Scientific Guesswork

Risk assessment as a means of judging the threat from DU weapons

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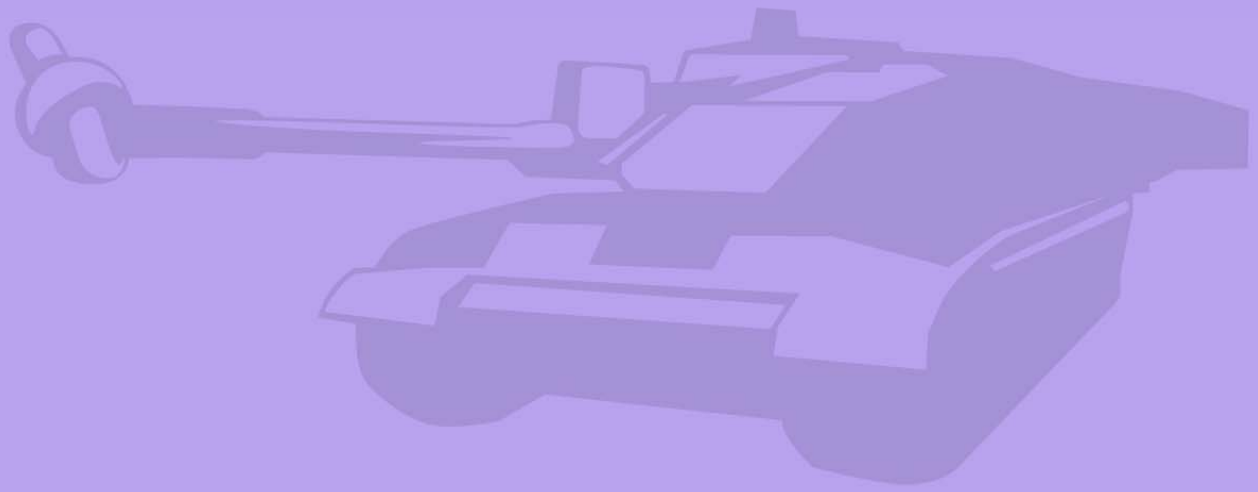

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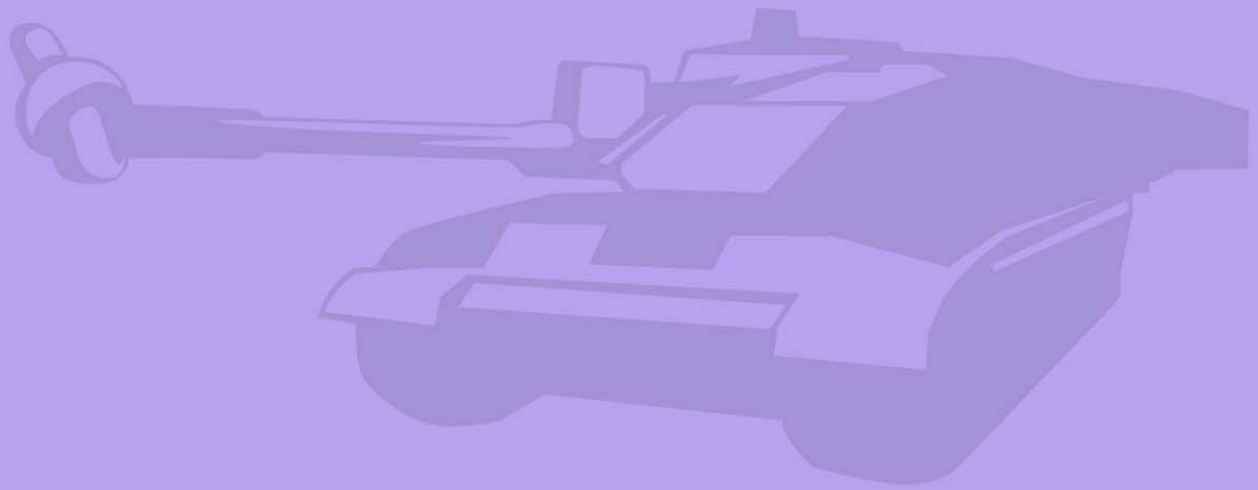
A Disclaimer

ICBUW supports scientific work and takes an evidence based approach to the issue of DU. In any assessment task where there are unknowns, the person carrying out the assessment will use their best judgement to fill in the gaps.



