

F2-isoprostanes: Venous blood specimens were collected after an overnight fast, and plasma was separated by centrifugation, transferred to 1.0 ml vials, and stored at -80°C at the Health ABC core laboratory. Specimens for the study sample were shipped to the Molecular Epidemiology and Biomarker Research Laboratory (MEBRL) at the University of Minnesota, Minneapolis, MN for plasma F2-isoprostane analysis under the supervision of Dr. Myron Gross. In prior studies, we have shown that the F2-isoprostanes are completely stable under these collection procedures with no artifactual F2-isoprostanes formed during this collection and handling procedures. Long-term studies at the MEBRL of three control pools found that levels of plasma F2-isoprostanes were stable for >16 months at -70°C.

Plasma free F2-isoprostanes (a collection of isomers) were measured by a gas chromatography-mass spectrometry (GC-MS)-based method.¹ The assay has an analytical variation of less than 10% in our laboratory for control pools at three concentrations, tested numerous times over an approximately 1 year period. In 368 blind duplicate pairs from a large study, the assay had a test-retest correlation of 0.84. In another study using the same methods, the intraclass correlation was 0.84 in 14 subjects drawn at weekly intervals (5 samples per subject). For the Health ABC samples, the coefficient of variation for the blind dups was .069636.

Reference:

1. Morrow JD, Roberts LJ, 2nd. Mass spectrometric quantification of F2-isoprostanes in biological fluids and tissues as measure of oxidant stress. *Methods Enzymol.* 1999;300:3-12.