

Two-fold increased risk from high-voltage power lines

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Dear Editor,

Your columnist Dr Ruairi Hanley (IMT, May 16, 2014) referred to articles linking childhood leukaemia to electric pylons as “pretty much baseless”. He provided no evidence for his personal opinions, which are contradicted by the existing scientific evidence.

There is extensive epidemiological evidence for the increased occurrence of childhood leukaemia near to high-voltage overhead lines^(1,2). The recent preliminary opinion from SCENIHR, an EU expert committee, states that a meta-analysis of studies published between 2000 and 2009 “confirms the robustness of an approximately two-fold increased risk of childhood leukaemia at magnetic field levels above 0.3/0.4 μT ”⁽³⁾. The 2007 Irish Government report concluded that the evidence for a linkage between childhood leukaemia and EMF “should not be discounted” and recommended that “as a precautionary measure future power lines and power installations should be sited away from heavily populated areas...”⁽⁴⁾.

Epidemiology is the tool scientists and doctors use to identify and confirm the risks to populations from novel environmental exposures. These risks are seldom evident even to an experienced GP like Dr Hanley treating individual patients. The risk has been established by some 20 or more studies carried out since 1979, including the recent GEOCAP study, a nationwide study of 2,779 cases of childhood acute leukaemia diagnosed in France from 2002–2007 and 30,000 contemporaneous population controls, which showed an increase in childhood acute leukaemia in patients living within 50 metres of high-voltage overhead power lines⁽⁵⁾.

The possible mechanisms behind the observed risk are beginning to be explored. Magnetic fields at levels similar to those associated with living close to power lines show behaviour in cell lines similar to that of known carcinogens⁽⁶⁾. Also, corona ions emitted from power lines may lead to increased pulmonary exposure to airborne charged particles, possibly associated with risk of childhood leukaemia^(7,8).

In the current public debate on the proposed new EirGrid network of pylons carrying 400 kV power lines, the Government needs to make its decisions based on the available facts and not on opinions, even those of Dr Hanley. The available facts start with the Government’s own 2007 report suggesting that new lines should avoid areas of high population density due to a risk of childhood leukaemia.

That document has been confirmed as the current advice of the appropriate government department (the Department of Environment, Community and Local Government). This is consistent with the draft European expert committee document, which describes robust evidence for an increased risk of childhood leukaemia at high-power frequency magnetic field exposure levels⁽³⁾.

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