

# German Researchers Target Effects of Wind Turbine Infrasound on the Heart

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The evidence proving the unnecessary damage done to wind farm neighbours by the noise generated by giant industrial wind turbines is mounting by the day: Germany's Max Planck Institute has identified sub-audible infrasound as the cause of stress, sleep disruption and more (see [our post here](#)); and a Swedish group have shown that it's the pulsing nature of low-frequency wind turbine noise ('amplitude modulation') that is responsible for sleep problems in those forced to live with it (see [our post here](#)).

In a World first, Australia's Administrative Appeals Tribunal (AAT) held that "noise annoyance" caused by wind turbine generated low-frequency noise and infrasound "is a plausible pathway to disease", based on the "established association between noise annoyance and some diseases, including hypertension and cardiovascular disease, possibly mediated in part by disturbed sleep and/or psychological stress/distress." The AAT also slammed wind turbine noise standards as irrelevant and, therefore, totally unfit for purpose: [Australian Court Finds Wind Turbine Noise Exposure a 'Pathway to Disease': Waubra Foundation Vindicated](#)

The wind industry and its pet acoustic consultants maintain the fiction that wind turbine noise is the equivalent of a refrigerator at 500m, and steadfastly refuse to admit that the low-frequency noise and infrasound generated has any impact on humans, at all.

Meanwhile, in Germany, real research continues apace. Here's a wrap up on one study focusing on the effects of long-term exposure to infrasound on the heart.

## **Wind power – Jammers for the heart: Mainz researchers investigate the consequences of infrasound**

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Michael Bermeitinger

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MAINZ – The wind energy euphoria is still continuing in politics and industry, but local residents find this energy generation highly controversial.

Landscaping is one aspect, but also the harmfulness of inaudible infrasound. And here there is more and more support from research. For example, a working group of the Department of Cardiothoracic and Vascular Surgery of Unimedicine caused a stir at the congress of the professional society with their research on the impairment of the heart muscle by infrasound. We spoke with the initiator of the work, HTG Director Professor Christian-Friedrich Vahl.

## WORKING GROUP INFRASHALL

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### **Professor Vahl, how did you come up to this topic?**

A friend of mine, the artist Cyrus Overbeck, had a house in Ostfriesland near a large wind farm. And he increasingly complained of difficulty concentrating and sleeping – symptoms that are described all over the world in the vicinity of wind turbines.

### **And the connection between sound and heart disease?**

The impact of audible sound is indeed being researched by the working group around Professor Münzel in an exemplary way. I myself examined the effects of high-frequency vibrations on the development of muscle strength in physiology Hamburg. The assumption that even inaudible sound, ie infrasound, has an effect on vessels is not new either.

### **What kind are these effects?**

When the aortic valve, which regulates the flow of blood from the heart to the body, is calcified and constricted, the bloodstream and thus the flow noise changes. For example, it is being discussed whether this altered sound is involved in the formation of dangerous sagging after constrictions.

### **What is infrasound and how does it work?**

The audible sound ranges from 20 to 20,000 Hertz, below 20 Hz it is no longer audible, but it is physically perceptible at high sound pressure – possibly with corresponding consequences. Wind turbines convert 40 percent into energy and 60 percent into infrasound.

### **But there is noise protection ...**

Infrasound has a long range and is not dampened by windows or masonry. It would take 30 meters high and eight meters thick walls to protect against the usual infrasonic frequencies. And with ever-increasing wind turbines of up to 200 meters and rising power, naturally, the infrasound load will be higher.

### **What question did you ask yourself about infrasound?**

We simply wanted to know qualitatively whether the direct application of infrasound to the heart muscle tissue has an effect on the development of strength.

### **And how was that measured?**

To test whether infrasound has a direct effect on force development, we've connected a speaker to a

heart muscle piece. The loudspeaker is a special industrial vibrator that transmits the smallest monophasic vibrations in the infrasound range to the specimen. But also the preparation itself was prepared.

#### **In what way?**

We have used an established but complicated technique to eliminate all membrane-bound processes and measure them only on the isolated contractile apparatus. This ensures the contraction of the heart muscle.

#### **How big can you imagine the preparation?**

It is about three millimeters long, 0.2 millimeters wide and is fixed between speaker and force gauge. The preparation was activated, then the loudspeaker was switched on.

#### **And what effect did the infrasound have?**

At the given time it is safe to say that infrasound under the conditions of measurement reduces the force developed by isolated heart muscle, under certain conditions up to 20 percent is lost. The fundamental question of whether the infrasound can affect the heart muscle is answered.

#### **What's next?**

The next step, of course, are measurements on the living specimen.

#### **What conclusion do you draw from the previous results?**

We are at the very beginning, but we can imagine that long-term impact of infrasound causes health problems. The silent noise of infrasound acts like a jammer for the heart.

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<https://stopthesethings.com/2018/03/22/german-researchers-target-effects-of-wind-turbine-infrasound-on-the-heart/>