

# **Open Submission: Risk of Harm to Children and Industrial Wind Turbines**

## **Health and Social-economic Impacts in Canada**

**Submitted by Carmen Krogh, BSc Pharm**

**May 15, 2013**

To:

The Honourable Leona Aglukkaq  
Minister of Health  
Health Canada  
[minister\\_ministre@hc-sc.gc.ca](mailto:minister_ministre@hc-sc.gc.ca)

Copy:

The Right Honourable Stephen Harper  
Prime Minister of Canada  
[pm@pm.gc.ca](mailto:pm@pm.gc.ca)

May 15, 2013

Dear Minister Aglukkaq,

Re: Risk of Harm to Children and Industrial Wind Turbines

### **1 Background**

This submission is being made regarding risk of harm to a child associated with exposure to a wind energy facility. This facility is not yet operational but approval for the facility is pending.

This submission is made on behalf of the Correia family from Ontario, Canada. The family raises concerns about their son who will be at risk from exposure to a wind energy facility.

I have forwarded a number of submissions, both public and confidential, to the Minister, Health Canada on behalf of other families who had expressed concerns for their children and grand-children. In addition, I have provided several submissions, public and confidential,

with examples of increased vulnerability associated with pre-existing medical conditions such as autism, respiratory conditions and other when industrial wind turbine facilities are sited in close proximity to family homes and schools. These have been copied to the Principle Investigator of the Wind Turbine Noise study as part of the peer review process.

Excerpts and references from peer reviewed and published research and other documentation of health and social-economic impacts associated with wind energy facilities have been provided to the Minister, Health Canada and in the past, copied to the Principle Investigator.

I have commented that vigilance and long term surveillance systems regarding risks to children and the general population associated with wind energy facilities are lacking.

The lack of resolution associated with industrial wind energy facilities has led to serious health, social, economic and altered quality of life issues.

The harm reported is in conflict with the World Health Organisation's definition of health:

“: “Health is a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity”<sup>1</sup>

Many jurisdictions, including the Canadian federal, provincial, and territorial governments and health officials have accepted WHO's definition of health (Health Canada, 2004, vol. 1, p. 1-1).”<sup>2</sup>

## **2 Purpose**

The purpose of this submission is to inform Health Canada about the Correia family's concern for their son; to request an investigation/inquiry into the siting of wind energy facilities in close proximity to family homes and schools; to request that Health Canada support placing further approvals on hold; and that Health Canada support those reporting health impairment at existing sites receive resolution to their satisfaction.

I have provided a copy of my comments to The Right Honourable Stephen Harper, Prime Minister of Canada.

## **3 Disclaimer**

I declare no conflicts and have received no financial support for the research, authorship, and/or publication of this submission.

The personal information used to compile this submission has been verified and confirmed by the family.

#### 4 Particulars: Ms Correia and physician comment

. May 7, 2013

Hello,

My name is Shellie Correia. I'd like to thank you for the opportunity to share with you today on this important issue.

The majority of people are very concerned about the health and well-being of their families, but in my case I have serious cause for concern.

My family has been very hard hit with cancer. I have had to watch my 16 year old daughter, 19 year old niece, my mom and two aunts all suffer terribly with cancer and then die. I asked the doctor why our children had developed cancer, when there had been no previous family history of it, even in the adults. The doctor said it was very likely environmentally caused. My brother and I were raised in an area of Hamilton surrounded by an electrical power generating station and two large steel companies. He said children raised in an industrial environment can suffer chromosomal damage which can then be passed on to the next generation. The damaged chromosomes can result in an inability for their bodies to defend themselves against certain types of cancers because of a susceptibility to toxins and carcinogens in the environment. It can also lead to many other types of disorders that you wouldn't normally see until after many years of exposure.

So naturally, when you know your family has a predisposition toward the development of environmentally based cancers, you avoid exposure to toxins whenever and wherever you can. There were three other kids in our neighbourhood that we knew of who later had children that died from cancer. The experts call this a "cancer cluster" and industrial areas are full of them.

Losing a child to cancer was a nightmare I never awoke from. When your child is terminally ill, the guilt you feel from being unable to protect them is crushing; you would give anything to take their place. You feel completely and utterly helpless.

