

Test	Gender	Age	Ref Interval	Units
AFP	All	All	0 – 15	µg/L
Albumin	All	< 3 M	25 – 40	g/L
		3 – 12 M	32 – 45	
		1 – 70 Y	34 – 48	
		> 70 Y	32 – 46	
Alk Phos	F	0 – 5 M	80 – 600	U/L
		6 M – 9 Y	80 – 450	
		10 – 12 Y	45 – 460	
		13 – 14 Y	45 – 300	
		15 – 21 Y	45 – 150	
		22 – 49 Y	45 – 110	
		50 – 59 Y	40 – 120	
	≥ 60 Y	40 – 130		
	M	0 – 5 M	80 – 600	
		6 M – 9 Y	80 – 450	
		10 Y – 14 Y	45 – 500	
		15 – 16 Y	45 – 380	
		17 – 18 Y	45 – 220	
		19 – 21 Y	45 – 150	
22 – 49 Y		40 – 110		
50 – 59 Y	40 – 120			
≥ 60 Y	40 – 130			
ALT	All	All	0 – 55	U/L
Ammonia	All	All	11 – 35	µmol/L
Amylase	All	All	0 – 100	U/L
Anion Gap	All	All	10 – 20	mmol/L
AST	All	0 – 2 Y	0 – 90	U/L
		2 – 10 Y	0 – 70	
		> 10 Y	0 – 50	
B12	All	All	110 – 650	pmol/L
Beta-HCG	F	Non-pregnant	0 – 5	IU/L
		F Pregnant (Gestational Age):		
		0.5 – < 1 W	5 – 50	
		1 – 2 W	50 – 500	
		3 – 5 W	500 – 50,000	
		6 – 8 W	10,000 – 200,000	
2 – 3 M	10,000 – 100,000			

Test	Gender	Age	Ref Interval	Units	
Bicarbonate	All	All	21 – 28	mmol/L	
Bilirubin Direct	All	All	0 – 5	µmol/L	
Bilirubin Total	All	< 1 D	0 – 150	µmol/L	
		1 – 2 D	0 – 200		
		3 D	0 – 250		
		4 – 6 D	0 – 300		
		7 – 21 D	0 – 100		
		3 – < 4 W	0 – 50		
		4 W – 16 Y	0 – 25		
		> 16 Y	0 – 20		
BNP	All	All	0 – 100	ng/L	
CA 125	All	All	0 – 35	kU/L	
CA 15-3	All	All	0 – 30	kU/L	
CA 19-9	All	All	0 – 37	kU/L	
Calcium (adjusted)	All	All	2.10 – 2.55	mmol/L	
Carbamazepine	All	All	17 – 51	µmol/L	
CEA	All	Non-smoker	0 – 3	µg/L	
	All	Smoker	0 – 5		
Chloride	All	All	98 – 110	mmol/L	
Cholesterol/HDL ratio	All	All	0 – 4.5		
Cholesterol	No reference intervals given.			mmol/L	
CK	All	All	0 – 220	U/L	
Cortisol	All	AM	170 – 500	nmol/L	
	All	PM	No reference intervals given		
Creatinine	All	0 – 7 D	0 – 95	µmol/L	
		1 – < 4 W	0 – 50		
		4 W – < 2 Y	0 – 40		
		2 – 5 Y	0 – 50		
		6 – 11 Y	0 – 65		
		12 – 15 Y	0 – 80		
		F	> 15 Y		45 – 90
		M	> 15 Y		60 – 105
CRP	All	All	0 – 8	mg/L	
DHEAS	All	0 – 14 D	3.3 – > 27	µmol/L	
		15 D – 5 M	0.06 – 8.71		
		6 M – 11 M	0.07 – 1.24		
		1 – 5 Y	0 – 1.01		

