

Synnovis Hub Routine Biochemistry Reference Intervals

Test	Units	Age	Reference Interval	
			Males	Females
Angiotensin Converting Enzyme (ACE)	U/L	All	20-70	
Adjusted Calcium	mmol/L	0-4w	2.00-2.70	
		4w-16y	2.20-2.70	
		16y+	2.20-2.60	
Alpha Fetoprotein (AFP)	kIU/L	All	<7	
Alanine Aminotransferase (ALT)	U/L	All	0-55	
Albumin	g/L	0-4d	28-44	
		4d-14y	38-54	
		14-60y	35-50	
		60-90y	32-46	
		90y+	29-45	
Alkaline Phosphatase (ALP)	U/L	0-4w	70-380	
		4w-16y	60-425	
		16+	30-130	
Alpha-1-antitrypsin	g/L	All	0.9-2.0	
Amylase (total)	U/L	0-14d	3-10	
		14d-13w	2-22	
		13w-1y	3-50	
		1-18y	25-101	
		18y+	28-100	
Amylase (pancreatic)	U/L	All	8-51	
Anion gap	mmol/L	All	8-17	
Apolipoprotein A1	g/L	0-1y	0.61-1.64	0.59-1.69
		1-12y	0.93-1.72	0.86-1.79
		12-60y	0.95-1.86	1.01-2.23
		60y+	0.73-1.86	0.91-2.24
Apolipoprotein B	g/L	0-1y	0.16-1.24	0.17-1.20
		1-12y	0.48-1.25	0.51-1.26
		12-60y	0.49-1.73	0.53-1.82
		60y+	0.54-1.63	0.64-1.82
Aspartate Aminotransferase (AST)	U/L	All	5-34	
B-hydroxybutyrate	mmol/L	All	None	

Test	Units	Age	Reference Interval	
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Bicarbonate	mmol/L	0-16y	19-28	
		16y+	22-29	
Total Bile Acids	µmol/L	All	1.0-6.0 (fasting)	
C-Reactive Protein	mg/L	All	<5	
CA125	kU/L	All	<35	
CA19-9	kU/L	All	<37	
CA15-3	kU/L	All	<31	
Caeruloplasmin	g/L	All	0.20-0.60	
Calcium	mmol/L	All	None	
Carbamazepine	mg/L	All	4.0-12.0	
Carcinoembryonic Antigen (CEA)	µg/L	All	<5	
Chloride	mmol/L	All	95-108	
Cholesterol	mmol/L	All	None	
Conjugated Bilirubin	µmol/L	All	0-7	
Cortisol	nmol/L	All	102-535 (before 10 am) 80-477 (after 5 pm)	
C-Peptide	pmol/L	All	258-1718 (fasting)	
Creatine Kinase (CK)	U/L	All	40-320	25-200
Creatinine	µmol/L	0-15d	29-82	
		15d-2y	9-32	
		2-5y	18-38	
		5-12y	27-54	
		12-15y	40-72	
		15-19y	55-96	43-74
		19y+	64-104	49-90
Creatinine Clearance	mL/min	All	70-140	
Digoxin	µg/L	All	0.5-2.0	
Follicle Stimulating Hormone (FSH)	IU/L	All	1.0-12.0	3.0-8.1 Follicular 2.6-16.7 Mid-cycle 1.4-5.5 Luteal 26.7-133.4 Post-menopause
Free Androgen Index (FAI)	None	All	35.0-92.6	<6.0
Free T4	pmol/L	All	9.0-19.1	
Free T3	pmol/L	All	2.4-6.0	

Test	Units	Age	Reference Interval	
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Free PSA	µg/L	All	0.0-0.5	
Fructosamine	µmol/L	<16y	None	
		16y+	205-285	
Gamma GT	U/L	All	<55	<38
Plasma Glucose	mmol/L	All	No reference range. Ranges are in an applied comment: Reference Ranges Normal fasting glucose: 3.0-6.0 mmol/L Impaired fasting glucose: 6.1-6.9 mmol/L Diabetes mellitus: >6.9 mmol/L (fasting) >11.0 mmol/L (random) Pregnant: >6.7 mmol/L (random) - consider glucose tolerance test	
Globulin	g/L	All	20-35	
Haptoglobin	g/L	0-1y	0.00-3.00	0.00-2.35
		1-12y	0.03-2.70	0.00-2.20
		12-60y	0.14-2.58	0.35-2.50
		60y+	0.40-2.68	0.63-2.50
HbA1c	mmol/mol	All	20-41	
HDL Cholesterol	mmol/L	All	0.9-1.7	0.9-2.0
HCG	IU/L	All	<2	< 5 (non-pregnant female)
Insulin	pmol/L	All	None	
Iron	µmol/L	All	11.6-31.3	9.0-30.4
Lactate Dehydrogenase (LDH)	U/L	All	125-220	
LDL Cholesterol (calculated)	mmol/L	All	None	
Lipase	U/L	All	<= 60	
Lipoprotein(a)	nmol/L	All	None	
Lithium	mmol/L	All	0.4-1.0	
Luteinising Hormone (LH)	IU/L	All	0.6-12.1	Follicular 1.8-11.8 Mid-cycle 7.6-89.1 Luteal 0.6-14.0 Post-menopause 5.2-62.0
Magnesium	mmol/L	<4 w	0.60-1.00	
		4w+	0.70-1.00	

