

“fess up to the annoyance link or delete”

Chief Medical Officer of Health document identifies causal link between wind turbine noise and adverse health effects

December 28, 2012

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1 Chief Medical Officer of Health of Ontario document identifies causal link

On May 20, 2010, the Chief Medical Officer of Health of Ontario (CMOH) released “*The Potential Health Impact of Wind Turbines*”. This CMOH report was distributed to the general public.

In conjunction with this release, CMOH prepared a document to address anticipated questions related to the CMOH “*The Potential Health Impact of Wind Turbines*”. Unlike “*The Potential Health Impact of Wind Turbines*” the CMOH Q & A document was not distributed to the general public.

A draft version of the CMOH Q & A document was obtained through an Ontario Freedom of Information Request. The draft CMOH Q & A contains comments which identify a causal link between wind turbine noise and adverse health effects.

Dr. Ray Copes is identified as one of the contributors to the CMOH “*The Potential Health Impact of Wind Turbines*”. (see except from CMOH Q & A document below). Dr. Copes is the Director, Environmental and Occupational Health Branch, Ontario Agency for Health Protection and Promotion.

17. Who are the technical experts who contributed to this report?

- Dr. Ray Copes, Director, Environmental and Occupational Health Branch, Ontario Agency for Health Protection and Promotion
 - Dr Gloria Rachamin, Team Lead, Water & Environment (A), MOHLTC
 - Dr. David Williams, Associate Chief Medical Officer of Health, MOHLTC
- And members from the Council of Ontario Medical Officers of Health:
- Dr. Malcolm Lock, Medical Officer of Health (MOH), Brant County Health Unit, and acting MOH, Haldimand-Norfolk Health Unit
 - Dr. David Colby, Acting MOH, Chatham-Kent Public Health Services
 - Dr. Hazel Lynn, MOH, Grey Bruce Health Unit
 - Dr. Rosana Pellizzari, MOH, Peterborough County-City Health Unit

In a May 11, 2010 email co-author Dr. Ray Copes provided his comments/suggestions to lead author of the CMOH Q & A response document prepared for Medical Officers of Health province wide (see email below).

Page 1 of 1

MacDonald, Gillian (MOH)

From: Ray Copes [Ray.Copes@oahpp.ca]
Sent: May 11, 2010 7:39 PM
To: Rachamin, Gloria Dr. (MOH)
Cc: King, Arlene S. Dr. (MOH); Williams, David C. Dr. (MOH); Walker, Elizabeth S. (MOH)
Subject: wind turbinesQAMay112010GR
Attachments: wind turbinesQAMay112010GR.doc

Gloria,

Comments /suggestions as requested.

The May 11, 2010 email (above) included a draft version of the CMOH Q & A document. The May 11, 2010 draft version of the CMOH Q & A (below) contained a track change comment which states "Should add 'direct'..." as studies support a causal link between wind turbine noise and adverse health effects. (see excerpt below)

WIND TURBINES Qs & As

1. What scientific evidence is available on the potential health impacts of wind turbines?

A few case studies and cross-sectional studies in people living near wind turbines were published in the literature. The scientific evidence available to date, however, does not demonstrate any causal link between wind turbine noise and any adverse health effects.

Comment [r1]: Should add 'direct' as the studies would support a link through 'annoyance'

The May 19, 2010 version of the CMOH Q & A was changed to add the word "direct". (see excerpt below)

Appendix B

WIND TURBINES Qs & As

1. What scientific evidence is available on the potential health impacts of wind turbines?

A few case studies and cross-sectional studies in people living near wind turbines were published in the literature. The scientific evidence available to date, however, does not demonstrate any direct causal link between wind turbine noise and any adverse health effects.

2 Wind turbine noise annoyance and sleep disturbance common - Dr. Copes

A 2009 literature review coauthored by Dr. Copes reports wind turbine noise annoyance and sleep disturbance is common between 30 and 45 dBA. (see excerpt below)



Wind Turbines and Health

Karen Rideout, Ray Copes, Constance Bos

- Annoyance and sleep disruption are common when sound levels are 30 to 45 dBA

3 Annoyance and sleep disturbance are health effects

Michaud et al. (2005)¹, Health Canada (2005)² and other references^{3,4,5} acknowledge that annoyance is an adverse health effect.

The World Health Organization web site (below) identifies annoyance and sleep disturbance to be main health risks of noise.

