

Ordering Test Kits from OmegaQuant

Healthcare providers may contact OmegaQuant to offer testing in their practices. Individuals may order tests directly from omegaquant.com/shop as outlined below:

1. ORDER TEST: Visit omegaquant.com/shop to order an at-home test kit.



2. REGISTER KIT: Visit omegaquant.com/start to register the kit using the unique bar code on the sample collection card.



3. COLLECT SAMPLE: Follow simple instructions to collect urine.



4. MAIL SAMPLE: Mail the sample back to one of our labs with the pre-paid envelope.



5. GET RESULTS: Within 2-4 weeks, results will be sent electronically and can also be accessed through our web portal.



References

¹ Smith, Warren, Refsum. *Advances in Food and Nutrition Research*, 2018.

² Office of Dietary Supplements Fact Sheet: Vitamin B12, 2021.

³ Kwok et al. *Nutrition*, 2004.

⁴ Molloy et al. *Pediatrics*, 2009.

⁵ Hooshmand et al. *J of Internal Medicine*, 2012.

⁶ Refsum and Smith. *J Neurol Neurosurg Psychiatry*, 2003.

Why OmegaQuant?

OmegaQuant is a CLIA-certified laboratory offering variety of nutritional status tests to individuals, healthcare providers and industry. OmegaQuant was founded in 2009 by Dr. Bill Harris, the co-inventor of the Omega-3 Index, which has been substantiated by more than 200 clinical studies. Dr. Harris is an internationally recognized expert in omega-3 research, has nearly 400 scientific papers in the field, and has been the recipient of five NIH grants for studies on the effects of omega-3 fatty acids and health. Beyond omega-3s, OmegaQuant also offers other nutritional status tests, including vitamin D. OmegaQuant also has partner laboratories in Australia and the United Kingdom.

Our goal at OmegaQuant is to offer the highest quality nutritional testing services to researchers and to provide simple tests of nutritional status to healthcare providers and patients, with the ultimate purpose of advancing the science and use of key nutrients to improve health.

US Laboratory and Headquarters

OmegaQuant
5009 W. 12th Street, Suite 8
Sioux Falls, SD 57106
Phone: 1-605-271-6917
Toll-free: 1-800-949-0632

UK Laboratory

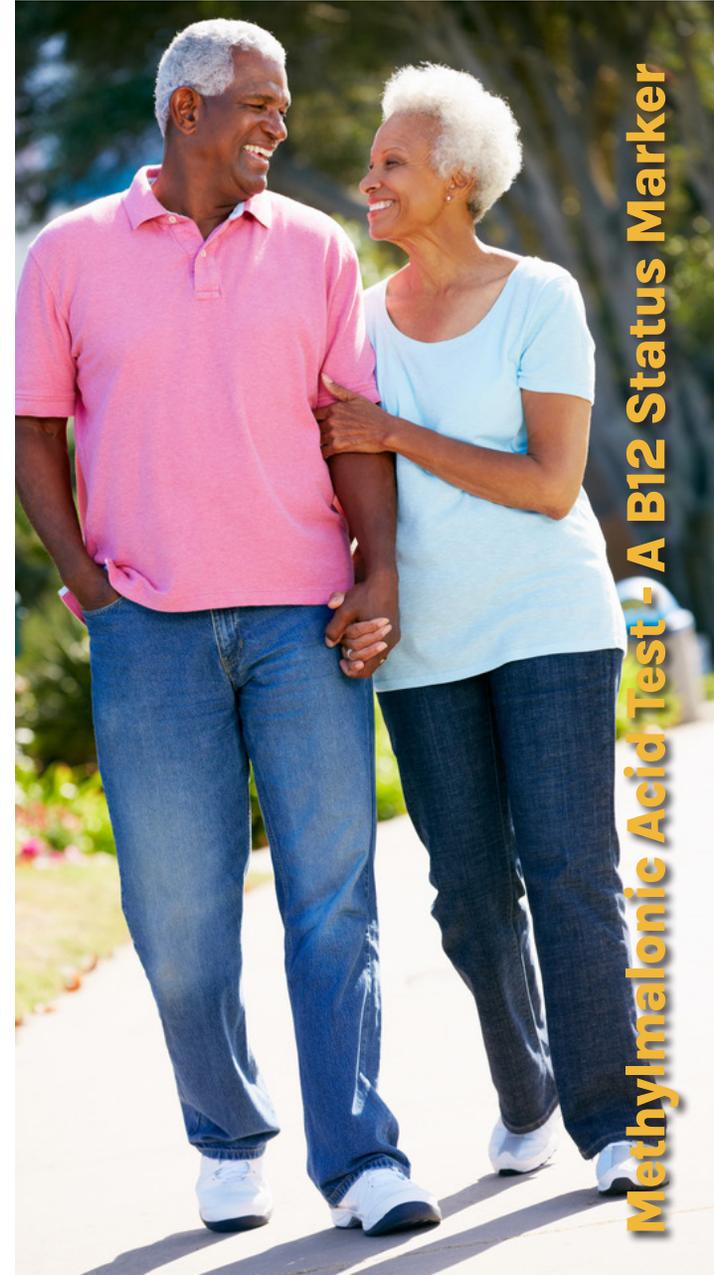
Nutrition Analytical Service
University of Stirling
Stirling FK9 4LA
Scotland, UK

Australia Laboratory

Gate 13
Kintore Avenue
Adelaide 5000
South Australia, AUS



Email: info@omegaquant.com
Website: www.omegaquant.com



Methylmalonic Acid Test - A B12 Status Marker

Vitamin B12

Do your patients know their status?