Test	Gender	Age	Ref Interval	Units
		6 – 8 Y	0.13 – 2.55	
	F	9 – 12 Y	0.43 – 5.62	
		13 – 15 Y	1.03 – 9.13	
		16 – 17 Y	1.97 – 16.1	
		18 – 20 Y	1.38 – 8.70	
		21 – 30 Y	0.49 – 10.60	
		31 – 40 Y	0.62 – 7.20	
		41 – 50 Y	0.51 – 6.20	
		51 – 60 Y	0.22 – 5.10	
		61 – 70 Y	0.32 – 3.60	
		> 70 Y	0.19 – 4.80	
	M	9 – 12 Y	0.43 – 5.62	
		13 – 15 Y	1.79 – 11.3	
		16 – 17 Y	3.06 – 16.6	
		18 – 20 Y	0.65 – 14.50	
		21 – 30 Y	2.30 – 18.60	
		31 – 40 Y	2.90 – 12.50	
		41 – 50 Y	1.90 – 13.30	
		51 – 60 Y	1.00 – 8.50	
		61 – 70 Y	0.65 – 6.60	
		> 70 Y	0.14 – 6.80	
Digoxin	All	All	0.6 – 2.0	nmol/L
Ethanol	All	All	N/A	mmol/l
eGFR	All	< 18 Y	N/A	mL/min
		> 18 Y	> 60	
FAI (Free Androgen Index)	F	All	0 – 16	NA
Ferritin	All	< 4 M	15 – 400	µg/L
		4 – 12 M	15 – 80	
		1 – 19 Y	15 – 150	
	F	20 – 29 Y	20 – 170	
		30 – 40 Y	20 – 190	
		> 40 Y	20 – 380	
	M	20 – 29 Y	20 – 320	
		30 – 40 Y	20 – 400	
		> 40 Y	20 – 450	
FIB-4	Refer to https://tests.pathlab.co.nz/tests/fib-4-index/			
Folate	All	All	7 – 45	nmol/L

Test	Gender	Age	Ref Interval	Units		
Free Kappa	All	All	3.3 – 19.4	mg/L		
Free Lambda	All	All	5.7 – 26.3	mg/L		
Kappa/Lambda Ratio	All	All	0.26 – 1.65			
FSH	F	0 – 1 Y	0 – 16	U/L		
		1 – < 9 Y	0.6 – 6.4			
		9 – < 12 Y	0.9 – 7.8			
		12 – < 16 Y	0.6 – 10			
		F ≥ 16 Y post-menarche:				
		Follicular	3 – 10			
		Mid-cycle	4 – 25			
		Luteal	2 – 8			
		Post-menopausal	> 20			
		Pregnant	0 – 1			

		M	0 – 1 y		0 – 4	
		1 – < 9 y	0 – 2.4			
9 – < 12 y	0.6 – 5					
≥ 12 Y	1.3 – 7					
Post-pubertal	2 – 9					
≥ 16 Y post-pubertal	2 – 9					
FT3	All	0 – 6 D	2.6 – 9.7	pmol/L		
		7 D – 6 Y	3.0 – 10.0			
		7 – 19 Y	3.5 – 8.0			
		> 19 Y	3.9 – 6.8			
FT4	All	4 – 7 D	12 – 27	pmol/L		
		1 – 4 W	11 – 22			
		1 M – 1 Y	10 – 20			
		> 1 Y	7 – 16			

		F Pregnant				
		1 st trimester	6 – 16			
		2 nd trimester	5 – 14			
3 rd trimester	5 – 14					
Gentamicin	All	All	N/A	mg/L		
GGT	F	All	0 – 50	U/L		
	M	All	0 – 60			
Globulins	All	All	27 – 43	g/L		
Glucose	All	Fasting	3.5 – 5.4	mmol/L		
	All	Random	3.0 – 7.8			