[Programmes and projects](#) > [Noise and health](#)

Noise and health

- [Home](#)
- [News and events](#)
- [Night noise guidelines](#)
- [Burden of disease from environmental noise](#)
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Home

Noise seriously harms human health and interferes with people's daily activities at school, at work, at home and during leisure time. Traffic noise alone is harming today the health of almost every third European. The main health risks of noise identified by WHO are:

- pain and hearing fatigue;
- hearing impairment including tinnitus;
- annoyance;
- interferences with social behaviour (aggressiveness, protest and helplessness);
- interference with speech communication;
- sleep disturbance and all its consequences on a long and short term basis;
- cardiovascular effects;
- hormonal responses (stress hormones) and their possible consequences on human metabolism (nutrition) and immune system;
- performance at work and school.

The programme on noise and health at ECEH Bonn reviews the evidence on main health effects of noise and identifies the needs of specific vulnerable groups. Working in close co-operation with other WHO programmes ECEH Bonn develops indicators and guidelines for noise and health, analyses exposure-response relationships for different health effects and studies the long-term effects of night exposure to noise such as long-term sleep disturbance and cardiovascular problems.

- [Noise and housing](#)
- [Background](#)
- [Exposure-response relationships](#)
- [Aircraft noise and health](#)
- [Children, noise and health](#)

4 CMOH Q&A identifies “indirect” links to adverse health effects

In addition, the May 11, 2010 draft version of the CMOH Q & A contained a track change comment which identifies an indirect causal link between wind turbine noise and adverse health effects. (see CMOH Q & A excerpt below)

8. Your report says “scientific evidence available to date does not show a direct causal link between wind turbine noise and adverse health effects.” Are there any *indirect* links?

This statement means that exposure to wind turbine noise does not cause any adverse health effects. There are no known indirect links.

Comment [r7]: Not really true. The link between perceived noise and symptoms is probably linked to annoyance. The link with annoyance should be recognized.

5 Authors directed to “fess up”

The May 11, 2010 draft version of the CMOH Q & A contained a track change comment which directs the authors to “fess up” to the indirect casual link.

9. Your research refers to “some people living near wind turbines reporting symptoms such as dizziness, headaches and sleep disturbance.” If not attributable to the effect of wind turbines, what do you think is causing these health conditions?

Although some people living near wind turbines report symptoms such as dizziness, headaches, and sleep disturbance, available scientific evidence does not demonstrate a causal link to wind turbine noise. As many factors can trigger these non-specific symptoms, people should consult with their physician about possible causes.

Comment [r8]: This answer isn't credible. Either 'fess up to the annoyance link or delete.

In an apparent effort to “fess up” the May 19, 2010 version of the CMOH Q & A was altered to include the word “direct” and acknowledge the potential for annoyance to result in symptoms such as dizziness, headache and sleep disturbance.

9. Your research refers to “some people living near wind turbines reporting symptoms such as dizziness, headaches and sleep disturbance.” If not attributable to the effect of wind turbines, what do you think is causing these health conditions?

Although some people living near wind turbines report symptoms such as dizziness, headaches, and sleep disturbance, available scientific evidence does not demonstrate a direct causal link to wind turbine noise. It is possible that these symptoms are a result of annoyance with the noise.

However these and other acknowledgements, contained in the May 11 and 19, 2010 versions of the CMOH Q & A, are not disclosed in CMOH “*The Potential Health Impact of Wind Turbines*”.

6 CMOH “*The Potential Health Impact of Wind Turbines*” missing material

Jankowski of Sun Times (June22, 2011) reports that Dr. Copes acknowledges the CMOH report was missing material that could have been in the report and wasn't. (see excerpt below)

Turbine report missing impact section

By PAUL JANKOWSKI, SUN TIMES STAFF

WEDNESDAY, JUNE 22, 2011

"I think it's a fair comment that there is other material that could have been in the report and wasn't," said Dr. Ray Copes, the director of environmental and occupational health at the Ontario Agency for Health Protection and Promotion and another member of the committee that reviewed drafts of the report.

Copes said there are "really important and quite legitimate" questions about wind farms that he and Lynn thought should be discussed, but "I guess the CMOH's report wasn't the place for it."

7 Serious harm to human health includes indirect impacts

A 2011 Ontario Environmental Review Tribunal (ERT) decision found that serious harm to human health includes indirect health impacts. (see ERT decision excerpt below)



Environmental Review Tribunal

Case Nos.: 10-121/10-122

Erickson v. Director,
Ministry of the Environment

One of the initial issues is whether “indirect” health impacts are included in the test for serious harm under section 145.2.1(2) of the *EPA*. The Tribunal has found above that “serious harm to human health” includes both direct impacts (e.g., a passer-by being injured by a falling turbine blade or a person losing hearing) or indirect impacts (e.g., a person being exposed to noise and then exhibiting stress and developing other related symptoms). This approach is consistent with both the WHO definition of health and Canadian jurisprudence on the topic.

