

Home

News Index

Our researched articles

Science (General)

- List of studies
- Basic guide to EMFs
- EMF guidance levels
- RF unit conversion
- FAQs
- Other resources

ELF ("Power" EMFs)

- Overview
- Powerlines
- Substations
- Electrical wiring
- Electrical appliances

RF ("Microwave" EMFs)

- Overview
- WiFi
- Mobile phones
- Cordless phones
- Mobile phone masts
- Other resources

Health

- Childhood leukaemia
- Brain tumours
- Electromagnetic sensitivity
- Other health effects

Action

- Reduce your exposure
 - Mobile phones
 - Phone masts
 - Powerlines



- Liability disclaimer -
 - Privacy policy -
 - Cookies policy -

© Copyright Powerwatch 2026

Childhood leukaemia and EMFs

Health index » [Overview](#) | [Childhood leukaemia](#) | [Brain tumours](#) | [Electromagnetic hypersensitivity](#) | [Other health effects](#)

Evidence for the association between ELF (50 and 60 Hz) magnetic fields and childhood leukaemia has grown over the past 35 years, and there is now general acknowledgement that magnetic fields in excess of about 0.3 to 0.4 microteslas (μT) are linked with a doubling of leukaemia incidence. An increase in incidence is seen from about 0.15 μT , so it is wise to minimise our exposure.

In 2004 the UK charity CHILDREN with LEUKAEMIA hosted an international 5 day conference bringing together some of the most prominent world scientists involved with childhood leukaemia research to discuss the possible causes and preventative measures that could be taken regarding the disease. We are now hosting the conference site including the presentations and abstracts, available at <http://cwl2004.powerwatch.org.uk>.

The charity is now known as **Children with Cancer UK** and ran another major [International Scientific Conference in April 2012](#) on Early Exposures (of many potential toxic things) to babies and children that may cause childhood cancer. By 2011 over 1500 UK children and young people were developing cancer every year (2000 by age 19). This conference was recorded on video and web-streamed. Most of the excellent and often challenging presentation can still be watched in video on the website.

Childhood Leukaemia

As far back as 1979, childhood leukaemia was associated with exposure to residential electromagnetic fields. In 2001, Anders Ahlbom analysed this and subsequent research and concluded that there was sufficient scientific evidence to confirm the doubling in incidence for childhood leukaemia at power frequency magnetic fields of 0.4 μT and above ^[1]. This is approximately the field strength one would expect 60 metres away from a 400 kV overhead transmission line.

However, doubting the likelihood of Ahlbom's finding, Gerald Draper, John Swanson and Mary Kroll set about producing the 2005 Draper report, which again found a 70 percent increase in childhood leukaemia for those living within 200 metres of 275 and 400 kV powerlines ^[2]. Interestingly, it also found an increase of 23% in childhood leukaemia for those living between 200 and 600 metres from the powerlines, and Bristol University have come up with some published theoretical support for the mechanism by which this could happen (as magnetic fields are likely to have fallen to the background level at this distance) ^{[3][4]}.

The UK Department of Health [SAGE](#) stakeholder group was set up to assess whether the overall scientific literature really supported these findings, whether there were other aspects of the science to be concerned about, and to make recommendations as to what could be done about it.

The first interim assessment of the SAGE group was released in April 2007, and found that the link between proximity to powerlines and Childhood Leukaemia was sufficient to involve a precautionary recommendation, including an option to underground new build powerlines where possible and to prevent the building of new residential buildings within 60m of existing powerlines^[5].

Childhood Leukaemia

Childhood leukaemia is continuing to increase. Thanks to better treatment, most children are surviving this illness into adulthood. The treatment is very difficult for the children and it disrupts many families even to breaking point. It would be much better to avoid the causes of leukaemia.

Our [free library articles](#) look at the possible causative factors associated with the development of childhood leukaemia; ionising radiation (e.g.X-rays), non-ionising radiation (e.g.EMFs); chemical exposure and infections. The research into these 4 areas is summarised (with references).

There is also a section on the possible protective factors that have been identified; and the other factors, medical, genetic, socioeconomic and environmental that have been linked with childhood leukaemia.

EMFs and childhood leukaemia (15 pages)

Section 4 focuses on non-ionising radiation, including powerfrequency (ELF) EMFs and radiofrequency EMFs. It contains many references.

References

[1] - Ahlbom, Anders; Elisabeth Cardis, Adele Green, Martha Linet, David Savitz, Anthony Swerdlow (December 2001). *"Review of the Epidemiologic Literature on EMF and Health"*. Environ Health Perspect. 109 (S6) - [[View abstract](#)]

[2] - Draper, Gerald; Tim Vincent, Mary E. Kroll, John Swanson (2005). *"Childhood cancer in relation to distance from high voltage power lines in England and Wales: a case-control study"*. BMJ (330). DOI:10.1136/bmj.330.7503.1290. - [[View Abstract](#)]

[3] - Fews, Peter; Denis Henshaw, Paul Keitch, Julie Close, Richard Wilding (December 1999). *"Increased exposure to pollutant aerosols under high voltage power lines"*. Int J Radiat Biol. 75 (12): 1505-21. - [[View Abstract](#)]

[4] -Fews, Peter; Denis Henshaw, Richard Wilding, Paul Keitch (December 1999). *"Corona ions from powerlines and increased exposure to pollutant aerosols"*. Int J Radiat Biol. 75 (12): 1523-31. - [[View Abstract](#)]

[5] - *"SAGE first interim assessment: Power Lines and Property, Wiring in Homes, and Electrical Equipment in Homes"* - [[Summary plus downloads](#)]

This page has links to content that requires a .pdf reader such as  [Adobe Acrobat Reader](#)