

# WIND TURBINE NOISE AND HEALTH STUDY: SUMMARY OF KEY FINDINGS



## WHAT IS THE WIND TURBINE NOISE AND HEALTH STUDY?

Health Canada, in partnership with Statistics Canada, has conducted a study involving communities in Southern Ontario and Prince Edward Island to better understand the impacts of wind turbine noise on health and well-being. A total of 1238 households participated, out of a possible 1570.

The study had three parts:

- An in-person questionnaire, which was given to randomly selected participants living at various distances from the wind turbines;
- A collection of physical health measures that assessed stress levels using hair cortisol, blood pressure and resting heart rate, as well as measures of sleep quality; and
- More than 4000 hours of wind turbine noise measurements conducted by Health Canada to support calculations of wind turbine noise levels at all homes in the study.

The *Wind Turbine Noise and Health Study* is a landmark study and the most comprehensive of its kind. Both the methodology used and the results are significant contributions to the global knowledge base and examples of innovative, leading-edge research.

## KEY FINDINGS

IT IS IMPORTANT to note that the results from this study do not provide definitive answers on their own and should be considered along with the other research available on the impacts of wind turbine noise on health. Results may also not be applied to other communities as the wind turbine locations in this study were not randomly selected from all possible sites operating in Canada.

**Illness and chronic disease\***  
No evidence was found to support a link between exposure to wind turbine noise and any of the self-reported illnesses (such as dizziness, tinnitus, migraines) and chronic conditions (such as heart disease, high blood pressure, diabetes).

**Stress\***  
No association was found between the multiple measures of stress (such as hair cortisol, blood pressure, heart rate, self-reported stress) and exposure to wind turbine noise.

**Sleep\***  
The results of this study do not support an association between wind turbine noise and self-reported or measured sleep quality.

\* While some people reported some of the health conditions above, their existence was not found to change in relation to exposure to wind turbine noise.

**Annoyance and quality of life**  
An association was found between increasing levels of wind turbine noise and individuals reporting to be very or extremely annoyed.  
  
No association was found with any significant changes in reported quality of life, or with overall quality of life and satisfaction with health. This was assessed using the abbreviated version of the World Health Organization's Quality of Life Scale.

**Noise**  
Calculated noise levels were found to be below levels that would be expected to directly affect health (World Health Organization—*Community Noise Guidelines [1999]*). This finding is consistent with self-reported and measured results of the study.

## HOW WILL THE INFORMATION BE USED?

Health Canada will consider the results of this study, along with other scientific research available, when providing advice on the health impacts of wind turbine noise.

These findings will also support decision-makers, such as provincial and territorial governments, in the development of decisions, advice and policies related to wind power development proposals, installations and operations.

These results are considered preliminary until published in the peer-reviewed scientific literature.

### For more information

A more detailed Summary of Findings from the Wind Turbine Noise and Health Study has been published on the Health Canada website at [www.hc-sc.gc.ca](http://www.hc-sc.gc.ca). For more information, please contact: [ccrpb-pcrpcc@hc-sc.gc.ca](mailto:ccrpb-pcrpcc@hc-sc.gc.ca).