

Rocky Flats Downwinders Health Survey Metropolitan State University of Denver

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Research Overview

Metropolitan State University of Denver in partnership with [Rocky Flats Downwinders](#) (RFD) are conducting a health survey to investigate relationships between residents who lived downwind of the former Rocky Flats Nuclear Weapons Plant and unusual illnesses. A survey was deployed on May 16, 2016, and 1,745 responses have been collected and assessed to date, for both geographic and illness information. The survey is designed to collect data from residents who lived in the area between 1952 and 1992 within the boundaries of Highway 128/120th Ave. on the north, I-25 on the east, I-70 on the south and Highway 93 on the west through convenience sampling.

Preliminary Findings

Data pertaining to illness was geoplotted on a map of the survey area. Two sourced maps of contamination from the plant in the form of radiation and fires were overlaid on the geoplotted data to identify possible correlation between illness and radiation exposure in the area.ⁱⁱⁱ The results are anecdotal, compelling, non-conclusive.

Within the 1,745 completed surveys for the 64-year time period, there were 848 cases of cancer with 414 of those cases being cancers designated as “rare” (less than 15/100,000 people). These rare cancers account for 48.8 percent of the total cancer cases for these survey results as compared to the US rate for “rare” cancers which is 25 percent. The most common cancers in this study, in order of prevalence, are breast, thyroid, prostate and colon. The most cancers for the US and Colorado, in order of prevalence, are breast, prostate, lung, and colon with thyroid ranking 9th. The data for all other types of illnesses has yet to be examined, but the identified patterns warrant further investigation.

Prevalence of Cancers:

- Ranking of prevalence of cancers in US and Colorado (reported as number per 100,000 people per year):
 1. Breast
 2. Prostate
 3. Lung
 4. Colon

 9. Thyroid (National Cancer Institute - <https://www.cancer.gov/types/common-cancers>)
- Ranking of prevalence of cancers of people reported in the RFD Health Survey (reported as cumulative for 64 years):
 1. Breast
 2. Thyroid
 3. Prostate
 4. Colon

- Prevalence of “rare” cancers in US: ~ 25% ⁱⁱⁱ(1995-2004)
- Prevalence of “rare” cancers of people reported in the RFD Health Survey: ~49% (reported as cumulative for 64 years)

Rare Cancers Identified:

Adrenal	Mucoepidermoid tumor
Anal	Multiple Myeloma
Appendix	Myelodysplastic syndrome
Bile Duct/cholangiocarcinoma	Myelofibrosis
Bone	Neuroblastoma, T-4 origin
Bone, Ewing sarcoma	Neuroendocrine carcinoma
Bone, myelofibrosis	Neurofibromatosis
Brain	Oral
Brain, glioblastoma	Ovarian
Brain, oligodendroglioma	Parathyroid
Cardinoid Syndrome	Pancreatic
Cervical	Penile
Dermatofibrosarcoma	Plasmacytoma
Desmoid tumor	Salivary gland
Esophageal	Sarcoma
Eye	Skin, mucosal melanoma
Facial gland	Skin, choroidal melanoma
Gallbladder	Merkel tumor
Heart, angiosarcoma	Stomach
Leiomyosarcoma	Schwannamatosi
Leukemia	Teratoma
Leukemia, acute myeloid (AML)	Testicular
Leukemia, acute myelomonocytic biphenotypic	Thigh
Leukemia, acute lymphoblastic	Thymoma
Leukemia, hairy cell	Thymus
Leukemia, myelofibrosis	Thyroid
Liver	Thyroid, Hurthle cell
Lymphoma	Thyroid, follicular with papillary
Lymphoma, T cell	Tongue
Lymphoma, Hodgkins	Tonsil remnant
Leukemia, acute myelomonocytic biphenotypic	Uterine
Lymphoma, mycosis fungoides	Vaginal
Maxillary sinus cavity	Vulvar
Meningioma	

Next steps:

- Verify existing survey information pertaining addresses and time frames
- Continue to offer the health survey as an ongoing data collection tool
- Examine illnesses in addition to cancer
- Conduct oral histories of individuals with very rare cancers from the survey

- Conduct soil sampling in areas of identified illness clusters

ⁱ John E. Till, Arthur S. Rood, Paul G. Voilleque, Patricia D. McGavran, Kathleen R. Meyer, Helen A. Grogan, Warren K. Sinclair, Jill W. Aanenson, H. Rober Meyer, H. Justin Mohler, Susan K. Rope and Marilyn J. Case (2002). Risks to the public from historical releases of radionuclides and chemicals at the Rocky Flats Environmental Technology Site. *Journal of Exposure Analysis and Environmental Epidemiology* (2002) 12, 355–372.

ⁱⁱ JeffCo Map (10/25/04) and Krey Hardy Map (8/1/70).

ⁱⁱⁱ Robert Greenlee, Marc Goodman, Charles Lynch, Charles Platz, Lori Havener, & Holly Howe (2010) The Occurrence of Rare Cancers in US Adults, 1995-2004. *Public Health Reports*, January-February, 125: 28-43.