

To The Hon Mal Brough MP

In response to the request from yourself towards our community not to criticize the NBN or its representatives during the community information session held in Maleny on 17th September 2014, Members of the Witta community have collected a substantial amount of evidence to demonstrate justifiable criticism of the NBN, its contractors, its strategy and the manner that it has been conducting itself with regard to interacting with communities.

We note that you nominated yourself to be the role of Chair in your capacity as our elected representative of the Australian Government who, in turn, commissioned and funded the NBN and its contractors.

Some concern was raised by members of the public as to the obvious conflict of interest in such a role that calls for neutrality but the overwhelming concern centred on your statement of the NBN doing its job. Being that our community members are not privy to the commercial in confidence contractual arrangements between your Government, the NBN and its contractors, we can only rely upon your statement to deduce that the evidence set out below is in keeping with the said contracts.

This view is reinforced by the absence of any statement or action by your Government or the NBN suggesting that any breach of contract has occurred when some of the evidence cited herein has been brought to the attention of the various authorities mentioned, including your Government.

The opportunity for you to clarify this point will occur at the forthcoming Community consultation relating to health risks from the NBN Microwave and WiFi towers to be held on Thursday 16th October in Maleny. We will welcome your clarification on the matter and in particular if the actions and statements evidenced herein have been carried out as a requirement of the various contracts or if they would be, as we suspect, in breach of any obligations within the contracts.

These include but are not restricted to the following:

1. The NBN's non-compliance with the undertakings of yourself your political party and the current government with regard to the promised fibre to node and copper to home solution and the replacement of this with a microwave to a series of unsightly and intrusive towers and WiFi to home plus a requirement of a WiFi receiver and transmitter on each home at a estimated cost of over \$2,500 even when the requirement is only for a telephone. We put it on public record that you have not explained the reasons for switching away from the promised fibre to node and copper to home to adopting a substandard wireless tower that is more often associated with underdeveloped counties.
2. Your government's refusal (as evidenced by the written statements of the NBN) to deviate from the contracted obligations of the NBN to deliver this inferior service when, as in the case of our Witta community we already have a fibre to exchange (node) and copper to home delivering landlines and fast broadband including ADSL2+. We put this and the evidence that the NBN and its contractors state that that they cannot deviate from the contracted requirements as defined by your government.
3. Your government's refusal (as evidenced by NBN written statements) to provide any guarantee that the WiFi and microwave Tower system will even match, let alone improve our community's communications requirements. No impact study or assessment has been released indicating how this will affect our local business, social, educational requirements or emergency services requests. However, we have been able to establish evidence that the microwave system that feeds the chain of towers is greatly impacted by heavy rain, adverse weather and even wildlife. This, in turn, would greatly impact upon our businesses and those working from home who rely upon uninterrupted and consistent communications and, in particular, to those who would be put at risk should an emergency service be required during a heavy rain storm which could impede dealing with a life-threatening situation. Whilst vague verbal comments have been made suggesting that the existing fibre to exchange and copper to home could be maintained (subject to commercial negotiations by NBN) at least to its current Service Level Agreements (SLAs) your government has not made available any contractual evidence to substantiate such claims. We put it on public record that should the services prove to be substandard to the existing fixed landline and SLAs of the broadband then a clear case can be made for various types and amounts of compensation.
4. As evidenced by the written evidence herein by the NBN and its contractors, the NBN are in a clear position of denial that any evidence exists of mental and other clinical harm, including cancer, as a direct and/or indirect effect of exposure to the types of microwave and radio frequencies utilized in the proposed configuration of the towers or the additional infrastructure as mentioned in the NBN contract for landowners. Both the World Health Organisation and the industry standards body ARPANSA have acknowledged the existence of a body of

evidence of adverse clinical impacts and that microwaves and clinical use of radio waves demonstrates that they are not inert. For example, the WHO have stated that sufficient evidence exists to form the view that EMFs within this radio frequency/microwave band could be carcinogenic. We put it on public record that you and your government along with the NBN have not factored this risk from a parent's perspective who has a legal duty of care to protect their children; and that you, your government and the NBN will, in effect, limit any parent's capacity to fulfill their responsibilities should you impose these towers on a community without full disclosure of the known evidence herein.

