



**PARTICIPANT STATISTICS**

**PERIPHERAL BLOOD SMEAR**

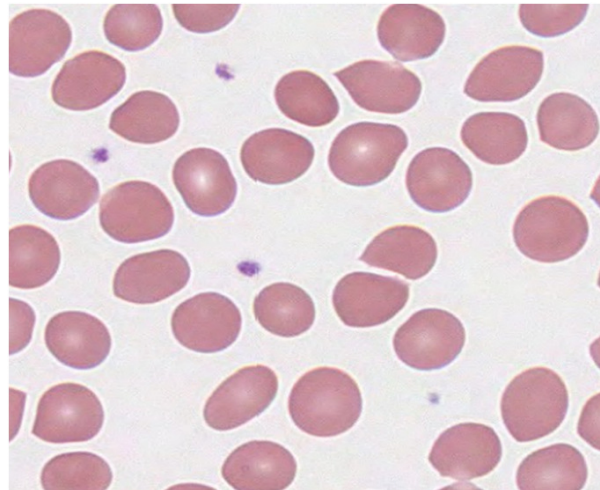
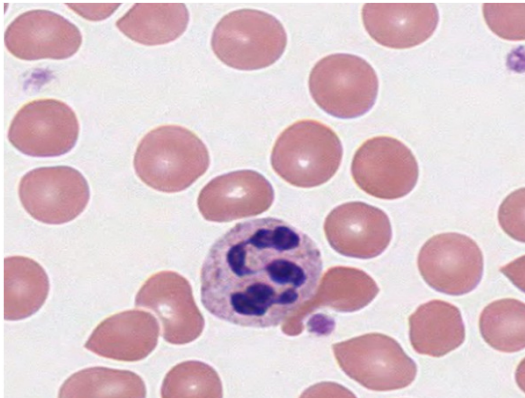
**SECOND QUADRIMESTER 2011**

MANUAL DIFFERENTIAL	Specimen 1			Specimen 2			N
	Mean	SD	Range%	Mean	SD	Range%	
Basophils %	0.0	0.1	0 - 4	0.2	1.2	0 - 4	46
Eosinophils %	0.0	1.7	0 - 5	11.7	1.0	7 - 17	47
PMN (Bands/Segs)%	56.6	1.7	52 - 62	39.7	1.8	34 - 45	47
Lymphocytes %	33.9	4.3	21 - 47	36.4	5.1	21 - 52	47
Monocytes %	8.0	0.1	3 - 13	8.0	0.1	3 - 13	47
Abnormal/Other %	3.6	6.1	0 - 22	5.5	8.5	0 - 31	46

Question/Response	Specimen 1		Specimen 2	
Yes/True	10	*****	2	*****
No/False	37		45	
<b>TOTAL POPULATION</b>	<b>47</b>		<b>47</b>	

Correct responses are defined as those reflecting agreement among 80% or more of all participants or referees. Unacceptable responses are indicated by "\*\*\*\*\*" on the Flagging line of each specimen.

