

Wind Turbines, Noise and Health

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THE EFFECT OF WIND TURBINES ON HEALTH.

I first realised there might be a problem associated with wind turbines when I was introduced to a couple living near a wind farm in Cornwall. The distance from their home to the nearest turbine is about 400 meters. They told me about poor sleep, headaches stress and anxiety symptoms brought on when the wind was blowing in certain directions. At times, they told me that they have been so disturbed by the noise that after several disturbed nights sleep, they have sought refuge in a nearby bed and breakfast establishment (far enough away not to be similarly affected by the noise).

Since that meeting I have spoken to and / or corresponded with 39 people living between 300meters and 2 km from the nearest turbine of a wind farm all of whom were suffering from the consequences of the noise coming from the turbines. This disturbance is by no means always there and is worse in certain wind directions. The cases mentioned below are from several wind farms in the UK with a variety of turbine sizes from the smaller, older turbines to the taller more modern turbines. However I have had correspondence from people living near wind farms in New Zealand and Australia and have evidence from other sources, (newspapers, journals and papers) of people being similarly affected in France, Germany, Netherlands and the USA.

What this shows is that there is number of people suffering from the consequences of noise from the wind turbines. I'm sure that the cases mentioned here are probably the "tip of the iceberg" and further independent investigation is warranted. The cases are kept anonymous in order to protect the individuals concerned. There is much concern within communities that if one is seen to complain about the noise that if they decide to move away their properties will be difficult to sell and possibly devalued as a result. Therefore they feel that they are in a "Catch 22" situation.

METHOD

All people involved in this survey were contacted either by phone or in writing. Questionnaires were completed for all cases. Questionnaires were sent to people already known to be suffering from problems which they felt was due to their proximity to wind turbines.

The identity of the people questioned has been with held in order to maintain confidentiality. The respondents were from a number of sites in the UK- Wales, Cornwall and the north of England

Example of questionnaire.

- 1) Name- (preferred but optional)
- 2) Age 18-30 30-45
45-60 >60
- 3) Occupation
- 4) Address and /or postcode

5) Which wind farm is near your property?

6) How far away from your property is the nearest turbine?

7) How long have you been living at this property?

8) Do you feel that your health has in any way been affected since the erection of these turbines?

9) If yes please answer the following:-

Do you feel that since living near a wind turbine/turbines you have experienced excess of the following symptoms (i.e. more than you did prior to living near these structures)?

Headaches	yes	no
Palpitations	yes	no
Excessive tiredness	yes	no
Stress	yes	no
Anxiety	yes	no
Tinnitus (ringing in ears)	yes	no
Hearing problems	yes	no
Sleep disturbance	yes	no
Migraines	yes	no
Depression	yes	no
Other- please specify		

If you have answered yes to any or the above questions, have you approached your doctor regarding these symptoms? If yes please state any tests and/or treatment initiated.

10) Do you feel that your quality of life has in any way altered since living near the wind turbines? Yes no

If yes could you please explain in what way you feel your life has been altered.

RESULTS

	1	2	3	4
Age	45-60	45-60	45-60	45-60
Occupation	Cleaner/ housewife	Retired ill health	Head chef	farmer
Distance from turbine	400m	300m	350m	400m
Time at property	36 years	3 years	7years	4years
Health altered	Yes	Yes	yes	yes
Headaches	Yes	Yes	yes	yes
Palpitations	No	no	no	no
Excessive tiredness	Yes	No	yes	yes
Stress	Yes	Yes	yes	yes
Anxiety	Yes	Yes	yes	yes
Tinnitus	No	No	no	no
Hearing problems	No	No	no	yes
Sleep disturbances	Yes	Yes	yes	yes
Migraines	Yes	Yes	no	yes
Other				
Approached doctor	No	No	no	no
Altered quality of life	Yes	Yes	yes	yes

