

German study finds leukemia increase

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Across Europe a number of studies have reported increased rates of childhood leukemia around other nuclear facilities. In 1992, the German Childhood Cancer Registry found a statistically significant increased incidence rate for leukemia's among children below five years of age within the 5-km-zone around nuclear sites. A second study was published in 1997, and again found increased childhood leukemia's near nuclear plants.

The third and most recent study was initiated, funded and published by the Federal Office for Radiation Protection on behalf of the Federal Ministry for the Environment and conducted by the German Childhood Cancer Registry on childhood cancer near nuclear installations. The study is known by its German acronym KiKK (Kinderkrebs in der Umgebung von Kernkraftwerken). The KiKK study on Childhood Cancer in the Vicinity of Nuclear Power Plants commissioned in 2001, started in 2003, and completed in 2007 is perhaps the most scientifically rigorous and statistically sound research on this topic. The study looked at childhood leukemia and cancer near nuclear plants from 1980 to 2003.

The published and peer reviewed results gives clear evidence of a significant increase in childhood leukemia and cancer risk near to nuclear plants in Germany. So let's be clear about this, the German Childhood Cancer Registry has found that there is a significantly increased risk for children less than five years of age to contract leukemia the nearer they live to nuclear power plant. The German Federal Office for Radiation Protection formally confirmed these findings, stating that 'in the vicinity of nuclear power plants, an increased risk of 60 per cent was observed for all types of childhood cancer, and for childhood leukemia the risk doubled equaling a risk increase of approximately 100 per cent'.

With the attention to technical detail associated with Germany, the German government also appointed a multi-disciplinary Expert Group to assess the KiKK study findings. They concluded that 'the study-design complies with the state-of-the-art of epidemiological science, the study is the methodically most elaborate and comprehensive investigation of this interrelation world-wide, and incidence risk has been sufficiently proved for Germany'. Further analysis of the KiKK study by the German Expert Group went onto state that childhood cancer near to nuclear power plant sites was actually underestimated by the KiKK researchers – and so the risks are considerably above those reported.

http://www.theecologist.org/blogs_and_comments/commentators/other_comments/889929/why_uk_nuclear_power_plants_may_cause_childhood_cancer_and_leukaemia.html

Why UK nuclear power plants may cause childhood cancer and leukaemia

Dr Paul Dorfman

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You won't hear the UK government admit it but after decades of research there is now evidence of real excesses of childhood cancer and leukaemia near some nuclear facilities, argues Dr Paul Dorfman

Lets cut to the chase. Since all nuclear reactors discharge low-level radiation to the environment, it would be intolerable if these emissions caused cancer and leukaemia to children and infants in local communities near to nuclear facilities, and if it were proven that they did then nuclear power would be finished. So the stakes are high.

Now the most recent shots in this trench war about radiation risk health effects have been fired by the UK government scientific advisory [Committee on the Medical Effects of Radiation on the Environment \(COMARE\)](#), who state unequivocally that increased childhood leukaemia and other cancers in communities near to nuclear power plants are not caused by radioactive pollution. Perhaps COMARE's findings shouldn't come as a great shock – there's a history and trajectory to their work.

Previous research

Back in 1983 the 'Black Report' investigated the proven, highly significant, and universally acknowledged 10-fold childhood leukaemia excess in the village of Seascale near the reprocessing plant of Sellafield in Cumbria. Sir Douglas Black's government advisory group confirmed that although there was indeed a higher incidence of leukaemia in young people living in the area, radioactive discharges from Sellafield discharges weren't the cause. The First COMARE Report confirmed these findings, as did the Second COMARE Report, which investigated the very high incidence (8-fold increase) of leukaemia in young people living near to the Dounreay nuclear reprocessing facility in Caithness.

COMARE's Third Report considered an increased incidence of childhood cancer near the Atomic Weapons Establishment (AWE) at Aldermaston and Burghfield. Again, although there were confirmed and statistically significant increases in childhood leukaemia and other childhood cancers near the two sites, they judged that the doses from the radioactive discharges were far too low to cause the childhood cancer. Their Fourth Report looked again at the ongoing malignancies in young people in Seascale near Sellafield and once again, perhaps unsurprisingly, concluded that radiation emissions were not to blame.

Over the last 25 years 10 of COMARE's 14 published Reports have dealt with radiation exposures to communities near to nuclear plants in the UK. Each report has successively dismissed the possibility that exposure to radiation from nuclear plants could in any way contribute to ill-health in local communities. COMARE also soundly rejected the possibility that radiation emissions could be even a factor in these malignancies – that ill-health could result from multiple causes, with radiation pollution

as a contributory factor, as suggested by many members of the government scientific advisory [Committee Examining Radiation Risks from Internal Emitters \(CERRIE\)](#).

The 'cluster' theory

COMARE have another explanation of the leukaemia clusters: Population Mixing Theory (PMT). PMT suggests that contact (herd mingling) between incoming and sensitive resident populations promotes the exchange of an unidentified virus that causes leukaemia. In other words, an influx of new people may pass on a virus to the children of a remote community. And whilst it's important to keep an open mind and explore any possible rational way forward, there are problems with this theory. For example, the Sellafield cluster is ongoing, and local children should have developed 'herd immunity' by now after many decades of exposure to this new unidentified virus.

Also, although nearly 8,000 construction workers from all parts of the UK landed in Cumbria in the 1940's, when two TNT production plants were built at Windscale and Drigg near Sellafield, the leukaemias were only found after nuclear plants had started operations.

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Who do you trust?

But - and maybe by now you wont be surprised – the UK scientific advisory body COMARE forwarded another view in their 14th Report, quietly published on 6 May 2011. Rather than conceding that nuclear pollution could cause, or even be a factor in these childhood cancers and leukaemias, their intricately constructed analysis of the KIKK study points again to 'the growing evidence for the role of infections in the risk of childhood leukaemia' – population mixing theory. They also state that the ill-health is driven by the leukaemia cluster near to the Krummel nuclear plant, and that 'the significantly raised incidence rate around Krummel influences the overall results; in the absence of Krummel data the childhood cancer and leukaemia incidence rate around nuclear installations is at the expected levels'.

But there's a problem. To verify findings, further examinations were carried out by the German researchers, and they found that excluding a single reactor site from the analysis did not change the results. As the German research team stated - 'this means the findings cannot be attributed to a single reactor site, but are valid for all 16 nuclear power plant sites in total. The previously alleged, so-called 'Krümmel effect' has therefore been eliminated'.

So I guess it's all about who you trust. On the one hand, nuclear low-level radiation emissions are 'safe', and nuclear plant should carry on generating. On the other hand, it has taken decades to establish that there are real excesses of childhood cancer and leukaemia near some nuclear facilities. As for me, I value precaution when considering the potential effect of a micron sized plutonium particle on the tracheal bronchial lymph node of a child.

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