

## Wind Turbine Noise: Annoyance or Hazard?

Wind power is rapidly becoming a popular alternative to fossil fuel. Towering wind turbines are now a routine sight across our landscapes. In spite of their potential environmental benefits, however, wind turbines are not without controversy. Of particular concern is the noise they produce and fear of health effects for those living near large operations.

Wind turbines emit noise that is very low in frequency, often so low that the sound cannot be heard or is barely audible (infrasonic). For many years, scientists assumed infrasound posed little or no threat to humans, the old adage "what we can't hear can't hurt us." Some are now challenging that notion. Although researchers have been studying the effects of environmental noise on human health for many decades, there is still much unknown. Noise annoyance, or sensitivity, is a perception of how bothered a person is by noise. Perception is often individual in nature and difficult to predict. Even less understood is whether environmental noise might be linked to health effects such as sleep disturbance, hypertension, or heart disease.

Early studies of wind turbine noise often regarded perceptions and "indirect" effects such as annoyance, sleep disruption, and associated stress as unimportant. Now researchers are considering the possibility that indirect effects may hold potential for long-term physical harm. Still, studies are difficult to design and carry out. Controlled longitudinal studies over many years would be needed. People come and go, other environmental concerns such as air pollution are difficult to factor out, and even potential health effects such as elevated blood pressure could take years or decades to show up.

Toward this goal, Health Canada is currently studying a group of over 1000 people living near wind-turbine developments. Initial results indicated no conclusive overall link between illness and wind turbine exposure. But when researchers looked closer, they found a statistically significant relationship between such health issues as blood pressure, migraines, tinnitus, dizziness, and stress for residents who reported being highly annoyed by wind turbine noise, vibration, blinking lights, etc. Researchers were careful to point out they had no way of knowing whether these health conditions may have pre-dated residents' exposure to wind turbines. Still, the findings support a potential link between high annoyance and health. Further study is warranted. Due to the large volume of acoustical data, Health Canada will continue its data analysis and publish additional findings in future.

References and further reading:

[Seltenrich N \(2014\)](#). Wind turbines: a different breed of noise? Environ Health Perspect 122:A20-A25;

[Health Canada \(2013\)](#). Wind Turbine Noise and Health Study: Summary of Results.

[NIDCD News \(2010\)](#). Scientist Challenges the Conventional Wisdom That What You Can't Hear Won't Hurt You.