Test	Gender	Age	Ref Interval	Units
HbA1c	All	All	0 – 41	mmol/mol
HCG Tumour Marker	F	Non-pregnant	0 – 5	U/L
	M	All	0 – 3	
HDL Cholesterol	No reference intervals given.			mol/L
IgA	All	< 1 Y	0 – 0.4	g/L
		1 – 2 Y	0 – 1.1	
		3 – 5 Y	0 – 1.7	
		6 – 13 Y	0.3 – 2.4	
		14 – 18 Y	0.4 – 3.1	
		> 18	0.8 – 4.0	
IgE	All	All	0 – 100	kU/L
IgG	All	< 2 W	3.0 – 13.7	g/L
		2 – < 6 W	1.2 – 6.0	
		6 W – < 6 M	1.2 – 7.0	
		6 – 12 M	3.0 – 10.5	
		1 – 3 Y	3.0 – 11.2	
		4 – 9 Y	5.0 – 13.3	
		10 – 18 Y	6.0 – 15.0	
		19 – 70 Y	7.0 – 16.0	
		> 70 Y	6.0 – 15.0	
IgM	All	< 2 W	0 – 0.5	g/L
		2 – 12 W	0.1 – 0.7	
		13 W – < 1 Y	0.1 – 0.9	
		1 – 18 Y	0.4 – 1.8	
		19 – 70 Y	0.4 – 2.5	
		> 70 Y	0.4 – 2.4	
Iron	All	< 2 M	10 – 31	µmol/L
		2 M – < 1 Y	4 – 27	
		1 – 2 Y	5 – 23	
		3 – 9 Y	6 – 25	
		10 – 18 Y	8 – 32	
		> 18 Y	10 – 30	
Iron Saturation	All	All	20 – 50	%
LDH	F	All	120 – 230	U/L
	M	All	120 – 250	
LDL Cholesterol	All	All	0 – 3.4	mmol/L
LH	F	0 – 1 Y	Not given	U/L

Test	Gender	Age	Ref Interval	Units
		F 1 – 16 Y post-menarche:		
		Follicular	2 – 8	
		Mid-cycle	10 – 75	
		Luteal	2 – 8	
		Post-menopausal	> 15	
		Pregnant	0 – 1	
		F ≥ 16:		
		Follicular	2 – 8	
		Mid-cycle	10 – 75	
		Luteal	2 – 8	
		Post-menopausal	> 15	
		Pregnant	0 – 1	

	M	0 – 1 Y	Not given	
		1 – 16 Y post-pubertal	2 – 9	
		> 16 Y	2 – 9	
Lipase	All	All	10 – 70	U/L
Lithium	All	12-hour trough	0.6 – 0.8	mmol/L
		Acute mania	0.8 – 1.2	
		Elderly	0.4 – 0.6	
		Potentially toxic	≥ 1.2	
Magnesium	All	All	0.7 – 1.0	mmol/L
Oestradiol	F	Follicular	0 – 921	pmol/L
		Pre-ovulation	0 – 2,511	
		Luteal	0 – 1,207	
		Post-menopausal	0 – 200	
		Oral Contraceptive	0 – 200	
		Pregnancy	up to 99,000	

	M	All	0 – 200	
Osmolality	All	All	280 – 300	mOsm/Kg
Paracetamol	All	Consult Nomogram		µmol/L
Phenytoin	All	All	40 – 80	µmol/L
Phosphate	All	< 1 Y	1.00 – 2.50	mmol/L
		1 – 6 Y	1.00 – 2.00	
		7 – 11 Y	1.00 – 1.85	
		12 – 16 Y	0.90 – 1.80	
		> 16 Y	0.70 – 1.50	
Potassium	All	All	3.5 – 5.2	mmol/L

