

Useful Blood Tests for Mental Health Disorders

Blood test	Laboratory reference intervals*	Optimal levels	Comments
Vitamin D	51-150nmol/L 25-50 mild deficiency 12.5-25 moderate deficiency <12.5 severe deficiency	> 100 nmol/L	Is a potent anti-inflammatory, important for the immune system and influences serotonin metabolism
<u>Iron studies</u> Iron Transferrin Saturation Ferritin	5-30 µmol/L 25-45 µmol/L 10-45% 30-300 ug/L	Ferritin 100 – 200 ug/L	Ferritin reflects iron stores Ferritin can be artificially elevated during times of inflammation
<u>Thyroid</u> TSH Free T4 Free T3	0.5 -5.0 mU/L 9.0-19.0 pmol/L 3.1-6.0 pmol/L	TSH around 1 mU/L T3 and T4 at upper end of range	Important for energy production
CRP	<5 mg/L	CRP < 1mg/L	Acute marker of inflammation. hsCRP is a more sensitive measure
Magnesium	0.65-1.10mmol/L	Upper end of range	Poor measure of magnesium. If levels are low, then deficiency has probably been present for some time
Folate	Red cell: 360-1400 nmol/L Serum: 7-45 nmol/L	Upper end of ranges	Not an accurate measure of folate stores. Some people with genetic polymorphism need greater amounts
Vitamin B12	120-680 pmol/L.	Upper end of range	Not an accurate measure of B12 stores. Some people with genetic polymorphism need greater amounts
Homocysteine	5-15 µmol/L	Between 6-10 µmol/L	Provides a crude measure of methylation which is important for neurotransmitter production
Zinc	12-20 µmol/L.	Upper end of range	Not an accurate measure of zinc stores. If levels are low, then deficiency has probably been present for some time
Blood glucose	Fasting: 3.0-5.4 mmol/L Random: 3.0-7.7 mmol/L	Low end of range	Other options include glucose challenge test, glycated haemoglobin (HbA1c) (measure of glucose level over last 3 months)
<u>Sex hormones</u> Oestrogen Progesterone Testosterone DHEA-S	Refer to lab		Deficiencies can influence mental health. Hormones can be measured via blood, urine and saliva, and in women, levels vary across menstrual cycle

* Reference ranges vary based on laboratory

Useful websites: <https://www.rcpa.edu.au/Library/Practising-Pathology/RCPA-Manual/Items/Pathology-Tests>

<https://www.learnmachine.net.au/catalog/articles/blood-tests.php>