Wimbledon Community Forum



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Wimbledon

Smart Metering Risks

A review of the evidence

Ingrid P. Dickenson

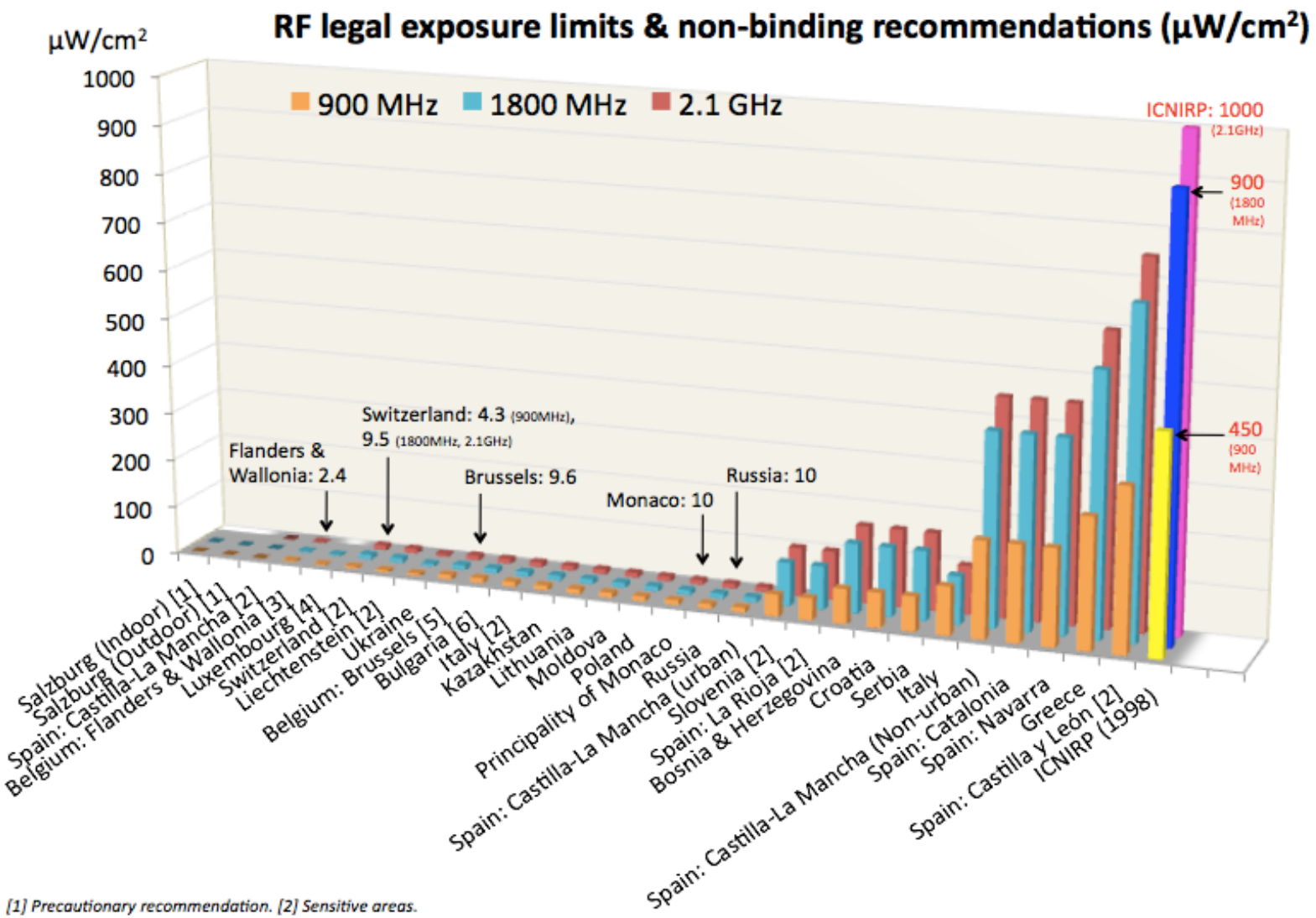
BRCP EMR, Electromagnetic Pollution Consultant

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http://www.bemri.org

RF Exposure guidelines for UK & elsewhere



[1] Precautionary recommendation. [2] Sensitive areas.
[3] Maximum threshold per antennae. [4] Maximum per operator & per antennae system.
[5] For all antennas taken together. [6] Periodical & short stay areas.

