Algorithm for Malaria Microscopy

1. Preparation of Blood Smear for Malaria

1. Disinfect finger using 70% Alcohol and let air dry
2. Puncture the finger using sterile lancet
3. Collect the blood as 3 drops for thick film and 1 drop for thin film
4. Spread the thin film first by using a clean spreader slide
5. Make the thick film, by quickly join 3 blood drops in circular motion from outside to inside and air dry away from dust
6. Label the slide at the frosted end or thicker end of thin film (date, name, age, sex, etc.)
7. Fix the thin smear by dipping in methanol
   Do not fix the thick smear.

2. Staining of Blood film for Malaria

<table>
<thead>
<tr>
<th>Stain preparation Method</th>
<th>10% (Rapid Method)</th>
<th>3% (Slow Method)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Individual (flooding)</td>
<td>Mass (Immersion / Coplin Jar)</td>
</tr>
<tr>
<td></td>
<td>For 50 mL</td>
<td>For 100 mL</td>
</tr>
<tr>
<td>Giemsa STOCK</td>
<td>9 drops</td>
<td>5 mL</td>
</tr>
<tr>
<td>Buffered H₂O</td>
<td>3 mL</td>
<td>45 mL</td>
</tr>
<tr>
<td>Staining Time</td>
<td>10-15 minutes</td>
<td>10-15 mins.</td>
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</tbody>
</table>

8. Prepare 10% working Giemsa stain using with PH 7.2 water
9. Gently pour the stain on the slide & wait for 10-15 Minutes
10. Gently wash the stain on the slide by adding drops of clean water
11. Allow to drain and then air dry

3. Examination of Blood film for Malaria

- Air dry the smear in the vertical position
- And examine under oil immersion by using microscope
- Read a minimum of 100 fields, but the whole thick film should be scanned.
- If parasites are observed, identify all species present

No Malaria Parasites Seen after 100 thick blood film fields – NMPS (but if time permits, whole thick film should be scanned)

Parasite Count Thick film
Number of parasite × 8000 = ------ / UL of blood

Parasite Count Thin film
Note – If ≥ 100 parasites are present in each field of a thick film under the 100x Objective, calculate the parasite count on the thin film

Number of infected RBC × 5,000,000 = ------ / UL of blood

Number of fields × 250 RBCs