Peripheral Blood Smear - Slide 1

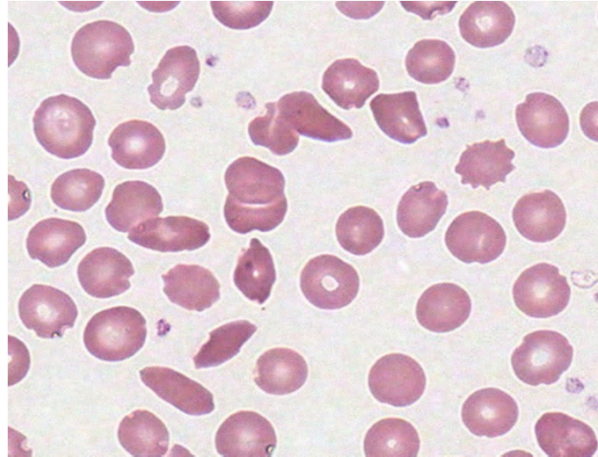
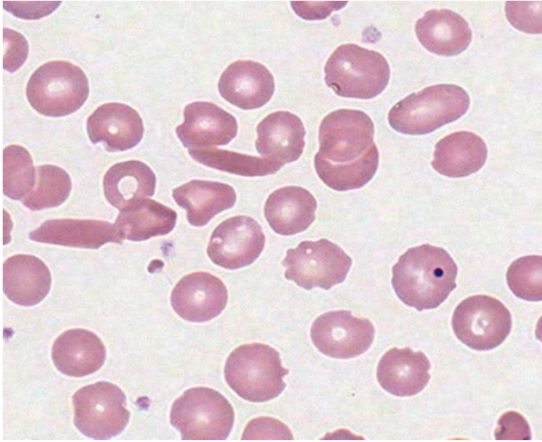


\*To see the original full-sized images, please refer to the original CD or sign on to your data entry sheet at <http://www.aab-pts.org/>

**Specimen 11Q2-1:** *History: A 44-year-old woman is seen by her family practitioner for her annual “well woman” exam. She has had no medical issues since her last examination, and wants to inquire about malaria prophylaxis since she will be traveling to Nigeria this summer. CBC results: WBC 3.8, Hgb 13.1 g/dL, Hct 39.8%, Plts 222,000/ $\mu$ L. Would you refer the slide for a pathologist’s review?*

The automated CBC values do not indicate any significant abnormalities in the RBC, WBC, or platelet counts. Review of the peripheral smear of this patient shows no significant anisocytosis or poikilocytosis, and no red blood cell inclusions are evident. The white blood cells are present in a normal distribution. Although a couple of the lymphocytes are large with abundant pale-blue cytoplasm with granules (see Cell #1), these are a normal variation. Cell #2 represents the more typical lymphocyte, with a condensed nucleus and a small rim of cytoplasm. In short, this is a “normal” peripheral blood smear and the findings correlate quite well with the automated CBC values. Unless it is the practice in your facility to submit all peripheral smears to a pathologist for review, it is not necessary to refer this peripheral smear for further examination.

Peripheral Blood Smear - Slide 2



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**Specimen 11Q2-2:** *History: A 26-year-old woman is evaluated by her obstetrician following a positive home pregnancy test. CBC results: WBC 5.8, Hgb 7.9, Hct 24.1%, Plts 352,000/ $\mu$ L. Is this Red Cell morphology normal?*

The automated CBC values indicate that the patient is anemic with a normal white blood cell count and mildly elevated platelet count. The red cell morphology is abnormal. There is aniso- and poikilocytosis as well as a moderate degree of hypochromia and polychromasia. Basophilic stippling is present (note the RBC outside the upper left corner of the box surrounding Cell #3) as are nucleated RBCs (located outside the upper left corner of the box surrounding Cell #17), consistent with a bone marrow response to the anemia. Perhaps most striking are the abnormally shaped RBCs (for examples, see RBCs in the vicinity of Cells #3, #7, and #9). Some of the RBCs are sickle-shaped while others are more boat-shaped (elongated cells that are pointed at both ends). These findings are consistent with sickle cell anemia.

Individuals with sickle cell anemia (or sickle cell disease) can have varying numbers of sickle cells on their peripheral blood smear. Likewise, these individuals show a variety of clinical manifestations, ranging from very severe chronic hemolytic anemia to mild anemia to relatively asymptomatic. For instance, individuals who have a high percentage of hemoglobin F in addition to the hemoglobin S have few symptoms of the disease, since the presence of hemoglobin F helps protect the red cells from sickling. If this patient is pregnant, the existence of sickle cell anemia means the pregnancy must be closely managed. Pregnant women with sickle cell disease are at higher risk for development of hypertension (preeclampsia), preterm labor, premature birth, and delivering infants who are small for their gestational age.