

## Reference Ranges - Clinical Trials & Research

This document is intended as a guide and summary of the applicable reference ranges (also known as: reference intervals and normal limits/limits of normal (LN)) used at Austin Health Pathology. This document should not be used to aid in the interpretation of results. The validated result and its reference ranges applied with any interpretive comments should be referred to at all times.

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11 March 2026	30 September 2025	<i>Ryan Bolger</i> Ryan Bolger Senior Scientist In Charge <small>Electronically signed by: Ryan Bolger                      Reason: I am the author                      Date: May 14, 2026 17:46:26 GMT +10</small>	<i>Christopher Hogan</i> Dr Christopher Hogan Medical Director Pathology <small>Electronically signed by: Christopher Hogan                      Reason: I approve this document                      Date: May 13, 2026 13:46:06 GMT+10</small>

LOINC CODE	ANALYTE	UNIT	SPECIMEN TYPE	SEX AT BIRTH	LOWER AGE	UPPER AGE	LOWER REFERENCE INTERVAL	UPPER REFERENCE INTERVAL	NOTES
<b>HAEMATOLOGY</b>									
6690-2	White Cell Count (WCC) (Leucocytes)	x10 <sup>9</sup> /L	Whole Blood	M/F	0 Days	< 1 Day	9.0	30.0	
				M/F	≥ 1 Day	< 3 Days	9.4	34.0	
				M/F	≥ 3 Days	< 1 Week	5.0	25.0	
				M/F	≥ 1 Week	< 2 Weeks	5.0	21.0	
				M/F	≥ 2 Weeks	< 2 Months	5.0	19.5	
				M/F	≥ 2 Months	< 2 Years	6.0	18.0	
				M/F	≥ 2 Years	< 4 Years	6.0	17.0	
				M/F	≥ 4 Years	< 6 Years	5.5	15.5	
				M/F	≥ 6 Years	< 8 Years	5.0	14.5	
				M/F	≥ 8 Years	< 15 Years	4.5	13.5	
				M/F	≥ 15 Years	< 16 Years	4.5	11.0	
M/F	≥ 16 Years	-	4.0	12.0					

LOINC CODE	ANALYTE	UNIT	SPECIMEN TYPE	SEX AT BIRTH	LOWER AGE	UPPER AGE	LOWER REFERENCE INTERVAL	UPPER REFERENCE INTERVAL	NOTES
<b>HAEMATOLOGY</b>									
789-8	Red Cell Count (RCC) (Erythrocytes)	x10 <sup>12</sup> /L	Whole Blood	M/F	0 Days	< 1 Day	4.2	6.6	
				M/F	≥ 1 Day	< 1 Week	4.0	6.6	
				M/F	≥ 1 Week	< 2 Weeks	3.9	6.3	
				M/F	≥ 2 Weeks	< 1 Month	3.6	6.2	
				M/F	≥ 1 Month	< 2 Months	3.0	5.4	
				M/F	≥ 2 Months	< 3 Months	2.7	4.9	
				M/F	≥ 3 Months	< 6 Months	3.1	4.5	
				M/F	≥ 6 Months	< 2 Years	3.7	5.3	
				M/F	≥ 2 Years	< 6 Years	3.9	5.3	
				M/F	≥ 6 Years	< 16 Years	4.0	5.2	
				M	≥ 16 Years	< 60 Years	4.2	5.9	
				F	≥ 16 Years	-	3.6	5.2	
M	≥ 60 Years	-	3.8	5.7					
718-7	Haemoglobin (Hb)	g/L	Whole Blood	M/F	0 Days	< 1 Day	145	240	
				M/F	≥ 1 Day	< 1 Week	145	225	
				M/F	≥ 1 Week	< 2 Weeks	135	215	
				M/F	≥ 2 Weeks	< 1 Month	125	205	
				M/F	≥ 1 Month	< 2 Months	100	180	
				M/F	≥ 2 Months	< 3 Months	90	140	
				M/F	≥ 3 Months	< 6 Months	95	135	
				M/F	≥ 6 Months	< 2 Years	105	135	
				M/F	≥ 2 Years	< 6 Years	110	140	
				M/F	≥ 6 Years	< 12 Years	115	155	
				M/F	≥ 12 Years	< 16 Years	120	160	
				M	≥ 16 Years	< 60 Years	130	170	
M	≥ 60 Years	-	120	170					
F	≥ 16 Years	-	115	155					
4544-3	Haematocrit (Hct) (Packed Cell Volume)	L/L	Whole Blood	M/F	0 Days	< 1 Day	0.45	0.70	
				M/F	≥ 1 Day	< 1 Week	0.45	0.67	
				M/F	≥ 1 Week	< 2 Weeks	0.42	0.66	
				M/F	≥ 2 Weeks	< 1 Month	0.39	0.63	
				M/F	≥ 1 Month	< 2 Months	0.31	0.55	
				M/F	≥ 2 Months	< 3 Months	0.28	0.42	
				M/F	≥ 3 Months	< 6 Months	0.29	0.41	
				M/F	≥ 6 Months	< 2 Years	0.33	0.41	
				M/F	≥ 2 Years	< 6 Years	0.34	0.42	
				M/F	≥ 6 Years	< 12 Years	0.35	0.45	
M/F	≥ 12 Years	< 16 Years	0.36	0.46					

LOINC CODE	ANALYTE	UNIT	SPECIMEN TYPE	SEX AT BIRTH	LOWER AGE	UPPER AGE	LOWER REFERENCE INTERVAL	UPPER REFERENCE INTERVAL	NOTES
<b>HAEMATOLOGY</b>									
4544-3	Haematocrit (Hct) (Packed Cell Volume)	L/L	Whole Blood	M	≥ 16 Years	< 60 Years	0.36	0.50	
				M	≥ 60 Years	-	0.36	0.50	
				F	≥ 16 Years	-	0.33	0.45	
787-2	Mean Cell/Corpuscular Volume (MCV)	fL	Whole Blood	M/F	≥ 0 Days	< 3 Days	100	120	
				M/F	≥ 3 Days	< 1 Week	95	120	
				M/F	≥ 1 Week	< 2 Weeks	90	110	
				M/F	≥ 2 Weeks	< 2 Months	85	110	
				M/F	≥ 2 Months	< 3 Months	80	110	
				M/F	≥ 3 Months	< 6 Months	75	100	
				M/F	≥ 6 Months	< 2 Years	70	90	
				M/F	≥ 2 Years	< 6 Years	75	90	
				M/F	≥ 6 Years	< 12 Years	77	95	
				M/F	≥ 12 Years	< 15 Years	78	97	
785-6	Mean Cell Haemoglobin (MCH)	pg	Whole Blood	M/F	≥ 0 Days	< 1 Week	31	37	
				M/F	≥ 1 Week	< 2 Months	28	40	
				M/F	≥ 2 Months	< 3 Months	26	34	
				M/F	≥ 3 Months	< 2 Years	23	31	
				M/F	≥ 2 Years	< 6 Years	24	30	
				M/F	≥ 6 Years	< 12 Years	25	33	
				M/F	≥ 12 Years	< 15 Years	25	35	
				M/F	≥ 15 Years	< 16 Years	27	34	
786-4	Mean Cell Haemoglobin Concentration (MCHC)	g/L	Whole Blood	M/F	≥ 0 Years	< 16 Years	320	360	
				M/F	≥ 16 Years	-	315	365	
788-0	Red Cell Distribution Width (RDW)	%	Whole Blood	M/F	≥ 0 Years	< 16 Years	11.0	14.0	
				M/F	≥ 16 Years	-	11.6	14.0	
777-3	Platelet Count	x10 <sup>9</sup> /L	Whole Blood	M/F	0 Years	-	150	400	
32623-1	Mean Platelet Volume (MPV)	fL	Whole Blood	M/F	0 Years	-	7.0	12.0	
751-8	Neutrophils (Absolute Count)	x10 <sup>9</sup> /L	Whole Blood	M/F	≥ 0 Days	< 3 Days	3.5	18.0	
				M/F	≥ 3 Days	< 2 Weeks	1.5	10.0	
				M/F	≥ 2 Weeks	< 6 Months	1.0	9.0	
				M/F	≥ 6 Months	< 2 Years	1.0	8.5	
				M/F	≥ 2 Years	< 6 Years	1.5	8.5	
				M/F	≥ 6 Years	< 12 Years	1.5	8.0	
				M/F	≥ 12 Years	< 15 Years	1.8	8.0	
M/F	≥ 15 Years	< 16 Years	2.0	8.0					
M/F	≥ 16 Years	-	2.0	8.0					

