

Haematology Reference Ranges**

Revision date: 16/06/2025; Next revision date: 05/10/2028

Full Blood Count & White Blood Cell Differential Count					
PARAMETER	SEX	AGE	LOW	HIGH	UNITS
White Blood Cells (WBC)	Male	Birth (0 days)	10.0	26.0	x10 ⁹ /L
		Day 3	7.0	23.0	
		Day 7	6.0	22.0	
		Day 14	6.0	22.0	
		1 Month	5.0	19.0	
		2 Months	5.0	15.0	
		3 – 6 Months	6.0	18.0	
		1 Year	6.0	16.0	
		2 – 6 Years	5.0	15.0	
		6 – 12 Years	5.0	13.0	
	>12 Years	2.9	9.6		
	Female	Birth (0 days)	10.0	26.0	
		Day 3	7.0	23.0	
		Day 7	6.0	22.0	
		Day 14	6.0	22.0	
		1 Month	5.0	19.0	
		2 Months	5.0	15.0	
		3 – 6 Months	6.0	18.0	
		1 Year	6.0	16.0	
		2 – 6 Years	5.0	15.0	
6 – 12 Years		5.0	13.0		
>12 Years	2.9	9.6			
Red Blood Cells (RBC)	Male	Birth (0 days)	5.00	7.00	x10 ¹² /L
		Day 3	4.00	6.60	
		Day 7	3.90	6.30	
		Day 14	3.60	6.20	
		1 Month	3.00	5.40	
		2 Months	3.10	4.30	
		3 – 6 Months	4.10	5.30	
		1 Year	3.90	5.10	
		2 – 6 Years	4.00	5.20	
		6 – 12 Years	4.00	5.20	
	>12 Years	4.20	5.80		
	Female	Birth (0 days)	5.00	7.00	
		Day 3	4.00	6.60	
		Day 7	3.90	6.30	
		Day 14	3.60	6.20	
		1 Month	3.00	5.40	
		2 Months	3.10	4.30	
		3 – 6 Months	4.10	5.30	
		1 Year	3.90	5.10	
		2 – 6 Years	4.00	5.20	
6 – 12 Years		4.00	5.20		
>12 Years	3.70	5.10			

Revision date: 16/06/2025; Next revision date: 05/10/2028

Full Blood Count & White Blood Cell Differential Count					
PARAMETER	SEX	AGE	LOW	HIGH	UNITS
Haemoglobin (HGB)	Male	Birth (0 days)	140	220	g/L
		Day 3	150	210	
		Day 7	135	215	
		Day 14	125	205	
		1 Month	115	165	
		2 Months	94	130	
		3 – 6 Months	111	141	
		1 Year	111	141	
		2 – 6 Years	110	140	
		6 – 12 Years	115	155	
	>12 Years	125	170		
	Female	Birth (0 days)	140	220	
		Day 3	150	210	
		Day 7	135	215	
		Day 14	125	205	
		1 Month	115	165	
		2 Months	94	130	
		3 – 6 Months	111	141	
		1 Year	111	141	
		2 – 6 Years	110	140	
6 – 12 Years		115	155		
>12 Years	115	148			
Haematocrit (HCT/PCV)	Male	Birth (0 days)	0.450	0.750	L/L
		Day 3	0.450	0.670	
		Day 7	0.420	0.660	
		Day 14	0.310	0.710	
		1 Month	0.330	0.530	
		2 Months	0.280	0.420	
		3 – 6 Months	0.300	0.400	
		1 Year	0.300	0.380	
		2 – 6 Years	0.340	0.400	
		6 – 12 Years	0.350	0.450	
	>12 Years	0.390	0.510		
	Female	Birth (0 days)	0.450	0.750	
		Day 3	0.450	0.670	
		Day 7	0.420	0.660	
		Day 14	0.310	0.710	
		1 Month	0.330	0.530	
		2 Months	0.280	0.420	
		3 – 6 Months	0.300	0.400	
		1 Year	0.300	0.380	
		2 – 6 Years	0.340	0.400	
6 – 12 Years		0.350	0.450		
>12 Years	0.350	0.450			