Two and a half years after I lost my daughter, I was blessed with another child; a miracle in itself since sadly, Rachel had been my only child and had been born 19 years earlier. I vowed that this time I would not raise my child in the city and my husband and I diligently searched for a quiet, clean and peaceful area to raise our son. We found it in West Lincoln.

I have been treated for depression and anxiety since the death of my daughter and I thought this would be the perfect place to heal and to try to start over. I grow my own fruits and vegetables as well as can them. We buy our meat, eggs and dairy locally and lead a quiet and peaceful life.

When our son Joey was 2 ½ to 3 years old, we began to notice he had issues with noises such as the sound of ripping Velcro, repetitive type noise, white noise and many others. He reacted very negatively to this type of stimuli, much more than you'd expect from a young child. He had extremely high sensitivity to some materials and textures. When Joey began to attend St. Martin School in Smithville, these issues became problematic. The school insisted he see a doctor. We took Joey to our family who then referred him to a specialist in Paediatric Neurological Disorders. Dr. Calvert was highly recommended and well respected in her field. She made amazing progress with our son with a combination of one-on-one therapy and several medications which she regularly fine tuned to meet Joey's needs. Soon Joey was stable enough to attend school regularly and he went from being withdrawn, unable to focus or communicate and frustrated to being able to participate in class most of the time. Accommodations are made for Joey when the noise becomes intolerable for him. The school has been very supportive over the years.

But- now, the progress Joey has made is being threatened. We've been told that soon we will be surrounded by gigantic 3 megawatt industrial wind turbines. At, over 600 ft., they will be the largest ever installed and one of them will be behind our home at the absolute minimum setback of 550 metres. I've done countless hours of research since learning of this and what I have found is very frightening. When I took Joey to see his specialist, I asked her what she thought of the situation and she gave her opinion in the form of a letter which I will send to you soon.

This issue is not only affecting my family, but the entire community; pitting neighbour against neighbour and even family members against each other. Stress levels are way up and still climbing, as more and more people are realizing what is happening. Everybody is either scared or angry. People are worried that they won't be able to live in their homes and they won't be able to sell them either.

And – once again, I am put in the position where I need to try to protect my child and I am going to do it before it is too late.

As the Ministry that is in charge of protecting our environment, your first moral and legal obligation, is to protect the people in your community, especially the most vulnerable of us. And we must insist that you do that!

As the mother of a child, who has special needs, I feel the need to advocate for my son in whatever way I possibly can. The present 40dB noise limits will not help my son, and that is only an average anyway. The noise levels go way above that when weather permits. Please help me in my goal to protect my son from the harm this will certainly bring to him.

Sincerely, Shellie Correia

**Dr. Chrystella Calvert**  
**109 King Street West**  
**Dundas, ON L9H 1V1**  
**905-628-9200**

October 5, 2012

**To Whom It May Concern:**

I am a behavioural Pediatrician and I specialize in assessment and care of children with developmental and mental health problems. My patient, Joey Correia, has been under my care since May, 2007. He has complex developmental issues including significant Sensory Processing Disorder.

He has always been sensitive to sensory environmental stimuli, which is quite noxious and problematic. Through sensitive and thoughtful interventions, by school and family, Joey has been able to cope much better. Much focus has been placed on reducing strong or noxious stimuli in the immediate environment.

Every human attempt to understand their world via input through the sensory organs which detect changes or threats in the environment. Noxious stimuli (or unexpected, or unnatural stimuli) are a source of environmental stress that affect the human brain and mounts a physiologic response to restabilize. For "typical" brains, known sources of environmental stress include airports, highways and industry. Wind turbines concern me, given my strong knowledge of neurobiology. Due to well-documented disruption to the "normal" environment (vibration, noxious repetitive sound) this is potentially a danger to health. There is also a rational fear that families living near these structures are being exposed, and have no reassurance of the long-term effects on health, particularly brain biology. In children, the developing brain is exquisitely sensitive and plastic – it relies on clean inputs to develop normally. Science has no evidence that this abnormal, incessant stimulus does not have long lasting effects on the developing fetal child and adolescent brain. Applying basic principles in fact suggest great danger of disrupting normal human neural networks. Certainly Joey is exceptionally more vulnerable. I have seen him become destabilized and quite impaired due to sensory overload. It results in agitation, insomnia, and mood changes. He is currently functioning very well and has a very good quality of life. His mother purposely moved to a quiet, rural home as an accommodation for Joey.