LOINC CODE	ANALYTE	UNIT	SPECIMEN TYPE	SEX AT BIRTH	LOWER AGE	UPPER AGE	LOWER REFERENCE INTERVAL	UPPER REFERENCE INTERVAL	NOTES
<b>HAEMATOLOGY</b>									
731-0	Lymphocytes (Absolute Count)	x10 <sup>9</sup> /L	Whole Blood	M/F	≥ 0 Days	< 3 Days	2.0	11.5	
				M/F	≥ 3 Days	< 1 Week	2.0	10.0	
				M/F	≥ 1 Week	< 2 Weeks	2.0	8.0	
				M/F	≥ 2 Weeks	< 2 Months	2.5	9.0	
				M/F	≥ 2 Months	< 2 Years	4.0	10.0	
				M/F	≥ 2 Years	< 4 Years	3.0	9.5	
				M/F	≥ 4 Years	< 6 Years	2.0	8.0	
				M/F	≥ 6 Years	< 8 Years	1.5	7.0	
				M/F	≥ 8 Years	< 12 Years	1.5	6.5	
				M/F	≥ 12 Years	< 15 Years	1.2	5.2	
				M/F	≥ 15 Years	< 16 Years	1.2	3.6	
M/F	≥ 16 Years	-	1.0	3.5					
742-7	Monocytes	x10 <sup>9</sup> /L	Whole Blood	M/F	≥ 0 Days	< 1 Day	0.2	3.4	
				M/F	≥ 1 Day	< 1 Week	0.7	3.8	
				M/F	≥ 1 Week	< 2 Weeks	0.2	2.4	
				M/F	≥ 2 Weeks	< 2 Months	0.2	1.2	
				M/F	≥ 2 Months	< 16 Years	0.1	1.0	
				M/F	≥ 16 Years	-	0.2	1.0	
711-2	Eosinophils	x10 <sup>9</sup> /L	Whole Blood	M/F	≥ 0 Days	< 1 Day	-	1.5	
				M/F	≥ 1 Day	< 1 Week	-	2.0	
				M/F	≥ 1 Week	< 2 Weeks	-	1.0	
				M/F	≥ 2 Weeks	< 6 Years	-	0.8	
				M/F	≥ 6 Years	-	-	0.5	
704-7	Basophils	x10 <sup>9</sup> /L	Whole Blood	M/F	≥ 0 Days	< 1 Week	-	0.3	
				M/F	≥ 1 Week	< 1 Month	-	0.2	
				M/F	≥ 1 Month	< 16 Years	-	0.2	
				M/F	≥ 16 Years	-	-	0.2	
60474-4	Reticulocytes (Absolute Count)	x10 <sup>9</sup> /L	Whole Blood	M/F	≥ 0 Days	< 1 Week	100	250	
				M/F	≥ 1 Week	< 2 Months	5	50	
				M/F	≥ 2 Months	< 6 Months	8	80	
				M/F	≥ 6 Months	< 16 Years	10	100	
				M/F	≥ 16 Years	-	20	100	
4679-7	Reticulocytes (Percentage)	%	Whole Blood	M/F	≥ 0 Years	-	-	2	
4537-7	Erythrocyte Sedimentation Rate (ESR)	mm in 1 Hour	Whole Blood	M/F	≥ 0 Years	-	1	20	

LOINC CODE	ANALYTE	UNIT	SPECIMEN TYPE	SEX AT BIRTH	LOWER AGE	UPPER AGE	LOWER REFERENCE INTERVAL	UPPER REFERENCE INTERVAL	NOTES
<b>HAEMATOLOGY</b>									
89312-3	CD3+ Lymphocytes (Absolute Number)	x10 <sup>9</sup> /L	Whole Blood	M/F	≥ 0 Days	< 6 Months	2.50	5.60	
				M/F	≥ 6 Months	< 1 Year	1.90	5.90	
				M/F	≥ 1 Year	< 2 Years	2.10	6.20	
				M/F	≥ 2 Years	< 6 Years	1.40	3.70	
				M/F	≥ 6 Years	< 12 Years	1.20	2.60	
				M/F	≥ 12 Years	< 18 Years	1.00	2.20	
				M/F	≥ 18 Years	-	1.09	3.02	
24467-3	CD3/4+ Lymphocytes (Absolute Number)	x10 <sup>9</sup> /L	Whole Blood	M/F	≥ 0 Days	< 6 Months	1.80	4.00	Also known as 'Helper T Cells'. This analyte is most applicable for 'CD4+ cells' referenced in most protocols.  Please contact pathology trials for more information if required.
				M/F	≥ 6 Months	< 1 Year	1.40	4.30	
				M/F	≥ 1 Year	< 2 Years	1.30	3.40	
				M/F	≥ 2 Years	< 6 Years	0.70	2.20	
				M/F	≥ 6 Years	< 12 Years	0.65	1.50	
				M/F	≥ 12 Years	< 18 Years	0.53	1.30	
				M/F	≥ 18 Years	-	0.65	2.00	
14135-8	CD3/8+ Lymphocytes (Absolute Number)	x10 <sup>9</sup> /L	Whole Blood	M/F	≥ 0 Days	< 6 Months	0.59	1.60	Also known as 'Cytotoxic T Cells' or 'T Suppressor'
				M/F	≥ 6 Months	< 1 Year	0.50	1.70	
				M/F	≥ 1 Year	< 2 Years	0.62	2.00	
				M/F	≥ 2 Years	< 6 Years	0.49	1.30	
				M/F	≥ 6 Years	< 12 Years	0.37	1.10	
				M/F	≥ 12 Years	< 18 Years	0.33	0.92	
				M/F	≥ 18 Years	-	0.33	1.31	
8116-6	CD19+ Lymphocytes (Absolute Number)	x10 <sup>9</sup> /L	Whole Blood	M/F	≥ 0 Days	< 6 Months	0.43	3.00	Also known as 'B Lymphocytes' or 'B Cells'.
				M/F	≥ 6 Months	< 1 Year	0.61	2.60	
				M/F	≥ 1 Year	< 2 Years	0.72	2.60	
				M/F	≥ 2 Years	< 6 Years	0.39	1.40	
				M/F	≥ 6 Years	< 12 Years	0.27	0.86	
				M/F	≥ 12 Years	< 18 Years	0.11	0.57	
				M/F	≥ 18 Years	-	0.19	0.55	
20402-4	CD16/56+ Lymphocytes (Absolute Number)	x10 <sup>9</sup> /L	Whole Blood	M/F	≥ 0 Days	< 6 Months	0.17	0.83	Also known as 'Natural Killer Cells' or 'NK Cells'/'NK Lymphocytes'
				M/F	≥ 6 Months	< 1 Year	0.16	0.95	
				M/F	≥ 1 Year	< 2 Years	0.18	0.92	
				M/F	≥ 2 Years	< 6 Years	0.13	0.72	
				M/F	≥ 6 Years	< 12 Years	0.10	0.48	
				M/F	≥ 12 Years	< 18 Years	0.07	0.48	
				M/F	≥ 18 Years	-	0.13	0.54	
-	Lymphocyte Subsets (Percentage)	%	Whole Blood	M/F	Reference ranges for percentages are not reported nor available. Please refer to specific ranges for the absolute value of the subset/population of interest.				

