



Radiation and Public Health Project

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HIGH LEVELS OF ATOM BOMB FALLOUT FOUND IN BODIES OF AMERICANS DYING OF CANCER AT AN EARLY AGE – NEW JOURNAL ARTICLE

STUDY USES SAMPLE OF 85,000 BABY TEETH, SUGGESTS EARLIER GOVERNMENT ESTIMATE OF DEATHS FROM FALLOUT IS LOW

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December 14, 2010 - The average concentration of Strontium-90 from atom bomb fallout in baby teeth of Americans who died of cancer by age 50 is 122% higher than in persons age 50 without cancer, according to a study published in the current *International Journal of Health Services*. The analysis is the first to address fallout cancer risk using radiation measurements in human bodies.

“The toll from fallout is probably far greater than prior estimates,” says study co-author Janette Sherman MD, an internist and toxicologist. Sherman, who is the study co-author, adds “Given the increase in cancer rates proximate to nuclear facilities documented world-wide by many researchers, the public needs to understand this if we are to prevent this scourge in our children and grandchildren.”

“Discovering high fallout levels in U.S. Baby Boomers exposed as infants during the Cold War who died of cancer at an early age is an important step in the effort to understand damage from bomb testing,” says Joseph Mangano MPH MBA, the other author of the study. Mangano is Executive Director of the Radiation and Public Health Project (RPHP) research group, which conducted the tooth study.

Fallout-induced cancer is a pertinent topic, as the U.S. Senate has not ratified the Comprehensive Test Ban Treaty of 1997, a goal set by President Obama. “For over sixty years, the planet has dealt with the toxic legacy of nuclear weapons tests,” says Rep. Edward Markey (D-MA). “This study confirms one of the many reasons it is absolutely essential to stop nuclear weapons testing forever; it is an attack upon our health.”

From 1945-1963, the U.S. and Soviet Union tested 422 nuclear weapons in the atmosphere, with a yield equal to 40,000 Hiroshima bombs. The Partial Test Ban Treaty signed by President John F. Kennedy and Premier Nikita Khrushchev restricted all tests to underground locations.

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Fallout from atmospheric tests reached all parts of the U.S. and contaminated the food supply. In 1958, St. Louis scientists began measuring Strontium-90 in baby teeth. Sr-90 is not found in nature, but one of over 100 radioactive and carcinogenic chemicals created by atom bomb explosions and nuclear reactor operations. Sr-90 is chemically similar to calcium, and accumulates in bone and teeth of children and the unborn.

Scientists and citizens collected 320,000 teeth over the 12 year period 1958-1970. Washington University researchers found a steep rise in Sr-90 in teeth during testing and a sharp decline after the Test Ban Treaty went into effect, but did not address cancer risk.

The newly released cancer study started with the 2001 discovery of 85,000 untested baby teeth at Tyson Valley, a World War II gunnery range outside St. Louis now used for storage by Washington University. The 85,000 teeth still retain about one third of the original Sr-90 from bomb fallout, as the chemical decays slowly.

The University donated the teeth to RPHP, which identified the current health status of a sample of St. Louis-area males born 1959-1961 who donated teeth. Lab tests by the University of Waterloo (Canada) showed the average Sr-90 concentration in 20 teeth of those who died of cancer (7.00 picocuries of Sr-90 per gram calcium) was 122% greater than for 29 persons the same age who never had cancer (3.16), a significant difference.

Of the 79 million Americans born in the 1950s and 1960s (during bomb testing), close to 20 million will die of cancer. This population was most adversely affected by fallout since radiation is most harmful during fetal and infant life. After years of government denials that bomb tests were harmful, the CDC issued a 2002 (unpublished) report estimating that fallout caused 15,000 U.S. cancer deaths.

In 2003, the European Committee on Radiation Risk, formed by a panel of the European Parliament, issued a report stating that cancer risk from fallout had been understated. The Committee estimated 123,200,000 cancer cases (61,600,000 fatal) worldwide.

RPHP plans to assess cancer risk in female tooth donors. Breast and thyroid cancers, especially sensitive to radiation, affect mostly females.

RPHP members have published 27 journal articles/letters and 7 books on health risks of radiation. The current study of cancer and baby teeth can be accessed at http://www.radiation.org/spotlight/101210_ijhs_ManganoSherman.html.