I, as a "normal brain" (or typical brain) individual would *not* want this risk to my mental health (or my children's) in my neighbourhood. The placement of these devices must be thoughtful and, of course, "first, do no harm." In a developed society like Canada, we must advocate and protect the most vulnerable members. Joey, and all our children deserve our thoughtful and ethical best.



Dr. Chrystella Calvert

## 5 Canada and rights of the child

Canada has had a role regarding “rights of the child”:

“Canada played an instrumental role in drafting and promoting the United Nations Convention on the Rights of the Child. The Convention outlines the responsibilities governments have to ensure a child’s right to survival, healthy development, protection and participation in all matters that affect them. The four general principles of the Convention are: non-discrimination, the best interests of the child, the right to life, survival and development, and respect for the views of the child.

The UN General Assembly unanimously adopted the Convention on November 20th, 1989. As of September 2010, the Convention has been ratified by 193 countries, making it the most widely ratified human rights treaty.

Canada ratified the Convention in 1991. The Public Health Agency of Canada is responsible for coordinating federal implementation of the Convention in Canada. The Department of Justice is responsible for its legislative implementation at the federal level.”<sup>3</sup>

The United Nations Convention on the Rights of the Child proclamation states that “childhood is entitled to special care and assistance”:

### “Preamble

Recalling that, in the Universal Declaration of Human Rights, the United Nations has proclaimed that childhood is entitled to special care and assistance,

Convinced that the family, as the fundamental group of society and the natural environment for the growth and well-being of all its members and particularly children, should be afforded the necessary protection and assistance so that it can fully assume its responsibilities within the community,<sup>4</sup>

The above United Nations proclamation that “childhood is entitled to special care and assistance” signatories “Have agreed as follows” to a number of Articles that can be retrieved from the site <http://www2.ohchr.org/english/law/crc.htm> Indications are that “...the governments that have ratified it have legally agreed to fulfill its provisions.” The Canadian Children's Rights Council notes:

“The U.N. Convention on the Rights of the Child is the most ratified of all the United Nations Human Rights treaties. The treaty affirms and describes the fundamental human rights of all children (all human beings below the age of 18), and the governments that have ratified it have legally agreed to fulfill its provisions. The CRC forms the most comprehensive and well-established international standard for

children's rights and provides the framework for the actions of UNICEF, the UN children's agency .

Children's rights are also protected under the other UN human rights instruments, which include the Universal Declaration of Human Rights, the International Covenant on Civil and Political Rights, the International Covenant of Economic, Social and Cultural Rights, International Labour Organization Conventions and numerous other documents.”<sup>5</sup>

## **6 Risks to children** *[not intended to be exhaustive]*

Excerpts from a fact sheet from the World Health Organization states:

### **“Facts and figures**

Noise is an underestimated threat that can cause a number of short- and long-term health problems, such as for example sleep disturbance, cardiovascular effects, poorer work and school performance, hearing impairment, etc.

### **Who is most affected?**

Some groups are more vulnerable to noise. As children spend more time in bed than adults, they are more exposed to night noise.

Nuisance at night can lead to an increase in medical visits and spending on sleeping pills, which affects families’ budgets and countries’ health expenditure. The gap between rich and poor is likely to increase if governments fail to address noise pollution.

### **Children, noise and health**

Impairment of early childhood development and education caused by noise may have lifelong effects on academic achievement and health. Studies and statistics on the effects of chronic exposure to aircraft noise on children have found:

- consistent evidence that noise exposure harms cognitive performance;
- consistent association with impaired well-being and motivation to a slightly more limited extent;
- moderate evidence of effects on blood pressure and catecholamine hormone secretion.”<sup>6</sup>

Excerpts from The World Health Organization’s “Training Package for the Health Sector” on “Children and Noise” identify vulnerabilities:

#### **“VULNERABLE GROUPS OF CHILDREN**

##### **§ The fetus and babies**

- § Preterm, low birth weight and small for gestational age babies
- § Children with dyslexia and hyperactivity
- § Children on ototoxic medication”<sup>7</sup>