Test	Gender	Age	Ref Interval	Units
Progesterone	F	Follicular/Luteal	0 – 5	nmol/L
		Mid-cycle	10 – 90	
		Post-menopausal	0 – 3	
		Oral Contraceptive	0 – 1	
		Ovulation unlikely	0 – 6	
		Ovulation possible	7 – 25	
		Ovulation likely	> 25	
	M	All	0 – 2	
Prolactin	F	All	60 – 620	mU/L
	M	All	45 – 375	mU/L
PSA	M	< 40	0 – 2	µg/L
		40 – 49	0 – 2.5	
		50 – 59	0 – 3.5	
		60 – 69	0 – 4.0	
		70 – 80	0 – 6.5	
		> 80	0 – 7.0	
RF	All	All	0 – 25	IU/mL
Salicylate	All	All	N/A	mmol/L
SHBG	F	0 – 46 Y	18.2 – 135.5	nmol/L
		> 47 Y	16.8 – 125.2	
		M	All	
Sodium	All	All	135 – 145	mmol/L
Testosterone	F	All	0 – 3	nmol/L
	M	All	9 – 30	
Theophylline	All	All	55 – 110	µmol/L
Tobramycin	All	All	0 – 2	ug/mL
Total Protein	All	0 – 5 M	42 – 68	g/L
		6 M – < 1 Y	48 – 71	
		1 – 2 Y	53 – 73	
		> 2 Y	62 – 83	
Transferrin	All	All	2.00 – 3.60	g/L
Triglyceride	No reference intervals given.			mmol/L
High Sensitivity Troponin-I	F	All	0 – 10	ng/L
	M	All	0 – 20	
TSH	All	All	0.3 – 5.0	mU/L
		F Pregnant		
		1 st trimester	0.05 – 3.7	

Test	Gender	Age	Ref Interval	Units
		2 nd trimester	0.3 – 4.3	
		3 rd trimester	0.4 – 5.2	
Urea	All	< 1 M	1.0 – 4.0	mmol/L
		1 M – < 1 Y	1.4 – 5.4	
		1 – 4 Y	1.8 – 5.4	
		> 4 Y	2.9 – 7.7	
Uric Acid	All	< 1 Y	0.08 – 0.37	mmol/L
		1 – 4 Y	0.10 – 0.30	
	F	5 – 13 Y	0.13 – 0.33	
		> 13 Y	0.16 – 0.42	
	M	5 – 10 Y	0.13 – 0.33	
		> 10 Y	0.23 – 0.42	
Valproate	All	All	345 – 690	µmol/L
Vancomycin	All	All	Nil	mg/L

Urine Reference Intervals

Amylase (24-hour)	All	All	0 – 500	U/d
Calcium (24-hour)	All	All	2.5 – 7.5	mmol/d
Creatinine (24-hour)	All	All	7 – 18	mmol/d
Magnesium (24-hour)	All	All	2.5 – 8.0	mmol/d
Microalbumin	All	All	0 – 20	mg/L
Microalb/Crea Ratio (ACR)	All	All	0 – 2.5	mg/mmol
Osmolality	All	All	50 – 1,200	mOsm/Kg
Phosphate (24-hour)	All	All	10 – 40	mmol/d
Potassium (24-hour)	All	All	25 – 100	mmol/d
Protein (24-hour)	All	All	0 – 0.15	g/d
Protein/Crea Ratio (PCR)	All	All	0 – 10.9	mg/mmol
Sodium (24-hour)	All	All	50 – 220	mmol/d
Urea (24-hour)	All	All	420 – 720	mmol/d
Uric Acid (random)	All	< 6 M	0 – 1.5	mol/mol Crea
		> 6 M	0 – 0.6	
Uric Acid (24-hour)	F	Adult	2.2 – 6.6	mmol/d
	M	Adult	1.6 – 5.6	

Test	Gender	Age	Ref Interval	Units
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Fluid Reference Intervals

Protein CSF	All	0 – 1 M	0.40 – 1.20	g/L
		> 1 M	0.15 – 0.45	

Microbiology Urinalysis Reference Intervals

Urine Specific Gravity	All	All	Nil	Nil
Urine pH	All	All	5.0 – 9.0	
Urine Glucose	All	All	Nil	+ / ++ / +++
Urine Creatinine Clearance	All	All	Nil	
Urine Blood/HGB	All	> 18 Y	0 – Trace	+ / ++ / +++