

Table of reference intervals

Specimen	Test	Reference interval (conventional units)		Conversion factor (multiply by)	Reference interval (SI units)	
S	Albumin	3.8-5.0	g/dL	10	38-50	g/L
B	Base excess	-3.3 to +2.3	mmol/L	1	-3.3 to +2.3	mmol/L
P	Bicarbonate	21-28	mmol/L	1	21-28	mmol/L
S/P	Bilirubin, conjugated	<0.3	mg/dL	17.1	<5	µmol/L
S/P	Bilirubin, total	0.1-1.2	mg/dL	17.1	2-21	µmol/L
S/P	Calcium, total	9.2-11.0	mg/dL	0.25	2.3-2.8	mmol/L
S/P	CO ₂ content, venous	24-30	mmol/L	1	24-30	mmol/L
P	Chloride	95-103	mEq/L	1	95-103	mmol/L
S/P	Cholesterol (NCEP recommendation)	140-200	mg/dL	0.0259	3.6-5.2	mmol/L
P	Cortisol (a.m.)	5-23	µg/dL	27.6	138-635	nmol/L
S/P	Creatinine	0.6-1.2	mg/dL	88.4	53-106	µmol/L
	Creatinine clearance	87-139	mL/min/1.74 M ²	0.0167	1.4-2.3	mL/s
S/P	Ferritin (men)	15-200	ng/mL	1	15-200	µg/L
S/P	Ferritin (women)	12-150	ng/mL	1	12-150	µg/L
P	Fibrinogen	200-400	mg/dL	0.01	2.00-4.00	g/L
S/P	Folate	>2.3	ng/mL	2.265	>5.0	nmol/L
S/P	Glucose, fasting	70-110	mg/dL	0.0556	3.9-6.1	mmol/L
S	Haptoglobin	60-270	mg/dL	0.01	0.6-2.7	g/L
B	Hematocrit (men)	41.5-50.4	%	0.01	0.415-0.504	Vol fraction
B	Hematocrit (women)	35.9-44.6	%	0.01	0.359-0.446	Vol fraction
B	Hemoglobin	12-18	g/dL	10	120-180	g/L
S/P	Iron, total	60-150	µg/dL	0.179	10.7-26.9	µmol/L
S/P	Iron binding capacity	250-400	µg/dL	0.179	44.8-71.6	µmol/L
S/P	Lactic acid, venous (lactate)	5-20	mg/dL	0.111	0.6-2.2	mmol/L
B	Lead (CDC recommendation)	<10	µg/dL	0.048	<0.48	µmol/L
S/P	Lithium, therapeutic	0.5-1.4	mEq/L	1	0.5-1.4	mmol/L
S/P	Magnesium	1.3-2.1	mEq/L	0.5	0.65-1.05	mmol/L
B	MCH (RBC index)	27.5-33.2	pg/cell	1	27.5-33.2	pg/cell
B	MCHC (RBC index)	33.4-35.5	%	0.01	0.334-0.355	concentration fract
B	MCV (RBC index)	80-96	fL	1	80-96	fL
S/P	Osmolality	280-295	mOsm/kg	1	280-295	mmol/kg
B	pCO ₂ (arterial)	35-40	mm Hg	0.133	4.7-5.3	kPa
B	pH (arterial)	7.38-7.44		1	7.38-7.44	
S/P	Phosphate (as P)	2.3-4.7	mg/dL	0.323	0.74-1.52	mmol/L
B	pO ₂ (arterial)	75-100	mm Hg	0.133	10-13.3	kPa
B	Platelet count	150-400	10 ⁹ /mm ³	10 ⁹	150-400	10 ⁹ /L
P	Potassium	3.8-5.0	mEq/L	1	3.8-5.0	mmol/L
S	Protein, total	6.0-7.8	g/dL	10	60-78	g/L
B	RBC count (men)	4.5-5.9	10 ⁹ /mm ³	10 ⁹	4.5-5.9	10 ⁹ /L
B	RBC count (women)	4.5-5.1	10 ⁹ /mm ³	10 ⁹	4.5-5.1	10 ⁹ /L
S/P	Salicylate, therapeutic	15-30	mg/dL	0.073	1.1-2.2	mmol/L
P	Sodium	136-142	mEq/L	1	136-142	mmol/L
S	Thyroxine, free	0.9-2.3	ng/dL	13	12-30	pmol/L
S	Thyroxine (T ₄), total	5.5-12.5	µg/dL	12.87	71-161	nmol/L
S/P	Triglyceride (as triolein)	10-190	mg/dL	0.0113	0.11-2.15	mmol/L
S/P	Urea nitrogen (BUN)	8-23	mg/dL	0.357	2.9-8.2	mmol/L
S/P	Uric acid (urate)	2.7-8.5	mg/dL	0.05948	0.16-0.51	mmol/L
S	Vitamin B ₁₂	160-950	pg/mL	0.74	118-703	pmol/L
B	WBC count	4.4-11.0	10 ⁹ /mm ³	10 ⁹	4.4-11.0	10 ⁹ /L
S	Zinc	50-150	µg/dL	0.153	7.7-23.0	µmol/L

Specimens: B, whole blood; P, plasma; S, serum. Reference intervals depend on test method and the demographics of the normal population used.
 Source: Henry JB, ed. *Clinical Diagnosis and Management by Laboratory Methods*. 19th ed. Philadelphia, PA: WB Saunders Co.;1996, and Burstis CA, Ashwood ER, *Tietz Textbook of Clinical Chemistry*. 3rd ed. Philadelphia, PA: WB Saunders Co.;1999.
 Revised by Frank Cruz III, MD, Resident, Department of Pathology, Oregon Health and Science University, Portland, OR.