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Viewpoints on Guidelines & Exposures

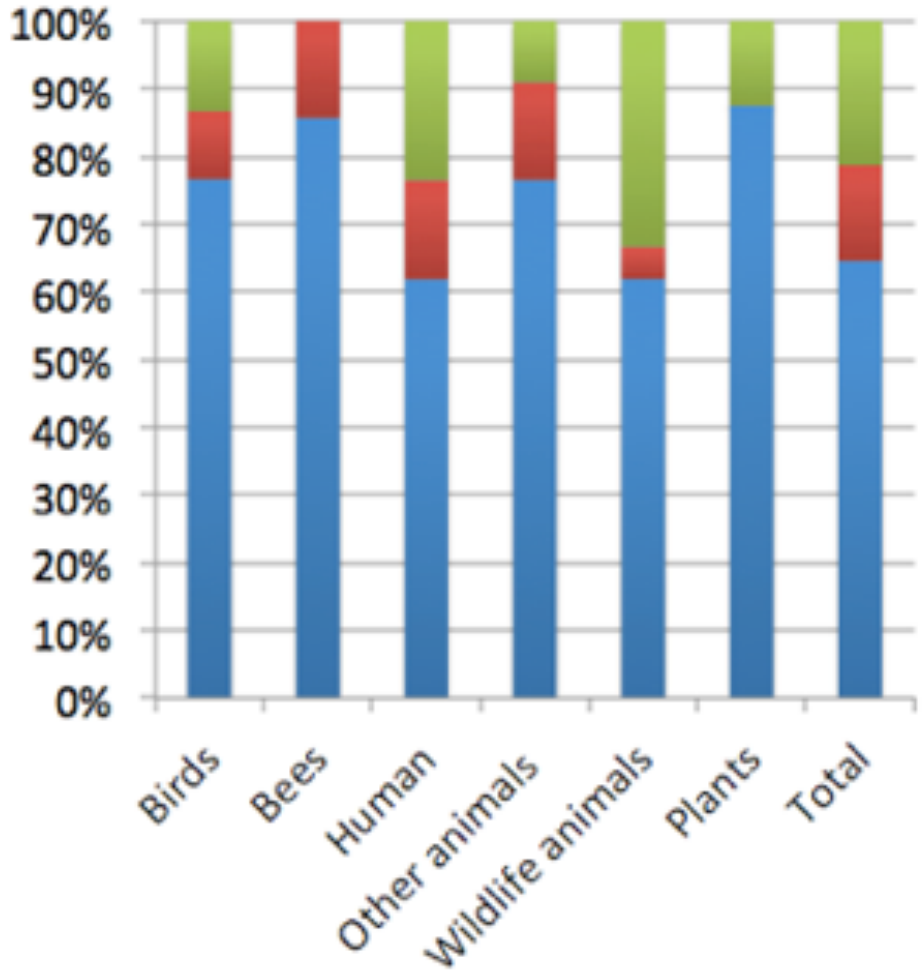
"… the ICNIRP guidelines are neither mandatory prescriptions for safety, the "last word" on the issue nor are they defensive walls for Industry or others," Professor Paolo Vecchia [ICNIRP Chairman from 2004-2012] (Vecchia 2008).

"… children, the elderly, and some chronically ill people might have a lower tolerance for one or more forms of [non-ionising radiation] exposure than the rest of the population," ICNIRP (2002).