LOINC CODE	ANALYTE	UNIT	SPECIMEN TYPE	SEX AT BIRTH	LOWER AGE	UPPER AGE	LOWER REFERENCE INTERVAL	UPPER REFERENCE INTERVAL	NOTES
<b>COAGULATION</b>									
6301-6	International Normalised Ratio (INR)	Ratio	Blood	M/F	<p>The INR should only be applied to patients receiving anticoagulant therapy and is not valid in any other clinical situations (RCPA manual 2001).</p> <p>For patients not on warfarin, no reference range or normal range for INR is available. The INR is a ratio and is specifically set up for warfarin patients, who instead have a therapeutic range, which is individualised depending on various clinical factors.</p> <p>Prothrombin time (PT) is a better indication for coagulation in this setting, for which we do provide a normal range for PT, as we do for our other routine coagulation tests APTT and fibrinogen.</p> <p>Please contact PathTrials@austin.org.au if this is not sufficient, and your enquiry will be triaged.</p>				
5902-2	PT (Prothrombin Time)	seconds	Blood	M/F	≥ 0 Days	< 1 Day	12	24	Not on anticoagulant therapy
14979-9	APTT (Activated Partial Thromboplastin Time)	seconds	Blood	M/F	≥ 1 Day	-	11	15	
3255-7	Fibrinogen (Clauss)	g/L	Blood	M/F	≥ 16 Years	-	22	38	
					≥ 0 Days	< 3 Days	1.2	3.8	
					≥ 3 Days	< 1 Month	1.5	4.0	
					≥ 1 Month	< 1 Year	0.8	3.8	
48065-7	D-Dimer	ng/ml	Blood	M/F	≥ 1 Year	< 16 Years	1.5	4.3	May also be known as 'Fibrin Degradation Products'
3243-3	Thrombin Clotting Time (TCT/TT)	seconds	Blood	M/F	≥ 16 Years	-	2.0	4.0	

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<b>BIOCHEMISTRY</b>									
1743-4	Alanine Aminotransferase (ALT)	U/L	Blood (Serum)	M/F	≥ 0 Years	< 1 Year	6	51	May also be referred to as Serum Glutamic-Pyruvic Transaminase (SGPT).
				M/F	≥ 1 Year	< 13 Years	11	30	
				M	≥ 13 Years	< 18 Years	10	33	
				M	≥ 18 Years	-	6	40	
				F	≥ 13 Years	< 18 Years	8	24	
				F	≥ 18 Years	-	6	35	
1751-7	Albumin	g/L	Blood (Serum)	M/F	≥ 0 Days	< 4 Days	28	44	
				M/F	≥ 4 Days	< 15 Years	38	54	
				M/F	≥ 15 Years	< 60 Years	35	50	
				M/F	≥ 60 Years	< 90 Years	32	46	
				M/F	≥ 90 Years	-	29	45	
1754-1	Albumin	mg/L	Spot Urine	Reference intervals are not available for this analyte. Refer to Albumin Creatinine Ratio					
32294-1	Albumin : Creatinine Ratio	mg/mmol	Spot Urine	M	≥ 0 Years	-	-	2.50	
				F	≥ 0 Years	-	-	3.50	

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<b>BIOCHEMISTRY</b>									
6768-6	Alkaline Phosphatase (ALP)	U/L	Blood (Serum)	M/F	≥ 0 Days	≤ 6 Days	80	380	
				M/F	> 1 Week	≤ 27 Days	120	550	
				M/F	≥ 4 Weeks	< 6 Months	120	650	
				M/F	≥ 6 Months	< 2 Years	120	450	
				M/F	≥ 2 Years	< 6 Years	120	370	
				M/F	≥ 6 Years	< 10 Years	120	440	
				M	≥ 10 Years	< 14 Years	130	530	
				M	≥ 14 Years	< 15 Years	105	480	
				M	≥ 15 Years	< 17 Years	80	380	
				M	≥ 17 Years	< 19 Years	50	220	
				M	≥ 19 Years	< 22 Years	45	150	
				M	≥ 22 Years	-	30	110	
				F	≥ 10 Years	< 13 Years	100	460	
				F	≥ 13 Years	< 14 Years	70	330	
F	≥ 14 Years	< 15 Years	50	280					
F	≥ 15 Years	< 16 Years	45	170					
F	≥ 16 Years	< 22 Years	35	140					
F	≥ 22 Years	-	30	110					
6771-0	Alpha-1-Antitrypsin	g/L	Blood (Serum)	M/F	≥ 0 Years	-	0.90	2	
1834-1	Alphafetoprotein (AFP)	kU/L	Blood (Serum)	M/F	≥ 0 Years	-	-	7.4	
16362-6	Ammonia	µmol/L	Blood (Plasma)	M/F	≥ 0 Years	-	18	72	
1798-8	Amylase	U/L	Blood (Serum)	M/F	≥ 0 Years	< 1 Year	5	65	
				M/F	≥ 1 Year	< 70 Years	25	125	
				M/F	≥ 70 Years	-	20	160	
1869-7	Apolipoprotein A1	g/L	Blood (Serum)	M	≥ 0 Years	-	0.95	1.86	
				F	≥ 0 Years	-	1.01	2.23	
1884-6	Apolipoprotein B	g/L	Blood (Serum)	M	≥ 0 Years	-	0.49	1.73	
				F	≥ 0 Years	-	0.53	1.82	
30239-8	Aspartate Transaminase (AST)	U/L	Blood (Serum)	M/F	≥ 0 Days	≤ 2 Weeks	23	186	May also be referred to as Serum Glutamic-Oxaloacetic Transaminase (SGOT).
				M/F	≥ 15 Days	< 1 Year	23	83	
				M/F	≥ 1 Year	< 7 Years	26	55	
				M/F	≥ 7 Years	< 12 Years	22	41	
				M	≥ 12 Years	< 18 Years	18	40	
				M	≥ 18 Years	-	6	35	
				F	≥ 12 Years	< 18 Years	17	33	
F	≥ 18 Years	-	6	30					
-	B-type Natriuretic Peptide (BNP)	-	Not performed at Austin Health Pathology. See "N Terminal pro-BNP"						
21198-7	Beta - Human Chorionic Gonadotropin (β-HCG)	IU/L	Blood (Serum)	M/F	≥ 0 Years	-	-	5	

