Motor neurone disease: Workplace exposure to electromagentic fields 'linked to ALS'

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WORKPLACE exposure to electromagentic fields is linked to a higher risk of developing the most common form of motor neurone disease, research suggests.

Experts noted an association between exposure to extremely low frequency electromagnetic fields and amyotrophic lateral sclerosis (ALS).

ALS causes weakness and wasting in the limbs and people only tend to live for two to five years from first experiencing symptoms.

More than 5,000 people in the UK are living with motor neurone disease (MND).

In the new study, Professor Roel Vermeulen, from Utrecht University in the Netherlands, and colleagues, examined data for 58,279 men and 6,573 women aged 55 to 69, who were followed for 17 years.

Some 76 men and 60 women died of ALS during the study.

The research found that high levels of electromagnetic field exposure were largely confined to the men, and depended on their jobs.

Those whose jobs had exposed them to high levels of extremely low frequency electromagnetic fields were more than twice as likely to develop ALS as those who had never been exposed through their work, the study suggested.

Furthermore, those in the top 30% of cumulative exposure (duration multiplied by intensity) were nearly twice as likely to develop the disease.

The researchers, writing in the journal Occupational & Environmental Medicine, stressed the study was observational.

But Prof Vermeulen said: "Those whose jobs had exposed them to high levels of extremely low-frequency magnetic fields were more than twice as likely to develop ALS as those who had always been exposed to only background levels through their work.

"Jobs with relatively higher extremely low frequency electromagnetic fields levels are for example electric line installer, repairers and cable jointer, welders, sewing-machine operators and aircraft pilots.

"These are essentially jobs where workers are placed in close proximity to appliances that use a lot of electricity."

He said the effect of the environment "appears substantial", adding: "The present study adds evidence to previous studies that have suggested that extremely low frequency electromagnetic fields is related to ALS risk."

Professor Neil Pearce, from the London School of Hygiene and Tropical Medicine, said: "Several previous studies have found that electrical workers are at increased risk of ALS.

"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.

"This study has much better information on exposure to magnetic fields than previous studies. It shows that the increased risk of ALS in electrical workers is most likely due to magnetic field exposure, rather than to electrical shocks."

Professor Christian Holscher, from Lancaster University, said the results should be interpreted with caution, adding, "the effect of extremely low frequency magnetic fields on ALS development is not clear.

"The trend is only just statistically significant, and with such low numbers, it may well be a false positive."

Paul Pharoah, professor of cancer epidemiology at the University of Cambridge, added: "An association between extremely low frequency magnetic fields and ALS is far from proven by these data."

Brian Dickie, director of research development at the Motor Neurone Disease Association (MNDA) said: "The results suggest that exposure to high levels of extremely low frequency magnetic fields is associated with an increased risk of developing MND.

"However, this only becomes apparent when relatively large numbers of people are studied, indicating that any such effect is a very subtle one. It does not mean that exposure causes MND.

"MND 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."