5. Both the WHO and ARPANSA have, as a result of recognizing the potential carcinogenic impact on young children, recommended governments and industry to conduct additional scientific research to determine if and how the standards should be adjusted to bring them up to date. The current standards are based around the notion of preventing the heating of the body (by degrees) that was associated with short-term exposure to radar. The effects of the clustering of multiple transmitters, as recently experienced in schools where each student may have more than one transmitter, has provided sufficient reason for some countries to require a precautionary approach. In simple terms this means that exposing growing children to known but as yet not fully understood risks should not occur until the evidence is established as to the safety limits, if indeed there are any safe limits to the long-term exposure of growing children. Both the WHO and ARPANSA have themselves advocated a precautionary approach as evidenced herein. It is noted that the NBN and its contractors have refused to acknowledge this position and only provide a quoted statement pertaining to the standards themselves. We put it on record that no risk benefit analysis statement has been issued by you, your government or the NBN on this matter to justify this decision not to use the existing fibre and copper system which carries no risk.
6. The only possible course of action that is apparent to our group is that the only way to comply with a precautionary approach in our own Witta community is to reject the introduction of the intense cluster of transmitters especially because the total exposure to properties near the tower and in direct line with all the other 100s of properties communicating with the tower is not understood and neither have the details of the total radiation and radio waves to these properties been published by the NBN. Therefore a precautionary approach to address the identified level of risk would simply require the NBN to deliver what you, your party and the government you represent promised which is the use the fibre to exchange and copper to home that already exists along with any additional upgrading of the equipment at each end of the existing fibre.
7. **Senator Ludlam** asked the Minister representing the Minister for Health, upon notice, on 12 June 2012: "Given that on 31 May 2011 the World Health Organization's (WHO) International Agency for Research on Cancer classified radiofrequency electromagnetic fields as a Group 2B carcinogen, and the inability of the Australian telecommunication industry to obtain public liability insurance for potential health effects of electromagnetic radiation (EMR), what financial provision is the Australian Government making to cover future public liability claims and health costs for Australians for illnesses caused by EMR." **Senator Ludwig:** The Minister for Health did not provide a direct answer but did confirm that your government and (ARPANSA) is aware that the World Health Organization's (WHO) International Agency for Research on Cancer (IARC) has classified radiofrequency electromagnetic fields as Group 2B or 'possibly carcinogenic to humans'. Senator Ludwig also stated "In Australia, although there are no precautionary limits per se, the ARPANSA exposure standard requires a minimisation of public radiofrequency field exposure "...which is unnecessary or incidental to achievement of service objectives or process requirements, provided this can be readily achieved at reasonable expense." For the public record you are being asked to clarify what level of cost associated with the risk of children being harmed (for example by cancer) has your government considered to be reasonable. For the public record, following Senator Ludwig statement that concerning the "inability of the Australian telecommunication industry to obtain public liability insurance for potential health effects of electromagnetic radiation (EMR)", you are being asked to clarify whether any budget been set aside to cover the cost of the stated risk of harming or causing the death of even one child in our community and if so, what financial provision is the Australian Government making to cover future public liability claims and health costs for Australians for illnesses caused by EMR. If no provision is being made for the government to underwrite these costs then it would appear that this financial burden would fall upon each family. Evidence of said statement provided as attachment.
8. Evidence is submitted with this notice to demonstrate that there is not a single country or telecommunications company anywhere in the World that is attempting to replace fixed networks with wireless in urban areas, or even planning to do so in the future. Physical limitations prevent practical wireless speeds from approaching those available over fibre-optic cables. There is insufficient radio spectrum to allow wireless to replace fixed networks. To even partially overcome the above limitations, we would need to build over 75,000 new mobile transmission towers across Australia. Wireless network connections are prohibitively expensive, typically being 3-4 times more expensive, for less data volume and at a much slower speed. The opportunity exists for you to fully inform your rural constituents as to why you now support a more expensive but inferior system to the original NBN model that will be delivered to your constituents in urban areas and your justification of the

obvious adverse impacts upon our small business and, in particular, the information technology sector of which we have a thriving group, which also offers employment to people working from home and, more importantly offering work to our young without which they usually have to move to a city.

