

## Around the world:

**Maine Medical Association** calls for regulatory changes for the wind energy industry in order to protect human health by avoiding among other things “unreasonable noise and shadow flicker effects”. Sept 2009 [www.windvigilance.com](http://www.windvigilance.com)

Preliminary findings of a **controlled study** (Mars Hill, Maine) being conducted by Dr. Nissenbaum to investigate potential negative health effects concludes that adults living within 1100 meters of industrial wind turbines suffer high incidences of chronic sleep disturbances and headaches, among other somatic complaints, and high incidences of dysphoric psychiatric symptomatology, compared to a control group living 5000-6000 meters away. Preliminary findings are available at [http://windvigilance.com/mars\\_hill.aspx](http://windvigilance.com/mars_hill.aspx)

The **Japanese government** has announced a 4-year health study with attention being given to low frequency sound.  
[www.asahi.com](http://www.asahi.com) <http://www.asahi.com/english/Herald-asahi/TKY201001180410.html> 19 January 2010

**France**, Court of Appeal of Rennes, Dec 2009 ordered wind turbines be stopped from 10:00 p.m. to 7:00 a.m. due to the disturbance caused by the wind turbines. *Châteaulin, La justice demande l'arrêt nocturne des huit éoliennes de Cast Environnement lundi 07 décembre 2009 "Silence la nuit"*  
[http://www.ouest-france.fr/actu/actuLocale\\_-La-justice-demande-l-arret-nocturne-des-huit-eoliennes-de-Cast\\_-1183050-----29103-abd\\_actu.Htm](http://www.ouest-france.fr/actu/actuLocale_-La-justice-demande-l-arret-nocturne-des-huit-eoliennes-de-Cast_-1183050-----29103-abd_actu.Htm)

**U.K.** : “civil servants...suppressed warnings that wind turbines can generate noise damaging people's health for several square miles around.” Warnings were that noise levels of 43dBA were too high and “the best way to protect locals was to cut the maximum permitted noise to 38 decibels, or 33 decibels if the machines created discernible “beating” noises as they spun” (beating refers to aerodynamic modulation). As a result of this information being suppressed, some became ill” UK, Sunday Times, Dec 2009  
<http://www.timesonline.co.uk/tol/news/environment/article6954565.ece>

**USA:** The New York Times, Dec 2009:  
Re investigations regarding allegations of fraud and corruption in the wind industry. The article states “The authorities say it is impossible to quantify the level of fraud in public spending on wind energy because investigations are scattered across different countries among the regional and fiscal police. But critics say the available riches and patchy controls are luring a rogue's gallery of corrupt politicians and entrepreneurs trying to literally create money out of thin air. By DOREEN CARVA-JAL New York Times

**Canada:** The Parliamentary Information and Research Service of the Library of Canada:

“Visual and noise pollution are the two most significant problems with wind power and have drawn criticism even within the environmental community.” ...

“**Two types of noise are generated by the turbines: ultra-low-frequency or infrasound; and audible, though typically low-frequency, sound. Because the noise is low and in some cases pulsing it may in fact be more noticeable indoors, because buildings can act as resonators for the sound and people may feel the low-frequency sound as much as they hear it.**”

### What are the potential safety issues?

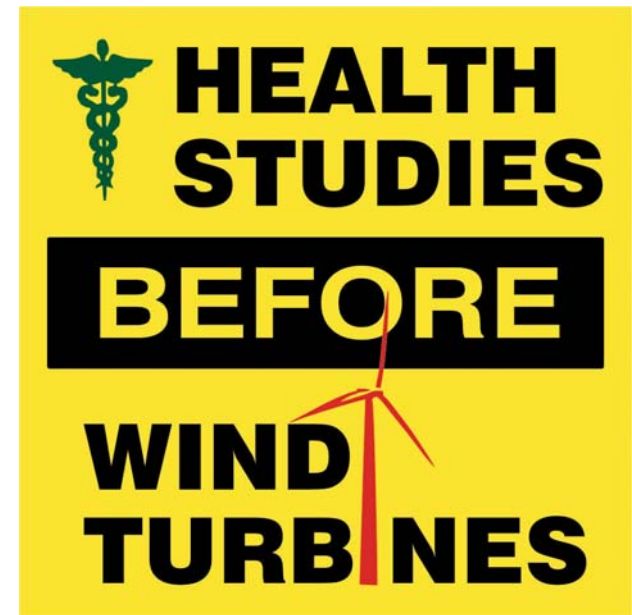
- Snow and Ice Throw - blade tips traveling at up to 200mph can pitch chunks of ice and snow
- Fire
- Tower Collapse
- Lightning

### What are we asking for:

- Independent third party health studies - completed before the approval of any more industrial wind turbine projects.
- Consultation and approval restored to the municipal level

Where can you get more information?

[www.windvigilance.com](http://www.windvigilance.com)  
[www.windconcernsontario.org](http://www.windconcernsontario.org)  
[www.windfacts.ca](http://www.windfacts.ca)  
[www.wind-watch.org](http://www.wind-watch.org)  
[www.windaction.org](http://www.windaction.org)  
[www.epaw.org](http://www.epaw.org)  
[www.windturbinesyndrome.com](http://www.windturbinesyndrome.com)



## What are the risks to health?

### Children may be affected:

“Impairments of early childhood development and education caused by environmental pollutants such as noise **may have lifelong effects on academic achievement and health.**” World Health Organization, 2005

### The general population may be affected:

“The family unit for each family has deteriorated and has been torn apart. We begged for sleep, and four families were billeted by the wind company from their homes for 90 to 180 days in motels, hotels and a rooming house. The consistent stress has broken apart the family unit-no gatherings, few or no celebrations at home.” Hansard, Victim Testimony Green Energy Act Standing Committee Hearings, April 15, 2009

**Currently there is no authoritative international guideline for wind turbine noise designed to protect the health of children or the general population.**

The American and Canadian Wind Energy Associations do not support such research.