Revision date: 16/06/2025; Next revision date: 05/10/2028

Full Blood Count & White Blood Cell Differential Count					
PARAMETER	SEX	AGE	LOW	HIGH	UNITS
Mean Cell Volume (MCV)	Male	Birth (0 days)	100	120	fL
		Day 3	92	118	
		Day 7	88	126	
		Day 14	86	124	
		1 Month	92	116	
		2 Months	87	103	
		3 – 6 Months	68	84	
		1 Year	72	84	
		2 – 6 Years	75	87	
		6 – 12 Years	77	95	
	>12 Years	81	100		
	Female	Birth (0 days)	100	120	
		Day 3	92	118	
		Day 7	88	126	
		Day 14	86	124	
		1 Month	92	116	
		2 Months	87	103	
		3 – 6 Months	68	84	
		1 Year	72	84	
		2 – 6 Years	75	87	
6 – 12 Years		77	95		
>12 Years	81	100			
Mean Corpuscular Haemoglobin (MCH)	Male	Birth (0 days)	31.0	37.0	pg
		Day 3	31.0	37.0	
		Day 7	31.0	37.0	
		Day 14	31.0	37.0	
		1 Month	30.0	36.0	
		2 Months	27.0	33.0	
		3 – 6 Months	24.0	30.0	
		1 Year	25.0	29.0	
		2 – 6 Years	24.0	30.0	
		6 – 12 Years	25.0	33.0	
	>12 Years	27.0	33.3		
	Female	Birth (0 days)	31.0	37.0	
		Day 3	31.0	37.0	
		Day 7	31.0	37.0	
		Day 14	31.0	37.0	
		1 Month	30.0	36.0	
		2 Months	27.0	33.0	
		3 – 6 Months	24.0	30.0	
		1 Year	25.0	29.0	
		2 – 6 Years	24.0	30.0	
6 – 12 Years		25.0	33.0		
>12 Years	27.0	33.3			

Revision date: 16/06/2025; Next revision date: 05/10/2028

Full Blood Count & White Blood Cell Differential Count					
PARAMETER	SEX	AGE	LOW	HIGH	UNITS
MCHC	Male	Birth (0 days)	300	360	g/L
		Day 3	290	370	
		Day 7	280	380	
		Day 14	280	380	
		1 Month	290	370	
		2 Months	285	355	
		3 – 6 Months	300	360	
		1 Year	320	360	
		2 – 6 Years	310	370	
		6 – 12 Years	310	370	
	>12 Years	310	350		
	Female	Birth (0 days)	300	360	
		Day 3	290	370	
		Day 7	280	380	
		Day 14	280	380	
		1 Month	290	370	
		2 Months	285	355	
		3 – 6 Months	300	360	
		1 Year	320	360	
		2 – 6 Years	310	370	
6 – 12 Years		310	370		
>12 Years	302	343			
Platelets (PLT)	Male	Birth (0 days)	100	450	x10 ⁹ /L
		Day 3	210	500	
		Day 7	160	500	
		Day 14	170	500	
		1 Month	200	500	
		2 Months	210	650	
		3 – 6 Months	200	550	
		1 Year	200	550	
		2 – 6 Years	200	490	
		6 – 12 Years	170	450	
	>12 Years	140	400		
	Female	Birth (0 days)	100	450	
		Day 3	210	500	
		Day 7	160	500	
		Day 14	170	500	
		1 Month	200	500	
		2 Months	210	650	
		3 – 6 Months	200	550	
		1 Year	200	550	
		2 – 6 Years	200	490	
6 – 12 Years		170	450		
>12 Years	140	400			

Revision date: 16/06/2025; Next revision date: 05/10/2028

Full Blood Count & White Blood Cell Differential Count					
PARAMETER	SEX	AGE	LOW	HIGH	UNITS
Red Cell Distribution Width (RDW)	Male	Birth (0 days)			%
		Day 3			
		Day 7			
		Day 14			
		1 Month			
		2 Months			
		3 – 6 Months			
		1 Year			
		2 – 6 Years			
		6 – 12 Years			
		>12 Years	10.5	16.0	
	Female	Birth (0 days)			
		Day 3			
		Day 7			
		Day 14			
		1 Month			
		2 Months			
		3 – 6 Months			
		1 Year			
		2 – 6 Years			
		6 – 12 Years			
		>12 Years	10.5	16.0	
Platelet Distribution Width (PDW)	Male	Birth (0 days)			fL
		Day 3			
		Day 7			
		Day 14			
		1 Month			
		2 Months			
		3 – 6 Months			
		1 Year			
		2 – 6 Years			
		6 – 12 Years			
		>12 Years	8.3	18.0	
	Female	Birth (0 days)			
		Day 3			
		Day 7			
		Day 14			
		1 Month			
		2 Months			
		3 – 6 Months			
		1 Year			
		2 – 6 Years			
		6 – 12 Years			
		>12 Years	8.3	18.0	