8 CMOH only looked at direct links

Noise can harm humans via the “indirect pathway”. The “indirect pathway” for noise exposure is illustrated in the following noise reaction schema.

62 EFFECTS ON HEALTH

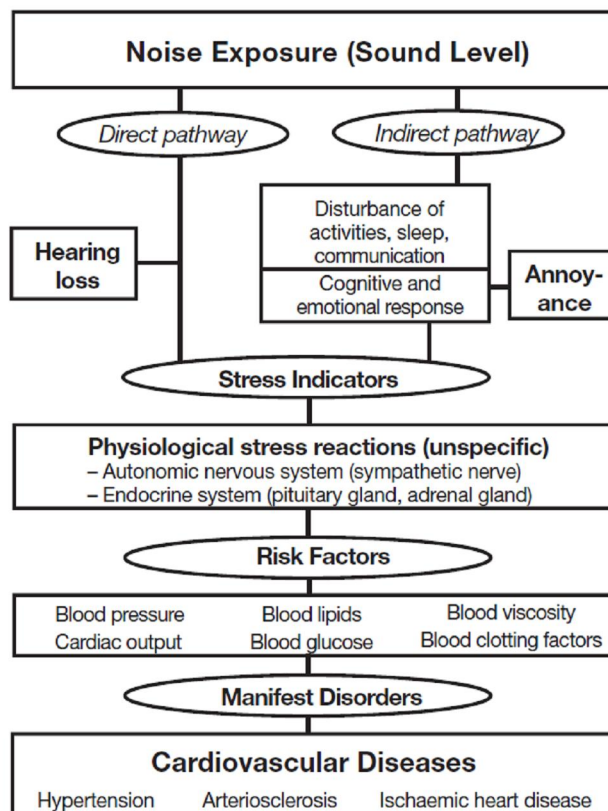


Fig. 4.3
Noise effects
reaction scheme

Source:
Babisch, 2002.

Excerpted from: World Health Organization, Night Noise Guidelines for Europe, 2009
http://www.euro.who.int/InformationSources/Publications/Catalogue/20090904_12

In 2011 the lead CMOH report author, Dr. Gloria Rachamin, acknowledged under oath that she was familiar with the schema and agreed with it in principle. (see Dr. Rachamin transcript excerpt below)

KATIE BRENDA ERICKSON and CHATHAM-KENT WIND ACTION INC.

Appellants

- and -

DIRECTOR, MINISTRY OF THE ENVIRONMENT and
SUNCOR ENERGY SERVICES INC. (KENT BREEZE WIND FARMS)

Respondents

HEARD BEFORE: JERRY V. DeMARCO, ASSOCIATE CHAIR
PAUL MULDOON, VICE-CHAIR

In the Chatham-Kent Civic Centre Council Chamber

March 4, 2011 - VOLUME 9

APPEARANCES:

Eric K. Gillespie, Mr. -- for the Appellants

Frederika M. Rotter, Ms. } -- for the Director, Ministry of the
Andrea Huckins, Ms. } Environment

18 A. Yes, I'm familiar with this diagram.

19 Yes.

20 Q. Right. And do you agree with the

21 diagram?

22 A. In principle, yes.

However, Dr. Gloria Rachamin also acknowledged under oath that CMOH "*The Potential Health Impact of Wind Turbines*" only looked at direct links to human health. (see Dr. Rachamin transcript excerpt below)

1 A. And it didn't look at -- now, again
2 the study did not say that there is no sleep
3 disturbance, it said that there is no direct link to
4 the sleep disturbance. So if annoyance has caused
5 the sleep disturbance, we are not saying that that
6 could not have happened.

7 Q. Okay. And then you've made that clear
8 that you've ---

9 A. Yes.

10 Q. --- only looked at direct links.

11 A. Right.

9 ***Industry sponsored panel review acknowledges link to noise***

The link between wind turbine noise and reported symptoms are well known according to a report coauthored by Dr. David Colby who is also a contributor to the CMOH “*The Potential Health Impact of Wind Turbines*”.

In 2009, The American Wind Energy Association and The Canadian Wind Energy Association “...established a scientific advisory panel ...” and funded a literature review. Colby et al. (2009)

Wind Turbine Sound and Health Effects An Expert Panel Review

Prepared by (in alphabetical order):

W. David Colby, M.D.
Robert Dobie, M.D.
Geoff Leventhall, Ph.D.
David M. Lipscomb, Ph.D.
Robert J. McCunney, M.D.
Michael T. Seilo, Ph.D.
Bo Søndergaard, M.Sc.

