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Reference: **XXXX\XXXX\G19**
Patient: **Sample report**
Clinician: **Dr Test**
Clinician's reference:

DOB: **09/01/1984**
Sex: **MALE**
Sample date: **13/05/2019**
Report printed: 18/07/2019

Homocysteine

			Reference range
Plasma Homocysteine	**15.6**	μmol/L	Up to 12.0

Comment

Notes

Homocysteine, which is formed from dietary methionine, is an amino acid that does not take part in protein synthesis, but is a metabolic intermediate, high levels of which may disturb cell physiology.
Deficiencies of folic acid, vitamin B_{12}, vitamin B_2 and vitamin B_6, which serve as cofactors for its metabolism, lead to increases in plasma homocysteine concentrations. Potential approaches for lowering plasma homocysteine include dietary supplementation with folate, vitamins B_{12}, B_2, and B_6, betaine, or choline.
The reference interval for plasma homocysteine is less than 12.0 μmoles/L, but the treatment goal is somewhat below this figure (typically less than 7.0 μmoles/L of plasma homocysteine).

An elevation of the plasma homocysteine by 5.0 μmoles/L has been associated with an increase of 1.7 in the odds ratio risk of cardiovascular disease (the same as an increase of 500 μmol/l in plasma cholesterol).

Blood samples for homocysteine analysis are best taken non-fasting, at between 3 to 5 hours after a protein-containing meal. This greatly increases the sensitivity of this measurement as compared to analysis of fasting samples.

References

1. Jacobsen DW, Gatautis VJ, Green R et al (1994). Rapid HPLC determination of total homocysteine and other thiols in serum and plasma: sex differences and correlation with cobalamin and folate concentrations in healthy subjects. Clin Chem 40:873-881

2. McCully KS. Vascular pathology of homocysteinemia: Implications for the pathogenesis of arteriosclerosis. Am J Pathol. 1969;56:111-128.

3. Nygard O, Nordrehaug JE, Refsum H, et al. Plasma homocysteine levels and mortality in patients with coronary artery disease. N Engl J Med. 1997;337:230-236.

4. Refsum H, Smith AD, Ueland PM, et al. Facts and recommendations about total homocysteine determinations: an expert opinion. Clin Chem. 2004;50:3-32.

5. Olthof MR, Brink EJ, Katan MB, et al. Choline supplemented as phosphatidylcholine decreases fasting and postmethionine-loading plasma homocysteine concentrations in healthy men. Am J Clin Pathol. 2005;82:111-117.