“It is logical to consider certain sub groups of children (since conception) to be particularly at risk for harm from excess noise exposure. These include the fetus, babies and very young infants born preterm, with low birth weigh or small for gestational age. Also, children who have learning disabilities or attention difficulties may be more likely to develop early problems with mild hearing loss compared to children without these challenges, and children on ototoxic medications may have higher likelihood of developing problems from exposure to excess noise.”<sup>8</sup>

A brief overview of the WHO Training Package notes that adverse effects from noise exposure can include direct ear damage, indirect adverse effects (physiological and psychological effects) and impaired cognition. The “indirect damage” of Indirect adverse effects can include stress-related somatic effects (stress hormone, blood pressure and muscle spasm) and psychological effects can include annoyance/isolation, sleep disturbance and mental health issues. Cognitive effects can include reading, concentration, memory and attention issues. Chronic noise exposure impairs cognitive function (reading comprehension and long term memory) and that dose-response relationships are supported by both laboratory and field studies and that “Over 20 studies have reported that noise adversely effects children’s academic performance”.<sup>9</sup>

Children with pre-existing medical conditions can have increased risks of adverse effects. For example autism,<sup>10, 11, 12</sup> asthma,<sup>13, 14</sup> migraine,<sup>15, 16</sup> bronchitis,<sup>17</sup> and epilepsy<sup>18, 19</sup> can be vulnerable to the effects of noise and/or stress and/or sleep disturbance. These effects can be detrimental to the health of children. Childhood asthma<sup>20</sup> and migraine<sup>21</sup> can be triggered by stress.

Niemann et al state:

“With children the effects of noise induced annoyance from traffic, as well as neighbourhood noise, are evident in the respiratory system. The increased risk of illness in the respiratory system in children does not seem to be caused primarily by air pollutants, but rather, as the results for neighbourhood noise demonstrate, by emotional stress.”<sup>22</sup>

A submission dated December 27, 2012 provided excerpts of judicial decisions associated with wind turbine appeals including among other issues and the risk to autistic children.

Indications are that UK planning inspectors and planning authorities have been sufficiently convinced of the adverse effects of wind turbines on children with AS (Autistic Spectrum Disorders) of similar severity to the children reported here, to refuse planning permission for several wind energy facilities.



The December 27 2012 submission <sup>23</sup> described the risks to children in general and for those with pre-existing medical conditions similar to the son of the Kerr family

## 7 Discussion

Published peer reviewed references document individuals living in the environs of wind turbines report reduced sleep quality and- / -or sleep disturbance and- / -or lower quality of life. <sup>24</sup> , <sup>25</sup> , <sup>26</sup> , <sup>27</sup> , <sup>28</sup>

There are no precautionary measures in place for children in public or private child care centres, schools or other institutions that care for children part or full-time. Parents and caregivers are unable to protect the health of their children and their capacity to learn.

Due to the siting of wind energy facilities in close proximity to residences, some children may be limited in their ability to play outdoors in order to avoid the potential risk of ill health.

Krogh and Horner (September 2012) note: <sup>29</sup>

“Inequity exists as participants who host industrial wind turbines typically “agree” and/or are compensated to accept noise, nuisance and / or other effects through a contractual arrangement. <sup>30</sup> , <sup>31</sup> Non participants typically have not agreed, or may not be given a similar opportunity to be compensated for noise, nuisance and / or other effects.

An example of a lease agreement states:

“The Rent, in respect of the Specified Locations...represent compensation in full for...nuisance, noise, signal interference,..., casting of shadows and other inconveniences or damage...incurred by Lessor from the acts or omissions of Lessee.”” <sup>32</sup>

The wind energy facilities under discussion are being imposed on the community and the Correia family. On February 21, 2013, the wind developer and consultant met with Ms Correia and Ms Krogh and were provided with the letter from the physician and documentation regarding the risk to children’s health.

On Mother’s Day, May 12, 2013, Ms Correia comments:

From: [Shellie Correia](#)  
Sent: Sunday, May 12, 2013 10:08 PM  
To: [Carmen Krogh](#)

“I am writing this letter in the hope of shedding light on a problem in rural Ontario, a problem that has proved to be absolutely devastating, for many families in our community.