Revision date: 16/06/2025; Next revision date: 05/10/2028

Full Blood Count & White Blood Cell Differential Count					
PARAMETER	SEX	AGE	LOW	HIGH	UNITS
Mean Platelet Volume (MPV)	Male	Birth (0 days)			fL
		Day 3			
		Day 7			
		Day 14			
		1 Month			
		2 Months			
		3 – 6 Months			
		1 Year			
		2 – 6 Years			
		6 – 12 Years			
	>12 Years	8.9	13.0		
	Female	Birth (0 days)			
		Day 3			
		Day 7			
		Day 14			
		1 Month			
		2 Months			
		3 – 6 Months			
		1 Year			
		2 – 6 Years			
6 – 12 Years					
>12 Years	8.9	13.0			
Neutrophils	Male	Birth (0 days)	4.00	14.00	x10 ⁹ /L
		Day 3	3.00	5.00	
		Day 7	3.00	6.00	
		Day 14	3.00	7.00	
		1 Month	3.00	9.00	
		2 Months	1.00	5.00	
		3 – 6 Months	1.00	6.00	
		1 Year	1.00	7.00	
		2 – 6 Years	1.50	8.00	
		6 – 12 Years	2.00	8.00	
	>12 Years**	1.50	6.10		
	Female	Birth (0 days)	4.00	14.00	
		Day 3	3.00	5.00	
		Day 7	3.00	6.00	
		Day 14	3.00	7.00	
		1 Month	3.00	9.00	
		2 Months	1.00	5.00	
		3 – 6 Months	1.00	6.00	
		1 Year	1.00	7.00	
		2 – 6 Years	1.50	8.00	
6 – 12 Years		2.00	8.00		
>12 Years*	1.50	6.10			

Revision date: 16/06/2025; Next revision date: 05/10/2028

Full Blood Count & White Blood Cell Differential Count					
PARAMETER	SEX	AGE	LOW	HIGH	UNITS
Lymphocytes	Male	Birth (0 days)	3.00	8.00	x10 ⁹ /L
		Day 3	2.00	8.00	
		Day 7	3.00	9.00	
		Day 14	3.00	9.00	
		1 Month	3.00	16.00	
		2 Months	4.00	10.00	
		3 – 6 Months	4.00	12.00	
		1 Year	3.50	11.00	
		2 – 6 Years	2.00	9.00	
		6 – 12 Years	1.00	5.00	
	>12 Years	0.80	3.50		
	Female	Birth (0 days)	3.00	8.00	
		Day 3	2.00	8.00	
		Day 7	3.00	9.00	
		Day 14	3.00	9.00	
		1 Month	3.00	16.00	
		2 Months	4.00	10.00	
		3 – 6 Months	4.00	12.00	
		1 Year	3.50	11.00	
		2 – 6 Years	2.00	9.00	
6 – 12 Years		1.00	5.00		
>12 Years	0.80	3.50			
Monocytes	Male	Birth (0 days)	0.50	2.00	x10 ⁹ /L
		Day 3	0.50	1.00	
		Day 7	0.10	1.70	
		Day 14	0.10	1.70	
		1 Month	0.30	1.00	
		2 Months	0.40	1.20	
		3 – 6 Months	0.20	1.20	
		1 Year	0.20	1.00	
		2 – 6 Years	0.20	1.00	
		6 – 12 Years	0.20	1.00	
	>12 Years	0.20	0.90		
	Female	Birth (0 days)	0.50	2.00	
		Day 3	0.50	1.00	
		Day 7	0.10	1.70	
		Day 14	0.10	1.70	
		1 Month	0.30	1.00	
		2 Months	0.40	1.20	
		3 – 6 Months	0.20	1.20	
		1 Year	0.20	1.00	
		2 – 6 Years	0.20	1.00	
6 – 12 Years		0.20	1.00		
>12 Years	0.20	0.90			

Revision date: 16/06/2025; Next revision date: 05/10/2028

Full Blood Count & White Blood Cell Differential Count					
PARAMETER	SEX	AGE	LOW	HIGH	UNITS
Eosinophils	Male	Birth (0 days)	0.10	1.00	x10 ⁹ /L
		Day 3	0.10	2.00	
		Day 7	0.10	0.80	
		Day 14	0.10	0.90	
		1 Month	0.20	1.00	
		2 Months	0.10	1.00	
		3 – 6 Months	0.10	1.00	
		1 Year	0.10	1.00	
		2 – 6 Years	0.10	1.00	
		6 – 12 Years	0.10	1.00	
	>12 Years	0.00	0.40		
	Female	Birth (0 days)	0.10	1.00	
		Day 3	0.10	2.00	
		Day 7	0.10	0.80	
		Day 14	0.10	0.90	
		1 Month	0.20	1.00	
		2 Months	0.10	1.00	
		3 – 6 Months	0.10	1.00	
		1 Year	0.10	1.00	
		2 – 6 Years	0.10	1.00	
6 – 12 Years		0.10	1.00		
>12 Years	0.00	0.40			
Basophils	Male	Birth (0 days)			x10 ⁹ /L
		Day 3			
		Day 7			
		Day 14			
		1 Month			
		2 Months			
		3 – 6 Months			
		1 Year			
		2 – 6 Years			
		6 – 12 Years			
	>12 Years	0.00	0.10		
	Female	Birth (0 days)			
		Day 3			
		Day 7			
		Day 14			
		1 Month			
		2 Months			
		3 – 6 Months			
		1 Year			
		2 – 6 Years			
6 – 12 Years					
>12 Years	0.00	0.10			

