

functioning erythroid marrow, and an adequate supply of substrates for hemoglobin synthesis. A defect in any of these key components can lead to anemia. Generally, anemia is recognized in the laboratory when a patient's hemoglobin level or hematocrit is reduced below an expected value (the normal range). The likelihood and severity of anemia are defined based on the deviation of the patient's hemoglobin/hematocrit from values expected for age- and sex-matched normal subjects. The hemoglobin concentration in adults has a Gaussian distribution. The normal range of hemoglobin values for adult males is 13.5–17.5 g/dL (135–175 g/L) and that for adult females is 12–15 g/dL (120–150 g/L). The World Health Organization (WHO) defines anemia as a hemoglobin level <13 g/dL (130 g/L) in men and <12 g/dL (120 g/L) in women. Hematocrit levels are less useful than hemoglobin levels in assessing anemia because they are calculated rather than measured directly. Suspected low hemoglobin or hematocrit values are more easily interpreted if previous values for the same patient are known for comparison.