



## Hematology Age Related Reference Ranges and Critical Values

| COMPLETE BLOOD COUNT AND DIFFERENTIAL |                       |   |  |  |  |
|---------------------------------------|-----------------------|---|--|--|--|
| TEST                                  | GENDER                | AGE   | REFERENCE RANGE  | CRITICAL VALUE   |  |
|                                       |                       |   |  | LOW  | HIGH   |
| <b>WBC</b>                            | M/F                   | 0 - 2 months<br>2 months - 5 years<br>5 - 11 years<br>>11 years                               | 5.00-20.00 x 10 <sup>3</sup> /μL<br>4.50-17.00 x 10 <sup>3</sup> /μL<br>4.50-13.00 x 10 <sup>3</sup> /μL<br>4.00-10.00 x 10 <sup>3</sup> /μL | <1.00 x 10 <sup>3</sup> /μL<br>(all ages)                | >30.00 x 10 <sup>3</sup> /μL<br>(all ages)                   |
| <b>RBC</b>                            | M/F<br>Male<br>Female | 0 - 6 months<br>6 months - 11 years<br>>11 years<br>>11 years                                 | 3.90-5.90 x 10 <sup>6</sup> /μL<br>3.80-5.40 x 10 <sup>6</sup> /μL<br>4.31-6.40 x 10 <sup>6</sup> /μL<br>3.85-5.20 x 10 <sup>6</sup> /μL     | None   |  |
| <b>Hemoglobin</b>                     | M/F<br>Male<br>Female | 0 - 2 months<br>2 months - 11 years<br>>11 years<br>>11 years                                 | 14.0-18.0 gm/dL<br>11.0-14.0 gm/dL<br>13.6-18.0 gm/dL<br>11.5-16.0 gm/dL   | <10.0 gm/dL<br><6.0 gm/dL<br><6.0 gm/dL<br><6.0 gm/dL    | None   |
| <b>Hematocrit</b>                     | M/F<br>Male<br>Female | 0 - 2 weeks<br>2 weeks - 2 months<br>2 months - 1 year<br>1 - 5 years<br>>5 years<br>>5 years | 42.0-68.0%<br>35.0-50.0%<br>30.0-40.0%<br>32.0-42.0%<br>39.8-52.0%<br>34.7-46.0%   | <30.0%<br><18.0%<br><18.0%<br><18.0%<br><18.0%<br><18.0% | None   |
| <b>MCV</b>                            | M/F                   | 0 - 2 weeks<br>2 weeks - 6 months<br>6 months - 11 years<br>>11 years                         | 88.0-114.0 fL<br>85.0-97.0 fL<br>72.0-86.6 fL<br>80.0-97.0 fL  | None   |  |
| <b>MCH</b>                            | M/F                   | 0 - 2 weeks<br>2 weeks - 6 months<br>6 months - 5 years<br>>5 years                           | 34.0-37.0 pg<br>31.0-36.0 pg<br>25.0-31.0 pg<br>26.0-34.0 pg   | None   |  |
| <b>MCHC</b>                           | M/F                   | 0 - 2 weeks<br>2 weeks - 6 months<br>>6 months  | 31.0-35.0 gm/dL<br>32.0-35.0 gm/dL<br>32.0-36.0 gm/dL  | None   |  |
| <b>RDW</b>                            | M/F                   | 0 - 2 days<br>>2 days   | 14.9-18.7 %<br>11.5-15.0 %   | None   |  |
| <b>Platelet</b>                       | M/F                   | 0 - 2 months<br>>2 months   | 140-440 x 10 <sup>3</sup> /μL<br>140-440 x 10 <sup>3</sup> /μL   | <100 x 10 <sup>3</sup> /μL<br><25 x 10 <sup>3</sup> /μL  | >1,000 x 10 <sup>3</sup> /μL<br>>1,000 x 10 <sup>3</sup> /μL |
| <b>MPV</b>                            | M/F                   | All Ages  | 6.5-12.4 fL  | None   |  |
| <b>Neutrophils Percent</b>            | M/F                   | 0 - 6 days<br>6 days - 1 year<br>1 - 11 years<br>>11 years                                    | 37.0-70.0 %<br>15.0-55.0 %<br>30.0-65.0 %<br>37.0-80.0 %   | None   |  |



