

# HEALTH IMPACTS FROM INDUSTRIAL WIND TURBINES

## 1. NOISE:

Sleep disturbance is the most common complaint.

*Prolonged lack of sleep negatively affects:*

*-memory*

*-temperament*

*-heart health*

*-stress levels*

**By Jerry Punch, PhD, and Richard James, INCE, BME**

**November 4, 2014**

### “The Changing Rural Landscape



Tax incentives in the US/Europe are making wind turbines a common sight across the rural landscape.

*Courtesy the [Sunday Times](#).*

Prior to the installation of the wind turbines, these rural communities were typically very quiet at night, with background sound levels ranging between 20 and 25 dBA. After the turbines began operation, the noise levels jumped to 40 or even 50 dBA, and sometimes higher. It is common for wind turbines to be barely audible during the day, yet be the dominant noise source at night. Environmental sounds are quieter in the evening, lowering the background sound levels, and wind speeds tend to be higher at blade height during nighttime hours, which increases sound emissions. Further, nighttime weather conditions enhance sound propagation. The result is that at night wind turbines can be a significantly more noticeable noise source than during the daytime.”

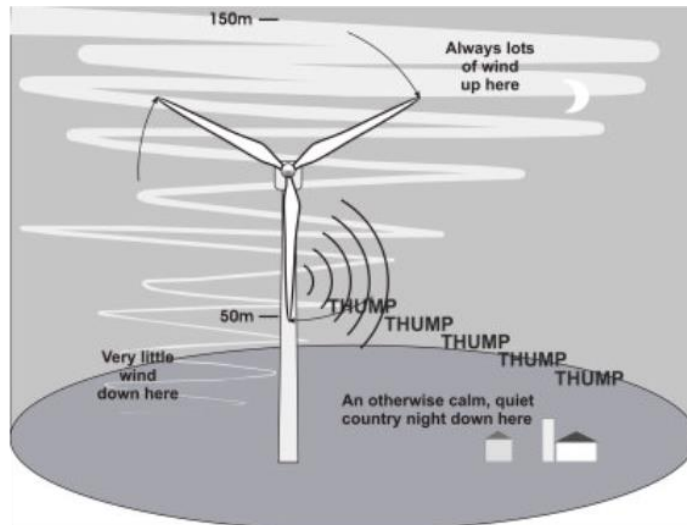
<http://hearinghealthmatters.org/hearingviews/2014/wind-turbine-health-problems-noise/>

**Jerry Punch** is an audiologist and professor emeritus at [Michigan State University](#) in the Department of Communicative Sciences and Disorders. Since his retirement in 2011, he has become actively involved as a private audiological consultant in areas related to his long-standing interest in community noise. **Richard James** is an acoustical consultant with over 40 years of experience in industrial noise measurement and control. He served as an adjunct instructor in Michigan State University’s Department of Communicative Sciences and Disorders from 1985-2013 and currently serves as an adjunct professor in [Central Michigan University](#)’s Department of Communication Disorders.

## 2. INFRASOUND:

*Infrasonic signals that reach the brain produce sensations such as:*

- pulsation
- annoyance
- stress
- panic
- ear pressure or fullness
- unsteadiness
- vertigo
- tinnitus
- headaches
- general discomfort
- memory loss
- disturbed sleep



As the blade passes the tower, low frequency noise and infrasound is generated by turbines and endured by neighbours

By: Esther Wrightman (Ontario)

*By Jerry Punch, PhD, and Richard James, INCE, BME*

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### **Infrasound: More of a Problem Than We Thought?**

Industrial-scale wind turbines generate peak sound pressure levels at infrasonic frequencies, especially between 0.25 and 3 Hz, as the blades pass in front of the tower. Most of us do not experience the energy in this lowest of low-frequency regions as sound; instead, we perceive a variety of other sensations. When present, infrasound can be more of a problem than audible sound.

<http://hearinghealthmatters.org/hearingviews/2014/infrasound-wind-turbine-hearing-health-effects/>

## 3. SHADOW FLICKER



*The visual burden of shadow flicker, caused by blades passing in front of the sun can cause:*

- annoyance and/or stress
- distraction
- prolonged physiological arousal
- potential photosensitive seizures

#### **4. ICE THROW / TURBINE FAILURE / TURBINE FIRES:**

*Ice, debris, or anything breaking off the wind turbine blades, including the blades themselves, can impact a point 1700' from the turbine base.*



Fire: The wind turbine in North Ayrshire went up in flames on Thursday. Pic: © Stuart McMahon



Existing industrial wind turbines (IWTs) in the United States are 200 feet shorter than in the proposed Apex Lighthouse Wind project and complaints of health effects are substantial. Turbines this tall have been generally placed offshore. There has been no testing of the effect of these massive spinning blades placed so close to residences and workplaces. Rural residents in New York deserve to know the effects and risks prior to approval.

If the State plans to mandate thousands of IWT's in rural areas, an independent and comprehensive study must be completed to ensure safety and safe setbacks. The fact that safe setbacks may eliminate large IWT's from an area should not deter the State from implementing such setbacks.