B¹²

Vitamin B12 is an essential nutrient for many bodily processes, including creating and repairing DNA and producing red blood cells and nerves. Having low B12 status can cause neurological symptoms, even without the presence of anemia or a “true” B12 deficiency¹. Many of the most difficult symptoms of aging, like cognitive decline and difficulty moving independently, can be linked to sub-clinical B12 deficiency and may be avoided or delayed with proper B12 levels earlier in life.

Vitamin B12 is rich in a wide variety of animal products². Clearly, individuals who avoid animal products (vegans and vegetarians) are at risk of having low B12 status unless they supplement. But many people who eat a rich-B12 diet can still have low status. Why? Because of the many factors that can affect B12 absorption, such as elderly people with digestive issues, people with autoimmune disease and gut issues, or those taking common medications like proton-pump inhibitors and metformin. So, often dietary intake is NOT the reason someone has a functional B12 deficiency, which makes testing even more important.

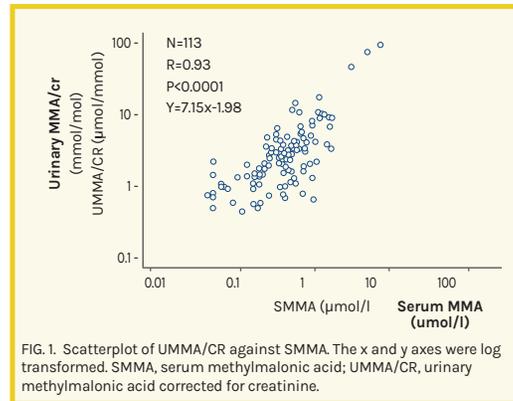


The Target uMMA Level for Optimal B12 Status

The urinary methylmalonic acid (uMMA) test is a specific indicator of low “functional” B12 status³. One of the functions of B12 is as a co-factor to an enzyme that converts MMA to succinyl-CoA. When there isn't enough B12, the enzyme can't fully function and MMA builds up in the blood as well as urine. Optimal vitamin B12 status is indicated when the result is below 2.0 mmol MMA/mol creatinine (cr). A result above 3.6 mmol/mol cr means B12 status is very low and should be confirmed with further testing.

Serum MMA is well correlated with uMMA/cr³. Other markers of B12 deficiency, like homocysteine, serum B12 levels and specific B12 transporter markers (transcobalamin), have varying relationships with uMMA/cr. Simple serum B12 levels can be slow to react to low B12 intake or absorption¹, while MMA in either urine or serum responds more quickly. MMA levels in the blood can be more affected by kidney disease than uMMA corrected for creatinine levels.

Historically, a B12 deficiency was primarily associated with megaloblastic and pernicious anemias, but recent research has found that neurological symptoms can be present without anemia. Achieving optimal B12 status may be associated with:



- **Lower risk of neural tube defects:** Pregnant women with better B12 status had lower rates of neural tube defects in their offspring⁴.
- **Lower risk of cognitive deficits or declines in elderly:** Better B12 status predicted the people who had better global cognition, episodic memory, and executive function after 7 years⁵.
- **Lower risk of Alzheimer's disease:** People with Alzheimer's disease had lower B12 status, as measured by transcobalamin, than people without it⁶.

Vitamin B12 Status Testing - Easy as 1-2-3

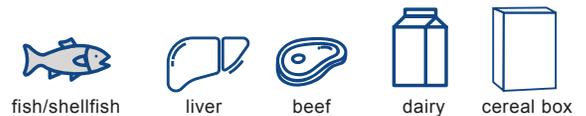
Typical vitamin B12 testing requires a blood draw, which is sent to a lab for analysis. However, new advances in technology have paved the way for a simpler approach. Now, healthcare providers and patients can access an easy-to-use test that requires only a urine sample. From this sample, analysis of one's vitamin B12 status (uMMA/creatinine) can be easily, safely, and accurately measured.

Following 3 simple steps can help healthcare providers and their patients achieve optimal levels of vitamin D:

- 1 **Measure** Eating vitamin B12-rich foods and taking supplements does not guarantee that one's urinary level will be in the desirable range – it must be measured.
- 2 **Modify** Vitamin B12 test results will give individuals and their healthcare providers the right information to personalize intake.
- 3 **Monitor** Confirm that one's vitamin B12 level has improved with dietary and lifestyle changes by re-testing every 6 months.

Vitamin B12 Sources

Vitamin B12 is found naturally in animal-based foods including fish, meat, liver, poultry, eggs, and dairy products. B12 can also be found in fortified foods including some breakfast cereals and nutritional yeasts².



Supplemental Vitamin B12 may be alone or in combination with other B vitamins (called B-complex) in several forms – capsules, sublingual tablets and drops. Injections of B12 are prescribed by a healthcare provider for severe B12 deficiency².