

**FAT-SOLUBLE
VITAMINS**



0036 Fat-Soluble Vitamins Profile - Serum

High Performance Liquid Chromatography, LC Tandem Mass Spectroscopy

Ranges are for ages 13 and over



Vitamin A

Item	Results mg/L	Quintile Ranking	95% Reference Range
1. Retinol	0.56	Between 0.36 and 0.74	0.29-1.05
2. β-Carotene	0.96	Between 0.15 and 1.70	0.10-2.71

Vitamin E

3. alpha-Tocopherol	8.6 L	Between 0.26 and 2.06	6.8-31.7
4. gamma-Tocopherol	0.77	Between 0.26 and 2.06	0.06-2.99

Vitamin K

5. Undercarboxylated osteocalcin (ucOC)	4.1 H	Between 0.26 and 2.06	<= 12.1
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Coenzyme Q10

6. Coenzyme Q10	1.03	Between 0.64 and 2.16	0.48-3.04
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Vitamin D

Item	Results	Quintile Ranking	Reference Range
7. 25-Hydroxyvitamin D	75.0	Between 30 and 100 (Optimal)	30.0-100.0
8. 25-Hydroxyvitamin D2	62.0		
9. 25-Hydroxyvitamin D3	13.0		

Normal or elevated levels of fat-soluble vitamins are indicative of sufficient gut absorption, along with adequate dietary or supplement intake. Low levels of fat-soluble vitamins can be related to low dietary intake or to GI conditions affecting absorption including gluten intolerance, pancreatic or bile insufficiency, IBD, or small-bowel surgery. Ensuring gut health and an adequate intake through diet or supplementation can help to increase blood levels. For more detailed information about the individual vitamins, please visit our website at www.metamatrix.com/vitamins.