

ALS linked to occupational exposure to electromagnetic fields



High exposure to low frequencies
Werner Bartsch/Plainpicture

By New Scientist staff and Press Association

Workplace exposure to electromagnetic fields is linked to a higher risk of developing the most common form of motor neurone disease.

Amyotrophic lateral sclerosis (ALS) is a disease that ravages the body's nerve cells, leaving people unable to control their bodies. People can die as soon as two years after first experiencing symptoms.

"Several previous studies have found that electrical workers are at increased risk of ALS," says Neil Pearce, at the London School of Hygiene and Tropical Medicine. "We don't know why the risk is higher, but the two most likely explanations involve either electrical shocks, or ongoing exposure to extremely low frequency magnetic fields."

Now an analysis of data from more than 58,000 men and 6,500 women suggests it is the latter. Roel Vermeulen, at Utrecht University in the Netherlands, and his team found that people whose jobs exposed them to high levels of very low frequency magnetic fields were twice as likely to develop ALS as people who have never had this kind of occupational exposure.

Jobs with relatively high levels of extremely low frequency electromagnetic fields include electric line installers, welders, sewing-machine operators, and aircraft pilots, says Vermeulen. "These are essentially jobs where workers are placed in close proximity to appliances that use a lot of electricity."

Causal link?

The team have stressed that this study is observational – it has not proven that the fields themselves cause ALS, just that this factor is linked to a person's likelihood of developing the disease.

However, it provides the best evidence yet that magnetic fields could be to blame for the disease. "This study has much better information on exposure to magnetic fields than previous studies," says Pearce. "It shows that the increased risk of ALS in electrical workers is most likely due to magnetic field exposure, rather than to electrical shocks."

But Christian Holscher, at Lancaster University, UK, says the results should be interpreted with caution. "The effect of extremely low frequency magnetic fields on ALS development is not clear," he says. The study only just crosses the threshold for statistical significance, and because only 82 people in the analysis developed the disease, the finding may well be a false positive, he says.

"Motor neurone disease is a devastating and complex disease, and it is likely that a wide range of triggers, from environmental to genetic, will cause an individual to get the condition," says Brian Dickie, of UK charity the Motor Neurone Disease Association.

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