



## Body Fluids Lab 2 - Differentials

- Points:** Points are awarded for Pre-test, Skills, (including general points awarded for neatness, lab clean-up, teamwork, etc.) , as well as successful and timely completion of Study Questions.
- Objectives:** According to standards set by the instructor, the student will be able to:
1. Perform differentials on two prepared cytopsin Wrights stained slides.
  2. Scan 1 cytopsin slide and identify a possible malignant cell
  3. Scan 1 cytopsin slide and identify intracellular bacteria.
  4. Scan 1 cytopsin slide and identify the types of inclusions seen in the macrophages.
- Materials:**
1. Microscope
  2. Differential Cell Counter
  3. Prepared cytopsin Wrights stained body fluid differential slides
- References:** Harmening, D. M. Clinical Hematology and Fundamentals of Hemostasis. 3rd ed. F.A. Davis  
McBride, L.J. (1998). Textbook of Urinalysis and Body Fluids. Lippincott.  
Lecture and Laboratory Study Guides for MLAB 1315 - Hematology, and MLAB 1211 - Urinalysis / Body Fluids  
Strasinger, S. K., Urinalysis and body fluids, 3rd ed. F.A. Davis.
- Principle:** Body fluid specimens are usually collected in three sterile tubes and labeled 1, 2, and 3 in the order in which they are drawn. Tube 3 is usually used for the cell counts and differentials. In rare cases, four tubes may be drawn in which case Tube 1 may not be used. All body fluid testing should be performed immediately as deterioration of specimen components can occur rather quickly.
- Cell differentials, along with the WBC and RBC cell counts provide extremely important information for the diagnosis and treatment of diseases involving CSF, serous, and synovial cavities. Infections, hemorrhages, and malignancies are of primary concern.
- Procedure:**
1. Scan prepared slides and identify a possible malignant cell, intracellular bacteria, and inclusions in the macrophages. Call your instructor over as you do this so she can check it off on your report form. Course textbook and references listed above provide additional assistance in cell and inclusions identification.

Name \_\_\_\_\_

Date \_\_\_\_\_

## Body Fluid Differentials

|               | Body Fluid #1  | Body Fluid #2  |
|---------------|--|--|
| Patient Name  |  |  |
| ID Number     |  |  |
| Type of Fluid |  |  |
| Differential  | Differential:<br>_____ Segs<br>_____ Lymphs<br>_____ Macrophages<br>_____ Eosinophils<br>_____ Basophils<br>Other Cells (specify)<br>_____<br>_____<br>_____ | Differential:<br>_____ Segs<br>_____ Lymphs<br>_____ Macrophages<br>_____ Eosinophils<br>_____ Basophils<br>Other Cells (specify)<br>_____<br>_____<br>_____ |
|               | Inclusions:<br>_____<br>_____<br>_____<br>_____  | Inclusions:<br>_____<br>_____<br>_____<br>_____  |
|               | Comments:  | Comments:  |

Body Fluids Slides  
Cells & Inclusions Checklist

Identify the slide in which the cell / inclusion was found.

| Cell / Inclusion        | CSF Specimen | Other Body Fluid (specify) |
|-------------------------|--------------|----------------------------|
| Neutrophil (Segs)       |              |                            |
| Lymphocyte              |              |                            |
| Macrophage              |              |                            |
| Eosinophil              |              |                            |
| Basophil                |              |                            |
| Plasma Cell             |              |                            |
| Ependymal Cell          |              |                            |
| Mesothelial Cell        |              |                            |
| possible malignant cell |              |                            |
| Intracellular bacteria  |              |                            |
| Macrophage Inclusions:  |              |                            |
| Erythrophage            |              |                            |
| Siderophage             |              |                            |
| Leukophage              |              |                            |
| Hematoidin crystals     |              |                            |
|                         |              |                            |
| Others:                 |              |                            |
| LE cell                 |              |                            |
|                         |              |                            |
|                         |              |                            |
|                         |              |                            |
|                         |              |                            |
|                         |              |                            |
|                         |              |                            |
|                         |              |                            |
|                         |              |                            |

Name \_\_\_\_\_

Date \_\_\_\_\_

**Body Fluids Study Questions & Case Studies II**

Unless otherwise noted, each question is worth one point. Using lecture notes, reading assignments and information presented in this lab, answer the following questions.

- (3 pts) 7. What three (3) fluids are referred to as serous fluids?
- (3 pts) 8. State three (3) reasons for performing serous fluid analysis?
9. What is the normal color and clarity of serous fluid?
10. What is the normal color and clarity of synovial fluid?
11. Define *effusion*.
12. Define *transudate*
13. Define *exudate*
- (3 pts) 14. State three (3) reasons for performing synovial fluid analysis?
15. What makes synovial fluid so viscous?
16. Why must synovial fluid be so viscous?
17. Why can't a WBC unopette containing acetic acid be used to dilute a synovial fluid?

(4 pts) 18. Complete the following information table for synovial fluid crystals.

| Synovial fluid crystal | Characteristic shape | Condition most often associated with the crystal. |
|------------------------|----------------------|---|
| monosodium urates      |                      |   |
| calcium pyrophosphate  |                      |   |
| cholesterol            |                      |   |
| corticosteroid         |                      |   |

(3 pts) 19. List three (3) reasons for performing semen analysis?

(3 pts) 20. Provide three (3) special requirements or instructions for the proper collection of semen for analysis.

(2 pts) 21. State the normal values for the following semen procedures.

- a. volume - \_\_\_\_\_
- b. motility - \_\_\_\_\_
- c. morphology - \_\_\_\_\_
- d. sperm count - \_\_\_\_\_

(2 pts) 22. List four (4) reasons for performing an amniocentesis?

(2 pts) 23. What is an L/S ratio and how is it used?

24. Why is a sweat test ordered?

25. State two (2) reasons for performing a gastric analysis.

26. What hormone stimulates the production of gastric HCl?

(2 pts) 27. State four (4) reasons for performing a fecal analysis.

28. A false positive fecal occult blood may be due to \_\_\_\_\_  
\_\_\_\_\_

29. A false negative fecal occult blood may be due to \_\_\_\_\_  
\_\_\_\_\_

30. Define steatorrhea.

(4 pts) 31. What would be the significance of finding or noting an increase of the following cells in cerebrospinal fluid?

a. Lymphocyte - \_\_\_\_\_

b. Neutrophil - \_\_\_\_\_

c. Eosinophil - \_\_\_\_\_

d. Monocyte - \_\_\_\_\_

e. Macrophage - \_\_\_\_\_

f. Ependymal - \_\_\_\_\_

g. Blast - \_\_\_\_\_

h. Malignant cell - \_\_\_\_\_

(3 pts) 32. What would be the significance of finding or noting an increase of the following cells in body fluids?

a. Mesothelial cells - \_\_\_\_\_

b. Synovial lining cells - \_\_\_\_\_

c. LE cells - \_\_\_\_\_