Test	Units	Age	Reference Interval	
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Methotrexate	μmol/L	All	None	
Non-esterified fatty acids (NEFA)	mmol/L	All	None	
Non-HDL Cholesterol	mmol/L	All	None	
NT-proBNP	ng/L	All	<400 Comments: <400 ng/L Heart failure unlikely 400-2000 ng/L Requires review in heart failure clinic within 6 weeks (request ROUTINE appointment on e-referral) >2000 ng/L Requires review in heart failure clinic within 2 weeks (request URGENT appointment on e-referral)	
Oestradiol	pmol/L	All	<162	Follicular <922 Mid-cycle 140-2383 Luteal <1146 Post-menopause <103
Paracetamol	mg/L	All	None	
Parathyroid Hormone (PTH)	ng/L	All	15.0-68.3	
Phenobarbitone	mg/L	All	10-40	
Phenytoin	mg/L	All	5-20	
Phosphate	mmol/L	0-4w	1.30-2.60	
		4w-1y	1.30-2.40	
		1-16y	0.90-1.80	
		16y+	0.80-1.50	
Potassium	mmol/L	<4 w	3.4-6.0	
		4w-1y	3.5-5.7	
		1-16y	3.5-5.0	
		16y+	3.5-5.3	
Progesterone	nmol/L	All	<1.6	Follicular <1.6 Luteal 3.8-50.6 Post-menopause <1.6
Prolactin (total)	mIU/L	All	73-407	109-557
Prolactin (monomeric)	mIU/L	All	32-309	39-422

Test	Units	Age	Reference Interval	
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Prostate Specific Antigen (PSA)	µg/L	0-39y	None	None
		40-49y	< 2.49	None
		50-59	< 3.49	None
		60-69	< 4.49	None
		70-79y	< 6.49	None
		≥80y	None	None
Salicylate	mg/L	All	None	
Sex Hormone Binding Globulin (SHBG)	nmol/L	0-50y	17.1-77.6	34.3-147.7 (pre-menopausal)
		>50		26.4-118.0 (post-menopausal)
Sodium	mmol/L	All	133-146	
Testosterone	nmol/L	0-6m	0.4-15.1	0.5-1.9
		<1y		
		1-5y	0.3-1.5	
		6-10y	0.5-2.0	
		11-14y	0.7-19.3	
		15-20y	4.7-41.7	
		20-49y	8.3-30.2	
		≥50y	7.7-24.8	0.4-1.2
Theophylline	mg/L	All	10-20	
TSH	mIU/L	All	0.35-4.94	
Total Bilirubin	µmol/L	>14d	<21 Comment appends to ages ≤ 14d to say: Please note reference range applies to patients >14 days old.	
Total Cholesterol/HDL ratio	None	All	None	
Total Protein	g/L	0-7m	46-70	
		7m-1y	51-73	
		1-3y	56-75	
		3+	60-80	
Transferrin Saturation	%	All	20-45	
Transferrin	g/L	1-14y	1.86-3.88	1.80-3.91
		14-60y	1.74-3.64	1.80-3.82
		60-80y	1.63-3.44	1.73-3.60
		80+	None	
Triglycerides	mmol/L	All	None	

Test	Units	Age	Reference Interval	
			Males	Females
Troponin I (high sensitivity)	ng/L	<6m	≤56	
		6m-19y	≤6	
		19y+	<35	<16
Uric Acid	μmol/L	All	200-430	140-360
Urea	mmol/L	0-4w	0.8-5.5	
		4w-1y	1.0-5.5	
		1-16y	2.5-6.5	
		16y+	2.5-7.8	
Valproate	mg/L	All	50-100	
Urine Albumin (random)	mg/L	All	None	
Urine Albumin Excretion	mg/24h	All	<30	
Urine Amylase (random)	U/L	All	16-491	21-447
Urine Amylase (excretion)	U/24h	All	170-2000	
Urine Calcium (random)	mmol/L	All	None	
Urine Calcium (excretion)	mmol/24h	All	2.5-7.5	
Urine Calcium:Creatinine ratio	mmol/mmol	0-1y	0.05-1.50	
		1-2y	0.05-1.25	
		2-5y	0.05-1.00	
		5-10y	0.05-0.70	
		10-18y	0.05-0.60	
		18y+	0.20-0.60	
Calcium:creatinine clearance ratio	None	All	None	
Urine Chloride (random)	mmol/L	All	None	
Urine Chloride (excretion)	mmol/24h	All	None	
Urine Creatinine (random)	mmol/L	All	5.1-14.2	3.9-9.4
Urine Creatinine (excretion)	mmol/24h	All	7.7-21.3	5.9-14.1
Urine Magnesium (random)	mmol/L	All	None	
Urine Magnesium (excretion)	mmol/24h	All	2.4-6.5	
Urine Phosphate (random)	mmol/L	All	None	
Urine Phosphate (excretion)	mmol/24h	All	15-60	
Urine Potassium (random)	mmol/L	All	None	
Urine Potassium (excretion)	mmol/24h	All	25-125	
Urine Protein (excretion)	mg/24h	All	<150	
Urine Sodium (random)	mmol/L	All	None	
Urine Sodium (excretion)	mmol/24h	All	40-220	27-287

Test	Units	Age	Reference Interval	
			Males	Females
Urine Urate (random)	mmol/L	All	None	
Urine Urate (excretion)	mmol/24h	All	None	
Urine Urea (random)	mmol/L	All	None	
Urine Urea (excretion)	mmol/24h	All	428-714	
Urine Albumin/Creat Ratio	mg/mmol	All	<3.0	
Urine Protein/Creat Ratio	mg/mmol	All	<15.0	