9. As radiofrequency emissions associated with microwave towers, Wifi and mobile phone infrastructure are not biologically inert, for the public record you are being asked what provision has been made by your government to identify those vulnerable and then protect them from harm, especially for those taking calcium channel blockers for heart disease. For example, the biological effects of these emissions negatively influence the electro-chemical function of low voltage-gated calcium channels within the body which control cardiac action potentials, neurotransmitter release, muscle contraction, calcium-dependent gene transcription and synaptic transmission. Negative effects are experienced as neurological disorders, heart arrhythmias, thalamocortical dysrhythmia (epilepsy) and possibly idiopathic chronic pain. It is now a matter of public record that you have been asked to support your constituents in understanding the increased risks of exposure to the towers today and in the future when the stated additional infrastructure which may include next generation mobile phone frequencies; and also to advise those identified constituents as to what precautions they need to take in order to mitigate those risks.

Our own research led us to the conclusion that some similarities exist between the way government dealt with the known clinical risks of asbestos and the evidence that our own community has identified, with limited resources, regarding these microwave and WiFi clusters. In particular, that a period of 20 years lapsed before the regulating authorities decided to recognize those risks and implement appropriate industry standards and government regulations in order to protect people from exposure to health risks.

We also noted that the parties who could or were to be held responsible, either for directly exposing workers and the public to the risk or those responsible for standards and regulations, offered a common response where almost all parties stated that they were, at the time, unaware of the available clinical evidence and simply operated within the existing regulation and standards structure. They also expressed that had they known then they would not have exposed people to such risks indicating that they would have, in effect, taken a precautionary approach.

This notice is intended to draw attention to all parties involved in the introduction of the towers the associated health risks and, in light of the refusal of your government or the NBN or its contractors to take a precautionary approach (and in turn ignore the identified risks as evidenced in this document as attached documents or internet links to evidence) that you, your government and the NBN will not be in a position to plead ignorance of the evidence at any point in the future.

We note that in your role as a parliamentary candidate, you personally made an undertaking to your prospective constituents to replace the more superior but [allegedly] more expensive fibre to home option that the government at the time had undertaken to deliver with fibre to node and copper to home. This was a policy of the Liberal Party which you also represented in this matter and then, later, as a Member of Parliament where you represent our current government.

We are unsure what role, if any, you have or may take with regard to any decision to adopt a precautionary approach. However, we are aware that you have rightly taken a proactive approach in the community discussions which, in turn, may have some impact on the decision to proceed with the tower rather than delivering upon your promise.

Therefore, we respectfully request that whilst it is entirely your prerogative to ignore, dismiss or set aside the evidence herein, that you at least acknowledge its existence and that you ensure that your government instructs the NBN and its contractors to do the same.

In light of the reports we have received from a landowner that the NBN have made statements that the health risk of installing and operating the tower will be no more risk than a landline, we would also request that, as our legal representative to the Australian Government, you provide a written statement to potential landowners acknowledging the existence of evidence of harm as recognized by the WHO and your own assessment of the evidence herein. This will ensure that landowners can mitigate any legal or business liabilities by seeking appropriate professional advice.

For example, our advice to any landowner considering signing the complex and what appears to be an onerous set of conditions that they seek legal advice that is independent from the NBN, their contractors, experts or legal advisors to counter any unqualified statements that landowners have allegedly received.

Considering the conditions within the NBN contract regarding the provision of public liability to be paid by the landowner we also recommend that they seek a quotation from either their existing insurer or from an expert underwriter. We also draw attention to any landowner that any knowledge they have or are aware of regarding any potential health risk to the broader community must be disclosed to the insurer to ensure that the policy is fully compliant.

We put it on public record that should any local landowner discover themselves to be underinsured in the future due, in part, to any misinformation, misunderstanding or because you, in your capacity of representing them in this matter have failed to respond to the requests herein, that they may have a case for compensation.

Again some unsubstantiated allegations have been made that unbiased advice is either not given or assurances have been made that it is unnecessary for the landowner to seek legal advice or acquire an insurance quotation. This, in some cases, is based on the notion that the tower is operating within the standards which would only form a small part of any insurance assessment if the known evidence is presented and factored in.

We put it on public record that it is beyond the capacity of a non-scientifically trained landowner to ensure that the standards are being complied with and we formally request that you provide written instructions to landowners on how they or any other party should go about determining if the combined exposures are compliant with the existing standards.

So, again, we formally ask you to provide clear and unequivocal written advice to your constituents, including potential land owners and NBN customers who will have to install equipment on their own roofs, regarding the need to disclose any known health risk or claim to their respective insurance companies. In particular, in the various contracts for landowners stipulate that additional and new forms of equipment may be added at any point in the future. This information is important because much controversy exists with the next generation of wireless technology and mobile phone due to the demonstrably higher levels of emissions.

