MEMORANDUM

TO: All Physicians
FROM: Katalin Banki, M.D., Director of Core Laboratory
       Stephen Gwalt, MS, MT(ASCP) SH, SC
DATE: June 15, 2016
RE: Body Fluids: Cell Count and Differential

Body fluid reporting will be revised at the Downtown Campus, as of June 27, 2016.
- **Total nucleated cell (TNC)** count will be reported instead of WBC.
- The **differential** will include tissue macrophages and lining cells (synovial, mesothelial, ependymal, leptomeningeal) in addition to white blood cells.
- New six-part differential:
  - % Neutrophils/Bands
  - % Lymphocytes
  - % Eosinophils
  - % Basophils
  - % Monocytes/Macrophages
  - % Lining Cells
- Unusual and less frequent nucleated cells (malignant cells, nucleated RBCs, bronchial cells and other tissue cells) are reported in a comment.

**Background:** Automated cell counting instruments and manual cell counting methods do not reliably separate WBCs from other nucleated cells. In addition, it is often difficult to differentiate monocytes from macrophages or even from lining cells. Hence, the new reporting will be more consistent.

**Methodology:**
Manual cell count in a hemocytometer (CSF, synovial fluid)
Automated cell count on Iris (other body fluids)
Microscopic review and differential of a Wright-stained cytopsin slide of all body fluid samples.
As the cytopsin concentrates samples, it is possible to do a differential, even if the cell count is zero.

**Normal Ranges:**

<table>
<thead>
<tr>
<th></th>
<th>TNC</th>
<th>Neutrophil/Band</th>
<th>RBC</th>
</tr>
</thead>
<tbody>
<tr>
<td>CSF, 0-30 days</td>
<td>&lt;27/μL</td>
<td></td>
<td>0</td>
</tr>
<tr>
<td>CSF, 31 days - 16 years</td>
<td>&lt;7/μL</td>
<td></td>
<td>0</td>
</tr>
<tr>
<td>CSF, &gt;16 years</td>
<td>&lt;5/μL</td>
<td></td>
<td>0</td>
</tr>
<tr>
<td>Synovial Fluid</td>
<td>&lt;200/μL</td>
<td>&lt;25%</td>
<td></td>
</tr>
<tr>
<td>Serous Fluids</td>
<td>&lt;500/μL</td>
<td>&lt;25%</td>
<td></td>
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