	5	6	7	8
Age	45-60	>60	18-30	18-30
Occupation	Housewife	Retired	Electrician	carer
Distance from turbine	300m	300m	300-500m	300-500m
Time at property	2.5 years	2.5 years	6 months	6 months
Health altered	Yes	Yes	Yes	yes
Headaches	Yes	Yes	Yes	yes
Palpitations	No	No	No	no
Excessive tiredness	No	Yes	Yes	yes
Stress	No	No	No	no
Anxiety	No	No	No	no
Tinnitus	No	No	No	no
Hearing problems	No	No	No	no
Sleep disturbance	No	No	Yes	yes
Migraines	No	no	No	no
Depression	No	no	No	no
Other		Thumping in ears		
Approached doctor	No	Yes-Rx with pain Killers-ongoing assessment	No- didn't associate symptoms with the turbines	
Altered quality of life	Yes	yes	Yes	yes

	9	10	11	12
Age	>60	30-45	30-45	30-45
occupation	Retired	candle maker	Retired-nervous Breakdown	Retired-ill health
Distance from turbine	300m	¼ mile	300m	300m
Time at property	4years	10 years	3 years	3years
Health altered	Yes	no	Yes	yes
Headaches	No	no	Yes	yes
Palpitations	No	no	No	no
Excessive tiredness	No	no	Yes	no
Stress	No	no	Yes	yes
Anxiety	No	no	Yes	yes
Tinnitus	Yes	no	No	no
Hearing problems	No	no	No	no
Sleep disturbance	No	no	Yes	yes
Migraines	Yes	no	Yes	no
Depression	No	no	Yes	yes
Other		See comments at end	Stomach upset	
Approached doctor	No	no	Yes-seen psychiatrist- Ongoing review	no
Quality of life affected	Yes	yes	Yes	yes

	13	14
Age	30-45	>60
Occupation	Veterinary nurse and HGV driver	Retired from farming and Teaching
Post code	TR8	SA38
Wind farm	Bears Down	Blean Bowi
Distance from turbine	Too close	1mile
Time at property	19 months	27years
Health altered	Yes	Yes
Headaches	Yes	Yes
Palpitations	No	Yes
Excessive tiredness	Yes	Yes
Stress	No	Yes
Anxiety	No	Yes
Tinnitus	No	Yes
Hearing problems	No	No
Sleep disturbance	Yes	Yes
Migraines	No	No
Depression	No	Yes
Other	No	Emotional turmoil
Approached doctor	Yes- taking sleepers and Headache tablets	Yes-had heart check up
Quality of life affected	Yes	Yes

	15	16	17	18
Age	45-60	>60	>60	45-60
Occupation	Teacher	Retired	Retired	Charity manager
Distance from turbine	700m	650m	650	½ mile
Time at property	26 years	30+	30+years	Bear Down
Health altered	Yes	Yes	No	No
Headaches	Yes	No	no	No
Palpitations	No	No	No	No
Excessive tiredness	Yes	Yes	No	No
Stress	No	Yes	No	No
Anxiety	Yes	No	No	No
Tinnitus	No	No	No	No
Hearing problems	No	Yes	No	No
Sleep disturbance	Yes	Yes	No	No
Migraines	No	No	No	No
Depression	No	Yes	No	No
Other	No	No	No	No
Approached doctor	No	No	No	No
Quality of life altered	Yes	Yes	Yes	No

	19	20	21	22
Age	>60	>60	>60	>60
Occupation	Retired		Retired	Retired
Distance from turbine			700m	700m
Time at property	20years	20 years	25years	25 years
Adverse health affects	Yes	Yes	Yes	Yes
Headaches			Yes	Yes
Palpitations				
Excessive tiredness	Yes	Yes	Yes	Yes
Stress			Yes	Yes
Anxiety			Yes	Yes
Tinnitus				Yes
Hearing problems				Yes
Sleep disturbance		Yes	Yes	Yes
Migraines				
Depression	Yes		Yes	Yes
Other				
Approached doctor			Yes	Yes- doctor referred me to the hospital. After tests the consultant could find nothing wrong with my ears.
Quality if life affected	Yes	Yes	Yes	Yes

	23	24	25	26
Age	45-60	45-60	>60	57
Occupation	Farmer	Farmer	Retired	Retired police officer
Distance from turbines	430m	430m	1000m	1000m
Time at property	5 ½ years	5 ½	30years	30years
Adverse health affects	No	Yes	Yes	Yes
Headaches			Yes	Yes
Palpitations				
Excessive tiredness			Yes	Yes
Stress			Yes	Yes
Anxiety				Yes
Tinnitus		Yes		
Hearing problems			Yes	
Sleep disturbance				Yes
Migraines			Yes	
Depression				Yes
Other				
Approached doctor		Yes- been under a specialist in Furness General hospital for 1 ½ years	Yes	No
Quality of life affected	Yes	Yes	Yes	Yes

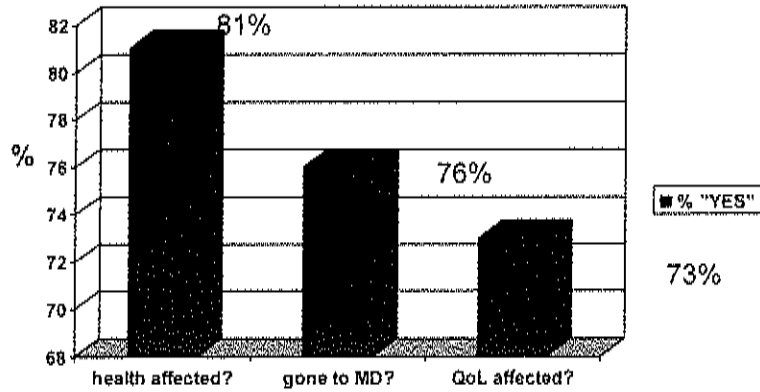
	27	28	29	30
Age	>60	>60	56	79
Occupation	Farmer/ sheep breeder		Pedigree sheep breeder	War veteran
Distance from turbine	½ mile	700m	1/3mile	
Time at property	9 years	33 years	9 years	33 years
Adverse health affect	Yes	Yes	Yes	Yes
Headaches	Yes		Yes	Yes
Palpitations			Yes	
Excessive tiredness	Yes		Yes	Yes
Stress	Yes		Yes	Yes
Anxiety			Yes	Yes
Tinnitus				Yes
Hearing problems				Yes
Sleep disturbance	Yes	Yes	Yes	
Migraines	Yes		Yes	Yes
Depression				
Other			Concentration	
Approached doctor	Yes	No	Yes- have had a 24 hour e.c.g. for investigations of palpitations. Brain haemorrhage 2 years ago.	Yes
Quality of life affected	Yes		Yes	Yes

	31	32	33	34
Age	81	45-60	>60	30-45
Occupation	Retired carpenter	Systems analyst/programmer	Business owner	Retired State registered nurse
Distance from turbine		¼ mile	Less than 1 mile	300m
Time at property	33 years	16 years	16 years	7 years
Health adversely affected	Yes	No	Yes	Yes
Headaches	Yes		No	Yes
Palpitations			No	
Excessive tiredness	Yes	Yes	Yes	Yes
Stress	Yes		Yes	Yes
Anxiety	Yes		No	
Tinnitus	Yes		No	
Hearing problems	Yes		Yes	
Sleep disturbance			Yes	Yes
Migraines	Yes		no	
Depression			No	
Other				
Approached doctor	Yes	Yes	No	No
Quality of life affected	Yes		Yes	Yes

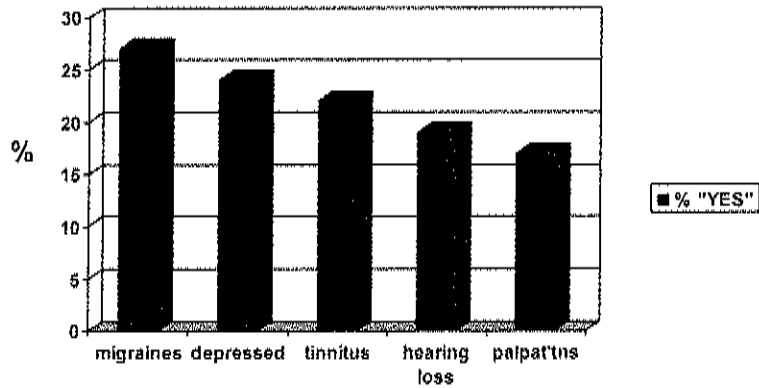
	35	36	37	38
Age	45-60	45-60	45-60	62
Occupation	Retired due to Nervous breakdown	Semi Retired farmer	Semi retired farmer	Retired
Distance from turbine	300m	800m	800m	
Time at property	7 years	11 years	11 years	25 years
Health adversely affected	yes	Yes definitely	Yes	
Headaches	yes	Yes	Yes	
Palpitations		Yes	Yes	
Excessive tiredness		Yes	Yes	Yes
Stress	yes	Yes yes	Yes	
Anxiety	yes	Yes yes yes	Yes	
Tinnitus		Yes	Yes	
Hearing problems		May be		
Sleep disturbance	yes	Yes yes yes	Yes	Yes
Migraines		No	No	
Depression		No	no	
Other	nausea			
Approached doctor	yes	Yes put on antidepressants and anti-hypertensives	Yes	
Quality of life affected	Yes	Absolutely yes	Yes	Yes

	39	40	41	42
Age			45-60	>60
Occupation	Retired phlebotomist	Running own business	Database administrator	Retired farmer
Distance from turbine		600m	3/4mile	1 mile
Time at property	20 years	24 years	7 years	26 years
Adverse affect on health	Yes	Yes	Yes	Yes
Headaches		Yes		Yes
Palpitations				Yes
Excessive tiredness	Yes	Yes		Yes
Stress				Yes
Anxiety		Yes	Yes	Yes
Tinnitus				
Hearing problems				
Sleep disturbance	Yes	Yes		Yes
Migraines				
Depression				Yes
Other	Lack of concentration And irritability		Nausea	
Approached doctor	No	No		Yes
Quality of life affected	Yes	Yes	Yes	Yes

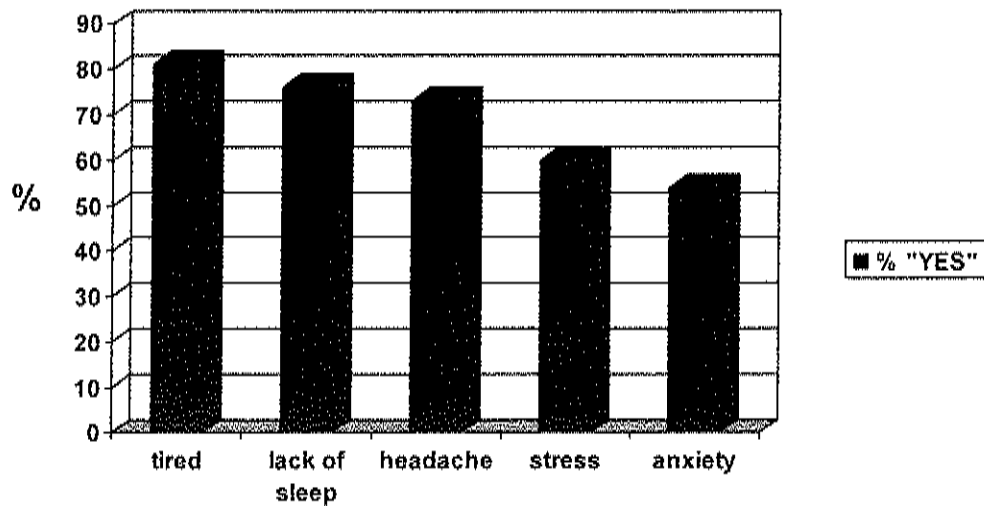
- *Has your health in any way been affected since the erection of these turbines?*
- *As a result, have you gone to see your doctor?*
- *Do you feel that your Quality of Life has in any way been altered since living near the wind turbines?*



Top 5 Self-reported Health Symptoms



Next 5 Self-reported Health Symptoms



ADDITIONAL COMMENTS MADE BY RESPONDANTS

- 1) I get little sleep when the noise from the turbines is constant in its low frequency noise. I feel so depressed I want to get away and stay away until I know the wind direction has changed.
- 2) My symptoms are due to lack of sleep when the wind is in the east or northeast
- 3) I get headaches frequently especially when the turbines are running at a fast rate towards us.
- 4) I get headaches and thumping in the ears. I also find its continual noise very distressing.
- 5) Suffer with headaches more and feel tired more so find daily tasks difficult to do.
- 6) I also find that the sound we get from the farm affects my metal heart valve.
- 7) I couldn't say whether or not the strobing effect wakes me up but it is impossible to go back to sleep with it there.
- 8) Constant worry about noise. I feel sick when the turbines are running fast and towards the property. I came here to a rural area for peace after a busy city life. I feel this has been ruined by the turbines.
- 9) Stressed and extremely anxious as I am constantly disturbed by them when they are turning fast and facing towards me. We are having to live our lives around them due to the constant noise when they are working causing wind pressure throbbing.
- 10) The strobing even when curtains are closed is "HELL". The noise is a pain. TV blocks it, night and day. Can't sit and read a book or write letters.

11) My plan was to stay here- in my newly converted barn (7 years old) (we farmed here) until I died. We have our own private water supply, a good supply of fire wood, my own painting studio- VERY IMPORTANT TO ME! And a good workshop for my husband; friends nearby, brother and sister nearby. I was born 2 miles away- Now WE HAVE TO MOVE. This move has been forced upon us. We planted 7,000 trees here. Etc.etc.etc.....

12) We will probably have to move, I can see no future for me here.

13) I dare not sleep at home.

14)

Noise disturbance at night –when wind in certain direction, interferes with sleep patterns, causing restlessness. During the day- makes it difficult to stay out of doors for any length of time through excessive thumping sound. Both can cause headaches, anxiety and irritability.

15) Certain wind directions mean excessive noise, like a thrashing machine constantly pounding, making it unpleasant to be in the garden or to have windows open. With strong wind conditions, double glazed windows vibrate and cause an intrusive, almost sub audible interference in some rooms.

16) Tired, disturbed by noise. Feel it as much as hear it. Developers deny there are any problems unless we can prove, but how can we do that?

17) Irritating noise from wind farm in easterly winds. You can almost feel it as well as hear it. It drives you mad over extended periods because of the nature of the noise, not the level per se. Unable to have front doors/windows open when winds are easterly, or use front bedroom if all 7 turbines are in operation.

18) Our quality of life we had before the wind farm came has gone. We no longer control the way we live our lives e.g. if we can work or sit in the garden, or at times, even where we can sit in our own home or get a full nights sleep.

19) I never suffered from any problems before the turbines. I am convinced that living in a continual state of anxiety over the past four and a half years since the noise nuisance started has contributed to my present problems (hypertension and stress). Prior to 1999 I always enjoyed excellent health and rarely visited the doctor's surgery. As my husband and I have been retired since 1994 and our family grown up and living in different areas of the country we do not have any other problems that are likely to cause stress or anxiety.