We also put it on public record that evidence exists suggesting that any landowner may experience problems and even a loss of value on their property should they sign the NBN contract. This is due to the onerous conditions where, for example, a covenant is made on the title deed enabling the NBN to veto any future sale of the property if the new owner is not willing to enter into a new contract. Our community has already received a report from a concerned community where a local landowner signed a contract without realizing the full implications and attempted to withdraw prior to the installation of the tower. It was reported that the NBN refused to negotiate and installed the tower against the wishes of the landowners. It later transpired that the landowner was at the time in financial hardship so was predisposed to the tactics of the NBN in acquiring the contract. Unfortunately the landowner died of a heart attack during this period and his wife was forced to put the property on the market at a greatly reduced price. But despite this and further reductions the property could not attract any purchasers who were willing to sign the NBN agreement. It has been alleged by community members that an eviction order has been served on the property owner.

We also put on public record that, in your capacity as the representative of your landowner constituents that you make the necessary enquiries so that you can publicly advise any potential landowner that their property or business may be at risk should they agree to the terms and conditions of the NBN contracts, especially if they have not received independent legal advice and a quote for public liability insurance policy. This would have to cover all issues stated within the NBN contract and any additional insurance risks that they would be exposed to should any child become injured or die.

We submit the following evidence as part of the formal notice

Nature of this notice

The nature of this notice is to inform all parties associated with the strategy, planning, construction and operations and, in particular, with the hosting of the NBN tower that evidence exists of:

- A. Harm to human tissue. in particular to growing children and embryos;
- B. Sufficient associated clinical adverse conditions to require any reasonable or responsible person or organisation to use a precautionary principle when factoring in each identified risk; and
- C. That due process and the required level of due diligence has not been undertaken by other councilors with respect to the planning procedure of NBN Towers and that some critical information relied upon by said councils from the NBN and its agents or contractors was misleading or absent.

The primary intention of the notice is to make each named party full aware of the risks that they may face of any future litigation from members of our Witta community or any other community affected by the introduction of levels of radiation into their communities and homes. In particular, as a consequence of any action by the parties named in the notices relating to the granting of permissions with regard to the use of land pertaining to the NBN Towers.

This notice effectively challenges any named party's capacity to defend their actions or non action in the future by citing the notion that they were ignorant of the evidence of risk and harm either within, attached or referenced by this notice.

We strongly recommend that any party involved in the formal planning of the NBN towers engage independent experts for community consultation and for assessing the evidence of risk to human tissue from the type of radiation associated with the current and future use of the tower.

Evidence of previous non-compliance or indications of negligence by the Council or dereliction of duty by staff

This notice provides sufficient referenced evidence of serious non compliance with planning procedures relating to the NBN and that a dereliction of duty with regard to accepting upon face value claims by the NBN and its commercial contractors rather than performing the process with the correct levels of due diligence.

This evidence constitutes a risk for any parties involved in the formal planning of the NBN towers if it ignores the said evidence and refrains from instigating rigorous scrutiny of any claim. In particular, to any claim that the tower cannot and will not cause any harm or that the community favours the siting of a tower.

Please consider the following examples of evidence referenced and provided as attachments. We request that you record all actions relating to its assessment as we will be demanding full disclosure at some point in the future.

- A. Letter from NSW Government Planning and Infrastructure confirming the legal opinion that the NBN Tower in Woombah was non compliant and requested that the local council fully consider the matter. It now appears that this did not occur.
- B. Letter from EDO containing formal legal opinion
- C. Letter from National Party candidate contradicting the advice given by the NBN and accepted by the council that the community supported the tower
- D. Letter from the NBN giving assurances that no evidence exists of any harm. This is not true as the evidence in this notice illustrates that many parties, including the World Health Organization, conclude that sufficient evidence of harm from studies exists to constitute the requirement of a new scientific study to provide the required scientific proof. They also direct that in the meantime a precautionary approach should be taken. For all parties, including council, to be compliant with this direction then it would have to use the existing fibre optic and copper infrastructure until the study is completed.
- E. Fact sheet from ARPANSA, whom the NBN reference, where the recognised safety standards endorse a precautionary approach of which the NBN is non compliant.
- F. White paper on the beneficial and adverse effects of electromagnetic fields for your expert to advise you upon
- G. Text of the findings of a recent court case where McDonald sued a party on the evidence of harm
- H. Letter from Minister Turnbull where he claims that the standards are set well below the level at which adverse health effects are known to occur which is at odds with both the WHO and the standards bodies themselves who acknowledge that sufficient scientific evidence of harm exists to warrant a full study and that until this is done a precautionary approach should be taken.
- I. Letter from Janelle Saffin MP confirming NBN refusal to answer questions or provide information and request to the NBN to halt all work until they have delivered sufficient information to support their claims of harm to the community plus a complaint of pro forma style community relations.
- J. NBN admitting wrong information given to community resulting in lack of attendance
- K. NBN claim of overwhelming community support which council accepted on face value despite evidence from community and its political representatives that the statement was untrue and unsubstantiated.
- L. NBN letter claiming full planning compliance despite legal opinion and the advice of the NSW government.
- M. Australian Radiation Protection and Nuclear Safety Agency making claims that the WHO supports their view that insufficient evidence exists of harm to people, including children, from current exposure limits which is misleading due to the evidence of WHO who say that sufficient evidence does exist to warrant a scientific study and that a precautionary approach should be adopted until such time that the standards bodies comply with this request to initiate thorough scientific examination.

