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The cause of congenital anomaly and cancer in Fallujah Iraq is identified as Enriched Uranium from novel weapons systems deployed by the US.

<http://www.conflictandhealth.com/content/5/1/15>

Remarkably high levels of congenital anomaly at birth, together with high cancer rates in Fallujah, Iraq were previously found in a joint UK Iraqi epidemiological study published in the *International Journal of Environment and Public Health* in July 2010 and reported in *The Independent*. The illnesses and unusual changes in the sex-ratio at birth were shown to appear following the US-led attacks on the town in 2004. Many believed that Depleted Uranium weapons were employed but no evidence of this was available. USA forces denied using DU. Now, one year after this, the authors have nailed down the cause of the genetic and genomic effects found in Fallujah. Samira Alaani and Muhammed Tafash, two paediatricians at Fallujah General Hospital, Chris Busby, Visiting Professor at the University of Ulster, Malak Hamdan, a chemical engineer and Eleonore Blaurock Busch, whose laboratory in Germany carried out analytical work will publish in the peer-reviewed journal *Conflict and Health* the results of an exhaustive study of contamination in Fallujah. They began by analysing the hair of 25 parents of children with congenital malformations using highly sensitive Inductively Coupled Plasma Mass Spectrometry (ICPMS). Metal contamination is excreted into hair at same rate as it is excreted into urine. There were high values of Calcium, Magnesium, Strontium, Aluminium, Bismuth, Mercury and Uranium. However, of these only Uranium, which is radioactive, is associated with cancer and birth defects. Uranium levels were significantly higher than those expected on the basis of other published control measurements of uncontaminated populations, particularly Israel and Sweden. Levels reported for soil, tap water, river water and well water were unable to explain the hair results but showed, surprisingly, that the environmental Uranium was not natural but was man-made. It was not, however DU. The ratio of the two isotopes of Uranium U238 and U235 is always 138 in natural Uranium deposits. For DU, the ratio is always high: pure DU has a ratio above 400. However, in Fallujah, both in the hair of the parents and in the environmental samples, the Uranium ratio was significantly low, implying the presence of Enriched Uranium. To investigate the source of the Uranium, because the Moslem women in Fallujah have long hair, and hair grows at a known rate of about 1cm a month, the team was able to obtain historic exposure information by analysing along the length of the hair of 5 women. Hair contamination was much higher in the past. In the case of one woman whose hair was 80cm long, taking the hair end back to 2005, just after the attack, the Uranium concentration in 2011 defined exposures to very high levels of uranium in the past. In the paper, the authors introduce evidence that the effects on child health are clear to see in the whole of Iraq as well as in the children of Gulf War veterans. This is also true for childhood cancer which was reported in the epidemiological study to be shockingly high in Fallujah with rates about 14 times those expected on the basis of populations in Egypt. The anomalously high genotoxic effects of Uranium are also discussed. Uranium binds to DNA and work by Chris Busby reported in *New Scientist* in 2009 shows that the element concentrates natural

background gamma radiation into the DNA through a process termed the secondary photoelectron effect.

Given that man-made Enriched Uranium is found in the Fallujah environment and that levels were higher in the past, the authors conclude that a uranium-based weapon of some type was employed in the Battle of Fallujah, and is the main cause of the high levels of cancer and congenital disease. The paper discusses weapons systems and cites patents which call for the use of Uranium in shaped charges and other types of anti-personnel weapons (rather than the anti-tank DU weapons used in GW1). Included also are thermobaric devices and novel uranium packed explosives which kill by charring victims and pressure effects which cause lung collapse. It is of interest that Enriched Uranium signatures have also turned up in other recent battlefields, notably in the Lebanon, where soil from a missile crater in Khiam and also dust from an ambulance air filter both showed the presence of Enriched Uranium in 2006, a finding reported in *The Independent* by Robert Fisk. The authors are unable to explain why these weapons contain or produce slightly enriched Uranium and call for the military to now reveal the truth about the weapons systems being employed in modern battlefields.

Dr Busby said: *What we have found makes it perfectly clear that a new generation of Uranium based weapons exists, is being employed in all modern battlefields and leads to shocking increases in cancer and congenital illness in innocent civilians and soldiers alike. Whether there is slightly enriched Uranium to cover up the use of Uranium weapons, or whether the enrichment is an integral requirement of some new weapons system, what we see is the deployment of a device of indiscriminate effect with terrible and indiscriminate consequences. It is most likely that this weapon is also being employed by NATO forces in Libya, and we will wait and watch with concern for increases in cancer and birth defects following this latest war.*

He continued: *There has been a sustained effort to stop us making this study and then to stop us publishing it. We have been attacked by people writing to our funders so we had no money to pay for the analyses, to the Journals we were sending the study to even before we sent it, to our Universities and Hospitals and Institutions. It was rejected by **The Lancet** without even being sent for Peer Review. It was rejected by the **International Journal of Environment and Public Health** where we published our previous paper, without being sent to a reviewer on the basis of pressure brought on the editor from outside by people who hacked into the computers of the authors and knew about the paper before the journal received it. The implications of this discovery are extremely serious.*

- *First it means that all the measurements made for Depleted Uranium DU on Gulf War 2 veterans are now useless as indications of exposure to Uranium dust and must be revisited.*
- *Second it shows that Uranium is now being used routinely in anti-personnel weapons and no longer only in anti tank weapons.*
- *Finally it means that the focus of the NGOs on banning Depleted Uranium (DU) is misplaced and such a ban pointless since DU has not been deployed for a long time as the military rightly (and with some concealed amusement) say.*

The local civilian effects and global civilian exposures to this material represents a human rights issue of the greatest magnitude.

Malak Hamdan added:

This extraordinary discovery of a new uranium weapon should serve as a wake-up call to the entire world. It is as if the military were at war with humanity, secretly winning their battles with what is effectively a kind of delayed-action radioactive poison gas. They cannot keep claiming that these radioactive weapons can discriminate in their effects between military and non-military targets. Because of this, enormous numbers of innocent people have died and will die in the future. Countless parents will watch their children with horror and pity as for several generations children will continue to be born with congenital anomalies as result of the genetic heritable effects induced by this exposure to uranium dust.

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