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<b>BIOCHEMISTRY</b>									
1952-1	Beta 2 Microglobulin (B2M)	mg/L	Blood (Serum)	M/F	≥ 0 Years	-	1.00	2.6	
1963-8	Bicarbonate (HCO <sub>3</sub> <sup>-</sup> )	mmol/L	Blood (Serum)	M/F	≥ 0 Days	< 1 Week	15	28	
				M/F	≥ 1 Week	< 2 Years	16	29	
				M/F	≥ 2 Years	< 10 Years	17	30	
				M/F	≥ 10 Years	< 18 Years	20	32	
				M/F	≥ 18 Years	-	22	32	
14631-6	Bilirubin (Total)	µmol/L	Blood (Serum)	M/F	≥ 0 Days	< 1 Day	-	171.0	
				M/F	≥ 1 Day	< 2 Days	-	250.0	
				M/F	≥ 2 Days	< 5 Days	-	205.2	
				M/F	≥ 5 Days	< 1 Week	-	171.0	
				M/F	≥ 1 Week	< 18 Years	-	20.0	
14630-8	Bilirubin (Indirect/Unconjugated)	µmol/L	Blood (Serum)	M/F	≥ 0 Years	-	-	18	Calculated parameter
				M/F	≥ 0 Days	≤ 2 Weeks	6	12.0	
				M/F	≥ 15 Days	< 1 Year	-	5.0	
				M/F	≥ 1 Year	< 9 Years	-	3.0	
				M/F	≥ 9 Years	< 13 Years	-	5.0	
14629-0	Bilirubin (Direct/Conjugated)	µmol/L	Blood (Serum)	M/F	≥ 13 Years	< 18 Years	2	7.0	
				M/F	≥ 18 Years	-	-	9.0	
				M/F	≥ 18 Years	-	-	9.0	
1988-5	C-Reactive Protein (CRP)	mg/L	Blood (Serum)	M/F	≥ 0 Years	-	-	5.0	
2064-7	Caeruloplasmin	g/L	Blood (Serum)	M/F	≥ 0 Years	-	0.2	0.6	
2000-8	Calcium & Corrected Calcium	mmol/L	Blood (Serum)	M/F	≥ 0 Days	< 1 Week	1.85	2.80	Corrected calcium is calculated from uncorrected calcium and albumin results.
				M/F	≥ 1 Week	< 26 Weeks	2.20	2.80	
				M/F	≥ 26 Weeks	< 2 Years	2.20	2.70	
				M/F	≥ 2 Years	< 18 Years	2.20	2.65	
				M/F	≥ 18 Years	-	2.10	2.60	
10334-1	Cancer Antigen 125 (CA 125)	U/mL	Blood (Serum)	M/F	≥ 0 Years	-	-	35	
6875-9	Cancer Antigen 15-3 (CA 15-3)	U/mL	Blood (Serum)	M/F	≥ 0 Years	-	-	30	
24108-3	Cancer Antigen 19-9 (CA 19-9)	U/mL	Blood (Serum)	M/F	≥ 0 Years	-	-	37	
2039-6	Carcino-embryonic Antigen (CEA)	µg/L	Blood (Serum)	M/F	≥ 0 Years	-	-	5	
2075-0	Chloride (Cl <sup>-</sup> )	mmol/L	Blood (Serum)	M/F	≥ 0 Days	< 1 Week	98	115	
				M/F	≥ 1 Week	< 18 Years	97	110	
				M/F	≥ 18 Years	-	95	110	
-	Chromogranin A	-	This is a referred test. Please refer to the reference range supplied on the report.						
-	Copper	-	This is a referred test. Please refer to the reference range supplied on the report.						
14682-9	Creatinine	µmol/L	Blood (Serum)	M/F	≥ 0 Days	< 1 Week	22	93	
				M/F	≥ 1 Week	< 4 Weeks	17	50	
				M/F	≥ 4 Weeks	< 2 Years	11	36	

LOINC CODE	ANALYTE	UNIT	SPECIMEN TYPE	SEX AT BIRTH	LOWER AGE	UPPER AGE	LOWER REFERENCE INTERVAL	UPPER REFERENCE INTERVAL	NOTES
<b>BIOCHEMISTRY</b>									
14682-9	Creatinine	µmol/L	Blood (Serum)	M/F	≥ 2 Years	< 6 Years	20	44	
				M/F	≥ 6 Years	< 12 Years	27	58	
				M	≥ 12 Years	< 15 Years	35	83	
				M	≥ 15 Years	< 19 Years	50	100	
				M	≥ 19 Years	-	60	110	
				F	≥ 12 Years	< 15 Years	35	74	
				F	≥ 15 Years	< 19 Years	38	82	
14683-7	Creatinine	mmol/L	Spot Urine	M/F	≥ 0 Years	-	3.0	24.0	
2164-2	Creatinine Clearance	mL/min	24 Hour Urine	M/F	≥ 0 Years	-	90	150	
		mL/sec		M/F	≥ 0 Years	-	1.5	2.5	
2157-6	Creatinine Kinase	U/L	Blood (Serum)	M/F	≥ 0 Years	< 4 Years	-	200	
				M/F	≥ 4 Years	< 7 Years	-	150	
				M	≥ 7 Years	< 18 Years	-	270	
				F	≥ 7 Years	< 18 Years	-	150	
				M	≥ 18 Years	-	20	200	
-	Creatinine Kinase Isoenzymes (CK-MB)	-	This is a referred test. Please refer to the reference range supplied on the report.						
62238-1	Estimated Glomerular Filtration Rate (eGFR)	mL/min/1.73m <sup>2</sup>	Blood (Serum)	M/F	≥ 0 Years	-	90	-	Calculated by CKD-EPI Formula
58453-2	Faecal Occult Blood	ng/mL	Faeces	M/F	≥ 0 Years	-	-	50	Also known Faecal Immunofluorescence Test
2276-4	Ferritin	µg/L	Blood (Serum)	M	≥ 0 Years	-	30	500	
				F	≥ 0 Years	-	15	400	
14732-2	Folate (Serum)	nmol/L	Blood (Serum)	M/F	≥ 0 Years	-	7	46	May also be known as Vitamin B9
2324-2	Gamma Glutamyl Transferase (GGT)	U/L	Blood (Serum)	M/F	≥ 0 Days	≤ 2 Weeks	23	219	
				M/F	≥ 15 Days	< 1 Year	8	127	
				M/F	≥ 1 Year	< 11 Years	6	16	
				M/F	≥ 11 Years	< 18 Years	7	21	
				M	≥ 18 Years	-	5	50	
10834-0	Globulins	g/L	Blood (Serum)	M/F	≥ 0 Years	-	25	40	Calculated parameter
14749-6	Glucose - Fasting	mmol/L	Blood (Serum)	M/F	≥ 0 Years	-	3.0	5.4	
14749-6	Glucose - Random	mmol/L	Blood (Serum)	M/F	≥ 0 Years	-	3.0	7.7	
2342-4	Total Glucose	mmol/L	CSF	M/F	≥ 0 Years	< 18 Years	3.3	4.5	
				M/F	≥ 18 Years	-	2.2	3.9	
-	Glucose 6 Phosphate Dehydrogenase (G6PD)	-	This is a referred test. Please refer to the reference range supplied on the report.						
59261-8	Glycated Haemoglobin (HbA <sub>1c</sub> ) Non Diabetic-diagnostic cut off for diabetes	%	Blood (Plasma)	M/F	≥ 0 Years	-	-	6.5	DCCT/NGSP Units
		mmol/mol		M/F	≥ 0 Years	-	-	48	IFCC Units

LOINC CODE	ANALYTE	UNIT	SPECIMEN TYPE	SEX AT BIRTH	LOWER AGE	UPPER AGE	LOWER REFERENCE INTERVAL	UPPER REFERENCE INTERVAL	NOTES
<b>BIOCHEMISTRY</b>									
59261-8	Glycated Haemoglobin (HbA <sub>1c</sub> ) Diabetic - target for good glycaemic control	%	Blood (Plasma)	M/F	≥ 0 Years	-	-	7.0	DCCT/NGSP Units
		mmol/mol		M/F	≥ 0 Years	-	-	53	IFCC Units
4542-7	Haptoglobin	g/L	Blood (Serum)	M	≥ 0 Years	-	0.14	2.58	
				F	≥ 0 Years	-	0.35	2.50	
72160-5	Holo-transcobalamin	pmol/L	Blood (Serum)	M/F	≥ 0 Years	-	25	165	May also be known as Active B12
2458-8	Immunoglobulin A (IgA)	g/L	Blood (Serum)	M/F	≥ 0 Years	< 1 Year	0.00	0.83	
				M/F	≥ 1 Year	< 3 Years	0.20	1.00	
				M/F	≥ 3 Years	< 6 Years	0.27	1.95	
				M/F	≥ 6 Years	< 9 Years	0.34	3.05	
				M/F	≥ 9 Years	< 11 Years	0.53	2.04	
				M/F	≥ 11 Years	< 13 Years	0.58	3.58	
				M/F	≥ 13 Years	< 15 Years	0.47	2.49	
				M/F	≥ 15 Years	< 18 Years	0.61	3.48	
2465-3	Immunoglobulin G (IgG)	g/L	Blood (Serum)	M/F	≥ 0 Weeks	< 2 Weeks	5.00	17.00	
				M/F	≥ 2 Weeks	< 6 Weeks	3.90	13.00	
				M/F	≥ 6 Weeks	< 12 Weeks	2.10	7.70	
				M/F	≥ 3 Months	< 6 Months	2.40	8.80	
				M/F	≥ 6 Months	< 9 Months	3.00	9.00	
				M/F	≥ 9 Months	< 12 Months	3.00	10.90	
				M/F	≥ 1 Year	< 2 Years	3.10	13.80	
				M/F	≥ 2 Years	< 3 Years	3.70	15.80	
				M/F	≥ 3 Years	< 6 Years	4.90	16.10	
				M/F	≥ 6 Years	< 15 Years	5.40	16.10	
				M/F	≥ 15 Years	< 45 Years	6.00	16.00	
2472-9	Immunoglobulin M (IgM)	g/L	Blood (Serum)	M/F	≥ 0 Years	< 2 Years	0.21	2.15	
				M/F	≥ 2 Years	< 4 Years	0.26	1.55	
				M/F	≥ 4 Years	< 9 Years	0.26	1.88	
				M/F	≥ 9 Years	< 14 Years	0.47	2.52	
				M/F	≥ 14 Years	< 18 Years	0.26	2.32	
				M/F	≥ 18 Years	-	0.35	2.42	
14798-3	Iron Concentration	µmol/L	Blood (Serum)	M/F	≥ 0 Years	< 14 Years	2.9	22.9	
				M	≥ 14 Years	< 19 Years	5.5	30.1	
				M	≥ 19 Years	-	11.6	31.3	
				F	≥ 14 Years	< 19 Years	3.6	29.0	
	F	≥ 19 Years	-	9.0	30.4				
2524-7	Lactate	mmol/L	Blood (Plasma)	M/F	≥ 0 Years	-	0.5	2.2	
14804-9	Lactate Dehydrogenase (LD)	U/L	Blood (Serum)	M/F	≥ 0 Days	≤ 2 Weeks	309	1222	

