

## Some Constructive Feedback on Your EHS Story on "The Drum"

Dear Mike,

I recently read your story “**Wi-fi isn't hurting you, but the fear of it might be**” on the ABC DRUM website and it would appear there are some serious flaws and factual deficiencies that I would like to bring to your attention.

First and foremost, the statement “***Why does the belief that wi-fi is bad for your health persist in the face of evidence to the contrary?***” is misleading and incorrect. Are you able to provide evidence to support this claim? I think it would be safer to say that the evidence at this time is inconclusive. Insufficient research has been spent looking at this relatively new technology to making any sort of conclusive and informed statement about WiFi and health. However, if we are to look at studies performed both in the past and more recently, biological effects have been reported in both in vitro/in vivo and clinical studies to microwave exposures below thermal guidelines. Some of these studies provide some very disturbing insights that show biological changes with the potential for long term health consequences such as cancer. Studies from the 60's and 70's showed human exposures to microwaves caused hematological, neurological, endocrine, immune and cardiovascular effects and changes. Some of these changes were permanent (irreversible) while others were temporary and based on the duration of the signal. Some studies showed breaching of the blood brain barrier allowing toxins to cross. These studies were conducted at a time when the commercialization of RF had not been fully realized. Today, the wireless industry is worth trillions so I seriously doubt we can expect an honest answer any time soon as there is too much money at stake. As a for your information, I have attached a collection of studies that I have accumulated since starting my research in 2012 that clearly demonstrates that there is scientific evidence showing RF exposure can cause biological effects with the potential to cause harm at levels well below thermal guidelines. I deliberately chose to collect effect studies to demonstrate that “all swans are not white” and to falsify the claim that RF within basic restrictions is safe.

In your opinion piece, Professor Lowe makes the claim that there is “no hard scientific evidence that the EMF field of Wi-Fi or smart meters is causing the problem”. Herein lays the problem, how can we get hard scientific evidence when the Government, NHMRC, ARPANSA and Australia's leading Universities are not doing any health based studies or looking into health complaints linked to these technologies? We have only one published peer reviewed study on smart meters and subjective symptoms performed by Dr Lamech (2014) from Victoria, Australia, and this was done on her own initiative and as a member of the general public. We have reports of fit youngsters having heart attacks, the requirement for defibrillators at schools when in my day there was never a need. We have more kids than ever with allergies, autism is going through the roof and it is simply not because of improved diagnosis. Where are the studies looking for, or dismissing, a possible link between the rapid rise of wireless communications and these aforementioned issues? There are none.

Another concern is your article is suggesting EHS is a psychosomatic cause because two professors are suggesting it. One being a psychologist (Rodney Croft) and another being a physicist (Ian Lowe), neither I believe have sufficient backgrounds in medical or biological sciences to give an informed and complete view of RF with respect to health and safety. Perhaps both gentlemen would like to respond to this recent article - [Electrohypersensitivity conference debunks 'nocebo effect' theory?](#)

