Abstract

Clin Biochem. 2010 Feb;43(3):338-40.

Biological variability of blood omega-3 biomarkers.

Harris WS, Thomas RM.

Cardiovascular Health Research Center, Sanford Research/USD and Sanford School of Medicine, Sioux Falls, SD 57105, USA.

OBJECTIVES: We conducted a pilot study to estimate the biological variability and effects of a prior meal on the omega-3 fatty acid (FA) content of 3 blood FA pools.

DESIGN AND METHODS: We measured FA levels in red blood cells (RBCs), plasma and plasma phospholipids (PL) obtained from 20 healthy volunteers tested weekly over 6 weeks.

RESULTS: The within-subject coefficients of variation were 4.1%+/-1.9%, 15.9%+/-6.4%, and 14.5%+/-8.4%, respectively (RBC vs. others, $p<0.001$). RBC omega-3 FA content had the lowest biological variability and was not altered in the fed state.

CONCLUSIONS: From the perspective of variability and of the sample types tested, RBCs may be the preferred sample type for assessing omega-3 FA status.

PMID: 19733159