

We were asked to do a presentation on health effects of people living near a wind turbine. We found this subject very challenging. We have asked people in this community if they believe that people living near a wind turbine experience negative health effects. Included among the responses was disbelief that there are negative health effects, believing the reason for this claim was started by anti-wind people and people who just don't want a wind farm in their back yard. However, we also heard from people who were very concerned about this claim and desired better understanding of the issue.

What are the health effects that everyone talks about? There are a wide range of symptoms. Among, but not limited to these, are: sleep disturbance and deprivation, headache, tinnitus (ringing in ears), ear pressure, dizziness, vertigo, nausea, visual blurring, tachycardia (rapid heart beat), irritability, problems with concentration and memory, high blood pressure, and panic episodes.

The wind industry claims that the health effects are exaggerated, untrue myths and misinformation. The American and Canadian wind industry published a detailed review, and in it the industry found no medical basis for the health complaints that arise when people live near a wind farm project. This was an 85 page wind industry-financed study. The seven-member panel of experts concluded that there was no evidence that "subaudible" turbine sounds and vibrations are harmful to human life. The authors did, however, concede that some people are irritated by turbine noise.

<http://greeninc.blogs.nytimes.com/2009/12/16/study-no-health-impact-from-turbines>

Several papers are written to support a theory of a psychological effect from living near a wind turbine. Those studies have suggested that a person's attitude toward a sound, meaning whether it's a "wanted" or unwanted sound" strongly influences how it will affect them. In other words, if a person has a negative attitude to wind turbines it will make them sick. However, if someone has a positive attitude toward wind energy, it's very likely that the sound will not bother them at all.

We located several evidence based scientific studies, including case studies. This is a standard and valid form of medical research. We found one control group study by Dr. Michael Nissenbaum of Maine. His study was a control group of 15 adult people from the Mars Hill Wind Project in Maine. They all lived an average of almost one half mile from a wind turbine. His study found:

- 93% experience sleep disturbance
- 87% consulted a doctor
- 53% have increased headaches
- 20% experienced unusual body sensations
- 2 persons experienced dizziness and nausea
- 33% were troubled with shadow flicker
- 2 persons experienced chest pulsations
- 73% were feeling stress
- 87% were feeling extreme anger
- 40% were feeling anxiety
- 27% suffered irritability as "no one cares", people don't believe us", "no one listens"

or “it’s very hard watching my child suffer”
53% were depressed
20% received new medication for hypertension, blood pressure
100% agreed that the quality of life has been effected, and
100% have considered moving away, and 73% can’t afford it because the homes in the study group loose home value which makes it impossible to move away.

The wind turbines at Mars Hill wind project are 262 feet high and the ones proposed for Alfred are 400 feet high

<http://www.wind-watch.org/documents/mars-hill-wind-turbine-project-health-effects-preliminary-symptoms-survey-results/>

The most recent study was written by Dr. Nina Pierpont, MD, PhD. This is a peer reviewed study entitled Wind Turbine Syndrome. She performed a before-during-after study format on a group of 10 families with 38 people from infants to age 75. The people of these families noticed the same ill symptoms as Dr. Nissenbaum’s study in Maine, but she documented that the effects started when the turbines started running near their homes. She documented that when they went away from their homes the ill effects went away. When they returned to their homes the symptoms returned. Eight of the ten families eventually moved away from their homes because they were so troubled by the symptoms, in some cases they abandoned their homes.

Dr Pierpont claims that illness from wind turbines is not psychological as the wind industry claims but physiological. She discounts the claim that people who worry or otherwise dislike the turbines around their homes are the ones getting sick. She proposes the illnesses are mediated by the vestibular system - by disturbing sensory input in the eyes, inner ears, and stretch and pressure receptors in a variety of body locations. She states low frequency noise (the frequency you don’t hear) stimulates the human vestibular system (inner ear), opening the door for ill health effects.

<http://www.windturbinesyndrome.com>

In 2008 Kemperman and James from the Institute of Noise Control Engineering wrote a report called Simple Guidelines for Citing Wind Turbines. This document reviewed sound studies conducted by sound consultants for governments, wind developers and residents using sound levels. The resources used studies in the US, to include Cohocton, NY, Canada, Germany and France. This document is today being used by town councils throughout the country in assisting them in writing their wind laws. In their conclusion they stated it is clear from this study and others that the setback distance in mountainous terrain should be two miles.

<http://www.wind-watch.org/documents/the-how-to-guide-to-criteria-for-siting-wind-turbines-to-prevent-health-risks-from-sound/>

We found numerous studies repeating the same opposing arguments over and over. #1: The wind industry claims that if people get ill it is because of a person's attitude toward a wind farm and, #2: Scientific or academic studies claim that low frequency noise causes the ill effects that occur when living near a wind turbine.

The wind industry also states that there are wind farms all over the world, **most** with no problems. This was their claim, **most** with no problems.

Our committee came to the conclusion that it doesn't matter how or why some people get sick when they live near a wind turbine. The point is that some people do get sick, and the only currently suggested prevention from sickness is proper setbacks. Dr. Nissenbaum recommends a two mile setback and most European countries which have had wind farms since the 80's now require a 35 decibel sound limit or (and?) 1500 meters (or almost one mile) setback.

This presentation was put together by a group of four people. Is the information we presented infallible - no it isn't. It cannot be. There are two camps in which we obtained our information: pro and anti wind. Our concern is to accurately address the issue of human health effects. The four of us all believe in renewable energy sources, are concerned about global warming and want to present to this community an accurate picture of what is currently being considered in terms of health effects, if any. The concern is international with identical health findings being reported throughout Europe, England, Canada, Scandinavia, Japan and USA, and undoubtedly beyond. In some of these areas, moratoria are being established to stop all further development until the unanswered questions can be properly evaluated. The most recent studies suggest that there may be no harmful health effects from a wind farm if the turbines are properly sited. However, it is admitted that from both perspectives additional research needs to be carried out. If turbines are not properly sited, our research found that people will and do suffer. There are wind farms in this country that are a good fit for their community and wind farms that have been negatively impacted. If we decide to host a wind farm in our small valley we must ask ourselves a major question. How far do we want to be from the wind farm? If this is properly answered, the possibility of health risks may be diminished. Subsequent research and the 50 year life expectancy for the initial turbines will clarify the wisdom of our evaluation of today's theories and hopes for the future.