Prepared for:

American Wind Energy Association
and
Canadian Wind Energy Association

December 2009

Colby et al. (2009) list the symptoms documented in Dr. Pierpont’s case study “wind turbine syndrome”. (see Colby et al. (2009) excerpt below)

in Pierpont (2009, pre-publication draft). Symptoms included sleep disturbance, headache, tinnitus, ear pressure, vertigo, nausea, visual blurring, tachycardia, irritability, concentration, memory, panic attacks, internal pulsation, and quivering. This type of study

Dr. Pierpont coined this cluster of symptoms Dr. Pierpont’s case study “wind turbine syndrome”.

Colby et al. (2009) reports the symptoms documented in Dr. Pierpont’s case study “... are not new and have been published previously in the context of “annoyance”...” and are the “... well-known stress effects of exposure to noise ...”. (see Colby et al. (2009) excerpt below)

sound (Leventhall et al., 2008). The similarity between the symptoms of noise annoyance and those of “wind turbine syndrome” indicates that this “diagnosis” is not a pathophysiological effect, but is an example of the well-known stress effects of exposure to noise, as displayed by a small proportion of the population. These effects are familiar to environmental noise control officers and other “on the ground” professionals.

However, these acknowledgements by an industry sponsored panel are not disclosed in CMOH “*The Potential Health Impact of Wind Turbines*”.

10 King continues to omit conclusions about indirect links

In December 2011 Dr Arlene King wrote to the London Free press editorial page stating:

“The scientific evidence available to date does not demonstrate a direct causal link between wind turbine noise and any adverse health effects on people living near wind turbines. The conclusions of the report are based on the review of available scientific evidence. *We will continue to monitor new scientific information on this subject.*”

On July 23, 2012 Dr. Arlene King continued to stand by her conclusions about direct health effects.

Official Report of Debates (Hansard)

Monday 23 July 2012

**Standing Committee on
Estimates**

Ministry of Health
and Long-Term Care

Page E-319

M^{me} France G  linas: One quick one, and I'll do them right off the bat. How's that?

Dr. King, we've all read the paper. I had asked you to comment on the health effects of windmills in Ontario and you were very nice in doing a report that you made public and certainly made accessible to me, showing that, with the setbacks that Ontario had set, there were no effects of the use of windmills. The federal health government has now decided to do more study, which is never a bad thing, if you ask me. What is Ontario's position now? Is this a file you're monitoring? Where are we at?

Dr. Arlene King: Thank you for the question. I think, first and foremost, I just want to say that I stand by the conclusions that I made in my study of 2010. The weight of the evidence does not support any direct health effects associated with wind turbines if they are appropriately placed, and that is with a minimum of a 550-metre setback.

I am aware of Health Canada's study. I'm always open, of course, to looking at more studies. It will be only a contributor, I want to just add, to the overall thinking. There have been more studies that have come out since I issued my report. We will continue to monitor the literature. All I can say at this point in time is that based on the

evidence to date, I do not believe that the weight of the evidence supports any direct health effects associated with wind turbines.

11 Express your concerns

Ontario residents have reason to be concerned about the CMOH's "*The Potential Health Impact of Wind Turbines*". The CMOH report failed to fully and accurately disclose the potential "indirect" health impacts of wind turbine noise.

If you are concerned about this omission consider demanding that Dr. Arlene King "fess up" to the indirect causal link between wind turbine noise and adverse health effects.

For your questions or comments to authorities contact information has been provided below.

Dr Arlene King
arlene.king@ontario.ca

The Honourable Leona Aglukkaq
Minister of Health
minister_ministre@hc-sc.gc.ca

The Right Honourable Stephen Harper
Prime Minister of Canada
pm@pm.gc.ca

Your Member of Parliament (Federal MP)

Your Member of Provincial Parliament (Provincial MPP)

Your local public health unit

¹ Michaud, D. S., Keith, S. E., & McMurchy, D., "Noise Annoyance in Canada", Noise Health, 7, 39-47, (2005)

² Health Canada, Community Noise Annoyance, Its Your Health, (2005, September) Retrieved from <http://www.hc-sc.gc.ca/hl-vs/iyh-vsv/life-vie/communityurbain-eng.php#he>

³ Pedersen, E., & Persson Waye, K., "Wind Turbine Noise, Annoyance and Self-Reported Health and Well Being in Different Living Environments", Occupational and Environmental Medicine, 64, 480-486, (2007)
doi:10.1136/oem.2006.031039

⁴ Suter, A. H., Noise and Its Effects, Washington, DC: Administrative Conference of the United States, (1991) Retrieved from <http://www.nonoise.org/library/suter/suter.htm>

⁵ New South Wales. Parliament. Legislative Council. General Purpose Standing Committee No. 5, Rural Wind Farms (2009, December)