**New report: evidence that depleted uranium can cause cancer now overwhelming**

A new analysis of nearly 50 peer-reviewed studies has concluded that the chemically toxic and radioactive weapons constituent depleted uranium (DU) can damage DNA and cause cancer, the report calls for urgent studies into the extent to which civilians are being exposed to the substance.

29 August 2014 **International Coalition to Ban Uranium Weapons (ICBUW)**

<http://www.bandepleteduranium.org/en/depleted-uranium-cancer-evidence-overwhelming>

**‘Radiation exposure from depleted uranium: The radiation bystander effect.’**

Miller AC, Rivas R, Tesoro L, Kovalenko G, Kovaric N, Pavlovic P, Brenner D.

Toxicol Appl Pharmacol. 2017 Sep 15; 331:135-141. doi: 10.1016/ j.taap.2017.06.004. Epub 2017 June 9. <https://www.ncbi.nlm.nih.gov/pubmed/28602947>

**Abstract**

Depleted uranium (DU) is a radioactive heavy metal used primarily in military applications. Published data from our laboratory have demonstrated that DU exposure in vitro to immortalized human osteoblast cells (HOS) is both neoplastically transforming and genotoxic. In vivo studies have also demonstrated that DU is leukemogenic and genotoxic. DU possesses both a radiological (alpha particle) and chemical (metal) component but is generally considered a chemical biohazard. Studies have shown that alpha particle radiation does play a role in DU's toxic effects. Evidence has accumulated that non-irradiated cells in the vicinity of irradiated cells can have a response to ionization events. The purpose of this study was to determine if these "bystander effects" play a role in DU's toxic and neoplastic effects using HOS cells. We investigated the bystander responses between DU-exposed cells and non-exposed cells by co-culturing the two equal populations. Decreased cell survival and increased neoplastic transformation were observed in the non-DU exposed cells following 4 or 24h co-culture. In contrast Ni (II)- or Cr(VI)- exposed cells were unable to alter those biological effects in non-Ni(II) or non-Cr(VI) exposed co-cultured cells. Transfer experiments using medium from the DU-exposed and non-exposed co-cultured cells was able to cause adverse biological responses in cells; these results demonstrated that a factor (s) is secreted into the co-culture medium which is involved in this DU-associated bystander effect. This novel effect of DU exposure could have implications for radiation risk and for health risk assessment associated with DU exposure.

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