I would also challenge both Ian and Rodney to read my EHS personal case study <http://www.es-uk.info/attachments/article/7/A%20personal%20EHS%20Case%20Study%20-%20public%202014.pdf> and demonstrate to me how my experience was the result of a nocebo effect i.e. psychosomatic in origin. I certainly had no fear or concern about WiFi nor was I even aware of potential health effects being linked to RF exposure. I had previously used RF transmitters such as analogue FM 27 MHz radios to fly remote controlled gliders, used analogue cordless phone (40Mhz) for years without any side effects. It was by my own choice to buy a WiFi router to enjoy the flexibility and freedom it offered me and I certainly had no attributions of concerns or awareness of potential health problems linked to WiFi. The effects I experienced were real, consistent and not manufactured by attributions of concern. After repeated experiences (around 2001/2) I consciously made the choice to disable the WiFi function in my router and use wired connections and my symptoms stopped. It was not until much later, 2011, when my symptoms returned with a vengeance after a couple of smart meters were installed near my bedroom (completely unbeknownst to me) that I actually became aware that my condition had been labelled (EHS) and so started to perform extensive research on this topic. My symptoms were a match to what has been described in past scientific literature as "microwave sickness" back in the 70's. Can Rodney or Ian provide proof that EHS is due to attributions of concern? I doubt they can. Rodney will likely cite provocation studies from researchers such as Dr James Rubin which show EHS people cannot perceive a wireless signal greater than chance. Signal perception is irrelevant and a furphy because it does not prove that the condition must therefore be psychosomatic nor does it disqualify Electromagnetic Radiation (EMR) as the source because testing environments are not always clean from an EMR perspective. Additionally, symptoms can be delayed in development and can persist for hours or even days, long after the signal ceases depending on how long an individual has been EHS. What is lacking in many of these poorly conducted studies is tests to look for somatic (biological) responses prior, during and after provocation. Professor Croft's own upcoming EHS study suffers the same critical shortfalls.

Professor Rodney Croft's assertion that EHS is not linked to EMR is based on what I believe is faulty and biased research. I have independently reviewed over 84 EHS studies and I have come to a different conclusion than Rodney. When it comes to science and research in Australia we seem to have a myopic view when it comes to evidence of potential harm. There are 1000's of studies indicating that chronic exposures to RF at or below RF Standards are resulting in biological effects, some with the propensity to cause harm. Yet they are ignored or down played. Why? The other problem I see in Australia is our RF experts are dominated by electrical engineers, physicists and psychologists, that there is lack of health based medical/neurological/immunological science representatives. This short fall needs to be addressed so that we can have an honest investigation and appraisal of the potential harms that long term chronic exposure to RF could potentially cause. We also need studies that are designed to look at long term exposures that match the environment we are living in and whether there are

health implications. Most studies to date are completely unrealistic, being too short in duration, limited exposures to single frequencies and not designed to look for health outcomes.

I recently presented on Electromagnetic Hypersensitivity (presentation attached) to the Electromagnetic Energy Reference Committee (EMERG) that is attached to ARPANSA. This presentation provides scientific evidence, including a double blind study, to support the link between EMR exposure and physiological effects. Perhaps Rodney can explain why he is ignoring them? I have also included an open letter to Professor Croft I sent over a month ago that challenges his claims that there are no links between EHS and exposure and also critiques an EHS study his team is about to conduct, I have yet to receive a response.

The current international RF Guidelines created by ICNIRP in 1998 were adopted by Australia in 2002 are well designed to protect against known and established “thermal effects” and so fulfil the requirement to protect against thermal damage, shock and burns. However, they are completely inappropriate for protecting against reported athermal effects which are numerous. In Australia, and I daresay ICNIRP and WHO, there is a requirement for proof of harm and a full understanding of the mechanism by which harm is caused before action will be taken. Science is not about providing proof but about providing evidence. There is significant amount of evidence that suggests athermal effects do exist and that these effects may have real health consequences. What is lacking in this country is a precautionary approach. My EHS presentation looks at the benefits of a precautionary approach and why we should not be waiting until unequivocal and conclusive evidence is developed, but this requires a totally different way of thinking that puts public health first ahead of corporate and government interests (money and technical innovation).

