



## Gulf War Illness and Depleted Uranium

In November 2008 an exhaustive study on the health problems experienced by veterans of the 1991 Gulf War was produced by the Research Advisory Committee on Gulf War Veteran's Illnesses (RAC), a body set up by the US congress. The report powerfully illustrates the state of research on DU and human health, as well as showing the resistance within the US department of Veterans' Affairs (VA) to proper investigation into Gulf War illness and the flaws in research that they have commissioned.

### *Major Findings*

The headline conclusion of the report was that Gulf War illness existed as a distinct medical condition. There are two major symptom groups – those indicative of neurological/cognitive problems and persistent, widespread joint and muscle pain, including chronic fatigue symptoms. In practice, the symptoms experienced will vary from person to person, and can cover a disparate range of maladies. As an indication of the diversity of symptoms, they include chronic headaches, vision abnormalities, muscle pain, sleep abnormalities, chronic diarrhoea and unexplained rashes.

The second major finding was that there is a causal link between Gulf War illness and two factors - Pyridostigmine Bromide (PB) pills, which were given to troops to protect them from the effects of chemical weapons, and to pesticides which were liberally used in coalition camps. Other factors were either categorised as being impossible to rule out, or being unlikely to play a role.

### *Depleted uranium and Gulf War illness – What we don't know*

A link between DU and GWI has been suggested repeatedly over the years, but the report makes explicit the lack of information available to assess whether such a link exists. For example, the committee did not have access to any information on specific sites where DU was fired by US forces in the 1991 conflict. Although a Clinton-era committee looking into similar issues was provided with a map of sites, it was not given to the RAC, who are left with estimated figures by independent researcher Dan Fahey that hundreds of thousands of veterans may be affected by DU exposure. The committee were critical of studies which rely on the self-reporting of veterans, due to the problem of faulty memories, exacerbated by the fact that DU was not well known at the time of the conflict. This criticism has implications for studies of UK veterans, which have largely relied on self-reporting.

### *Depleted uranium and the wider health of veterans*

As well as these impediments to identifying veterans exposed to DU and possible correlations with those suffering from Gulf War illness, there are further problems to assessing whether DU exposure has had other health effects. Information about the rates of cancer in veterans is sparse, and the few studies which have been done on the incidence of birth defects in their families have not looked at DU. The report also implies that the VA has access to information about the latter which it is withholding from public view. It is very critical of a previous series of reports entitled 'Gulf War and Health' which were mandated by congress, but implemented by the VA. As well as stating that these reports failed to address fundamental questions, it considered the problems with the commissioning process so severe that it recommended the department involved be stripped of responsibility for future research.

### *Reports conclusions regarding depleted uranium*

While the committee believes that some recent animal research suggesting DU exposure can have behavioural effects is "potentially of great importance", they also state that additional research would be required before they could make recommendations based on it. Their main finding is that DU is "not likely a primary cause of Gulf War Illness for most Gulf War veterans", despite the lack of firm data either way. This conclusion is based on two premises. Firstly, that there is a disparity between the health problems

known to result from DU exposure and the symptoms that make up Gulf War Illness. Secondly, that similar 'syndromes' have not been seen in the veterans of subsequent conflicts. This second premise is questionable, as the committee seem to assume that use of DU in later conflicts is largely equivalent to its use in 1991. They state with confidence that DU was used in Afghanistan, whereas there is no information in the public domain that confirms that it was. Furthermore, veterans in the US have questioned the assertion that similar symptoms have not been seen in veterans of the current Iraq conflict. Notwithstanding these concerns, CADU and ICBUW believe that the main thrust of the report's conclusions are sound – while DU may well play a role in the illness suffered by some veterans, it is unlikely to be a major factor for most. Only around 40% of Gulf War veterans are estimated to have been in areas where ground combat occurred and symptoms occur in veterans from all three services – Army, Navy and Air Force.

### *McDiarmid Study*

Potentially the most important part of the section on DU is the criticisms it makes of a series of studies carried out on behalf of the VA on veterans with confirmed DU exposure, including some involved in friendly fire incidents and a few that still have fragments of DU lodged in their bodies. It is difficult to overstate the importance of these studies – there are very few scientific papers which study the effects of depleted uranium on humans, as opposed to natural uranium, and no others which follow a group over several years. They are a standard reference point in the field, and the UK Ministry of Defence regularly refer to them when responding to concerns about DU.

The committee vindicates many of the criticisms that have been made of these studies over the years. The number of veterans studied is very small – of around 900 veterans who the US Department of Defence says were involved in incidents that could result in high level DU exposure, only 70 have ever been studied as part of the programme. Between 1993 and 2005 the group was examined every 2 or 3 years, but on each occasion only 29 to 50 of the 70 were examined, meaning that the series does not actually track the health of the same group of people from study to study. The studies did not involve a control group, and the way health problems were categorised in the write-ups of the study is very simplistic, for example there is a category of 'other health problems'. These flaws mean that there is no way to extrapolate meaningful results from these studies.

Beyond the methodological issues, however, there are serious concerns over the way the results have been handled. The RAC states that important findings were not followed up – including traces of uranium in the sperm of five veterans in 1997. Even more disturbing is that two of the subjects developed tumours, and that this was omitted from almost all of the reporting. A case of Hodgkins lymphoma was mentioned in passing on one write up, but excluded from subsequent reports, and a non-malignant bone tumour was not mentioned at all. The RAC diplomatically describe this as 'puzzling', but were sufficiently concerned about to call in the study director who responded that she did not include these cases "because they were not believed to be the result of DU exposure".

While we do not have any way of knowing why this omission occurred, to exclude results which you do not believe to be important is the very opposite of a rigorous scientific methodology. Such poor practices will inevitably lead to questions about whether other considerations were at play. As the report states: "[g]iven the size of the cohort, all health outcomes are of interest, even if they occur as single cases".

### *Conclusion*

Aside from the landmark admission about the reality of Gulf War Illness, this report is significant in that it highlights the deplorable lack of information about the use of DU and the exposure of soldiers to it during the Gulf War. It is indicative that its recommendations regarding DU are essentially research from first principles, of the sort that should have been undertaken 17 years previously. The questions which it raises about the quality of research overseen by the VA and the independence of scientists undertaking it, merely underscore the importance of animal and in vitro studies when assessing whether DU poses a risk to human health.