A comprehensive complete blood count (CBC) test consists of 2 components

A quantitative CBC and a qualitative blood smear

Automated CBC: Quantitative evaluation
- Numerical data and indices
- Graphical representations

Blood smear: Qualitative evaluation
- Estimated counts for quality assurance
- Cellular morphology
- Polychromatophil count

The Comprehensive CBC
The complete hematology patient picture

Ideally, a blood smear evaluation should be performed as a part of every CBC

At a minimum, blood smears must be performed:
- On every sick patient
- In each instance of abnormal counts or automated cell count flags

<table>
<thead>
<tr>
<th>Automated cell count flag</th>
<th>Abnormality</th>
</tr>
</thead>
<tbody>
<tr>
<td>Red blood cells (RBCs)</td>
<td>Anemia2,3</td>
</tr>
<tr>
<td>White blood cells (WBCs)</td>
<td>Cancer, infection, inflammation2,3</td>
</tr>
<tr>
<td>Platelets (PLTs)</td>
<td>Disease and clumping5</td>
</tr>
</tbody>
</table>

Why aren’t blood smears performed more often?
- Lack of experience preparing blood smears
- Time- and labor-intensive process
- Lack of confidence and experience with interpretation
- Assumption that automated count is correct

A blood smear evaluation should not be utilized as a replacement for an automated cell count. If properly maintained, automated analyzers are more precise and accurate than manual cell counts.
Failure to perform blood smears can lead to errors in clinical decisions

Blood smears inform clinical decisions and enable veterinarians to6-9:

- Confirm automated CBC results
- Assure quality
- Provide additional insights on cell morphology to guide diagnosis and treatment

Morphological changes that may be identified by a blood smear1,5,10*:

<table>
<thead>
<tr>
<th>Red blood cells (RBCs)</th>
<th>White blood cells (WBCs)</th>
<th>Platelets (PLTs)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Polychromasia†</td>
<td>Left shift (increased neutrophil band cells)</td>
<td>Macroplatelets†</td>
</tr>
<tr>
<td>Anisocytosis</td>
<td>Toxic changes</td>
<td></td>
</tr>
<tr>
<td>Spherocytes</td>
<td>Reactive lymphocytes</td>
<td></td>
</tr>
<tr>
<td>Heinz bodies</td>
<td>Blast cells</td>
<td></td>
</tr>
<tr>
<td>Fragmented RBCs</td>
<td></td>
<td>PLT clumping†</td>
</tr>
<tr>
<td>Nucleated RBCs†</td>
<td>Mast cells</td>
<td></td>
</tr>
<tr>
<td>RBC parasites</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Table includes common examples and is not intended to be an exhaustive list.
†Indicates morphological changes currently identified by VETSCAN IMAGYST™ artificial intelligence (AI) blood smear analysis. Other morphology can be assessed via VETSCAN IMAGYST digital cytology image transfer.

Integrating VETSCAN IMAGYST into a complete, in-hospital hematology solution

Use any point-of-care hematology analyzer

The VETSCAN® HM5 is an easy-to-use option that reports a full, 5-part CBC differential with 22 parameters in <4 minutes

VETSCAN IMAGYST artificial intelligence (AI) technology can review blood smears automatically and quickly

- Confirm automated cell counts
- Follow up on abnormal automated CBC results
- If abnormalities are observed, expert review via digital image transfer is available*

Access expert review by a Zoetis clinical pathologist when needed*

Digitally submit images for further evaluation beyond AI review, including:

- WBCs—left shifts, toxic changes, malignancy
- RBCs—morphology, inclusions
- PLTs—thrombocytopenia

Optional complimentary consult

Obtain free consultations from veterinary specialists with the Zoetis Global Consultation Service whenever further guidance is needed†

*Option to send physical slide to our network of clinical pathologists as needed. Additional costs may apply.
†Service available through ZoetisDx platform. Speak to your Zoetis representative to learn more.

Learn more


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