From a scientific perspective, some possible mechanisms athermal effects are occurring have been elucidated by various scientist in the past and present. RF from mobile phone signals have been shown to cause mast cell degranulation (O Johansson et al. 2007, 2009) and results in histamine release – this can lead to allergic reactions including skin rashes, asthma and inflammation. Unexplained rashes, joint pain etc. feature in some EHS cases. In 1997 microbiologist Dr Peter French of St Vincent’s Hospital in Sydney was conducting experiments on mast cells. What he discovered was that the production of histamine – the chemical responsible for allergic reactions – and which is involved in bronchial spasm, is nearly doubled after exposure to mobile phone frequencies. He speculated that this could result in an increase in illnesses such as asthma and allergies in the years to come. French, P., et al (1997): *“Electromagnetic Radiation at 835 MHz changes the morphology and inhibits proliferation of a human astrocytoma cell line.”* We also have *“Studies with Ca<sup>2+</sup> indicate a large increase in Ca<sup>2+</sup> influx into the mast cell upon antigenic stimulation (5,9-11). The translocation of calcium ions, whether from outside or inside the cell, has been assumed to lead to an increase in free cytosol Ca<sup>2+</sup> concentration [Ca]; (12) as a Ca signal to trigger degranulation.”* (M. Beavan et al. 1983). So Calcium Flux has a role to play in mast cell degranulation. Electromagnetic radiation has been demonstrated to effect VGCC (Voltage Gated Calcium Channels) leading to Calcium flux changes in cells – M Pall 2013., X.W. Lu 2014. We are seeing increases in allergies in our society. This is most obvious when comparing developed nation populations with the Amish (who do not use modern powered technology) and poorer under developed nations.

Calcium flux changes in cells have also been linked to the production of reactive oxygen species (ROS). When there is an imbalance between ROS and anti-oxidants we get cellular damage including DNA damage. There are more than 100 hundred peer reviewed scientific studies that show RF causes increases in ROS. Of course the body has mechanisms to counter this cellular stressor but is dependent on genetics, state of health and the bodies capacity to deal with this RF caused stress and other environmental, physiological and psychological stressors. There are vulnerable portions of the population who are being impacted but the authorities choose to ignore them.

RF, as you have rightly pointed out in your opinion piece, has been designated as a potential carcinogen as a result of limited epidemiological studies (Hardell, Interphone). These studies have been further reinforced by more recent studies by Hardell and the French CERENAT study which reinforce this classification and actually suggest it should be upgraded to probable carcinogen or higher. We also have laboratory experiments such as the one recently performed by Professor A. Lerchl (who demonstrated RF is a co-carcinogen – a repeat of an earlier experiment performed by Tillman in 2010 who had similar findings). RF exposure also has been demonstrated to down regulate miR107 that is key to controlling cancer from spreading (metastasis).

Chronic RF exposure has also been shown to impact neurotransmitter levels. Depressed or elevated levels of neurotransmitters such as serotonin will cause many of the effects claimed by EHS individuals such as headaches, insomnia and heart beat irregularities. I could write pages and pages here on the evidence and the effects. Much of the information is beyond the capacity of a typical electrical engineer, physicist or a psychologist to fully understand because they lack the necessary experience in biological, physiological and medical sciences to interpret them correctly and map the effects to possible health consequences.

You may not be aware of this but it is another equally controversial issue. The general public has been requesting for health based studies to be performed against these various wireless technologies but they are being ignored and instead technical studies to measure RF emissions from tested devices against the RF Standard are being offered. The public is not challenging the authorities as to whether emissions are above the limit but whether there are any health problems developing after transmitters are established near our homes and schools. If we do not look we will not find.

What we need is an honest review and appraisal of currently available research as well as the initiation of new research without involvement or influence from vested interests. We need non biased scientists who have an open mind looking at this issue objectively. A psychosomatic causation is being used as an excuse – I can only speculate this is to protect Government and Industry interests – after all it is easy to blame the sufferer and request them to prove their impairment is caused by EMR, which is extremely difficult given the lack of knowledge in the medical profession and the significant gaps in scientific understanding as to the mechanism, to avoid costly liability issues. What we really need are focused studies that consider biological responses such as skin and nerve conductivity, consideration of genetic deficiencies, nutritional factors, stress factors, hormone levels, glucose levels, neurotransmitter levels, live blood analysis, heart reactions to exposure via ECG, brain function using functional MRI tests and

EEG tests. Such a study would be expensive and take time but is essential if we are to honestly look for answers.

Kind Regards,

Steve Weller