



National Institute for Occupational Safety and Health

NIOSH Administered – DOE Funded Grants and Cooperative Agreements

NIOSH Grants

Winter 2004

Grantee: International Agency for Research on Cancer (IARC) Principal Investigator: Elisabeth Cardis, Ph.D.

Follow-up work from NIOSH Grant # 5 R01 CC015763-03

Reconstruction of Doses for Chernobyl Liquidators

Two case-control studies were conducted among Chernobyl liquidators in Belarus, Estonia, Latvia, Lithuania and Russia. The study objective was to estimate the risk of developing leukemia/non-Hodgkin lymphoma and thyroid cancer from protracted exposure to low-to-medium (0-500 mSv) radiation dosage. To obtain a copy of the final report, visit the NIOSH website (<http://www.cdc.gov/niosh/2001-133.html>) or call (513) 841-4400. For a copy of the publication, please refer to the citation below. For further information on this study, please contact Dr. Elisabeth Cardis by email (cardis@iarc.fr) or by telephone in France, +33 (4) 72-73-85-08.

Kesminiene A, Cardis E, Tenet V, Ivanov VK, Kurtinaitis J, Malakhova I, Stengrevics A, Tekkel M [2002]. Studies of Cancer Risk Among Chernobyl Liquidators: Materials and Methods. *J. Radiol. Prot.*, 22:137-41.

Grantee: University of Southern California Principal Investigator: Daniel O. Stram, Ph.D.

Follow-up work from NIOSH Grant # R01 CCR11869-06

Measurement Error Methods for Underground Miner Studies

This study developed statistical methods for radiation exposure measurement errors and uncertainty when exposures are extended over time. These methods were applied to a reanalysis of exposure-time-response (including dose-rate effects) for lung cancer mortality in the Colorado Plateau Uranium Miners Cohort Study. To obtain a copy of the final report, visit the NIOSH website (<http://www.cdc.gov/niosh/2001-133.html>) or call (513) 841-4400. For copies of the publications, please refer to the citations below. For further information on this study, please contact Dr. Stram by email (stram@rcf.usc.edu) or telephone (323) 442-1817.

Langholz B, Thomas D, Xiang A, Stram DO [1999]. Latency Analysis in Epidemiologic Studies of Occupational Exposures: Application to the Colorado Plateau Uranium Miners Cohort. *Am J Ind Med.*, 35:246-56.

Stram DO, Langholz B, Huberman M, Thomas DC [1999]. Correcting for Exposure Measurement Error in a Reanalysis of Lung Cancer Mortality for the Colorado Plateau Uranium Miners Cohort. *Health Phys.*, 77(3):265-75.

Stram DO [2000]. Correcting for Exposure Measurement Error in Uranium Miners Studies: Impact on Inverse Dose-Rate Effects. *Radiat Res.*, 154(6):738-39.

Stram DO, Kopecky KJ [2002]. Power Analysis of Epidemiological Studies of Radiation-Related Disease Risk when Dose Estimates are Based on a Complex Dosimetry System with an Application to the Hanford Thyroid Disease Study. *Radiat Res.*, 158(6):797-99.

Stram DO, Kopecky KJ [2003]. Power and Uncertainty Analysis of Epidemiological Studies of Radiation-Related Disease Risk in which Dose Estimates are Based on a Complex Dosimetry System: Some Observations. *Radiat Res.*, 160:408-17.

Grantee: New York University
Principal Investigator: Xiaonan Xue, Ph.D.

Follow-up work from NIOSH Grant # 1R01 CCR215746
Correcting for Measurement Errors in Radiation Exposure

This research developed methods for correcting radiation exposure measurement errors, including both systematic errors, particularly the error due to minimum detection levels of the dosimeters, and random errors. A joint model for measurement errors and dose-response relationships was developed for more precise and accurate risk assessments. The methods for modeling and correcting measurement errors developed from this research will apply to ongoing and future worker radiation studies and analysis of other environmental exposure data. To obtain a copy of the final performance report, visit the NIOSH website (<http://www.cdc.gov/niosh/2001-133.html>) or call (513) 841-4400. For a copy of the publication, please refer to the citation below. For further information on this study, please contact Dr. Xiaonan (Nan) Xue by email (xxue@aecom.yu.edu) or telephone (718) 430-2431. Dr. Xue currently works at the Albert Einstein College of Medicine.

Xue X, Shore RE [2003]. A Method for Estimating Occupational Radiation Doses Subject to Minimum Detection Levels. Health Phys., 84(1):61-71.

Xue X, Shore RE, Ye X, Kim MY [2004]. Estimating the Dose Response Relationship for Occupational Radiation Exposure Measured with Minimum Detection Level. Health Phys., 87(4):397-404.

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Further NIOSH Information

1-800-356-4674

For a summary of NIOSH research involving Department of Energy workers, visit on-line at:

<http://www.cdc.gov/niosh/2001-133.html>

NIOSH/HERB Contact Points for Further Information...

National Institute for Occupational Safety and Health (NIOSH)
Division of Surveillance, Hazard Evaluations and Field Studies (DSHEFS)
Health-Related Energy Research Branch (HERB)

NIOSH-HERB MS R-44
4676 Columbia Parkway
Cincinnati, OH 45226

Phone: (513) 841-4400
Fax: (513) 841-4470

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