

BONE HEALTH



PROVIDER EDUCATION RESOURCE

The AYUMETRIX Bone Health Panel gives insight into how each patient absorbs the nutrients important for proper bone health, allowing for patients and healthcare providers to make informed dietary and supplement choices.

Strong bones are critical to good health. While healthy bones are influenced by environmental elements such as nutrition, genetics also play a major role. Osteoporosis, characterized by low bone mass, is a major problem in older adults. Today, about 30 to 50 percent of American women and 15 to 30 percent of American men experience an osteoporosis-related fracture in their lifetimes. Studies have demonstrated that bone mineral density in older adults is influenced by genes underlying bone accrual and bone loss; in fact, up to 85 percent of the variation in peak bone mineral density can be explained by genetic factors. However, only recently have these specific genes, and their variants, been identified.

Why Test?

Knowing which genes will ultimately have the greatest impact on bone health allows physicians to recommend genetic testing for early identification of individuals prone to low bone mineral density.

Ideal Candidates are the Patients with the Following Symptoms and Conditions:

- Diagnosed with osteoporosis or osteopenia
- Conditions that prevent proper vitamin D absorption
- Individuals with compromised mobility
- People in low sun exposure areas
- Menopausal changes
- History of a minimal-trauma fracture
- Low blood calcium (hypocalcemia)
- Low blood phosphate (hypophosphatemia)



Genetic Markers Included in the Bone Health Panel

Genetic Markers	EFFECTS ON BONE HEALTH
Vitamin D	Tests three genes that function in the Vitamin D metabolism pathway involved in transportation of Vitamin D to target organs, conversion of the inactive form of Vitamin D to the active form and bioavailability of the Vitamin D precursor
WNT16	Impacts dosages requirements for tricyclic anti-depressants
Estrogen Receptor 1	Crucial to the breakdown of NSAIDS including: dichlofenac, naproxen, and ibuprofen

Tying it all Together

The genetic markers included in the Bone Health Panel have been rigorously analyzed by our experienced researchers. It is our mission to provide healthcare providers with a deeper understanding of the genetic basis of their patients' bone and joint health, to provide more timely and effective care

Get started today

Make AYUMETRIX Genetic Testing Part of your Patient's Treatment Plan.

- Become a Provider
- Request Test Kits

Questions? Please contact our customer service team at 800-215-8898 or by email at info@ayumetrix.com This email address is being protected from spambots. We are available Monday through Friday, from 8:00 AM - 5:00 PM, Pacific Time.

For provider pricing information, please call us at

1-800-218-8898 or

info@ayumetrix.com



Selected References:

1. Estrada K et al. Genome-wide meta-analysis identifies 56 bone mineral density loci and reveals 14 loci associated with risk of fracture. *Nat Genet.* 2012; 44(5):491–501.
2. Koller DL et al. Meta-analysis of genome-wide studies identifies WNT16 and ESR1 snps associated with bone mineral density in premenopausal women. *J Bone Miner Res.* 2013; 28(3):547–558.
3. Haussler CA et al. Molecular Mechanisms of Vitamin D Action. *Calcified Tissue International* 2013; 92:77-98
4. Kim JH et al. Wnt signaling in bone formation and its therapeutic potential for bone diseases. *Ther Adv Musculoskel Dis.* 2014; 5(1):13–31.
5. Bone Health and Osteoporosis: A Report of the Surgeon General. Rockville (MD): Office of the Surgeon General (US); 2004.