I have taken on the task of completing an enormous amount of research on the issue of industrial wind turbines, covering it from every angle, and I must honestly say, that I can only come to one conclusion. This horrible situation has been created by political agendas that I consider unfair, undemocratic, and have caused the owners of the properties adjacent to IWT's to bear the crippling burden of these industrial turbine facilities, for the rest of the population. Even our innocent children have no protection.

The damage being done to our farmland, flora and fauna, finances, and the health and well-being of the citizens of rural Ontario, is completely unacceptable. The most astonishing, and terrifying thing I have discovered, is that the provincial government has taken away every avenue for protection that had previously been in place. The MOE, MNR, and MOH have completely forgotten to take into consideration, all of the excellent work and evidence, that has been brought forward by professionals from many different backgrounds. Honest, believable people, who are coming forward for no other reason, other than to achieve health protection.

As a parent, I do not believe that any reasonable government would enact a bill, such as the green energy act, to forcefully implement harsh, unjust policies, leaving not one avenue open for the protection of our children, or anything else for that matter. But, the reality is, there is a complete travesty of justice happening right here in rural Ontario, and we need your help now.

I have previously reached out to every individual, and organization I could think of. I've met personally with the leaders of all 3 provincial parties. I have appealed for help to my local government, and regional government, personally, and have written to most of the MPP's. I have attended Queen's Park, in the hope of getting the opportunity to speak, yet again, with Premier Wynne; but she did not appear, and also did not send a representative to pick up the letters I had written, or peer-reviewed documents I had brought to give to her.

I have even contacted the Director of the Children's Aid, to ask what I could do to protect my son. He said he would like to be able to help, but cutbacks have left him in the position of having to let employees go, and therefore, he could not take on a task of this magnitude.

The most educational and eye-opening experience I've had, is speaking face to face with the unfortunate victims, who are suffering the health effects associated with IWT's. They come from projects currently operating in various parts of rural Ontario,

and they are nothing like what the wind industry and others infer that they are. They are honest, intelligent, reasonable individuals, many of them professional people, who had no reason to believe that the turbines would be a problem....but they were sorely mistaken. It is beyond obvious, why anyone would try to discredit these people.

On the advice of the MOE, I have met directly with representatives of the wind company, NRWC. In attendance, were Randi Rahamim, Chris Ollson, and a representative from NRWC.

CarmenKrogh, BScPharm, accompanied me to the meeting as my "expert" on the subject of turbines, and the health effects caused by them. While speaking with them, it became increasingly clear, that they had absolutely NO experience at all with the real people who have suffered from turbines placed close to their homes. They had nothing of any substance, as far as relevant studies, or documentation to show us. They were unwilling to give guarantees of health protection of any kind. They promised to digest the important information I had given them, as well as the letter from my son's specialist, and get back to me. That was in February. Not only did they not get back to me....on May 3, 2013, they submitted their application to the MOE, even though they had many outstanding issues to resolve. Our community has been fighting valiantly, to prove that we are not willing hosts to these IWT's.

So you can see, I have done my due diligence, in trying to protect my son. All avenues that had previously been put in place to protect us, have been overtaken by the Liberal government's green energy act. The safeguards, even those to protect our children, such as the Children's Aid, have been crippled by our very own provincial government. All of our cries for help, have up till this time, fallen on deaf ears. Our family is now, pleading for the help of the Federal Government. We need you to step in and stop the terrible hardships that rural families are being put through, through no fault of their own. We implore you to advise us of how to correct this horrendous situation. Our son, as all other children in this country, deserves to have the protection of his family, his community, and his Government. Please see to it that he is protected.

Sincerely,

Shellie Correia”

## **8 Conclusion**

Children living in homes exposed to the noise and other emissions of industrial wind turbines are reported to suffer adverse health effects <sup>33</sup> and may be at risk of mental and / or physical adverse health effects similar to that of their parents.

Vigilance and long term surveillance systems regarding risks and adverse effects related to children are lacking. Such programs are necessary to evaluate the risks to children who have been exposed to industrial wind turbines. This evaluation should take place before proceeding with additional approvals.

Canada has committed to four general principles:

“... non-discrimination, the best interests of the child, the right to life, survival and development, and respect for the views of the child”.<sup>34</sup>

An inequity appears to violate the principle that all children are to be treated equally i.e. that of “non-discrimination”.<sup>35</sup> Rural children are at risk of harm when wind energy facilities are sited in close proximity to family homes and many parents do not consent to this risk.

