Customer Information
Literature List – Body Fluids

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Cerebrospinal Fluid (CSF)

**Buoro S et al. (2017):** Two-site evaluation of the diagnostic performance of the Sysmex XN Body Fluid (BF) module for cell count and differential in Cerebrospinal Fluid. *Int J Lab Hematol*; early online


What we see as the essence: The XN Body Fluid mode provides rapid and accurate counts from cerebrospinal fluid samples in clinically relevant ranges. It was found to provide a good alternative to conventional microscopic analysis.


What we see as the essence: Excellent review on body fluid analysis. Several different analysers were compared, including the XE-5000, XN-Series and UF-Series.


What we see as the essence: Liposomal particles from DepoCyt chemotherapy treatment may be misclassified as polymorphonuclear cells by the XN body fluid mode (software version 18). The authors worked together with Sysmex to develop an alert, available from software version 20.


Quote: “In the present study, we found that the open body fluid mode of the Sysmex XE-5000 was a favourable method for determination of WBC counts and for differentiation between MNCs and PMNs, compared to manual counting.”

What we see as the essence: The authors describe a performance evaluation of the XE-5000 body fluid mode for peritoneal and serous fluids. A good correlation between the XE-5000 and microscopy was found as well as good precision and low carryover.


What we see as the essence: It was found that cell counts obtained from the XN-2000 body fluid mode were comparable to counts obtained from microscopy. The authors recommend that samples with highly fluorescent cells (HF-BF) should be further analysed.


What we see as the essence: This study reports an improved correlation between manual counts and XE-5000 counts of WBC and PMN in CSF when comparing software version 10 to software version 6. However, a significant positive bias remained for PMN.


Quote: "The BF module on the XN-1000 is a suitable tool for fast and accurate quantification of WBC (differential) and RBC counts in CSF and other BF in a diagnostic setting."


What we see as the essence: Using the XE-5000 for automated counting in CSF is trustworthy especially for severely pathological cell counts, but also below. The study demonstrates specific and significant savings in terms of time and money (about 6 ×).


Quote: "Determination of CSF cells with the XE-5000 is presently the best automated method for counting leukocytes of blood-stained CSF."


What we see as the essence: The body fluid mode on the Sysmex XE-5000 offers rapid and accurate RBC and WBC (differential) counts in clinically relevant concentration ranges in CSF and other fluids.


What we see as the essence: The XE-5000 count is trustworthy and can provide more precise and reliable information than the manual method using the Malassez chamber (1µL counting volume).
Free online: http://ajcp.ascpjournals.org/content/134/5/734.full.pdf+html

What we see as the essence: The correlation between XE-5000 and Fuchs-Rosenthal chamber over the entire range of data was very good. Studies are needed to determine method-specific reference intervals for white blood cells in CSF.

http://jcp.bmj.com/content/63/6/538.abstract

What we see as the essence: The 24 h available DM96 body fluid module reliably and accurately preclassifies five main cell categories in cytospin slides with a low CV and an agreement of 90% as compared with highly trained technicians, thereby contributing to quality improvement.

http://www.sciencedirect.com/science/journal/00099120/42/7-8

What we see as the essence: Most patients were classified correctly using the XE-5000 which is thus suitable for automated quantification of white blood cells in CSF in a defined diagnostic setting. This could significantly improve automation of CSF diagnostics.

Other Body Fluids

Xu W et al. (2016): Evaluation of Sysmex XN-1000 hematology analyzer for cell count and screening of malignant cells of serous cavity effusion. Medicine (Baltimore);96(27):e7433
Free online https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5502180/

What we see as the essence: The study found that the XN-Series body fluid mode has an excellent performance, which makes it a reliable and practical alternative to optical microscopy for synovial fluids in clinical laboratories.


What we see as the essence: The study found that the XN-Series body fluid mode has an excellent performance, which makes it a reliable and practical alternative to optical microscopy for synovial fluids in clinical laboratories.
*Free online (after free registration)*
https://members.sysmex.co.jp/me/scientific/en/sji/pdf/2016/vol26_1_03.pdf

What we see as the essence: Good performance of body fluid mode on XN-L was found compared to manual microscopy and XN-9000 for cerebrospinal and synovial fluid samples.

http://www.sciencedirect.com/science/journal/00098981/452

What we see as the essence: Results of the study confirm that the XN-BF module on Sysmex XN-9000 is a suitable alternative to optical microscopy for screening body fluid samples. Peritoneal and pleural fluids were analysed in the study. Authors implemented own validation rules that increased the productivity.


What we see as the essence: Excellent review on body fluid analysis. Several different analysers were compared, including the XE-5000, XN-Series and UF-Series.


What we see as the essence: Analysis of serous fluids on the XN-2000 showed that the absence of high fluorescence body fluid cells (HF-BF) could be used to exclude malignant samples: the negative predictive value was 92% at a cutoff of 2.1% and 95% at a cutoff of 17/µL.

*Free online:* http://jla.sagepub.com/content/18/3/240.full.pdf+html

What we see as the essence: This evaluation of the XE-5000 for peritoneal fluid analysis showed excellent performance for all analyzed parameters. The performance of the XE-5000 was slightly better than that of the XE-2100.

Quote: "The BF module on the XN-1000 is a suitable tool for fast and accurate quantification of WBC (differential) and RBC counts in CSF and other BFs in a diagnostic setting."


What we see as the essence: The body fluid mode on the Sysmex XE-5000 offers rapid and accurate RBC and WBC (differential) counts in clinically relevant concentration ranges in CSF and other fluids.


What we see as the essence: The XE-5000 count is trustworthy and can provide more precise and reliable information than the manual method using the Malassez chamber (1µL counting volume).


What we see as the essence: The 24 h available DM96 body fluid module reliably and accurately preclassifies five main cell categories in cytospin slides with a low CV and an agreement of 90% as compared with highly trained technicians, thereby contributing to quality improvement.


What we see as the essence: With some limitations, total and differential WBC counts in pleural fluid can be reliably determined using the XE-2100.
Free online: http://rheumatology.oxfordjournals.org/content/43/2/170.full.pdf+html

What we see as the essence: The WBC count in synovial fluid using the DIFF channel of the XE-2100 can be reliably determined more precisely and faster than by manual counting. The better precision may also improve the low confidence that clinicians have in these results at present.