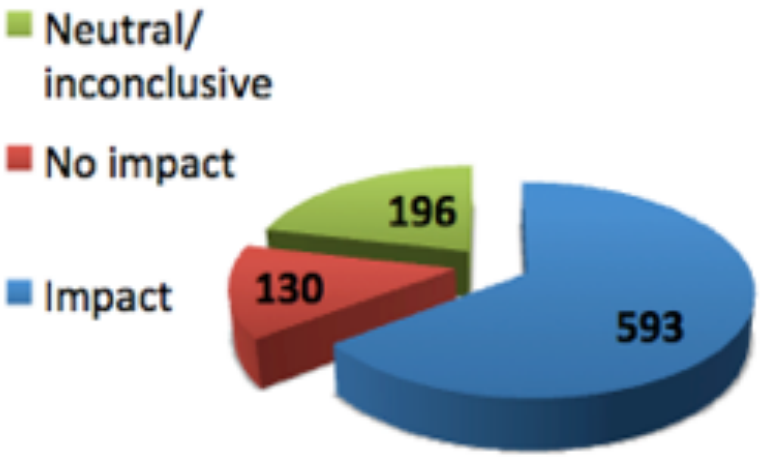
"I want to be very clear. Industry has not said once - once - that … [RF / microwave radiation is] safe. The federal government and various interagency working groups have said it is safe," K. Dane Snowden [when Vice President, External & State Affairs of CTIA-The Wireless Association. The CTIA is the International Association for the Wireless Telecommunications Industry] (Safeschool 2010).

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What does research on EMF risk show?



Number of studies on EMF impacts collected & collated based on study subjects & results (Rahmani et al. 2011).*



Total 919 studies

- **Cucurachi et al. (2013) reviewed 113 RF EMF studies, around 2/3 documented effects**.
- **Yakymenko et al. (2015) reviewed 100 studies investigating oxidative effects of low-intensity RF EMF, 93 reported effects** – *there are connections between oxidative stress & around 200 human diseases.*

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Studies Matrix (Exposures below those creatable by smart meters)

Power Density ($\mu W/cm^2$)	Reported Biological Effects / Comments
0.000,000,000,1	Natural RF background level (Powerwatch 2015).
<0.000,000,001 **[130-960 MHz]**	**Temporary changes in human brain waves & behaviour** (Bise 1978).
0.0004 [6 GHz]	Reduced avian fertility (Kondra et al. 1970).
0.006 - 0.01 [900 MHz band]	**Long-term changes in important neurotransmitters** observed in humans under real life conditions (Buchner & Eger 2011).
0.0032-0.0745 & 0.0307-9.0156 [compared to 0.0004-9.016] [3-30 MHz range]	24-hour average exposures associated with highly significant incidence of: **nervosity, restlessness; difficulty in falling asleep; difficulty in maintaining sleep; general weakness and tiredness** (Altpeter et al. 1995).
0.0795 [GSM 900 MHz]	Significant inhibition of ants' memories & association between food sites & visual & olfactory cues. Overall state of colonies similar to bee colonies with CCD (Cammaerts et al. 2012).
0.0165-0.4400 [Compared to 0.0006-0.0128] [900/1800 MHz]	**Difficulties in concentration; feelings of discomfort; sleeping disorders; irritability; depressive tendency; loss of appetite; loss of memory; and headaches** (Oberfeld et al. 2004).

Additional peer-reviewed research also documents effects.

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Peer-Reviewed Research on Smart Meters (Lamech 2014).

