

Quiz: *In Vivo* Non-Imaging Studies

By Stephen M. Karesh, PhD

1. Which one of the following is NOT an example of an *in vivo* non-imaging procedure?
 - a. a radioimmunoassay
 - b. a splenic sequestration study
 - c. a Schilling Test
 - d. a Thyroid Uptake Test
2. The typical injected dose of Cr-51 RBCs is
 - a. 0.0075 mCi
 - b. 0.075 mCi
 - c. 0.75 mCi
 - d. 7.5 mCi
3. The normal value for half-time of survival of Cr-51 RBCs is
 - a. approximately 30 days
 - b. approximately 60 days
 - c. approximately 90 days
 - d. approximately 120 days
4. A splenic sequestration study was performed. A Spleen/Liver Ratio of 2.8:1 was obtained. The diagnosis would be
 - a. Normal study
 - b. Very small spleen
 - c. Slightly enlarged spleen
 - d. Significant splenic sequestration
5. A Plasma volume/Red Cell Mass Study is useful
 - a. to measure hematocrit
 - b. to diagnose Polycythemia Vera
 - c. to evaluate renal function
 - d. to diagnose pernicious anemia
6. A Plasma Volume Study is based on the principle of
 - a. reverse transition
 - b. isotope dilution
 - c. reverse isotope dilution
 - d. plasma dilution

PATIENT STUDY

7. The results of a RCM/PV study are shown at right. The diagnosis is:

	EXPECTED VALUE	MEASURED VALUE	% DEVIATION
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- a. Normal study
- b. Dehydration
- c. Polycythemia Vera
- d. Pernicious anemia

PLASMA VOLUME	3300	3400	+3.0
RED CELL VOLUME	2200	2650	+20.5
TOTAL BLOOD VOL	5500	6050	+10.0

8. The administered activity of radiocobalt in a Schilling Test is approximately

- a. 0.5 μ Ci
- b. 5 μ Ci
- c. 50 μ Ci
- d. 500 μ Ci

9. The Schilling Test is used to diagnose

- 10. Pernicious anemia
- 11. Hyperthyroidism
- 12. Polycythemia
- 13. Plummer's Disease

14. In the Schilling Test, an IM injection of 1 mg of non-radioactive B₁₂ is given to

- a. Reduce radiation dose to the liver
- b. Increase urinary output
- c. Saturate binding sites in the liver
- d. Increase binding of radiocobalt B₁₂ to intrinsic factor

15. Patient X has a deficiency of intrinsic factor in his gut. The expected result of Stage 1 of a Schilling Test would be a % excretion of the radiocobalt in the range of

- a. 0-6%
- b. 6-10%
- c. 10-30%
- d. 80-90%

16. The result of a dual Schilling Test was 14.1% excretion of Co-57 and 13.9% excretion of Co-58. The diagnosis is

- a. pernicious anemia
- b. simple malabsorption syndrome unrelated to intrinsic factor deficiency
- c. normal study
- d. impossible to make without first administering an antibiotic and then repeating the study 2 weeks later

17. The typical administered dose of I-123 NaI for performing an RAIU is
- 0.2 μCi
 - 2 μCi
 - 20 μCi
 - 200 μCi
18. The typical administered dose of I-131 NaI for performing an uptake and scan in a patient with a substernal thyroid is
- 0.1 μCi
 - 1 μCi
 - 10 μCi
 - 100 μCi
19. Which of the following is NOT a required part of the preparation for an RAIU?
- Discontinue synthroid for 4 weeks prior to performing RAIU
 - Patient must be NPO from midnight until 1 hour post administration of I-123 NaI
 - Patient must discontinue propranolol for 4 weeks prior to performing RAIU
 - Patient must not have undergone CT Scan with Contrast Media
24. A patient underwent an RAIU and the result was 58.4%. The diagnosis is
- Normal
 - Hypothyroid
 - Hyperthyroid
 - Hashimoto's thyroiditis