LOINC CODE	ANALYTE	UNIT	SPECIMEN TYPE	SEX AT BIRTH	LOWER AGE	UPPER AGE	LOWER REFERENCE INTERVAL	UPPER REFERENCE INTERVAL	NOTES	
<b>BIOCHEMISTRY</b>										
14804-9	Lactate Dehydrogenase (LD)	U/L	Blood (Serum)	M/F	≥ 15 Days	< 1 Year	120	250		
				M/F	≥ 1 Year	-	120	250		
3040-3	Lipase	U/L	Blood (Serum)	M/F	≥ 0 Years	< 18 Years	4	39		
				M/F	≥ 18 Years	-	10	60		
14647-2	Lipids - Cholesterol (Total)	mmol/L	Blood (Serum)	M/F	≥ 0 Years	-	-	5.5		
14927-8	Lipids - Triglycerides	mmol/L	Blood (Serum)	M/F	≥ 0 Days	≤ 2 Weeks	0.93	2.93	Treatment target for patients on lipid lowering therapy	
				M/F	≥ 15 Days	< 1 Year	0.60	2.92		
				M/F	≥ 1 Year	< 18 Years	0.50	2.23		
				M/F	≥ 18 Years	-	-	2.00		
14646-4	Lipids - HDL Cholesterol	mmol/L	Blood (Serum)	M	≥ 0 Years	-	1.0	-		
				F	≥ 0 Years	-	1.20	-		
39469-2	Lipids - LDL Cholesterol (calculated result)	mmol/L	Blood (Serum)	M/F	≥ 0 Years	-	-	2.5		
70204-3	Lipids - Non-HDL Cholesterol	mmol/L	Blood (Serum)	M/F	≥ 0 Years	-	-	2.5		
14647-2	Lipids - Cholesterol (Total)	mmol/L	Blood (Serum)	M/F	≥ 0 Years	-	-	5.5		
14927-8	Lipids - Triglycerides	mmol/L	Blood (Serum)	M/F	≥ 0 Years	-	-	2.0		
14646-4	Lipids - HDL Cholesterol	mmol/L	Blood (Serum)	M	≥ 0 Years	-	1.0	-	The Following are targets for patients NOT on lipid lowering therapy (As published by AACB 2018)	
				F	≥ 0 Years	-	1.2	-		
39469-2	Lipids - LDL Cholesterol (calculated result)	mmol/L	Blood (Serum)	M/F	≥ 0 Years	-	-	3.0		
70204-3	Lipids - Non-HDL Cholesterol	mmol/L	Blood (Serum)	M/F	≥ 0 Years	-	-	4.5		
32309-7	Lipids - Total Cholesterol : HDL-C (Molar Ratio)	%	Blood (Serum)	M/F	The ratio of Total Cholesterol to High Density Lipoprotein (HDL) should not be interpreted in isolation as an indicator of cardiovascular risk. If required, a cut off value of 4.5 may be used (As published by AACB 2018).					
-	Lipids - VLDL Cholesterol	-	This is a referred test. Please refer to the reference range supplied on the report.							
10835-7	Lipoprotein (a)	nmol/L	Blood (Serum)	M/F	≥ 0 Years	-	-	75		
2601-3	Magnesium	mmol/L	Blood (Serum)	M/F	≥ 0 Days	< 1 Week	0.60	1.00		
				M/F	≥ 1 Week	< 18 Years	0.65	1.10		
				M/F	≥ 18 Years	-	0.70	1.10		
33762-6	N Terminal pro-BNP	ng/L	Blood (Serum)	M/F	≥ 0 Years	< 75 Years	-	125		
				M/F	≥ 75 Years	-	-	450		
3298-7	Paracetamol (Acetaminophen)	mg/L	Blood (Serum)	M/F	≥ 0 Years	-	0	-	As of 20th January 2018, paracetamol concentrations are reported in mg/L. In the case of single acute ingestions treatment should be considered for concentrations of 150mg/l or greater at 4 hours post-ingestion.	
14879-1	Phosphate (Inorganic Phosphate)	mmol/L	Blood (Serum)	M/F	≥ 0 Days	< 1 Week	1.25	2.85		
				M/F	≥ 1 Week	< 4 Weeks	1.50	2.75		
				M/F	≥ 4 Weeks	< 26 Weeks	1.45	2.50		
				M/F	≥ 26 Weeks	< 1 Year	1.30	2.30		
				M/F	≥ 1 Year	< 4 Years	1.10	2.20		

LOINC CODE	ANALYTE	UNIT	SPECIMEN TYPE	SEX AT BIRTH	LOWER AGE	UPPER AGE	LOWER REFERENCE INTERVAL	UPPER REFERENCE INTERVAL	NOTES
<b>BIOCHEMISTRY</b>									
14879-1	Phosphate (Inorganic Phosphate)	mmol/L	Blood (Serum)	M/F	≥ 4 Years	< 15 Years	0.90	2.00	
				M/F	≥ 15 Years	< 18 Years	0.80	1.85	
				M/F	≥ 18 Years	< 20 Years	0.75	1.65	
				M/F	≥ 20 Years	-	0.75	1.50	
2823-3	Potassium (K <sup>+</sup> )	mmol/L	Blood (Serum)	M/F	≥ 0 Days	< 1 Week	3.8	6.5	
				M/F	≥ 1 Week	< 6 Months	4.2	6.7	
				M/F	≥ 6 Months	< 2 Years	3.9	5.6	
				M/F	≥ 2 Years	< 18 Years	3.6	5.3	
				M/F	≥ 18 Years	-	3.5	5.2	
2857-1	Prostate Specific Antigen (PSA)	µg/L	Blood (Serum)	M	≥ 0 Years	< 50 Years	-	2.5	
				M	≥ 50 Years	< 60 Years	-	3.5	
				M	≥ 60 Years	< 65 Years	-	4.5	
				M	≥ 65 Years	< 70 Years	-	5.5	
				M	≥ 70 Years	-	-	6.5	
2885-2	Total Protein	g/L	Blood (Serum)	M/F	≥ 0 Days	≤ 6 Days	46	70	
				M/F	≥ 1 Week	< 7 Months	44	76	
				M/F	≥ 7 Months	< 1 Year	51	73	
				M/F	≥ 1 Year	< 2 Years	56	75	
				M/F	≥ 2 Years	-	60	80	
2888-6	Total Protein	g/L	Spot Urine	Reference intervals are not available for this analyte. Refer to Albumin Creatinine Ratio					
2889-4	Total Protein Excretion	g/Day	24 Hour Urine	M/F	≥ 0 Years	-	-	0.15	
2880-3	Total Protein	g/L	CSF	M/F	≥ 0 Days	< 6 Days	0.40	1.20	
				M/F	≥ 7 Days	< 1 Month	0.20	0.80	
				M/F	≥ 1 Month	< 1 Year	0.15	0.40	
				M/F	≥ 1 Year	-	0.15	0.40	
34366-5	Protein : Creatinine Ratio	mg/mmol	Spot Urine	M/F	≥ 0 Years	-	-	30.00	
34366-5	Protein : Creatinine Ratio	mg/mmol	24 Hour Urine	M/F	≥ 0 Years	-	-	30	
2951-2	Sodium (Na <sup>+</sup> )	mmol/L	Blood (Serum)	M/F	≥ 0 Days	< 1 Week	132	147	
				M/F	≥ 1 Week	< 18 Years	133	144	
				M/F	≥ 18 Years	-	135	145	
11579-0	Thyroid Stimulating Hormone (TSH) (Thyrotropin)	mU/L	Blood (Serum)	M/F	≥ 4 Days	< 6 Months	0.73	4.77	
				M/F	≥ 6 Months	< 1 Year	0.70	4.17	
				M/F	≥ 1 Year	14 Years	0.70	4.17	
				M/F	14 Years	18 Years	0.47	3.41	
				M/F	> 18 Years	-	0.40	4.90	
14920-3	Free Thyroxine (FT4)	pmol/L	Blood (Serum)	M/F	≥ 0 Years	-	9	19	
14928-6	Free Tri-iodothyronine (FT3)	pmol/L	Blood (Serum)	M/F	≥ 0 Years	-	2.4	6.0	
3034-6	Transferrin	g/L	Blood (Serum)	M/F	≥ 0 Years	< 14 Years	1.86	3.88	
				M	≥ 14 Years	< 60 Years	1.74	3.64	

