

Normal values

Haematology: full blood count (FBC)

Haemoglobin (Hb):	13.0–18.0 g/dL (males), 11.5–16.5 g/dL (females)
Mean cell volume (MCV):	80–96 fL
Packed cell volume (PCV) / Haematocrit (Hct)	40–50% (males), 36–45% (females)
Mean corpuscular haemoglobin (MCH):	28–32 pg
Mean cell haemoglobin concentration (MCHC):	32–35 g/dL
Reticulocytes:	25–85 × 10 ⁹ /L <i>or</i> 0.5–2.4%
Platelets:	150–400 × 10 ⁹ /L
White cell count (WCC):	4–11 × 10 ⁹ /L
Differential WCC:	Neutrophils: 2.5–7.5 × 10 ⁹ /L Lymphocytes: 1.5–4.0 × 10 ⁹ /L Monocytes: 0.2–0.8 × 10 ⁹ /L Eosinophils: 0.04–0.44 × 10 ⁹ /L Basophils: 0.0–0.1 × 10 ⁹ /L

Coagulation screen

Prothrombin time (PT):	12–15 sec
Activated partial thromboplastin time (APTT):	40–50 sec
Bleeding time:	3–8 min
International normalized ratio (INR):	<0.9–1.2
Fibrinogen:	1.8–5.4 g/L
D-dimer	<0.5 mg/L (varies with assay used, e.g. ELISA/latex agglutination, etc.)

Biochemistry

Ions:	
Sodium (Na ⁺):	137–144 mmol/L
Potassium (K ⁺):	3.5–5.0 mmol/L
Chloride (Cl ⁻):	95–107 mmol/L
Bicarbonate (HCO ₃ ⁻):	20–28 mmol/L
Corrected calcium (Ca ²⁺):	2.2–2.6 mmol/L
Phosphate (PO ₄ ³⁻):	0.8–1.4 mmol/L
Copper (Cu ²⁺):	12–26 μmol/L
Caeruloplasmin:	200–350 mg/L
Magnesium (Mg ²⁺):	0.75–1.05 mmol/L
Anion gap:	
	12–16 mmol/L
	Calculated by: ([Na ⁺] + [K ⁺]) – ([Cl ⁻] + [HCO ₃ ⁻])
Renal:	
Urea:	2.5–7.5 mmol/L
Creatinine:	60–110 μmol/L
Urate:	0.23–0.46 mmol/L (males), 0.19–0.36 mmol/L (females)
Plasma osmolality:	278–305 mosmol/kg
Hepatic:	
Total protein:	61–76 g/L
Albumin:	37–49 g/L
Total bilirubin:	1–22 μmol/L
Conjugated bilirubin:	0–3.4 μmol/L
Alanine aminotransferase (ALT):	5–35 U/L
Aspartate aminotransferase (AST):	1–31 U/L
Alkaline phosphatase (ALP):	45–105 U/L (over 14 years)
Gamma glutamyl transferase (γ-GT):	4–35 U/L (<50 U/L in males)
Lactate dehydrogenase (LDH):	10–250 U/L

Cardiac:

Creatine kinase MB fraction:	<5%
Troponin I:	0–0.4 μg/L
Troponin T:	0–0.1 μg/L

Others:

Creatine kinase (CK):	24–195 U/L (males), 24–170 U/L (females)
Plasma lactate:	0.6–1.8 mmol/L
Fasting plasma glucose:	3.0–6.0 mmol/L
Haemoglobin A _{1c} (HbA _{1c}):	3.8–6.4%
Fructosamine:	<285 μmol/L
Serum amylase:	60–180 U/L

Lipids and lipoproteins:

Cholesterol:	<5.2 mmol/L
LDL (low-density lipoprotein) cholesterol:	<3.36 mmol/L
HDL (high-density lipoprotein) cholesterol:	>1.55 mmol/L
Fasting serum triglyceride:	0.45–1.69 mmol/L

NB: These target levels vary depending on the patient's overall cardiovascular risk assessment.

Blood gases

(See respiratory chapters for further information)

H ⁺ :	35–45 nmol/L
pH:	7.35–7.45
PaO ₂ :	10.6–12.6 kPa
PaCO ₂ :	4.7–6.0 kPa
Base excess:	±2 mmol/L

NB: 1 kPa = 7.6 mmHg. Atmospheric pressure is c. 100 kPa.

Urine

Glomerular filtration rate (GFR):	70–140 mL/min
Creatinine clearance (an estimate of GFR):	82–125 mL/min (males), 75–115 mL/min (females)
Total protein:	<150 mg/24 h
Albumin:	<30 mg/24 h
Albumin:creatinine ratio:	<3.5 mg/mmol (males), <2.5 mg/mmol (females)
Sodium:	100–250 mmol/24 h
Potassium:	14–120 mmol/24 h
Phosphate (inorganic):	15–50 mmol/24 h
Calcium:	2.5–7.5 mmol/24 h
Urobilinogen:	1.7–5.9 μmol/24 h
Osmolality:	350–1000 mosmol/kg
5-HT metabolite:	
5-Hydroxyindoleacetic acid (HIAA):	16–73 μmol/24 h
Catecholamine and metabolites:	
Noradrenaline (norepinephrine)	60–660 nmol/24 h
Adrenaline (epinephrine)	15–160 nmol/24 h
Metadrenaline (metanephrine):	0.03–0.695 μmol/mmol creatinine <i>or</i> <5.5 μmol/24 h
Hydroxymethylmandelic acid (HMMA)/ vanillomandelic acid (VMA):	16–48 μmol/24 h

NB: most centres are moving away from the measurement of VMA due to its poor relative sensitivity as compared to catecholamines and metadrenalines.