



National Health and Medical Research Council

Report on the Scientific Forum: Wind Farms and Human Health

7 June 2011

BACKGROUND

In 2009, NHMRC conducted a review of the effect wind turbines have on people's health, considering potential adverse health impacts from infrasound, noise, electromagnetic interference, shadow flicker and blade glint produced by wind turbines. The review revealed there is no peer reviewed, published scientific evidence to link wind turbines with adverse health effects.

In July 2010, NHMRC released *NHMRC Public Statement: Wind Turbines and Health* and supporting evidence *Wind Turbines and Health: A rapid review of the evidence*. These publicly accessible documents suggested authorities take a precautionary approach while continuing to monitor research outcomes. Members of the public were urged to contact their doctor if they had any individual health concerns.

Residents living close to wind farms have raised concerns about potential ill effects on health from wind turbines, termed 'Wind Turbine Syndrome'.

As part of its commitment to monitoring research outcomes, NHMRC scheduled a Scientific Forum for mid-2011.

OBJECTIVES

The NHMRC Scientific Forum conducted on 7 June 2011 had the following objectives:

- identify further Australian and international evidence related to possible health impacts on wind farms;
- consult with stakeholders to ensure NHMRC awareness of the range of issues of public concern;
- identify gaps in the evidence on this issue; and
- explore possible collaborations within the health, environment health, planning, industry and community sectors to progress this issue.

WORKING TO BUILD A HEALTHY AUSTRALIA

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OPENING REMARKS

Professor John McCallum, Head of NHMRC's Research Translation Group, opened the forum, acknowledging the traditional owners of the land, the Ngunnawal people. The forum objectives were outlined and participants were advised that any views expressed during the forum belonged to the individuals and were neither representative of, nor endorsed by, the NHMRC.

A brief overview of NHMRC's role in developing guidelines and advice was provided to enable participants to better understand NHMRC processes. Professor McCallum explained that while NHMRC is aware of anecdotal evidence, as a scientific body it only uses published scientific evidence developed from robust research. Participants were also advised that NHMRC does not conduct research itself, but awards and manages research funding based on the quality of grant applications. Professor McCallum described how mounting anecdotal evidence in a particular field often motivates researchers to submit research proposals in that area for funding consideration.

Professor Warwick Anderson, CEO of the NHMRC, welcomed participants and reiterated that NHMRC is an evidence-based organisation with a long history of dealing with complex clinical and public health issues. He discussed the role of NHMRC in developing health and ethical advice, as well as funding research, and explained the processes associated with targeted calls for research. Professor Anderson discussed the current limitation of existing research into the adverse health outcomes possibly caused by wind turbines and expressed interest in the outcomes of the forum.

Participants were advised that information gathered during the day would inform any decision to update the public statement, and that the Council of the NHMRC would advise him on this issue.

MORNING PRESENTATIONS

Facilitator: Dr Gael Jennings

The morning session consisted of three sessions. The first session aimed to provide differing perspectives on the science underpinning the issue, and was comprised of two international presentations delivered via the Skype network. Professor Geoffrey Leventhall, an acoustic specialist from the United Kingdom, delivered a presentation entitled [*Wind Farms and Human Health*](#). Thereafter, Professor Mariana Alves-Pereira, an epidemiologist from Portugal, delivered a presentation with the title [*Low Frequency Noise and Health Effects*](#).

The second session aimed to provide information on issues related to possible health impacts. Dr Bob Thorne, a psycho-acoustician, presented on [*Wind Farm Noise - Assessment and Management*](#), followed by Dr Simon Chapman, an epidemiologist from the University of Sydney, with [*Psycho-social mediators of reported annoyance and putative health-related symptoms associated with wind turbines*](#). A hand-out of Dr Chapman's oral presentation was provided to forum participants.

The third session aimed to provide a perspective from members of the public who live near wind farms. A panel discussion included Ms Bernie Janssen, Mr Donald Thomas and Mr David Page who shared the adverse health effects they have experienced since wind farms were constructed close to their homes.

The morning session was streamed live on the day and is available on the NHMRC website along with the presentations and an NHMRC background paper. (<http://www.nhmrc.gov.au/media/events/index.htm>)

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AFTERNOON DISCUSSIONS

Facilitator: Dr Gael Jennings

A workshop session was conducted in the afternoon, with the aim of identifying evidence gaps and public concerns and to allow any other issues to be raised. The following questions were discussed and the outcomes are summarised below.

Question 1:

What substantiated scientific evidence on a link between wind turbines and health can we agree on? Where are the gaps? What needs to be properly investigated?

Outcomes:

- Areas requiring more research include infrasound and audible noise and their impact on health. Variables include (but not limited to) Australian housing, proximity to turbines, wind and topography.
- There is insufficient published and peer-reviewed quality evidence concerning infrasound and its effects on health. Further research could include health effects from other sources of infrasound such as mobile phones.
- To address this issue, detailed epidemiological and longitudinal studies would need to be carried out, taking into account multidisciplinary factors.

Question 2:

What are the other major health issues raised today that need to be communicated to the NHMRC? Have we captured the full scope of health concerns?

Outcomes:

- The positive impact of wind turbines should also be noted.
- The adverse health effects of wind turbines should be analysed through multidisciplinary neurological, psychological, cardiovascular and other fields.
- There needs to be a system to address reports of adverse health effects of wind turbines.
- Social and economic factors need to be considered when analysing the impact of wind farms on human health.
- Further research is needed to inform the determination and setting of relevant industry standards on wind turbine development, to minimise effects on people living in their vicinity.

Question 3:

In light of questions 1 & 2, what changes would you recommend be made to the NHMRC Public Statement?

Outcomes:

- A thorough and systematic literature review.
- Clearly presented evidence, and the residual uncertainties or 'unknowns' in a table format.
- An overview of the evidence to define areas of uncertainties, highlighting limitations to available evidence, also including prospective areas of further research.

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- A mention of occupational exposure and related precautions.
- An unambiguous key statement relating wind turbines to all valid noise (infrasound and audible noise) and the specific response it can elicit in those who are exposed.
- No change in the paragraph in which authorities are instructed to maintain a precautionary approach.

OUTCOMES

Professor Warwick Anderson thanked participants, and acknowledged the diversity of professions and views represented in the forum.

Noise, both audible and inaudible, was the key area identified by participants as causing the most concern. Accordingly, NHMRC has agreed to undertake a systematic approach to reviewing the literature and use the results to inform any update of the public statement.

NHMRC COUNCIL and CEO CONSIDERATIONS

The CEO of NHMRC, Professor Anderson, has accepted the NHMRC Council recommendations following the 17 June 2011 Council session, that:

1. The literature be reviewed in a systematic manner, especially focussing on the possible health impacts of audible noise and infrasound, and
2. Depending on the result of this review, that a targeted call for research in this area be considered.