**Independent Third Party Health Studies are required before going ahead with any more wind projects. Learn more and visit [www.windvigilance.com](http://www.windvigilance.com)**

## What may cause adverse health effects?

Wind turbine **noise**, including low frequency noise, may cause **annoyance**, **stress** and **sleep disturbance**. This is acknowledged by an American Wind Energy Association and Canadian Wind Energy Association sponsored report and representatives of the Government of Ontario.

Wind turbine shadow flicker may also cause **annoyance** and **stress**.

### **Annoyance:**

The word annoyance may mean many things to many people. In medical terms annoyance is considered a risk to human health.

**Health Canada** states

*“The most common effect of community noise is annoyance, which is considered an adverse health effect by the World Health Organization.”*

**World Health Organization** states specifically about noise induced annoyance:

*“Sleep disturbance and annoyance are the first effects of night noise and can lead to mental disorders. The effects of noise can even trigger premature illness and death.”*

### **Stress:**

Make no mistake stress is a serious risk to human health. Health Canada says:

*“...stress is considered to be a risk factor in a great many diseases, including: heart disease, some types of bowel disease, herpes, mental illness. Stress also makes it hard for people with diabetes to control their blood sugar. Severe stress can cause biochemical changes in the body, affecting the immune system, leaving your body vulnerable to disease.”*

According to **Health Canada** and **World Health Organization** symptoms of stress may also include:

- becoming increasingly distressed and irritable
- unable to relax or concentrate
- have difficulty thinking logically and making decisions
- depression
- anxiety
- sleep disorders
- disorders of the digestive system
- increases in blood pressure
- headaches
- musculoskeletal disorders

### **Sleep disturbance:**

Sleep disturbance is known to lead to serious medical conditions.

According to the **World Health Organization** symptoms of **sleep disturbance** may include:

- poor performance at work
- fatigue
- memory difficulties
- concentration problems
- motor vehicle accidents
- mood disorders (depression, anxiety)
- alcohol and other substance abuse
- cardiovascular
- respiratory
- renal, gastrointestinal, musculoskeletal disorders
- obesity
- impaired immune system function
- a reported increased risk of mortality

### **What the experts say:**

*“Impairments of early childhood development and education caused by environmental pollutants such as noise may have lifelong effects on academic achievement and health. ....The scientific community agrees that there is sufficient and consistent research evidence to show that chronic exposure to environmental noise leads to impaired cognitive function and health in children.” World Health Organization, 2005*

*“The effects of exposure to noise at home, as well as at school, the interaction with classroom acoustics, the potential protective effect of classroom insulation against noise.... Our results are relevant to the design and placement of schools ... to the formulation of policy on noise and child health, and to a wider consideration of the effect of environmental stressors on children’s cognitive development. Greater specification of exposure-effect relations is an important step in confirming a causal role for exposure to environmental noise in impairments of children’s cognition. Stansfeld, (2005)*

*Researchers have documented that sleep disturbance tends to be the number one health complaint from victims of wind turbines Harry (2007); Pierpont (2009); Nissenbaum (2009) [http://windvigilance.com/mars\\_hill.aspx](http://windvigilance.com/mars_hill.aspx); WindVOiCe© (Wind Vigilance for Ontario Communities) [www.windvigilance.com](http://www.windvigilance.com)*

***In my expert opinion, from my knowledge of sleep physiology and a review of the available research, I have no doubt that wind turbine noise emissions cause sleep disturbance and ill health.” Hanning (2009)***

*“...there are peer reviewed scientific articles indicating that wind turbines may have an adverse impact on human health....Please ensure that any communication effort presents factual information with respect to expected noise levels, including information pertaining to the audibility of operational noises (low-level continuous, intermittent swooshing or low frequency noise), and also includes the potential effects of specific noise levels on human health...” Health Canada, 2009*

### **In Ontario:**

An increasing number of victims are reporting adverse health effects from exposure to industrial wind projects. **Many families have abandoned their homes to restore or protect their health.** This cannot be denied.

Learn more and see WindVOiCe© (Wind Vigilance for Ontario Communities) health survey [www.windvigilance.com](http://www.windvigilance.com)

While industry representatives may claim Ontario has ‘strict requirements’, this information does not seem to be supported by recent observations.

The Ontario Ministry of Environment (MOE) states in a letter: “There is currently no scientifically accepted methodology to measure wind turbine noise to determine compliance or non compliance with a Certificate of Approval limits.” Correspondence from Ontario Ministry of Environment Sept 30, 2009 ENV1283MC2009-4305.

In January 2010 the Ontario government issued a Request for Proposal to develop a “measurement procedure to assess noise compliance.” **The MOE Noise Guidelines for Wind Farms, 2008, “do not contain a measurement method for assessing the actual noise impact.”** (MERX 2010). **Despite acknowledgment of deficiencies in the ability to measure audible and low frequency noise, existing wind developments continue to operate, projects continue to be built, and approvals for future projects continue to be granted.**

Consider the following communication from the MOE: “there is **no professional organization that qualifies** an acoustical consultant....it is **assumed** that if an individual or company designates themselves as a qualified consultant, **we accept the designation.”**

Conservative computer modeling techniques are used in project planning, with the stated intention of keeping audible sound below 40 dBA. However, actual levels in Ontario are allowed to exceed 50 dBA (a difference of 10 dBA is a 10-fold increase in acoustic energy).

These facts raise concerns about sound levels near family homes and the MOE’s ability to measure and enforce its guidelines relating to wind projects.