

## Hematology Values for Newborn and Juvenile Elephants

Parameter	Newborn (*)		Juvenile (**)	
	Mean ± SD	Range	Mean	Range
Hematocrit (%)	47.1 ± 4.4	37.2–50.9	37.3 ± 0.38	32.25–43.80
RBC (x 10 <sup>6</sup> /μl)	4.2 ± 0.3	3.4–4.5	3.10 ± 0.03	2.17–3.47
WBC (cells/μl)	12.7 ± 2.7	7.7–15.0	18,825 ± 351	14,810–21,990
Heterophils (cells/μl)	6,302.8 ± 997.1	5300.0–7950.0	4247 ± 136	2920–7587
Lymphocytes (cells/μl)	2,348.3 ± 1,455.6	850–5476.0	10,675 ± 358	6918–13,980
Monocytes (cells/μl)	3,954.0 ± 1,684.8	2340–7000.0	3459 ± 219	2316–5578
Eosinophils (cells/μl)	25.0 ± 61.2	0–150.0	296 ± 28	0–535
Platelets (cells/μl)	284.0 ± 167.4	113–477.0	458 ± 8.38	374–554
Monocyte/Heterophil ratio			0.87 ± 0.05	0.41–1.17
Hemoglobin (g/dl)	17.0 ± 1.4	14.2–18.5		
MCV (fl)	46.3 ± 4.5	37.2–50.9		
MCH ((pg)	40.6 ± 1.4	39–42.6		
MCHC (g/dl)	36.1 ± 2.0	33.1 –38.2		

\* Values are from newborn calves (n=5-9). Heterophils predominated (vs monocytes in elephants of all other ages). Hematocrit and hemoglobin were higher in newborns but mean corpuscular volume (MCV) and platelets were lower. Other RBC parameters including mean corpuscular hemoglobin (MCH), and mean corpuscular hemoglobin concentration (MCHC), were similar to adult values. Wiedner E, Kiso WK, Aria J, Isaza R, Lindsay W, Jacobson G, Jacobson K, Schmitt D. **Vital Signs and First Occurrences In Normal and Abnormal Newborn Asian Elephant (*Elephas maximus*) Calves.** J Zoo Wildl Med.

\*\* Values are from eight healthy calves in Thailand that were weaned prior to the study (average weaning age of 25.5 ± 3.8 months). Calves were sampled monthly for a year across three seasons and results were averaged. Packed-cell volume (PCV), red blood cell count (RBC), monocytes, and monocyte/heterophil (M:H) ratios were highest in the winter compared to the summer and the rainy season. Results were comparable to values published for adults in other studies. Boonprasert K, Yun Y, Kosaruk W, Towiboon P, Tankaew P, Punyapornwithaya V, Janyamathakul T, Muanghong P, Brown JL, Thitaram C, Somgird C. **A Longitudinal Study of Hematology and Stress Biomarker Profiles in Young Asian Elephants (*Elephas Maximus*) in Relation to Elephant Endotheliotropic Herpesvirus (EEHV) in Thailand.** Animals (Basel). 2021 Aug 28;11(9):2530.