30 seconds.
6. When the blood flow ceases, stop timing with the stopwatch. If bleeding continues for more than 20 minutes, discontinue the test and apply pressure to the site.
7. Calculate the bleeding time by averaging the bleeding times of both incisions.

#### Postprocedure Care

1. If the bleeding time is normal, apply the dressing to the site. If the bleeding time is prolonged, apply a pressure bandage to the site.
2. A butterfly closure may be required for 24 hours.

#### Client and Family Teaching

1. Do not take aspirin for 7 days before the test.
2. Call the physician if there are signs of infection at the test site: increasing pain, bleeding, redness, swelling, purulent drainage, or temperature >101 degrees F (>38.3 degrees C).
3. Results are normally available within 24 hours.

#### Factors That Affect Results

1. With standardized incisions, one incision yields as much information as two nonstandardized incisions.
2. Pressing too hard on the blood with the filter paper disturbs the platelet plug and prolongs the bleeding time.

#### Other Data

1. None.

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