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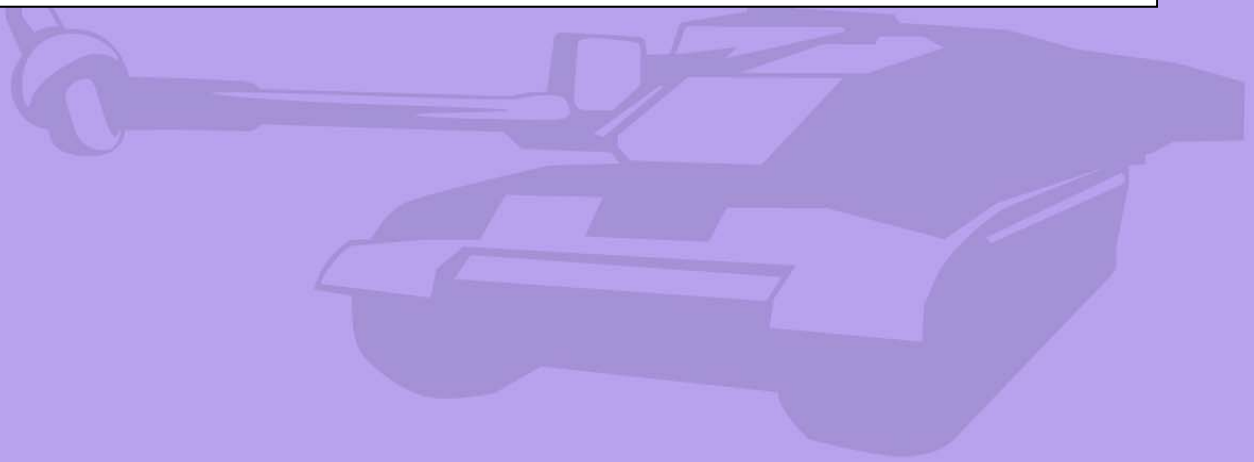
Definitions

Hazard: Something which is dangerous to people

Risk: A measure of the danger posed by that hazard. Risk is a hazard quantified.

Hazard x Exposure = Risk (Probability of effect)



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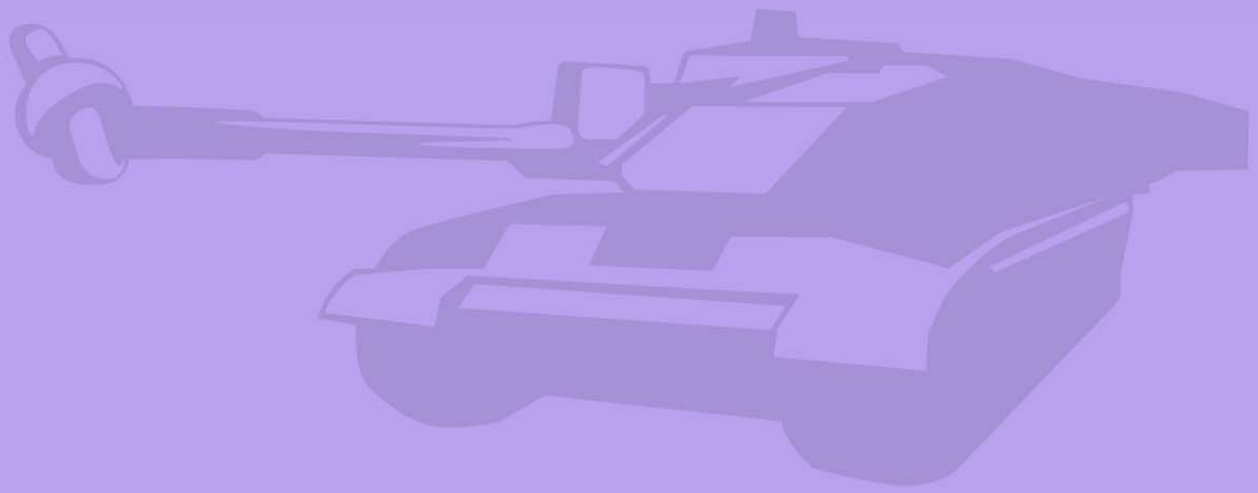
Bodies of knowledge used for DU risk assessment

- Sometimes used in combination, sometimes used separately
- Pros and cons to each
- Draw on a variety of scientific disciplines
- Key issue is connecting them and drawing inferences