LOINC CODE	ANALYTE	UNIT	SPECIMEN TYPE	SEX AT BIRTH	LOWER AGE	UPPER AGE	LOWER REFERENCE INTERVAL	UPPER REFERENCE INTERVAL	NOTES
<b>BIOCHEMISTRY</b>									
3034-6	Transferrin	g/L	Blood (Serum)	M	≥ 60 Years	-	1.63	3.44	
				F	≥ 14 Years	< 60 Years	1.80	3.82	
				F	≥ 60 Years	-	1.73	3.60	
14801-5	Transferrin Saturation	%	Blood (Serum)	M/F	≥ 0 Years	-	15	45	
89579-7	Troponin I (High Sensitivity)	ng/L	Blood (Serum)	M	≥ 0 Years	-	-	26	
				F	≥ 0 Years	-	-	16	
-	Troponin T	-	Not performed at Austin Health Pathology. See "Troponin I (High Sensitivity)"						
22664-7	Urea	mmol/L	Blood (Serum)	M/F	≥ 0 Years	< 3 Years	1.8	6	NB: Austin Health Pathology does not perform Blood Urea Nitrogen.
				M/F	≥ 3 Years	< 13 Years	2.5	6	
				M/F	≥ 13 Years	< 19 Years	3	7.5	
				M	≥ 19 Years	< 50 Years	3.2	7.4	
				M	≥ 50 Years	-	3	9.2	
				F	≥ 19 Years	< 50 Years	2.50	6.70	
				F	≥ 50 Years	-	3.50	7.20	
14933-6	Uric Acid	mmol/L	Blood (Serum)	M/F	≥ 0 Days	≤ 2 Weeks	0.17	0.75	
				M/F	≥ 15 Days	< 1 Year	0.09	0.37	
				M/F	≥ 1 Year	< 3 Years	0.11	0.29	
				M/F	≥ 3 Years	< 5 Years	0.12	0.29	
				M/F	≥ 5 Years	< 9 Years	0.11	0.30	
				M/F	≥ 9 Years	< 11 Years	0.14	0.32	
				M/F	≥ 11 Years	< 13 Years	0.15	0.34	
				M	≥ 13 Years	-	0.22	0.45	
14685-2	Vitamin B12	pmol/L	Blood (Serum)	M/F	≥ 0 Years	-	138	652	
33958-0	Vitamin D (25OH)	nmol/L	Blood (Serum)	M/F	≥ 0 Years	-	75	-	

LOINC CODE	ANALYTE	UNIT	SPECIMEN TYPE	SEX AT BIRTH	LOWER AGE	UPPER AGE	LOWER REFERENCE INTERVAL	UPPER REFERENCE INTERVAL	NOTES
<b>BIOCHEMISTRY - BLOOD GAS ANALYSIS</b>									
73578-7	Anion Gap - Venous	mmol/L	Venous Blood Gas	M/F	≥ 0 Years	-	8	16	Results obtained from Venous Blood Gas samples should not be compared with results produced by a different testing methodology.
1927-3	Base Excess - Venous	mmol/L	Venous Blood Gas	M/F	≥ 0 Years	-	-3	3	
14627-4	Bicarbonate (HCO3-) - Venous	mmol/L	Venous Blood Gas	M/F	≥ 0 Years	-	22	28	
89871-8	Bilirubin - Venous	µmol/L	Venous Blood Gas	M/F	≥ 0 Days	< 4 Weeks	-	125	
				M/F	≥ 4 Weeks	-	-	18	
41645-3	Calcium Ionised - Venous	mmol/L	Venous Blood Gas	M/F	≥ 0 Years	-	1.15	1.30	Arterial Blood Gas ranges are not listed in this document.
2032-1	Carboxyhaemoglobin - Venous	%	Venous Blood Gas	M/F	≥ 0 Years	-	0.5	1.5	
41649-5	Chloride - Venous	mmol/L	Venous Blood Gas	M/F	≥ 0 Years	-	95	110	
101475-2	Creatinine - Venous	µmol/L	Venous Blood Gas	M/F	≥ 0 Years	-	53	115	

LOINC CODE	ANALYTE	UNIT	SPECIMEN TYPE	SEX AT BIRTH	LOWER AGE	UPPER AGE	LOWER REFERENCE INTERVAL	UPPER REFERENCE INTERVAL	NOTES
<b>BIOCHEMISTRY - BLOOD GAS ANALYSIS</b>									
62238-1	eGFR - Venous	mL/min/1.73 m <sup>2</sup>	Venous Blood Gas	M/F	≥ 0 Years	-	90	-	Results obtained from Venous Blood Gas samples should not be compared with results produced by a different testing methodology.
39480-9	Random Glucose - Venous	mmol/L	Venous Blood Gas	M/F	≥ 0 Years	-	3.6	7.7	
30350-3	Total Haemoglobin - Venous	g/L	Venous Blood Gas	M/F	≥ 0 Years	-	120	180	
2617-9	Methaemoglobin - Venous	%	Venous Blood Gas	M/F	≥ 0 Years	-	-	1.5	
2716-9	Oxy-Haemoglobin (OxyHb) - Venous	%	Venous Blood Gas	M/F	≥ 0 Years	-	94	97	
19227-8	Reduced Haemoglobin (deoxyhaemoglobin) - Venous	%	Venous Blood Gas	M/F	≥ 0 Years	-	-	5.0	
32693-4	Lactate - Venous	mmol/L	Venous Blood Gas	M/F	≥ 0 Years	-	0.4	2.0	
2711-0	O2 Saturation - Venous	%	Venous Blood Gas	M/F	≥ 0 Years	-	95	100	
2746-6	pH (Power of Hydrogen) - Venous	-	Venous Blood Gas	M/F	≥ 0 Years	-	7.35	7.45	
2021-4	pCO2 - Venous	mmHg	Venous Blood Gas	M/F	≥ 0 Years	-	35	45	
2705-2	pO2 - Venous	mmHg	Venous Blood Gas	M/F	≥ 0 Years	-	75	105	
39789-3	Potassium - Venous	mmol/L	Venous Blood Gas	M/F	≥ 0 Years	-	3.5	5.5	Arterial Blood Gas ranges are not listed in this document.
39791-9	Sodium - Venous	mmol/L	Venous Blood Gas	M/F	≥ 0 Years	-	135	145	