Evidence of harm

For health related damages relating to the total microwave radiation generated between the various towers themselves, plus the WiFi radiation from each tower to each home and then the additional radiation from each of the 400 homes back to the tower which will for some dwellings dramatically increase the exposure and dosage.

Having undertaken a large volume of research and speaking with experts our group has formed the view that this notice provides sufficient evidence of correlative harm associated with the range of frequencies to be utilized, in particular of harm from non-ionising radiation. You will see in the evidence attached that this ranges from the lowering of sperm count, to a wide range of conditions, including cancer.

The attached 35 page report *Evidence for the Inadequacy of Standards; BioInitiative 2012* provides sufficient evidence to demonstrate that again a precautionary approach is required to match the evidence of risk and to ensure that no harm is done to our community.

We also draw attention to reports that the NBN contract appears by nature to be onerous and may attempt to switch some of the responsibilities and therefore the liabilities associated with the potential harm outlined in the evidence to the landowner.

It is our view that by providing this information within the context of a formal legal notice it will assist the landowner to acquire better specialist legal and insurance advice.

We also understand that should any litigation occur in the future then all parties would be bound to make available this and any other notes in response to any discovery. We are uncertain if this would also relate to any land and title discovery should the property be put on the market so we advise the landowner to seek legal advice as to their responsibilities.

Please find as part of the evidence the following attached documents:

1. World Health Organisation release 208. IARC Classifies radio frequency electromagnetic fields as possibly carcinogenic to humans
2. Bio-Initiative 2012 Section 4: Evidence of inadequacy of the standards
3. Safe Schools in 2012: Medical and scientific experts call for safe technologies in schools
4. Electromagnetic fields act via activation of voltage-gated calcium channels to produce beneficial or adverse effects
5. Reported biological effects from radio-frequency radiation at low-intensity exposure
6. The structural biology of voltage-gated calcium channel function and regulation; F. Van Petegem and D.L. Minor, Jr <http://www.ncbi.nlm.nih.gov/pmc/articles/PMC3010275/>

We also wish to bring the named parties within this notice attention to the following information below as part of the evidence

6. A comparison of WiFi emissions to scientific research

The Parliamentary Assembly of the Council of Europe (PACE), meeting in Kyiv at Standing Committee level, today called on European governments to "take all reasonable measures" to reduce exposure to electromagnetic fields, especially to radio frequencies from mobile phones, "and particularly the exposure to children and young people who seem to be most at risk from head tumours".

According to parliamentarians, governments should "for children in general, and particularly in schools and classrooms, give preference to wired Internet connections, and strictly regulate the use of mobile phones by schoolchildren on school premises", and put in place information and awareness-raising campaigns on the risks of potentially harmful long-term biological effects on the environment and on human health, especially "targeting children, teenagers and young people of reproductive age".

Following the proposals of the rapporteur (Jean Huss, Luxembourg, SOC), the Assembly called on governments to provide information on potential health risks of DECT-type wireless telephones, baby monitors and other domestic

appliances which emit continuous pulse waves, if all electrical equipment is left permanently on standby. They should, instead, recommend "the use of wired, fixed telephones at home or, failing that, models which do not permanently emit pulse waves".

Governments should "reconsider the scientific basis for the present electromagnetic fields exposure standards set by the International Commission on Non-Ionising Radiation Protection, "which have serious limitations" and apply as low as reasonably achievable (ALARA) principles.