20) Not being able to choose when I work or sit in my own garden. Not getting full nights sleep. Waking with headaches when the noise is bad and feeling sick. Ears feel like I experience when travelling by plane- feel as if they are swollen inside. I cannot work more than 2-3 hours in the garden when the wind direction is from the east. We cannot see the wind farm from our property but at times the noise is horrendous.

- 21) My quality of life has been affected by the shadow flicker and the noise
- 22) I am bothered by the shadow flicker, and the noise while working behind the building.
- 23) I feel generally off colour
- 24) As we leave the house, the turbines are always there, menacing, always drawing your attention, depressing, in a beautiful area. Normally I sleep with the bedroom windows closed, if in summer we have a heat wave and the windows are open, I find I am wheezing in time with the turbine noise, it seems to come inside my body. This is an old stone gatehouse south of the site.
- 25) Quality of life has almost disappeared. No longer able to relax in the garden (when wind speed/ direction cause noise). Glinting and reflection also cause disturbance. Visual dominance is oppressive- extremely angry.
- 26) Constant sleep disturbance. Unable to work within certain areas, for noise levels, when wind is in certain directions, very stressful.
- 27) Disturbed sleeping. View blades whishing in the wind. Drawn to blades going round. Little concentration. Ugly to look at. Dominant. Not able to work in yard for long periods of time.
- 28) Our lives and home have been trashed and must be seen to be believed. We seem to be short tempered, unable to concentrate. Every thing we have such as mattress, duvets, cushions 4" thick, 3 rolls of sound deadening quilt, 3 sheets of corrugated asbestos, blankets, curtains, pillows even floor carpet stacked against the walls to try and keep out the sound. Not the peace I volunteered to fight for.
- 29) constant noise
- 30) Constant noise when turbine is facing us and away from us. Sleepless nights which make me irritable. Stress due to husbands anxiety about the turbines.
- 31) Noise from turbines effects my sleep patterns, I sleep less. I get nausea when the turbines face our home and causes a drumming at low noise frequency. I worry about the turbine blades coming off and killing me
- 32) Alienation from mainstream community that have the erroneous impression that wind power is a good alternative. Forced to sell property at a reduced rate- that was meant to be our retirement home. Health improved since moving from the property
- 33) As soon as the wind farm was operating I experienced horrendous continuous noise when the wind was from the east. This was both inside and outside my home. There were many times I had to leave the garden because of the noise. It was like a Chinese water torture, it was a constant pulsating noise. It was almost a feeling of compression as much as noise. I had to move bedrooms at times in order to escape the noise. It imprints on you, if you have had it all day in the garden, it stays with you,

once it's in your head it's hard to get rid of. It's weird. It's a feeling as much as a noise. It's torture.

34) It's an irritating and tiring noise, especially when you have not had any sleep because of it.

35) Even if you shut the window, the noise is still there, but not as much. The problem is, once you get the noise in your head, it's always there, it does annoy you and it is difficult to disregard.

36) The noise is like a whooshing noise. It is intrusive. It keeps me awake- it doesn't affect my husband as much as me but my being awake keeps him awake.

37) Once the noise gets into your head, it also seems to beat at the same frequency as my heart and I find it annoying and am unable to get any sleep- this can go on for nights on end. It's not always the level of the noise, it's the intermittent nature. You think "Oh it's stopped" then it starts up again.

38) If the wind is from the East or the South the noise is horrendous- you can't get away from it. It's inside and outside the house. It's worse at night- I have to bed hop. It's a whooshing, drumming, constant drumming noise. It's annoying. It's frustrating. It wears you down. You can't sleep at night or concentrate during the day. Once it gets inside your head you can't get rid of it. You get up in the morning, tired, agitated and depressed and it makes you short-tempered.

39) Our lives are hell, they have been ruined and it's all due to those turbines.

40) The noise from the wind farm is different and I can't explain why, it just is. All you ever want to do is to get out of the way of it, by whatever means you can.