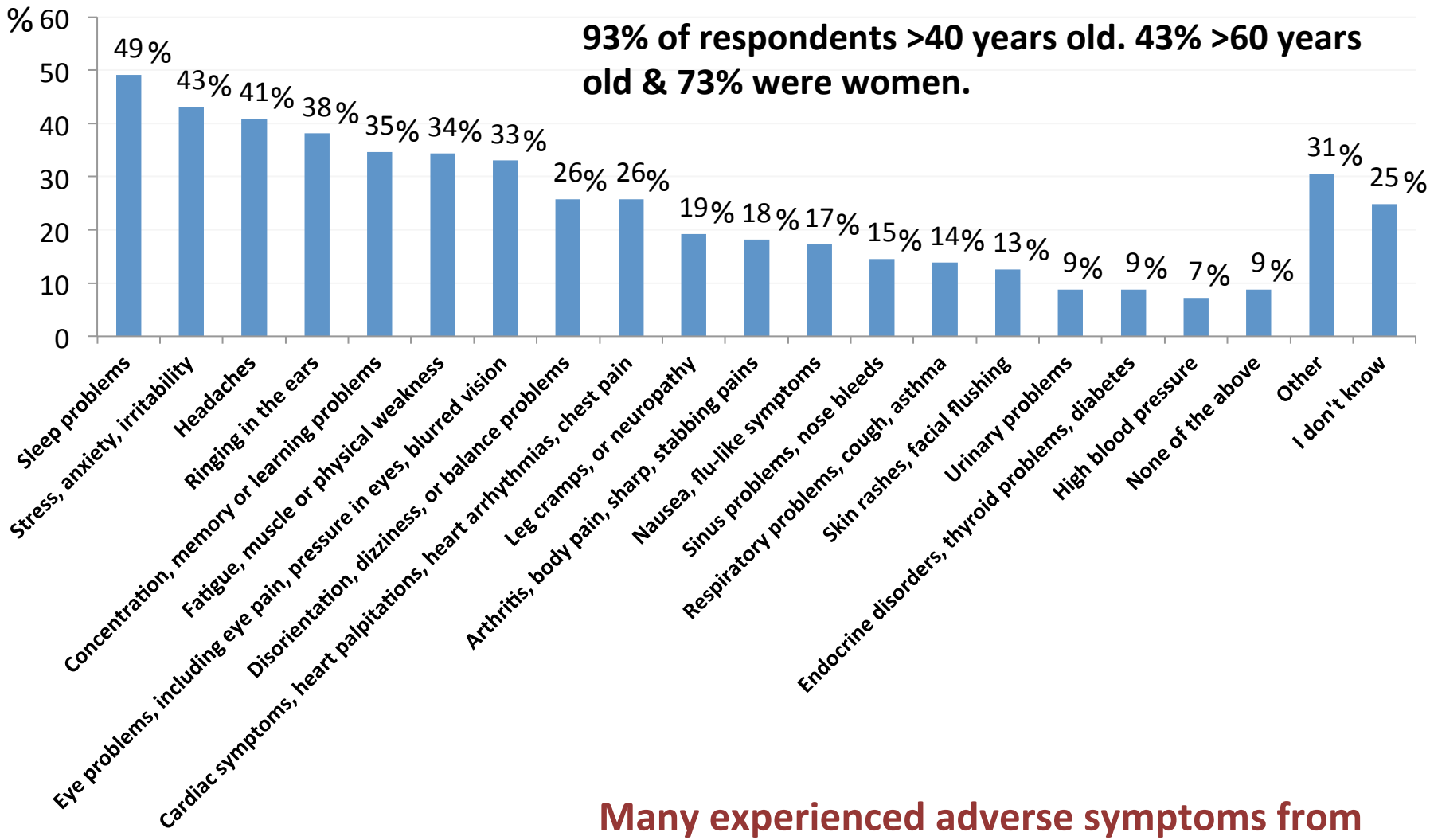
New or Worsened Symptoms Reported after Smart Meter Exposure	
Condition (partial listing)	**Detrimental effects reported***
Insomnia, sleep disturbance, or sleep disruption	**48%**
Headaches, head pain, or dull head	**45%**
Tinnitus, ringing or buzzing/noises in ears	**33%**
Lethargy, tiredness, **fatigue**, exhaustion, or weakness	**32%**
Cognitive disturbance, inability to concentrate or think, disorientation, or memory loss	**30%**
Abnormal sensations, including nerve pain, neuropathy, burning sensations, tremors, ...	**22%**
Dizziness/loss of balance	**21%**
Heart palpitations	**17%**

*Percentage of respondents reporting symptoms (n = 92).

Dr Lamech reported: ***"smart meters may have unique characteristics that lower people's threshold for symptom development."***

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Online Survey 1 (Halteman 2011)



Detrimental effects reported (%)

Many experienced adverse symptoms from smart metering networks even if they themselves did not have smart meters.

