

# **High incidence of ill-health in residents living within 50 metres of a 400 kilovolt powerline in Werrington, Stoke-on-Trent**

**January 2006**

A survey of the health of residents living within 50 metres of a 400 kilovolt powerline in Werrington, Stoke-on-Trent has revealed a high incidence of depression, headache, insomnia, and dietary problems. The survey has also found 18 cases of miscarriage compared with only 1 miscarriage case in a similar population living away from the powerline.

The findings are similar to those obtained in a previous survey carried out near a 132kV powerline in Trentham, Stoke-on-Trent in October 2002.

The latest survey was carried out against a background of scientific reports of higher incidence of depression, miscarriage and certain cancers linked to magnetic fields such as those that radiate from powerlines.

The survey took the form of a questionnaire to residents all of whom lived within 50 metres of the 400 kV powerline where the magnetic field was measured to be greater than 0.4 microtesla, the level where a doubling of the risk of childhood leukaemia has already been acknowledged by the Health Protection Agency (HPA) and the Government. The reported illnesses all relate to the period actually living under the powerline. The findings were compared with a control group living further than 150 metres away from the Trentham powerline.

In both men and women there was a clear excess of depression, headache and insomnia in those living near the powerline, including an excess in those requiring either treatment by a doctor or treatment in hospital.

The most startling finding was of 18 cases of miscarriage in those living near the powerline, compared with only one case in the residents in the control group. This finding is particularly significant because of the 11 cases of miscarriage found in the previous survey in Trentham, as well as two epidemiological studies in California carried out in 2001 which reported an increase in the risk of miscarriage for magnetic field exposures similar to or less than that seen under the powerlines at Trentham and Werrington

**Table 1: Males**

Reported illnesses in residents of 67 houses living within 50 metres of a 400 kV powerline at Werrington, Stoke-on-Trent

	Within 50m of powerline (magnetic field >0.4 $\mu$ T)	Controls group*
Total number of questionnaires issued	130	
Total number of questionnaires returned	67	
<b>Depression:</b>		
Total reported	18	10
No. requiring doctor	5	-
No. requiring hospital	4	-
<b>Headache:</b>		
Total reported	25	30
No. requiring doctor	3	-
No. requiring hospital	-	-
<b>Insomnia:</b>		
Total reported	22	16
No. requiring doctor	3	-
No. requiring hospital	-	-
<b>Dietary:</b>		
Total reported	24	6
No. requiring doctor	7	-
No. requiring hospital	-	-
<b>Cancers:</b>	1	-
Childhood leukaemia	2	-
Brain tumour	2	-
Prostate cancer	3	-
Lung cancer		

\* The controls were the same group as those used for a previous survey carried out in Trentham, Stoke-on-Trent, in 2002 which consisted of a group of people living in similar houses to those in Werrington and residing further than 150 metres from the 132 kV powerline in Trentham. 83 questionnaires were received from this control group. The number of reported illnesses has been scaled by the ratio 83/67, so as to correspond to the 67 questionnaires received from the Werrington group.

**Table 2: Females**

Reported illnesses in residents of 67 houses living within 50 metres of a 400 kV powerline at Werrington, Stoke-on-Trent

	Within 50 m of powerline (magnetic field >0.4 $\mu$ T)	Controls group*
Total number of questionnaires issued	130	
Total number of questionnaires returned	67	
<b>Depression:</b>		
Total reported	25	11
No. requiring doctor	7	-
No. requiring hospital	2	-
<b>Headache:</b>		
Total reported	43	32
No. requiring doctor	4	-
No. requiring hospital	1	-
<b>Insomnia:</b>		
Total reported	30	21
No. requiring doctor	4	-
No. requiring hospital	2	-
<b>Dietary:</b>		
Total reported	31	12
No. requiring doctor	7	-
No. requiring hospital	3	-
<b>Miscarriage:</b>		
Total reported	18	1
<b>Cancers:</b>		
Breast cancer	4	-

\* The controls were the same group as those used for a previous survey carried out in Trentham, Stoke on Trent, in 2002 which consisted of a group of people living in similar houses to those in Werrington and residing further than 150 metres from the 132 kV powerline in Trentham. 83 questionnaires were received from this control group. The number of reported illnesses has been scaled by the ratio 83/67, so as to correspond to the 67 questionnaires received from the Werrington group.