| COMPLETE BLOOD COUNT AND DIFFERENTIAL      |        |  |  |   |      |
|--|--------|--|--|---|------|
| TEST                                       | GENDER | AGE  | REFERENCE RANGE  | CRITICAL VALUE                            |      |
|  |        |  |  | LOW                                       | HIGH |
| <b>Neutrophils, Absolute</b>               | M/F    | 0 - 6 days<br>6 days - 2 months<br>2 months - 1 year<br>1 - 5 years<br>5 - 11 years<br>>11 years | 1.50-16.00 x 10 <sup>3</sup> /μL<br>0.80-9.00 x 10 <sup>3</sup> /μL<br>0.70-7.60 x 10 <sup>3</sup> /μL<br>1.50-11.00 x 10 <sup>3</sup> /μL<br>1.50-8.50 x 10 <sup>3</sup> /μL<br>1.50-8.00 x 10 <sup>3</sup> /μL | <0.50 x 10 <sup>3</sup> /μL<br>(all ages) | None |
| <b>Lymphocytes Percent</b>                 | M/F    | 0 - 6 days<br>6 days - 5 year<br>5 - 11 years<br>>11 years                                       | 20.0-50.0 %<br>40.0-70.0 %<br>20.0-60.0 %<br>16.0-51.0 %   | None                                      |      |
| <b>Lymphocytes, Absolute</b>               | M/F    | 0 - 6 days<br>6 days - 5 years<br>5 - 11 years<br>>11 years                                      | 0.50-10.00 x 10 <sup>3</sup> /μL<br>2.00-14.00 x 10 <sup>3</sup> /μL<br>1.00-7.80 x 10 <sup>3</sup> /μL<br>0.80-4.00 x 10 <sup>3</sup> /μL   | None                                      |      |
| <b>Monocytes Percent</b>                   | M/F    | All Ages   | 0.0-12.0 %   | None                                      |      |
| <b>Monocytes, Absolute</b>                 | M/F    | 0 - 2 months<br>2 months - 5 years<br>5 - 11 years<br>> 11 years                                 | 0.00-2.40 x 10 <sup>3</sup> /μL<br>0.00-2.00 x 10 <sup>3</sup> /μL<br>0.00-1.60 x 10 <sup>3</sup> /μL<br>0.00-1.20 x 10 <sup>3</sup> /μL   | None                                      |      |
| <b>Eosinophils Percent</b>                 | M/F    | All Ages   | 0.0-8.0 %  | None                                      |      |
| <b>Eosinophils, Absolute</b>               | M/F    | 0 - 2 months<br>2 months - 5 years<br>5 - 11 years<br>>11 years                                  | 0.00-1.40 x 10 <sup>3</sup> /μL<br>0.00-1.20 x 10 <sup>3</sup> /μL<br>0.00-0.90 x 10 <sup>3</sup> /μL<br>0.00-0.30 x 10 <sup>3</sup> /μL   | None                                      |      |
| <b>Basophils Percent</b>                   | M/F    | All Ages   | 0.0-3.0 %  | None                                      |      |
| <b>Basophils, Absolute</b>                 | M/F    | 0 - 2 months<br>2 months - 5 years<br>5 - 11 years<br>>11 years                                  | 0.00-0.60 x 10 <sup>3</sup> /μL<br>0.00-0.50 x 10 <sup>3</sup> /μL<br>0.00-0.40 x 10 <sup>3</sup> /μL<br>0.00-0.30 x 10 <sup>3</sup> /μL   | None                                      |      |
| <b>Immature Granulocytes (IG) Percent</b>  | M/F    | 0 – 14 days<br>15 – 30 days<br>>30 days  | 0.0-1.9 %<br>0.0-1.3 %<br>0.0-1.0 %  | None                                      |      |
| <b>Immature Granulocytes (IG) Absolute</b> | M/F    | 0 – 14 days<br>15 – 30 days<br>>30 days  | 0.00-0.28 x 10 <sup>3</sup> /μL<br>0.00-0.22 x 10 <sup>3</sup> /μL<br>0.00-0.10 x 10 <sup>3</sup> /μL  | None                                      |      |
| <b>NRBC Percent (NRBC/100 WBC)</b>         | M/F    | All Ages   | 0.0 – 0.2 /100 WBC   | None                                      |      |
| <b>NRBC Absolute</b>                       | M/F    | All Ages   | 0.00-0.01 x 10 <sup>3</sup> /μL  | None                                      |      |



