Normal values

Note. *Some biological measures have been extracted from the text and listed here for easy reference. In some cases slightly different 'normals' may be found in other texts and used by different medical practitioners.*

Metric measures, units and SI symbols

Name	SI unit	Symbol
Length	metre	m
Mass	kilogram	kg
Amount of substance	mole	mol
Pressure	pascal	Pa
Energy	joule	J

Decimal multiples and submultiples of the units are formed by the use of standard prefixes.

Multiple	Prefix	Symbol	Submultiple	Prefix	Symbol
10^6	mega	M	10^{-1}	deci	d
10^3	kilo	k	10^{-2}	centi	c
10^2	hecto	h	10^{-3}	milli	m
10^1	deca	da	10^{-6}	micro	μ
			10^{-9}	nano	n
			10^{-12}	pico	p
			10^{-15}	femto	f

Conversion table for kPa/mmHg (for e.g. capillary pressures)
1 mmHg = 0.13 kPa
1 kPa = 7.5 mmHg
35 mmHg = 4.7 kPa
25 mmHg = 3.3 kPa
15 mmHg = 2.0 kPa
10 mmHg = 1.3 kPa

Hydrogen ion concentration (pH)

Neutral = 7 Acid = 0 to 7 Alkaline = 7 to 14

Normal pH of some body fluids	
Blood	7.35 to 7.45
Saliva	5.8 to 7.4
Gastric juice	1.5 to 3.5
Bile	6.0 to 8.5
Urine	4.5 to 8.0

Some normal plasma levels in adults

Calcium	2.12 to 2.62 mmol/L	(8.5 to 10.5 mg/100 mL)
Chloride	97 to 106 mmol/L	(97 to 106 mEq/L)
Cholesterol	3.6 to 6.7 mmol/L	(140 to 260 mg/100 mL)
Glucose	3.5 to 8 mmol/L	(63 to 144 mg/100 mL)
Fasting glucose	3.6 to 5.8 mmol/L	(65 to 105 mg/100 mL)
Potassium	3.3 to 4.7 mmol/L	(3.3 to 4.7 mEq/L)
Sodium	135 to 143 mmol/L	(135 to 143 mEq/L)
Urea	2.5 to 6.6 mmol/L	(15 to 44 mg/100 mL)

Arterial blood gases

PO_2	12 to 15 kPa	(90 to 110 mmHg)
PCO_2	4.5 to 6 kPa	(34 to 46 mmHg)
Bicarbonate	21 to 27.5 mmol/L	
H^+ ions	36 to 44 nmol/L	(7.35 to 7.45 pH units)

NORMAL VALUES

Blood pressure

Normal adult 120/80 mmHg.
Blood pressure above 140/90 is generally considered high.

Heart rate

At rest	60 to 80/min
Sinus bradycardia	<60/min
Sinus tachycardia	>100/min

Respiration rate

At rest 15 to 18/min

Tidal volume	500 mL
Dead space	150 mL
Alveolar ventilation	15 (500 – 150) = 5.25 L/min

Blood count

Leukocytes	4×10^9/L	to	11×10^9/L
Neutrophils	2.5×10^9/L	to	7.5×10^9/L
Eosinophils	0.04×10^9/L	to	0.44×10^9/L
Basophils	0.015×10^9/L	to	0.1×10^9/L
Monocytes	0.2×10^9/L	to	0.8×10^9/L
Lymphocytes	1.5×10^9/L	to	3.5×10^9/L
Erythrocytes			
female	3.8×10^{12}/L	to	5×10^{12}/L
male	4.5×10^{12}/L	to	6.5×10^{12}/L
Thrombocytes	200×10^9/L	to	350×10^9/L

Diet

1 kilocalorie (kcal) = 4.182 kilojoules (kJ)
1 kilojoule = 0.24 kilocalories

Energy source	Energy released	Recommended proportion in diet
Carbohydrate	1 g = 17 kJ = 4 kcal	55–75%
Protein	1 g = 17 kJ = 4 kcal	10–15%
Fat	1 g = 38 kJ = 9 kcal	15–30%

Daily vitamin requirements for adults

Vitamin	Daily requirement
Fat soluble	
Vitamin A	600–700 mcg
Vitamin D	10 mcg
Vitamin E	Males: 10 mg Females: 8 mg
Vitamin K	1 mcg per kg body weight
Water soluble	
Vitamin B_1	0.8–1 mg
Vitamin B_2	1.1–1.3 mg
Vitamin B_3	12–17 mg
Vitamin B_6	1.2–1.4 mg
Vitamin B_{12}	1.5 mcg
Folic acid	200 mcg
Pantothenic acid	3–7 mg
Biotin	10–20 mcg
Vitamin C	40 mg

Urine

Specific gravity	1.020 to 1.030
Volume excreted	1000 to 1500 mL/day

Glucose is normally absent, but appears in urine when blood glucose levels exceed 9 mmol/L

Body temperatures

Normal	36.8°C: axillary
Hypothermia	≤35°C: core temperature
Death when below	25°C

Cerebrospinal fluid pressure

Lying on the side 60–180 mm H_2O

Intraocular pressure

1.3 to 2.6 kPa (10 to 20 mmHg)