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Online Survey 2 (Conrad & Friedman 2013)

New symptoms reported after smart meter exposure - previously never experienced (n = 210)

Symptoms	Severe and New	Moderate and New
Insomnia	66	16
Ringing, buzzing/tinnitus	61	37
Pressure in Head	53	80
Difficulty concentrating	51	48
Headaches	47	33
Heart racing, arrhythmia	47	32
Memory problems	44	29
Agitation	40	35
Dizziness	40	31
Fatigue	37	27
Tingling, burning skin	29	38
Involuntary muscle contractions	28	27
Eye/vision problems	17	38
Numbness	16	23

"Nearly 98% of respondents were very sure or fairly sure their new or worsened symptoms correlated to smart meter exposure." *... "It's important to reiterate ...* ***most of our respondents (82%); were in good or excellent health before smart meters were installed*** ***and 42% of them developed symptoms prior to any knowledge of the presence of smart meters,"*** Conrad & Friedman (2013).

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A Duty to Protect Public Health

- **Between 3-6 % of the public may be EHS** (Jamieson 2014).
- **Such numbers are predicted to grow** (Hallberg & Oberfeld 2006).
- **The health of many individuals are being compromised by smart meter rollouts. This can greatly impact families.** [Note: transmissions from wireless water smart meter infrastructures are similar to those from other wireless smart meter infrastructures].

The costs of failure to address smart meter risks are immense and hurt all parties.

IF YOU HAVE SMART METERS FITTED YOU ARE NOT ALLOWED TO HAVE THEM REMOVED (Hansard 2013).

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Conclusion – Smart Meter Risks

- **Smart meter rollouts often create significant health risks.**
- **Both EHS and non-EHS individuals can be affected.**
- **Adverse effects include: depression, headaches and sleep problems.**

There is an urgent need to stop current smart meter rollouts. Better and safer alternatives are available.

INDIVIDUALS ARE ALLOWED TO REFUSE ELECTRIC, GAS AND WATER SMART METERS

(Which? 2016, StopSmartMeters!UK 2014, Hansard 2011).

Notice of Non-Consent for smart meter Installation:
http://stopsmartmeters.org.uk/dont-smart-meter-me-notice-of-non-consent-for-smart-meter-installation/

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Depression

In England in 2000, the annual cost of depression, in adults alone, was around £9 billion, an increase of £6 billion from a decade earlier [*when wireless proliferation was less*] (Thomas & Morris 2003, Kind & Sorensen (1993).

Heightened risk of medical illness for people with depression

Medical condition	Risk level
Alzheimer's disease	1.71 to 2.67 times the rate for general population
Cancer	1.35 to 1.88 times the rate for general population
Diabetes (type 2)	Depression is an independent risk factor
Epilepsy	4 to 6 times the rate for general population
Obesity	Childhood or adolescent depression is an obesity predictor
Stroke	2.6 times the rate for general population

Higher depressive tendency associated with RF exposures of 0.25-1.29 V/m (0.0165-0.4400 µW/cm^2) compared to 0.05-0.22 V/m (0.0006-0.0128 µW/cm^2) (p = 0.0016) (Oberfeld et al. 2004).

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Headaches

In 2011, annual cost of headaches in the UK was £4.8 billion (McCrone et al. 2011).

In the UK, some 25 million work- or school-days are lost every year because of migraine alone (WHO 2012).

Headaches are one of the most regularly reported symptoms after smart meter installation (EMF Safety Network 2016, Lamech 2014, Conrad & Friedman 2013, Halteman 2011).

Significant link ($p < 0.017$) recorded between headaches & exposures to power densities >0.05 µW/cm² (maximum 0.41 µW/cm²) compared to ≤0.01 µW/cm² (Hutter et al. 2006).

It is likely headache disorders will significantly increase as a result of smart meter rollouts.

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Sleep problems

- **Poor sleep may be a causal factor in: premature ageing, melatonin reduction, cancer, high blood pressure, diabetes, obesity, depression & other mental health problems. It can also tax the immune system** (Ackermann et al. 2012).

- **The annual cost to the UK of chronic sleep deprivation in 2010 was estimated at £1.6 billion** (Bupa 2010).

- **In a 2013 survey of 2,000 UK workers, 30% reported getting less sleep than the year previously.** [It was also reported at that time that 6.25 million sick days had been taken due to lack of sleep, an increase of 2.8 million since 2008] (Travelodge 2013).

Power densities of 0.002-1.0 µW/cm^2 are associated with sleep disorders (Simonenko et al. 1998, Altpeter et al. 1997, 1995).

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