Table 9.1. Definitions of Bleeding Disorders

Platelet disorders	
Thrombocytopenia	Decreased number of functioning platelets caused by decreased platelet production or accelerated platelet destruction/removal
Immune thrombocypenic purpura (ITP)	An autoimmune disorder causing platelet destruction due to the presence of antibodies against the patient's own platelets
Drug-induced platelet disorders	Drugs may reversibly or irreversibly cause inhibition of platelet function.
Coagulation disorders	
von Willebrand disease	An autosomal dominant hereditary bleeding disorder caused by a deficient or defective plasma von Willebrand factor (vWF)
Hemophilia A	An X-linked genetic disorder resulting in deficient or defective clotting Factor VIII
Hemophilia B	An X-linked genetic disorder resulting in deficient or defective clotting Factor IX
Disseminated intravascular coagulation (DIC)	An acquired coagulation disorder characterized by uncontrolled thrombin activation and release, resulting in severe thrombosis that may be fatal
Drug-induced coagulation disorders	Drugs may prevent synthesis of coagulation cascade factors and have the potential to result in prolonged bleeding.

Table 9.2. Clinical Bleeding Symptoms Differ Based on Nature of Hemostatic Disorder

Clinical Findings	Platelet and Vascular Disorders	Coagulation Disorders
Petechiae	Characteristic	Rare
Ecchymoses	Characteristic, usually small and multiple	Common, often large and solitary
Deep dissecting hematomas	Rare	Characteristic
Hemarthroses	Rare	Characteristic
Delayed surgical bleeding	Rare	Common
Bleeding from superficial cuts and scratches	Persistent, often profuse	Minimal

Table 9.3. Common Laboratory Tests Used to Assess Hemostasis

Laboratory Test	Normal Range	What It Measures
Platelet count	150,00–400,00 cells/mL	Platelet quantity
Ivy bleeding time (BT)	<6 minutes	Platelet function (quantity and quality)
PFA-100	Closure time <193 seconds	Quantitative and qualitative measurement of platelet adhesion, activation, and aggregation
Prothrombin time (PT)	11–14 seconds	Factors II (prothrombin), V, VII, and X, and fibrinogen
International normalized ratio (INR)	1.0	
Activated partial thromboplastin time (aPTT)	27–38 seconds	Factors II, V, VIII, IX, X, XI, and XII
Thrombin time (TT)	9–13 seconds	Abnormalities in the conversion of fibrinogen to fibrin

PFA-100, platelet function analyzer 100.

Table 9.4. Relative Levels of Common Laboratory Screening Test Results for Hemostatic Disorders

Condition	Platelet Count	Bleeding Time/PFA-100	PT/INR	aPTT	TT
Aspirin therapy	↓ or ↔	↑	↔	↔	↔
Coumarin therapy	↔	↔	↑↑	↑	↔
Heparin therapy	↔	↔	↔	↑↑	↑
Hemophilia A or B	↔	↔	↔	↑↑	↔
Thrombocytopenia	↓↓	↑↑	↔	↔	↔
Severe liver disease	↓	↑	↑↑	↑↑	↑↑
Renal hemodialysis	↓	↔	↔	↑	↔
Leukemia	↓	↑	↔	↔	↔
Vessel wall defect	↔	↑	↔	↔	↔
Fibrinogenolysis	↔	↔	↑	↑	↑↑
DIC	↓↓	↑↑	↑↑	↑↑	↑↑

↑, mild increase; ↑↑, moderate to marked increase; ↓, mild decrease; ↓↓, moderate to marked decrease; ↔, normal level; PFA-100, platelet function analyzer 100; PT, prothrombin time; INR, international normalized ratio; aPTT, activated partial thromboplastin time; TT, thrombin time; DIC, disseminated intravascular coagulation.