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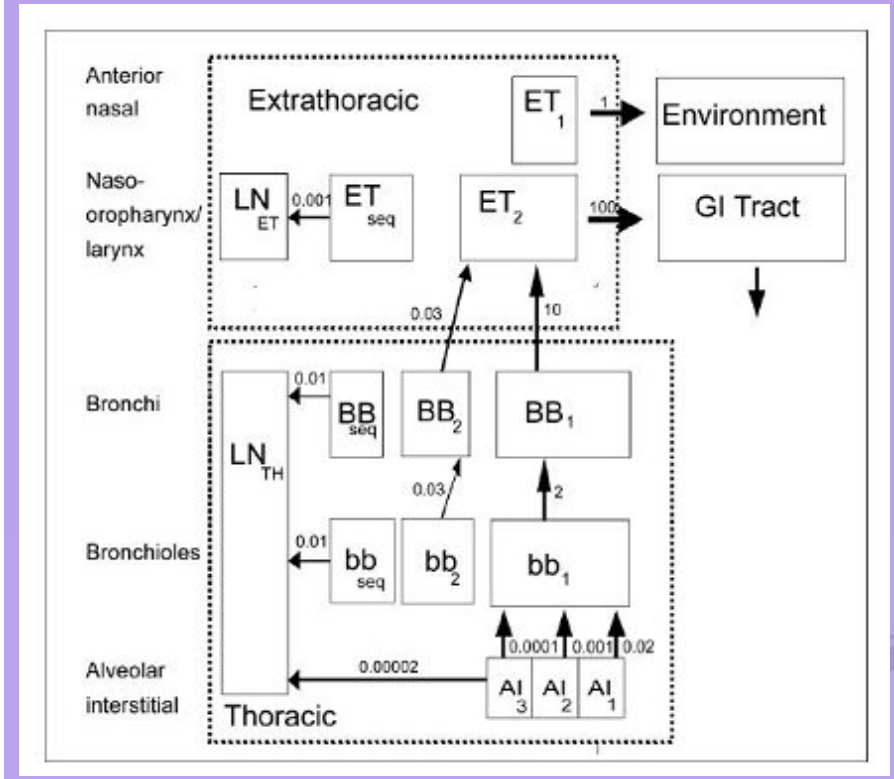
International Commission for Radiological Protection (ICRP) models of the human body



- Detailed and flexible models
- Able to look at effects on different parts of the body
- Only look at radiological risk, so not the full picture

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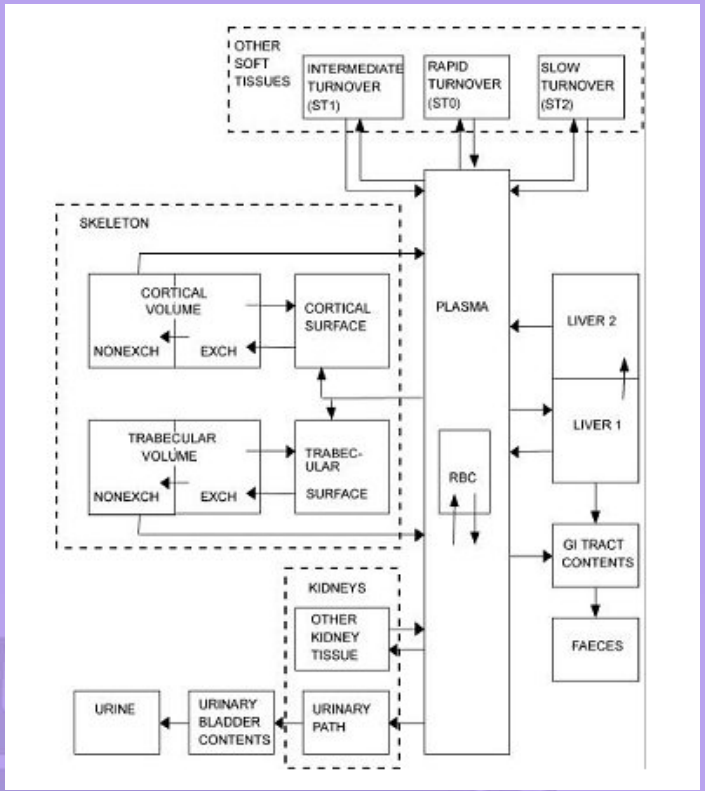
ICRP models (part 2)

- Significant uncertainties in the models (factor of 7 to 10, 27 years after the dose)
- Developed for civilian nuclear programmes with a functioning regulatory environment, so not necessarily applicable
- Within this framework it is assumed that any DU within the body carries an increased risk of cancer.