Revision date: 16/06/2025; Next revision date: 05/10/2028

Full Blood Count & White Blood Cell Differential Count					
PARAMETER	SEX	AGE	LOW	HIGH	UNITS
Nucleated RBC (NRBCs)	Male	Birth (0 days)			x10 ⁹ /L
		Day 3			
		Day 7			
		Day 14			
		1 Month			
		2 Months			
		3 – 6 Months			
		1 Year			
		2 – 6 Years			
		6 – 12 Years			
	>12 Years	0.00	0.01		
	Female	Birth (0 days)			
		Day 3			
		Day 7			
		Day 14			
		1 Month			
		2 Months			
		3 – 6 Months			
		1 Year			
		2 – 6 Years			
6 – 12 Years					
>12 Years	0.00	0.01			
Metamyelocytes	Male	All	0.00	0.00	x10 ⁹ /L
	Female	All	0.00	0.00	
Myelocytes	Male	All	0.00	0.00	x10 ⁹ /L
	Female	All	0.00	0.00	
Promyelocytes	Male	All	0.00	0.00	x10 ⁹ /L
	Female	All	0.00	0.00	
Blast cells	Male	All	0.00	0.00	x10 ⁹ /L
	Female	All	0.00	0.00	
Atypical mononuclear cells	Male	All	0.00	0.00	x10 ⁹ /L
	Female	All	0.00	0.00	
Plasma cells	Male	All	0.00	0.00	x10 ⁹ /L
	Female	All	0.00	0.00	

* Normal neutrophil counts in healthy people from Africa and the Middle East may be lower than 1.5 x 10⁹/L.

Please note: the laboratory does not provide the percentage value for the WBC differential as these are not reportable values.

Revision date: 16/06/2025; Next revision date: 05/10/2028

Reticulocyte count					
PARAMETER	SEX	AGE	LOW	HIGH	UNITS
Reticulocytes	Male	Birth (0 days)	120	400	x10 ⁹ /L
		Day 3	50	350	
		Day 7	50	100	
		Day 14	50	100	
		1 Month	20	60	
		2 Months	30	50	
		3 – 6 Months	40	100	
		1 Year	30	100	
		2 – 6 Years	30	100	
		6 – 12 Years	30	100	
	>12 Years	16	124		
	Female	Birth (0 days)	120	400	
		Day 3	50	350	
		Day 7	50	100	
		Day 14	50	100	
		1 Month	20	60	
		2 Months	30	50	
		3 – 6 Months	40	100	
		1 Year	30	100	
		2 – 6 Years	30	100	
6 – 12 Years		30	100		
>12 Years	25	105			
Erythrocyte Sedimentation Rate					
ESR	Male	0 - 17 Years	0	10	mm/Hr
		17- 50 Years	0	10	
		51 - 60 Years	0	12	
		61 – 70 Years	0	14	
		>70 Years	0	30	
	Female	0 - 17 Years	0	12	
		17 - 50 Years	0	12	
		51 – 60 Years	0	19	
		61 – 70 Years	0	20	
		>70 Years	0	35	
Plasma Viscosity					
Plasma Viscosity	Male	All	1.50	1.72	mPa.s @ 25°C
	Female	All	1.50	1.72	

**The reference ranges in this document apply to the following Synnovis sites:

- Synnovis Hub Blood Sciences Laboratory
- Guy’s and St Thomas’ Hospitals Essential Services Laboratories
- King’s College Hospital Essential Services Laboratory
- Princess Royal University Hospital Essential Services Laboratory
- Royal Brompton Essential Services Laboratory
- Harefield Hospitals Essential Services Laboratory

References for the reference ranges for each method can be found within the appropriate Standard Operating Procedure.

Clinical Sign-off	Beverley J. Hunt
Role	Strategic Lead in Laboratory Haematology for Synnovis
Signature	
Date:	16 th of June 2025
Clinical Sign-off	Paul Cane
Role	Medical Director for Synnovis
Signature	
Date:	21 st of October 2025