

**ASSOCIATION OF HEALTH PROBLEMS WITH 50-HZ  
MAGNETIC FIELDS IN HUMAN ADULTS LIVING NEAR  
POWER TRANSMISSION LINES**



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## ABSTRACT

Numerous studies have been conducted to look for evidence of association between power-frequency magnetic field exposure and human health. Many studies of animals and cell cultures indicate that immune-system function is affected by power-frequency magnetic fields. However, only few studies have looked for evidence of association between power-frequency magnetic field exposure and immune-related illnesses in humans. This study used a cross sectional design to examine the dose-response relationship between magnetic field exposure of adults who live near power transmission lines and incidence of immune-related and other chronic illnesses. Three hundred adults completed questionnaires about their health and demographic characteristics. The exposure assessment method used was short-term (spot) measurements of magnetic fields in homes. Derived health variables were related to homes magnetic field exposure. It was found that there are significant associations between emf exposure levels of adults living near transmission lines and allergy-related illnesses, namely eczema, urticaria and asthma. Rheumatoid arthritis and Myasthenia gravis, both represent autoimmune-related illness, as well as type II – diabetes showed a proportional relationship with amount of exposure level. The results indicate that power-frequency magnetic field exposure might have a possible adverse effect on some allergy-related and immune-related illnesses.