| COMPLETE BLOOD COUNT AND DIFFERENTIAL |  |     |                 |                |      |  |
|---------------------------------------|--|-----|-----------------|----------------|------|--|
| TEST                                  | GENDER   | AGE | REFERENCE RANGE | CRITICAL VALUE |      |  |
|                                       |  |     |                 | LOW            | HIGH |  |
| <b>Blasts</b>                         | The presence of <b>blasts</b> is a critical value on all new (unknown) patients. |     |                 |                |      |  |

| RETICULOCYTE                                |                       |                                     |  |                |
|---|-----------------------|-------------------------------------|--|----------------|
| TEST  | GENDER                | AGE                                 | REFERENCE RANGE  | CRITICAL VALUE |
| <b>Reticulocyte Percent</b>                 | M/F                   | 0 - 14 days<br>>14 days             | 2.5-6.5%<br>0.5-2.0%   | None           |
| <b>Reticulocyte Absolute</b>                | M/F<br>Male<br>Female | 0 - 14 days<br>>14 days<br>>14 days | 95.0-385.0 x 10 <sup>3</sup> /μL<br>20.0-130.0 x 10 <sup>3</sup> /μL<br>20.0-100.0 x 10 <sup>3</sup> /μL | None           |
| <b>Immature Reticulocyte Fraction (IRF)</b> | M/F                   | All Ages                            | 3.0-15.5%  | None           |
| <b>Reticulocyte Hemoglobin (RET-He)</b>     | M/F                   | All Ages                            | 29.0-38.0 pg   | None           |

| IMMATURE PLATELET FRACTION (IPF)           |        |          |                               |                |
|--|--------|----------|-------------------------------|----------------|
| TEST                                       | GENDER | AGE      | REFERENCE RANGE               | CRITICAL VALUE |
| <b>Immature Platelet Fraction Percent</b>  | M/F    | All Ages | 1.0-7.5%                      | None           |
| <b>Immature Platelet Fraction Absolute</b> | M/F    | All Ages | 2.9-22.0 x10 <sup>3</sup> /uL | None           |

| MISCELLANEOUS HEMATOLOGY |                |                      |                          |                |
|--------------------------|----------------|----------------------|--------------------------|----------------|
| TEST                     | GENDER         | AGE                  | REFERENCE RANGE          | CRITICAL VALUE |
| <b>ESR</b>               | Male<br>Female | All Ages<br>All Ages | 0-15 mm/hr<br>0-20 mm/hr | None           |



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| <b>BODY FLUIDS</b> |               |            |                          |            |                       |
|--------------------|---------------|------------|--------------------------|------------|-----------------------|
| <b>FLUID</b>       | <b>GENDER</b> | <b>AGE</b> | <b>WBC</b>               | <b>RBC</b> | <b>CRITICAL VALUE</b> |
| <b>CSF</b>         | M/F           | <1 month   | ≤30/μL Mononuclear Cells | No Cells   | WBC >30/μL            |
| <b>CSF</b>         | M/F           | >1 month   | ≤5/μL Mononuclear Cells  | No Cells   | WBC >10/μL            |

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