

Ordering Physician:

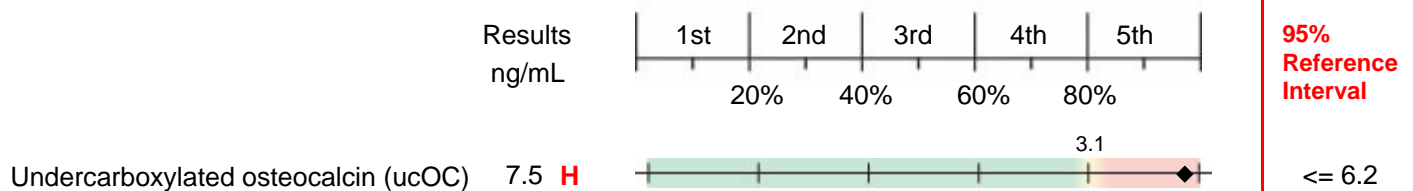
Metamatrix Staff & Family

3425 Corporate Way
 Duluth, GA 30096

0031 Vitamin K (ucOC) - Serum

Methodology: Enzyme linked immunoassay

Percentile Ranking by Quintile



Elevated ucOC is a functional marker of vitamin K deficiency. Vitamin K is required for the carboxylation of osteocalcin (OC) in order to bind calcium. OC is a product of mature, active osteoblasts that delivers calcium to form bone matrix. When Vitamin K is low, ucOC increases and bone formation is reduced. By similarly affecting other calcium-binding proteins, insufficient vitamin K may lead to decreased clotting time, increased risk of cardiovascular disease, and increased risk of certain types of cancer.

1. Sokoll LJ, Booth SL, O'Brien ME, Davidson KW, Tsaion KI, Sadowski JA. Changes in serum osteocalcin, plasma phylloquinone, and urinary gamma-carboxyglutamic acid in response to altered intakes of dietary phylloquinone in human subjects. *Am J Clin Nutr.* Mar 1997;65(3):779-784.
2. Koyama N, Ohara K, Yokota H, et. al. A one step sandwich enzyme immunoassay for gamma-carboxylated osteocalcin using monoclonal antibodies. *J Immunol Methods.* May 17 1991;139(1):17-23.
3. Jie, KS, Bots ML, Verneer C, et.al. Vitamin K intake and osteocalcin levels in women with and without aortic atherosclerosis: a population-based study. *Atherosclerosis.* July 1995;116(1):117-123.
4. Beulens JW, Bots ML, Atsma F, et al. High dietary menaquinone intake is associated with reduced coronary calcification. *Atherosclerosis.* Jul 19 2008.

These test results are not for the diagnosis of disease. They are intended to provide nutritional guidelines to qualified healthcare professionals with full knowledge of patient history and concerns to assist in their design of an appropriate healthcare program.