Platelet Count: *Interpreting the platelet count.*

A low platelet count is called thrombocytopenia. Thrombocytopenia may result from either decreased platelet production or increased platelet utilization (or destruction) as a result of various pathological conditions:[34-36]

- Infectious etiology: bacterial, fungal, or viral (e.g., CMV, HIV, rubella, herpes)
- Maternal medical conditions (e.g., pregnancy induced hypertension)
- Maternal auto- or isoimmunization: alloimmune or autoimmune thrombocytopenia (idiopathic thrombocytopenic purpura, systemic lupus erythematosus)
- Genetic etiology: chromosomal (trisomy 13, 18, 21, turner syndrome), familial thrombocytopenias, or specific mutations in the genes MPL, RUNX1, or PTPN11.
- Other etiologies: necrotizing enterocolitis, hyperviscosity, disseminated intravascular coagulation following perinatal asphyxia, metabolic (propionic methylmalonic, isovaleric acidemias)

Thrombocytopenia has traditionally been defined as a platelet count less than 150,000 per microliter (μL)[34,35] **Mild** thrombocytopenia is defined as a platelet count in the range 100,000/μL to 149,000/μL; **moderate** thrombocytopenia is between 50,000 and 100,000/μL and **severe** thrombocytopenia is when the platelet count is less than 50,000/μL.[36] New reference ranges for platelet counts for preterm and term infants at birth and the first 90 days of life may be found in Appendix 5.9.[37] These new reference ranges reveal that platelet counts advance with increasing gestational age. The 5th percentile for infants < 32 weeks gestation was 104,200/μL and for late preterm and term infants, 123,000/μL. Thus the traditional cutoff of 150,000/μL to define thrombocytopenia is a little higher value than the current data demonstrates.[37] Neonates previously judged to have "mild thrombocytopenia" because their count was in the range 100,000 to 149,000/μL actually fall within the reference range and therefore should not be considered thrombocytopenic.

What number should I be concerned about?[38]

- **A platelet count less than 100,000/μL** is abnormal and needs to be re-evaluated, especially if there is a downward trend. In addition, the infant should be examined for signs of bleeding (oozing from puncture sites, bruising, petechiae, GI bleeding, etc.). Consult the tertiary center if any of these signs are present.
- **A platelet count less than 50,000/μL** in a neonate is termed "severe" thrombocytopenia and indicates that the risk of bleeding is increased.[34] If the platelet count is <50,000 in a neonate who has no petechiae and no signs of bleeding, consider repeating the count to make sure it is accurate (i.e., there is no platelet clumping). As mentioned above, evaluate for signs of bleeding and consult the tertiary center if any signs of bleeding are present.
- **Platelet counts less than 25,000/μL** are dangerously low. Consult the tertiary center for assistance with diagnosing the cause and treating this problem. As mentioned above, evaluate for signs of bleeding and be prepared to administer a platelet transfusion if instructed to do so.