LOINC CODE	ANALYTE	UNIT	SPECIMEN TYPE	SEX AT BIRTH	LOWER AGE	UPPER AGE	LOWER REFERENCE INTERVAL	UPPER REFERENCE INTERVAL	NOTES
<b>HORMONES</b>									
14674-6	Adrenocorticotrophic Hormone (ACTH)	ng/L	Blood (Plasma)	M/F	≥ 0 Years	-	7.2	63.3	Aldosterone, plasma renin concentration and their ratio (ARR) should be interpreted in the context of medications and electrolyte status.
92826-7	Renin	Supine	Blood (Plasma)	M/F	≥ 0 Years	-	2.8	39.9	
92825-9									
15011-0	Aldosterone	Supine	Blood (Plasma)	M/F	≥ 0 Years	-	-	654	
15012-8		Upright							
30894-0	Aldosterone Renin Ratio	%	Blood (Plasma)	M/F	≥ 0 Years	-	-	70	
14633-2	C-Peptide	nmol/L	Blood (Serum)	M/F	≥ 0 Years	-	0.26	1.73	
14675-3	Cortisol	nmol/L	Blood (Serum)	M/F	≥ 0 Years	-	102	477	Early morning collection (6am - 10 am)
15067-2	Follicle Stimulating Hormone (FSH)	IU/L	Blood (Serum)	F	Mid-Follicular		3.03	8.08	
				F	Mid-Cycle Peak		2.55	16.69	
				F	Mid-Luteal		1.38	5.47	
				F	Post-Menopausal		26.72	133.41	
				M	≥ 18 Years	-	0.95	11.95	
20448-7	Insulin	mU/L	Blood (Serum)	M/F	≥ 0 Years	-	1.9	23	
10501-5	Luteinizing Hormone (LH)	IU/L	Blood (Serum)	F	Mid-Follicular		1.80	11.78	
				F	Mid-Cycle Peak		7.59	89.08	
				F	Mid-Luteal		0.56	14.00	
				F	Post-Menopausal		5.16	61.99	
				M	≥ 18 Years	-	0.57	12.07	

LOINC CODE	ANALYTE	UNIT	SPECIMEN TYPE	SEX AT BIRTH	LOWER AGE	UPPER AGE	LOWER REFERENCE INTERVAL	UPPER REFERENCE INTERVAL	NOTES
<b>HORMONES</b>									
14866-8	Parathyroid Hormone (PTH)	pmol/L	Blood (Plasma)	M/F	≥ 0 Years	-	1.6	7.0	
14890-8	Progesterone (P4)	nmol/L	Blood (Serum)	F	Mid-Follicular		0.32	0.95	
				F	Mid-Cycle Peak		-	-	
				F	Mid-Luteal		3.82	50.56	
				F	Post-Menopausal		0.32	0.64	
				M	≥ 18 Years	-	0.32	0.64	
20434-7	Prolactin	mIU/L	Blood (Serum)	M/F	≥ 0 Years	< 1 Year	115.00	1342.00	
				M/F	≥ 1 Year	< 18 Years	72.00	592.00	
				M	≥ 18 Years	-	73	407	
				F	≥ 18 Years	-	109	557	
14715-7	Oestradiol (E2)	pmol/L	Blood (Serum)	F	Mid-Follicular		77.10	921.51	
				F	Mid-Cycle Peak		139.51	2382.70	
				F	Mid-Luteal		77.10	1145.46	
				F	Post-Menopausal		36.71	102.80	
				M	≥ 18 Years	-	40.38	161.54	
13967-5	Sex Hormone Binding Globulin (SHBG)	nmol/L	Blood (Serum)	M	≥ 15 Years	< 19 Years	10	50	
				M	≥ 19 Years	-	11	78	
				F	≥ 15 Years	< 17 Years	10	84	
				F	≥ 17 Years	< 19 Years	11	155	
				F	≥ 19 Years	-	12	137	
14913-8	Testosterone (Total)	nmol/L	Blood (Serum)	M	≥ 0 Months	< 6 Months	0.30	10.4	
				M	≥ 6 Months	< 9 Years	-	1.2	
				M	≥ 9 Years	< 11 Years	-	0.8	
				M	≥ 11 Years	< 14 Years	-	15.4	
				M	≥ 14 Years	< 16 Years	1.3	21.9	
				M	≥ 16 Years	< 19 Years	5.1	27.6	
				M	≥ 19 Years	< 50 Years	8.3	30.2	
				M	≥ 50 Years	-	7.7	24.8	
				F	≥ 0 Years	< 9 Years	-	2.2	
				F	≥ 9 Years	< 13 Years	-	1.0	
				F	≥ 13 Years	< 15 Years	0.4	1.5	
				F	≥ 15 Years	< 19 Years	0.5	1.7	
				F	≥ 19 Years	< 50 Years	0.5	1.9	
				F	≥ 50 Years	-	0.4	1.2	

LOINC CODE	ANALYTE	UNIT	SPECIMEN TYPE	SEX AT BIRTH	LOWER AGE	UPPER AGE	LOWER REFERENCE INTERVAL	UPPER REFERENCE INTERVAL	NOTES
<b>INFECTIOUS SEROLOGY &amp; MOLECULAR</b>									
58900-2	HIV 1, 2 Serology	-	Blood (Serum)	M/F	≥ 0 Years	-	Negative		(Ag-Ab Combo Test)
16128-1	Hepatitis C Antibody	-	Blood (Serum)	M/F	≥ 0 Years	-	Negative		
5195-3	Hepatitis B Surface Antigen	-	Blood (Serum)	M/F	≥ 0 Years	-	Negative		
16933-4	Hepatitis B Core Antibody (Total)	-	Blood (Serum)	M/F	≥ 0 Years	-	Negative		
31204-1	Hepatitis B Core IgM Antibody	-	Blood (Serum)	M/F	≥ 0 Years	-	Not Detected		
32019-2	Hepatitis B Surface Antibody	IU/mL	Blood (Serum)	M/F	≥ 0 Years	-	10	-	A result greater than 10 is defined as a protective level of antibody.
29615-2	Hepatitis B Viral Load (PCR)	RT-PCR	Blood (Plasma)	M/F	≥ 0 Years	-	Not Detected		
		Load (IU/mL)		M/F	≥ 0 Years	-	-	0	
		Log10 (IU/mL)		M/F	≥ 0 Years	-	-	0	
11011-4	Hepatitis C Viral Load (PCR)	RT-PCR	Blood (Plasma)	M/F	≥ 0 Years	-	Not Detected		
		Load (IU/mL)		M/F	≥ 0 Years	-	-	0	
		Log10 (IU/mL)		M/F	≥ 0 Years	-	-	0	
20447-9	HIV-1 Viral Load	RT-PCR	Blood (Plasma)	M/F	≥ 0 Years	-	Not Detected		For in-house reported results. For results from referred laboratories, refer to the reference interval on the report.
		Load (copies)		M/F	≥ 0 Years	-	-	0	
		Log10 (copies)		M/F	≥ 0 Years	-	-	0	