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Contamination and Exposure Data

- Some very high quality work (UNEP)
- Snapshots rather than continuous monitoring
- Uncertainty about different types of contamination
- Significant variation in key variables such as solubility. Difficult to generalise
- Long-term behaviour of DU in the environment is still not well understood

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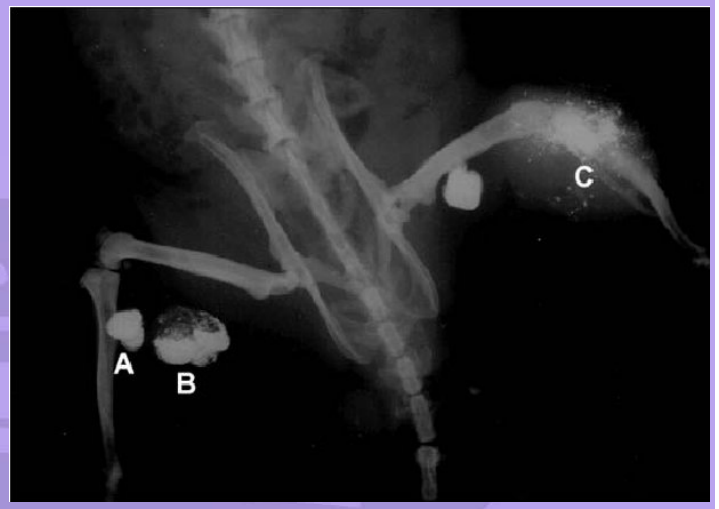
Exposure studies on soldiers and civilians

- Testing uranium content in urine to see if the subject has been exposed to DU
- Very sensitive procedures available, but very expensive
- Almost all studies carried out on soldiers. Often self-selecting cohort
- Testing on civilians has involved tiny number of subjects

Data from animal and laboratory studies

- A lot of detailed work, majority of recent scientific literature
- Various health issues identified, including genotoxicity
- Dose response not well understood for many health effects
- In some cases health implications of physiological changes not clear
- Major DU risk assessments looked only at radiological effects, and risk of kidney poisoning in some cases



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Medical studies on exposed US veterans

- Group too small for meaningful results
- Poor methodology and failure to properly follow-up some results
- Issues of concern, including tumours, not properly reported

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Epidemiology

- Potentially one of the strongest bodies of knowledge
- Can be used to prove health effects without needing to understand the biological processes involved
- No epidemiological studies done on people exposed to DU
- Inferring from studies on uranium miners and mill workers is problematic

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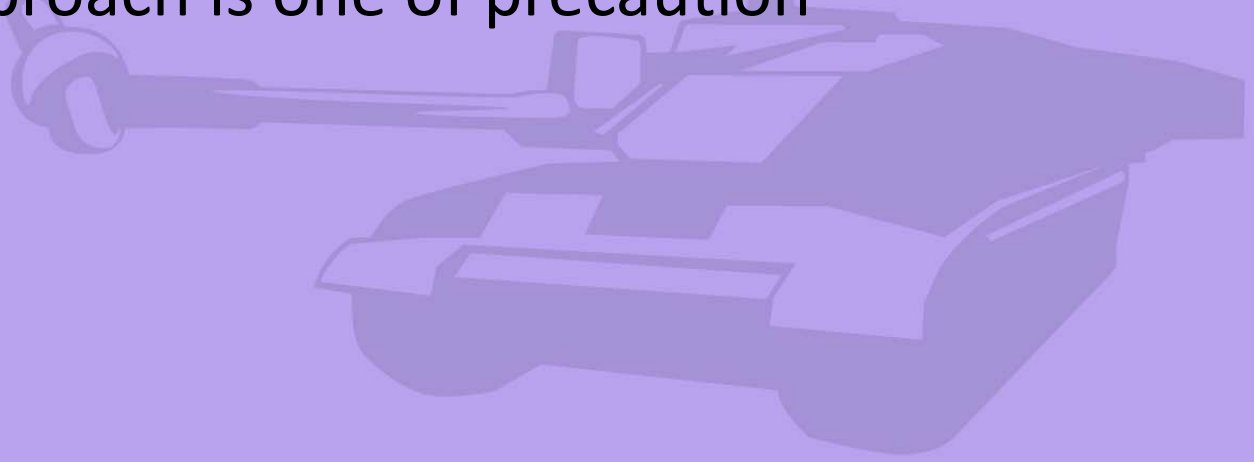
Conclusions

- A lot of research has been done, but there are still significant areas of uncertainty
- Without data on exposure, dose-response or epidemiology, it is impossible to accurately assess risk
- Given we know DU is a hazard, the only responsible approach is one of precaution



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