

The Military Deployment Human Exposure Assessment Study (MDHEXAS)

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Auteur(s) : May, Lisa M.

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Résumé ou extrait : Currently the Department of Defense (DoD) does not use exposure biomarkers to measure environmental exposures to chemicals. Blood and urine exposure biomarkers for volatile organic compounds (VOC), selected heavy metals, depleted uranium (DU), and chemical warfare agents are currently available but have not been field tested or validated in military deployments as a tool to document exposures by the DoD. The Military Deployment Human Exposure Assessment Study, a prospective cohort of 46 soldiers deployed to Bosnia, was designed to validate blood and urine exposure biomarkers as a mechanism to document exposures to these chemicals during military deployments. Blood and urine were collected pre-, during, and post deployment. Standard questionnaire was administered, and environmental and occupational monitoring methods were conducted for comparison to the exposure biomarker results. The urine depleted uranium, blood VOC, urine heavy metals, and blood heavy metals results are compared pre-, during, and post deployment and against standard US reference ranges for the same compounds. The results of the study indicate that natural uranium and styrene environmental exposures increased during deployment. Therefore, exposure biomarkers may be a valuable tool in assessing exposures and risk from environmental and occupational chemicals and hence imperative to include in a comprehensive DoD preventive medicine program.

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