LOINC CODE	ANALYTE	UNIT	SPECIMEN TYPE	SEX AT BIRTH	LOWER AGE	UPPER AGE	LOWER REFERENCE INTERVAL	UPPER REFERENCE INTERVAL	NOTES
<b>MICROBIOLOGY</b>									
50555-2	Glucose - Urine Dipstick	-	Urine	M/F	≥ 0 Years	-	Negative		
20454-5	Protein - Urine Dipstick	-	Urine	M/F	≥ 0 Years	-	Negative		
5803-2	pH - Urine Dipstick	-	Urine	M/F	≥ 0 Years	-	5.0	8.5	
5811-5	Specific Gravity - Urine Dipstick	Ratio	Urine	M/F	≥ 0 Years	-	1.005	1.030	
5799-2	Leucocyte Esterases - Urine Dipstick	-	Urine	M/F	≥ 0 Years	-	Negative		
2514-8	Ketones - Urine Dipstick	-	Urine	M/F	≥ 0 Years	-	Negative		
5802-4	Nitrites - Urine Dipstick	-	Urine	M/F	≥ 0 Years	-	Negative		
5770-3	Bilirubin - Urine Dipstick	-	Urine	M/F	≥ 0 Years	-	Negative		
50041-3	Urobilinogen - Urine Dipstick	µmol/L	Urine	M/F	≥ 0 Years	-	3.2	16.0	
5794-3	Blood/Hb - Urine Dipstick	-	Urine	M/F	≥ 0 Years	-	Negative		
46702-7	Leucocytes - Urine Microscopy	10 <sup>6</sup> /L	Urine	M/F	≥ 0 Years	-	-	10	
46419-8	Erythrocytes - Urine Microscopy	10 <sup>6</sup> /L	Urine	M/F	≥ 0 Years	-	-	13	
33219-7	Epithelial (Squamous) Cells - Urine Microscopy	-	Urine	M/F	No reference interval exists for Epithelial / Squamous cells within a First Pass or Mid-Stream urine collection. The presence of these cells is not considered pathogenic and as such no 'abnormal' range is defined. The presence of epithelial cells can be used as an indicator of sample quality.				
87827-2	Pathological Casts (Excluding Hyaline Casts) - Urine Microscopy	-	Urine	M/F	≥ 0 Years	-	Negative		The presence of any cast EXCEPT Hyaline Casts, is considered abnormal.

LOINC CODE	ANALYTE	UNIT	SPECIMEN TYPE	SEX AT BIRTH	LOWER AGE	UPPER AGE	LOWER REFERENCE INTERVAL	UPPER REFERENCE INTERVAL	NOTES
<b>MICROBIOLOGY</b>									
58433-4	Crystals - Urine Microscopy	-	Urine	M/F	≥ 0 Years	-	Negative		Presence of crystals will be noted, and if known differentiated into the type of crystal (e.g. Uric Acid, Calcium Oxalate).
104648-1	Yeast - Urine Microscopy	-	Urine	M/F	≥ 0 Years	-	Negative		The presence of yeast in urine is considered abnormal but may not be pathogenic. Interpret with clinical findings.
104865-1	Bacteria - Urine Microscopy	-	Urine	M/F	≥ 0 Years	-	Negative		Excluding contamination, the presence of bacteria in urine is considered abnormal.
806-0	Leucocytes - CSF Microscopy (Manual)	10 <sup>6</sup> /L	CSF	M/F	≥ 0 Years	≤28 Days	-	25	A traumatic lumbar puncture may affect results. A result of 5 and above will result in a manual 2 part differential.
					> 28 Days	-	-	5	
792-2	Erythrocytes - CSF Microscopy (Manual)	10 <sup>6</sup> /L	CSF	M/F	≥ 0 Years	-	Negative		The presence of any erythrocytes within CSF should be considered abnormal, with consideration to the lumbar puncture and any collection associated trauma (e.g. Traumatic tap).

LOINC CODE	ANALYTE	UNIT	SPECIMEN TYPE	SEX AT BIRTH	LOWER AGE	UPPER AGE	LOWER REFERENCE INTERVAL	UPPER REFERENCE INTERVAL	NOTES
<b>IMMUNOLOGY</b>									
2865-4	Alpha 1 Globulin - Electrophoresis	g/L	Blood (Serum)	M/F	≥ 0 Years	-	2.1	3.5	
2868-8	Alpha 2 Globulin - Electrophoresis	g/L	Blood (Serum)	M/F	≥ 0 Years	-	5.1	8.5	
32730-4	Beta 1 Globulin - Electrophoresis	g/L	Blood (Serum)	M/F	≥ 0 Years	-	3.4	5.2	
32731-2	Beta 2 Globulin - Electrophoresis	g/L	Blood (Serum)	M/F	≥ 0 Years	-	2.3	4.7	
2874-6	Gamma Globulin - Electrophoresis	g/L	Blood (Serum)	M/F	≥ 0 Years	-	8.0	13.5	
-	Paraproteins (Any Type) - Electrophoresis	g/L	Blood (Serum)	M/F	≥ 0 Years	-	Negative		
36916-5	Kappa Free LC	mg/L	Blood (Serum)	M/F	≥ 0 Years	-	3.3	19.4	
33944-0	Lambda Free LC	mg/L	Blood (Serum)	M/F	≥ 0 Years	-	5.7	26.3	
48378-4	Kappa Lambda Ratio	Ratio	Blood (Serum)	M/F	≥ 0 Years	-	0.26	1.65	
19113-0	Immunoglobulin E (IgE)	kU/L	Blood (Serum)	M/F	≥ 0 Weeks	< 6 Weeks	-	9.0	
				M/F	≥ 6 Weeks	< 3 Months	-	9.0	
				M/F	≥ 3 Months	< 6 Months	-	30.0	
				M/F	≥ 6 Months	< 9 Months	-	38.0	
				M/F	≥ 9 Months	< 1 Year	-	53.0	
				M/F	≥ 1 Year	< 2 Years	-	93.00	
				M/F	≥ 2 Years	< 3 Years	-	320.0	
				M/F	≥ 3 Years	< 4 Years	-	160.00	
				M/F	≥ 4 Years	< 5 Years	-	192.0	
M/F	≥ 5 Years	< 6 Years	-	224.0					
M/F	≥ 6 Years	< 7 years	-	256.0					

LOINC CODE	ANALYTE	UNIT	SPECIMEN TYPE	SEX AT BIRTH	LOWER AGE	UPPER AGE	LOWER REFERENCE INTERVAL	UPPER REFERENCE INTERVAL	NOTES
<b>IMMUNOLOGY</b>									
19113-0	Immunoglobulin E (IgE)	kU/L	Blood (Serum)	M/F	≥ 7 Years	< 8 Years	-	280.0	
				M/F	≥ 8 Years	< 9 Years	-	304.0	
				M/F	≥ 9 Years	< 10 Years	-	328.0	
				M/F	≥ 10 Years	< 14 Years	-	198.0	
				M/F	≥ 14 Years	< 18 Years	-	198.0	
				M/F	≥ 18 Years	-	-	114	
-	Immunoglobulin D (IgD)	-	This is a referred test. Please refer to the reference range supplied on the report.						
40661-1	Urinary Bence Jones Protein/Free Light Chain	-	Urine	M/F	≥ 0 Years	-	Negative		The presence of any Bence Jones Protein or free light chain is abnormal in urine.
40661-1	Urine Protein - Paraprotein Band 1 - Electrophoresis	g/L	Urine	M/F	≥ 0 Years	-	Negative		
51437-2	Urine Protein - Paraprotein Band 2 - Electrophoresis	g/L	Urine	M/F	≥ 0 Years	-	Negative		
51440-6	Urine Protein - Paraprotein Band 3 - Electrophoresis	g/L	Urine	M/F	≥ 0 Years	-	Negative		
6928-6	Rheumatoid Factor	IU/mL	Blood (Serum)	M/F	≥ 0 Years	-	-	30	
32218-0	Anti Cyclic Citrullinated Peptide (CCP) Antibodies	U/mL	Blood (Serum)	M/F	≥ 0 Years	-	-	5.1	
42254-3	Anti-Nuclear Antibodies (ANA)	Titre	Blood (Serum)	M/F	≥ 18 Years	-	-	80	The presence of any ANA is considered abnormal.
14277-8	Anti-Nuclear Cytoplasmic Antibodies (ANCA)	Titre	Blood (Serum)	M/F	≥ 0 Years	-	-	20	The presence of any ANCA is considered abnormal.
21582-2	Tryptase	µg/L	Blood (Serum)	M/F	≥ 0 Years	-	-	11.0	










# Clinical Trial Reference Ranges - Austin Pathology (Harmonised)\_May2026

Final Audit Report

2026-05-14

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