The adopted resolution underlines the fact that "the precautionary principle should be applicable when scientific evaluation does not allow the risk to be determined with sufficient certainty" and stresses that "the issue of independence and credibility of scientific expertise is crucial" to achieve a transparent and balanced assessment of potential negative impacts on the environment and human health.

Papers finding adverse biological effects or damage to health from Wi-Fi signals, Wi-Fi-enabled devices or Wi-Fi frequencies (2.4 or 5 GHz).

Papers listed are only those where exposures were below 16V/m. Someone using a Wi-Fi-enabled tablet computer can be exposed to electromagnetic fields up to 16V/m. Papers are in alphabetical order.

Some of the references to peer reviewed studies relating to exposure to WiFi

- Atasoy H.I. et al., 2013. Immunohistopathologic demonstration of deleterious effects on growing rat testes of radiofrequency waves emitted from conventional Wi-Fi devices. *Journal of Pediatric Urology* 9(2): 223-229. <http://www.ncbi.nlm.nih.gov/pubmed/22465825>
- Avendaño C. et al., 2012. Use of laptop computers connected to internet through Wi-Fi decreases human sperm motility and increases sperm DNA fragmentation. *Fertility and Sterility* 97(1): 39-45. <http://www.ncbi.nlm.nih.gov/pubmed/22112647>
- Aynali G. et al., 2013. Modulation of wireless (2.45 GHz)-induced oxidative toxicity in laryngotracheal mucosa of rat by melatonin. *Eur Arch Otorhinolaryngol* 270(5): 1695-1700. <http://www.ncbi.nlm.nih.gov/pubmed/23479077>
- Dasdag S. et al., 2014. Effect of long-term exposure of 2.4 GHz radiofrequency radiation emitted from Wi-Fi equipment on testes functions. *Electromagn Biol Med*. Epub ahead of print. <http://www.ncbi.nlm.nih.gov/pubmed/24460421>
- Gumral N. et al., 2009. Effects of selenium and L-carnitine on oxidative stress in blood of rat induced by 2.45-GHz radiation from wireless devices. *Biol Trace Elem Res*. 132(1-3): 153-163. <http://www.ncbi.nlm.nih.gov/pubmed/19396408>
- Gürler H.S. et al, 2014. Increased DNA oxidation (8-OHdG) and protein oxidation (AOPP) by Low level electromagnetic field (2.45 GHz) in rat brain and protective effect of garlic. *Int. J. Radiat. Biol*. Epub ahead of print. <http://www.ncbi.nlm.nih.gov/pubmed/24844368>
- Havas M. et al., 2010. Provocation study using heart rate variability shows microwave radiation from 2.4GHz cordless phone affects autonomic nervous system. *European Journal of Oncology Library* Vol. 5: 273-300. <http://www.icems.eu/papers.htm?f=/c/a/2009/12/15/MNHJ1B49KH.DTL> part 2.
- Havas M. and Marrongelle J. 2013. Replication of heart rate variability provocation study with 2.45GHz cordless phone confirms original findings. *Electromagn Biol Med* 32(2): 253-266. <https://www.ncbi.nlm.nih.gov/pubmed/23675629>
- Maganioti A. E. et al., 2010. Wi-Fi electromagnetic fields exert gender related alterations on EEG. 6th International Workshop on Biological Effects of Electromagnetic fields. <http://www.istanbul.edu.tr/6internatwshopbioeffemf/cd/pdf/poster/WI-FI%20ELECTROMAGNETIC%20FIELDS%20EXERT%20GENDER.pdf>
- Margaritis L.H. et al., 2013. Drosophila oogenesis as a bio-marker responding to EMF sources. *Electromagn Biol Med.*, Epub ahead of print. <http://www.ncbi.nlm.nih.gov/pubmed/23915130>