As the result of the anticipated proliferation in the future<sup>36</sup> of industrial wind turbine facilities in Canada, it is expected more Canadians, including children in general, and those with special needs such as autism, epilepsy, migraine and those with respiratory disorders will be at risk of harm. Risk of learning/cognitive difficulties is a risk.

Action by Health Canada would support its “Mission and Vision” as the responsible authority to help “people of Canada maintain and improve their health” and its “Objectives” to “prevent and reduce risks to individual health and the overall environment”.<sup>37</sup>

The Policy Interpretation Network on Children’s Health and Environment comments on the use of the precautionary principle i.e. prevention:

Policies that may protect children’s health or may minimise irreversible health effects should be implemented, and policies or measures should be applied based on the precautionary principle, in accordance with the Declaration of the WHO Fourth Ministerial Conference on Environment and Health in Budapest in 2004.<sup>38</sup>

Regarding precaution, the World Health Organization states:

“...where there is a reasonable possibility that public health will be damaged, action should be taken to protect public health without awaiting full scientific proof.”<sup>39</sup>

There is an opportunity for Health Canada to invoke the precautionary principle. Until guidelines are established that protect human health and social-economic viability, no further development of wind energy facilities should occur and existing sites reporting health issues should be resolved to the satisfaction of the those reporting health impairment or risk factors.

Respectfully submitted on behalf of the Correia family from Ontario,

Carmen Krogh, BScPharm  
Ontario, Canada [carmen.krogh@gmail.com](mailto:carmen.krogh@gmail.com)

## References

- <sup>1</sup> World Health Organization. (1948). Preamble to the constitution of the World Health Organization as adopted by the International Health Conference, New York, 19-22 June, 1946; signed on 22 July 1946 by the representatives of 61 States (Official records of the World Health Organization, no. 2, p. 100) and entered into force on 7 April 1948. Cited Krogh, CME, (2011), Industrial Wind Turbine Development and Loss of Social Justice? *Bulletin of Science Technology & Society* 2011 31: 321, DOI: 10.1177/0270467611412550, <http://bst.sagepub.com/content/31/4/321>
- <sup>2</sup> World Health Organization. (1948). Preamble to the constitution of the World Health Organization as adopted by the International Health Conference, New York, 19-22 June, 1946; signed on 22 July 1946 by the representatives of 61 States (Official records of the World Health Organization, no. 2, p. 100) and entered into force on 7 April 1948. Cited Krogh, CME, (2011), Industrial Wind Turbine Development and Loss of Social Justice? *Bulletin of Science Technology & Society* 2011 31: 321, DOI: 10.1177/0270467611412550, <http://bst.sagepub.com/content/31/4/321>
- <sup>3</sup> Public Agency of Canada, UN Convention on the Rights of the Child and Canada's Role, <http://www.phac-aspc.gc.ca/ncd-jne/bck-info-un-eng.php>
- <sup>4</sup> Office of the United Nations High Commissioner for Human Rights, Convention on the Rights of the Child, Adopted and opened for signature, ratification and accession by General Assembly resolution 44/25 of 20 November 1989, Entry into force 2 September 1990, in accordance with article 49
- <sup>5</sup> The Canadian Children's Rights Council, The U.N. Convention on the Rights of the Child - Overview About the U.N. Convention on the Rights of the Child (UNCRC) [www.CanadianCRC.com](http://www.CanadianCRC.com)
- <sup>6</sup> World Health Organization, Noise Facts and Figures, Sited December 23, 2012, [http://www.euro.who.int/en/what-we-do/health-topics/environment-and-health/noise/facts-and-figures\\_cited\\_dec\\_23\\_2012](http://www.euro.who.int/en/what-we-do/health-topics/environment-and-health/noise/facts-and-figures_cited_dec_23_2012)
- <sup>7</sup> World Health Organization, Children and Noise, Children's Health and the Environment, WHO Training Package for the Health Sector, [www.who.int/ceh](http://www.who.int/ceh)
- <sup>8</sup> World Health Organization, Children and Noise, Children's Health and the Environment, WHO Training Package for the Health Sector, [www.who.int/ceh](http://www.who.int/ceh)
- <sup>9</sup> World Health Organization, Children and Noise, Children's Health and the Environment, WHO Training Package for the Health Sector, [www.who.int/ceh](http://www.who.int/ceh)
- <sup>10</sup> Cristina Becchio, Morena Mari, Umberto Castiello, (2010). Perception of Shadows in Children with Autism Spectrum Disorders *PLoS ONE* | May 2010 | Volume 5 | Issue 5 | e10582. Retrieved from [www.plosone.org](http://www.plosone.org)
- <sup>11</sup> Catherine Purple Cherry and Lauren Underwood. The ideal home for the autistic child: physiological rationale for design strategies. *Autism Science Digest: The Journal Of Autismone*, Issue 03 Retrieved from [www.purplecherry.com](http://www.purplecherry.com).
- <sup>12</sup> Flavia Cortesi, Flavia Giannotti, Anna Ivanenko, Kyle Johnson (2010). Sleep in children with autistic spectrum disorder, *Sleep Medicine* 11 (2010) 659–664 Retrieved from [www.elsevier.com/locate/sleep](http://www.elsevier.com/locate/sleep)
- <sup>13</sup> Hartmut Ising, Martin Ising (2002), Chronic cortisol increases in the first half of the night caused by road traffic noise. *Noise and Health* 2002,4:16:p13-21 Retrieved from <http://www.noiseandhealth.org/article.asp?issn=1463-1741;year=2002;volume=4;issue=16;spage=13;epage=21;aulast=Ising>
- <sup>14</sup> Bockelbrink A, Willich SN, Dirzus I, Reich A, Lau S, Wahn U, Keil T. (2008) Environmental noise and asthma in children: sex specific differences *J Asthma*. 2008 Nov;45(9):770-3. Retrieved from <http://www.ncbi.nlm.nih.gov/pubmed/18972293>
- <sup>15</sup> Neut D, Fily A, Cuvelier JC, Vallée L (2011),. The prevalence of triggers in paediatric migraine: a questionnaire study in 102 children and adolescents. *J Headache Pain*. 2011 Nov 1. [Epub ahead of print] Retrieved from <http://www.ncbi.nlm.nih.gov/pubmed/22042255>
- <sup>16</sup> Doreen Wagner, Velitchko Manahilov, Gunter Löffler, Gael E. Gordon, and Gordon N. Dutton, Visual Noise Selectively Degrades Vision in Migraine *Investigative Ophthalmology & Visual Science*, April 2010, Vol. 51, No. 4 Retrieved from <http://www.iovs.org/content/51/4/2294.full.pdf>
- <sup>17</sup> Ising H, Lange-Asschenfeldt H, Moriske HJ, Born J, Eilts M, Low frequency noise and stress: bronchitis and cortisol in children, *Noise Health*. 2004 Apr-Jun;6(23):21-8 exposed chronically to traffic noise and exhaust fumes.

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- <sup>18</sup> Gilboa T. *Epilepsia*. 2011 Dec 9. Emotional stress-induced seizures: Another reflex epilepsy? doi: 10.1111/j.1528-1167.2011.03342.x. [Epub ahead of print] Retrieved from <http://www.ncbi.nlm.nih.gov/pubmed/22150553>
- <sup>19</sup> Epilepsy Facts - Epilepsy Canada Cited March 2012, Retrieved from [www.epilepsy@epilepsy.ca](http://www.epilepsy@epilepsy.ca)
- <sup>20</sup> Hartmut Ising, Martin Ising (2002), Chronic cortisol increases in the first half of the night caused by road traffic noise. *Noise and Health* 2002,4:16:p13-21 Retrieved from <http://www.noiseandhealth.org/article.asp?issn=1463-1741;year=2002;volume=4;issue=16;spage=13;epage=21;aualast=Ising>
- <sup>21</sup> Neut D, Fily A, Cuvellier JC, Vallée L. The prevalence of triggers in paediatric migraine: a questionnaire study in 102 children and adolescents. *J Headache Pain*. 2011 Nov 1. [Epub ahead of print] <http://www.ncbi.nlm.nih.gov/pubmed/22042255>
- <sup>22</sup> Niemann H, Bonnefoy X, Braubach M, Hecht K, Maschke C, Rodrigues C, Röbbel N. Noise-induced annoyance and morbidity results from the pan-European LARES study. *Noise Health*. 2006 Apr-Jun;8(31):63-79.
- <sup>23</sup> Health Canada\_Risks to children December 27 2012 FINAL submitted by Krogh
- <sup>24</sup> Krogh, CME, (2011), Industrial Wind Turbine Development and Loss of Social Justice? *Bulletin of Science Technology & Society* 2011 31: 321, DOI: 10.1177/0270467611412550, Retrieved from <http://bst.sagepub.com/content/31/4/321>
- <sup>25</sup> Krogh, CME, Gillis, L, Kouwen, N, and Aramini, J, (2011), WindVOiCe, a Self-Reporting Survey: Adverse Health Effects, Industrial Wind Turbines, and the Need for Vigilance Monitoring, *Bulletin of Science Technology & Society* 2011 31: 334, DOI: 10.1177/0270467611412551, Retrieved from <http://bst.sagepub.com/content/31/4/334>
- <sup>26</sup> Shepherd D, McBride D, Welch D, Dirks KN, Hill EM. Evaluating the impact of wind turbine noise on health-related quality of life. *Noise Health* 2011;13:333-9.
- <sup>27</sup> Nissenbaum, M., Aramini, J., Hanning, C., (July 24 – 28, 2011), Adverse health effects of industrial wind turbines: a preliminary report 10th International Congress on Noise as a Public Health Problem (ICBEN) 2011, London, UK. Retrieved from [http://www.windcows.com/files/Nissenbaum\\_et\\_al\\_ICBEN2011\\_0158\\_final\\_1\\_.pdf](http://www.windcows.com/files/Nissenbaum_et_al_ICBEN2011_0158_final_1_.pdf)
- <sup>28</sup> Nissenbaum, Michael A., Aramini, Jeffery J., Hanning, Christopher D., Effects of industrial wind turbine noise on sleep and health *Noise & Health*, September-October 2012, Volume 14, p243, [www.noiseandhealth.org](http://www.noiseandhealth.org)
- <sup>29</sup> Open Letter Peer Review, Health Canada Wind Turbine Noise and Health Study, Submitted by Carmen Krogh, BScPharm and Brett Homer BA CMA, September 7, 2012
- <sup>30</sup> “Schedule “B”, Lease Agreement for Wind Power, Canada
- <sup>31</sup> Surface Lease for Wind Power Project, Canada
- <sup>32</sup> Surface Lease for Wind Power Project, Canada
- <sup>33</sup> Hansard. (2009, April 15). Legislative assembly, first session, 39<sup>th</sup> parliament première session, official report. Standing Committee on Green Energy and Green Economy Act. Retrieved from [http://www.ontla.on.ca/web/committee-proceedings/committee\\_transcripts\\_details.do?locale=en&Date=2009-04-15&ParlCommID=8856&BillID=2145&Business=&DocumentID=23801#P68\\_2644](http://www.ontla.on.ca/web/committee-proceedings/committee_transcripts_details.do?locale=en&Date=2009-04-15&ParlCommID=8856&BillID=2145&Business=&DocumentID=23801#P68_2644)
- <sup>34</sup> Public Agency of Canada, UN Convention on the Rights of the Child and Canada’s Role, <http://www.phac-aspc.gc.ca/ncd-jne/bck-info-un-eng.php>
- <sup>35</sup> Public Agency of Canada, UN Convention on the Rights of the Child and Canada’s Role, <http://www.phac-aspc.gc.ca/ncd-jne/bck-info-un-eng.php>
- <sup>36</sup> Science Advisory Board Meeting, Proceedings - Science Advisory Board (SAB), February 1-2, 2012
- <sup>37</sup> Health Canada, About Health Canada, About Mission, Values, Activities, Retrieved from <http://www.hc-sc.gc.ca/ahc-asc/activit/about-apropos/index-eng.php>, Cited August 24, 2012
- <sup>38</sup> Report WP7 Summary PINCHE policy recommendations Policy Interpretation Network on Children’s Health and Environment (PINCHE) Policy Interpretation Network on Children’s Health and Environment QLK4-2002-02395
- <sup>39</sup> World Health Organization, Guidelines for Community Noise, WHO (1999). <http://www.who.int/docstore/peh/noise/guidelines2.html>