

Industrial wind turbines, infrasound and vibro-acoustic disease (VAD)

Documented in a press release dated May 31, 2007 from the Vibro-Acoustic Disease (VAD) research group in Portugal, people living in the shadow of industrial wind turbines have moved a step closer to understanding the nature of the Wind Turbine Syndrome many of them experience and complain about. Professor Mariana Alves-Pereira (an acoustical engineer) and Dr. Nuno Castelo Branco (a surgical pathologist) recently took numerous noise/vibration measurements within a Portuguese home surrounded by four (4) industrial wind turbines. The closest turbine is nearly 1000 feet (300 meters), from the affected home. The turbines have been operating since November 2006. The scientific report on this research will be formally presented at Internoise 2007, to be held on 28-31 August in Istanbul, Turkey.

May 31, 2007 by Mariana Alves-Pereira, PhD

Excessive exposure to infrasound and low frequency noise (ILFN, defined as all acoustical phenomena occurring at or below the frequency bands of 500 Hz) can cause vibroacoustic disease (VAD).[1]

Research into VAD has been ongoing since 1980, conducted by a multidisciplinary team of scientists and led by pathologist Nuno Castelo Branco, MD.

In March 2007, and for the first time, the Portuguese *National Center for Occupational Diseases* attributed 100% professional disability to a 40-year-old flight attendant who had been diagnosed with VAD since 2001. Two other VAD patients have also been attributed a similar disability status.

Initially, only ILFN-rich occupational environments were investigated. However, over the past several years, many individuals and their families have approached our team because of the ILFN contaminant in their homes. The sources of residential ILFN vary from industrial complexes, to large volume highways, to public transportation systems, etc.

In a case study published in *Proceedings of Internoise 2004* (an annual scientific meeting dedicated to all aspects of acoustics), one of the first documented cases of environmental VAD was reported in a family of four, exposed to the ILFN produced by a port grain terminal.[2]

Over the past three years, several families have contacted this team complaining of noise caused by the proximity of industrial wind turbines (windmills). However, only within this past month has this team obtained detailed acoustical measurements within a home surrounded by 4, recently installed industrial windmills.

This acoustical data was essential in order to compare in-home, windmill-produced acoustical environments with the residential, ILFN-rich environments that are known to be conducive to VAD.

The levels of ILFN inside the windmill-surrounded home are larger than those obtained in the home contaminated by the port grain terminal.

The scientific report will be formally presented at *Internoise 2007*, to be held on 28-31 August in Istanbul, Turkey.[3]

These results irrefutably demonstrate that windmills in the proximity of residential areas produce acoustical environments that can lead to the development of VAD in the nearby home-dwellers.

In order to protect Public Health, ILFN-producing devices must not be placed in locations that will contaminate residential areas with this agent of disease.

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The **Center for Human Performance** is a civilian, non-profit organization dedicated to research in vibro-acoustic disease. CPH was founded in 1992 has been the organization which coordinates all the different teams that work on vibro-acoustic disease research, and that include (in Portugal) the cardiology and pulmonary departments of the Cascais Hospital, the neurophysiology department of the National Institute of Cancer, the department of human genetics of the National Institute of Public Health, the department of speech pathology of the School of Health Sciences of the Polytechnical Institute of Setúbal, among several others over the past 25 years.

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[1] Castelo Branco NAA, Alves-Pereira M. (2004) Vibroacoustic disease. *Noise & Health* 2004; 6(23): 3-20.

[2] Castelo Branco NAA, Araujo A., Joanaz de Melo J, Alves-Pereira M. (2004) Vibroacoustic disease in a 10-year-old male. *Proc. Internoise 2004*, Prague, Czech Republic, August 22-25, 2004: No. 634 (7 pages).

[3] www.internoise2007.org.tr