- Nazirođlu M. and Gumral 2009. Modulator effects of L-carnitine and selenium on wireless devices (2.45 GHz)-induced oxidative stress and electroencephalography records in brain of rat. *Int J Radiat Biol.* 85(8): 680-689. <http://www.ncbi.nlm.nih.gov/pubmed/19637079>
 - Nazirođlu M. et al., 2012. 2.45-Gz wireless devices induce oxidative stress and proliferation through cytosolic Ca²⁺ influx in human leukemia cancer cells. *International Journal of Radiation Biology* 88(6): 449-456. <http://www.ncbi.nlm.nih.gov/pubmed/22489926>
 - Nazirođlu M. et al., 2012b. Melatonin modulates wireless (2.45 GHz)-induced oxidative injury through TRPM2 and voltage gated Ca(2+) channels in brain and dorsal root ganglion in rat. *Physiol Behav.* 105(3): 683-92. <http://www.ncbi.nlm.nih.gov/pubmed/22019785>
 - Ozorak A. et al., 2013. Wi-Fi (2.45 GHz)- and mobile phone (900 and 1800 MHz)- induced risks on oxidative stress and elements in kidney and testis of rats during pregnancy and the development of offspring. *Biol. Trace Elem. Res.* 156(103): 221-229. <http://www.ncbi.nlm.nih.gov/pubmed/24101576>
 - Oksay T. et al., 2012. Protective effects of melatonin against oxidative injury in rat testis induced by wireless (2.45 GHz) devices. *Andrologia* doi: 10.1111/and.12044, Epub ahead of print. <http://www.ncbi.nlm.nih.gov/pubmed/23145464>
 - Papageorgiou C. C. et al., 2011. Effects of Wi-Fi signals on the p300 component of event-related potentials during an auditory hayling task. *Journal of Integrative Neuroscience* 10(2): 189-202. <http://www.ncbi.nlm.nih.gov/pubmed/21714138>
 - (Wi-Fi alters brain activity in young adults: <http://wifiinschools.org.uk/resources/wifi+brain+July+2011.pdf>)
 - Salah M.B. et al., 2013. Effects of olive leave extract on metabolic disorders and oxidative stress induced by 2.45 GHz WIFI signals. *Environ Toxicol Pharmacol* 36(3): 826-834. <https://www.ncbi.nlm.nih.gov/pubmed/23994945>
 - Sangun O. et al., 2014. The effects of long-term exposure to a 2450MHz electromagnetic field on growth and pubertal development in female Wistar rats. *Electromagn Biol Med.* Epub ahead of print. <https://www.ncbi.nlm.nih.gov/pubmed/24460416>
 - Shahin S. et al., 2013. 2.45 GHz Microwave Irradiation-Induced Oxidative Stress Affects Implantation or Pregnancy in Mice, *Mus musculus*. *Appl Biochem Biotechnol* 169: 1727-1751. <http://www.ncbi.nlm.nih.gov/pubmed/23334843>
 - Shahin S. et al., 2014. Microwave irradiation adversely affects reproductive function in male mouse, *Mus musculus*, by inducing oxidative and nitrosative stress. *Free Radic Res.* 48(5): 511-525. <https://www.ncbi.nlm.nih.gov/pubmed/24490664>
 - Tök L. et al., 2014. Effects of melatonin on Wi-Fi-induced oxidative stress in lens of rats. *Indian Journal of Ophthalmology* 62(1): 12-15. <http://www.ncbi.nlm.nih.gov/pubmed/24492496>
 - Türker Y. et al., 2011. Selenium and L-carnitine reduce oxidative stress in the heart of rat induced by 2.45-GHz radiation from wireless devices. *Biol Trace Elem Res.* 143(3): 1640-1650. <http://www.ncbi.nlm.nih.gov/pubmed/21360060>
- **A few more studies of similar microwave frequencies at low exposures (6V/m or below):**
- Balmori A. 2010. Mobile phone mast effects on common frog (*Rana temporaria*) tadpoles: the city turned into a laboratory. *Electromagn. Biol. Med.* 29(1-2):31-35. <http://www.ncbi.nlm.nih.gov/pubmed/20560769>
 - Erdinc O. O. et al., 2003. Electromagnetic waves of 900MHz in acute pentylenetetrazole model in ontogenesis in mice. *Neurol. Sci.* 24:111-116. <http://www.ncbi.nlm.nih.gov/pubmed/14600821>
 - Fesenko E. E. et al., 1999. Stimulation of murine natural killer cells by weak electromagnetic waves in the centimeter range. *Biofizika* 44:737-741. <http://www.ncbi.nlm.nih.gov/pubmed/10544828>

- Fesenko E. E. et al., 1999. Microwaves and cellular immunity. I. Effect of whole body microwave irradiation on tumor necrosis factor production in mouse cells, *Bioelectrochem. Bioenerg.* 49:29–35. <http://www.ncbi.nlm.nih.gov/pubmed/10619445>
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Signed on behalf of Witta community:

Date: