Appendix 1 (AMENDED)

Table Summarizing Literature Review

Topic	Source		Tab	Pp.	Details
Biological Effects of microwave radiation at non-thermal levels are established					
Biological Effects of microwave radiation at non-thermal levels are established	Sears	2013	47	15	-Human: brain excitability, decreased cortical activity, decreased reaction time, EEG changes, increased brain glucose metabolism.
Biological Effects of microwave radiation at non-thermal levels are established	Maret	2012	32	15-17 53	-Human: EEG change, sleep disorder, nervousness, fatigue, impaired motor function, headache, dizziness, fatigue, insomnia, indigestion, lower memory function/visual reaction time. -Clearly, non-thermal RF radiation can cause neurophysiological changes in the brain.
Biological Effects of microwave radiation at non-thermal levels are established	Bioinitiative: Summary for the Public & Statement of the Problem & Conclusions Table 1-1	Mr 2014	3		-Established in human & animal "beyond any reasonable doubt". -68% of studies show effects. -**90% of neurological studies show neurological effects.** -insomnia, EEG changes -Changes on exposure objectively measured by McCarty (heart-rate variability). -Electrical rhythms in our brains can be influenced.
Biological Effects of microwave radiation at non-thermal levels are established	Carpenter	2012	9	3-4	-**It is generally accepted within the relevant scientific community and has been established beyond any reasonable doubt that adverse human health effects occur at far lower levels…than those that cause noticeable heating.** -Studies showing changes in cells -Human studies show changes in brain function including memory loss, headaches, neurodegenerative conditions, sleep disorders, fatigue

				7 10 14 12 23	-Forefront experts recognize large body of scientific literature which establishes without limitation that microwave radiation with chronic duration is quite harmful to humans, particularly children -Studies show neurologic, immune, endocrine, reproductive, cardiac adverse health effects from low-dose chronic exposure in humans. -Less exposure produces less harm. -Human: decreased reaction time, altered working memory, and increased number of errors. -Media-promulgated notion that studies are inconsistent and inconclusive is misleading.
Biological Effects of microwave radiation at non-thermal levels are established	Altunkaynak	2015	1	1 All	-brain is most sensitive -summarizes studies showing harm/effects
Biological Effects of microwave radiation at non-thermal levels are established	Parliamentary Assembly Council of Europe	2011	43		-effects are established
Biological Effects of microwave radiation at non-thermal levels are established	Pall	2017	41	1-2 3 5 6	-many thousands of studies show effects -consensus among independent scientists=>2015 UN appeal signed by 220 independent research scientists in the field -attacks brain function, genome, reproduction -widespread neuropsychiatric effects -lowered melatonin & sleep disruption -table of effects listed with citations—effects have extensive literature for their occurrence. -Cumulative effects: severe

					irreversible impacts on brain and neuronal structure, headaches, sterility
Biological Effects of microwave radiation at non-thermal levels are established	Pall	2016	39	43 44 44-45 45 45-46 46 47 46	-Microwave radiation provides widespread neuropsychiatric effects including depression. -Microwave syndrome ("EHS") has been disputed largely because of lack of an apparent mechanism for generating these symptoms. -EHS symptoms: fatigue, headache, insomnia… -Mechanism now known to be activation of voltage-gated calcium channels (VGCC) in the brain which are exquisitely sensitive to EMF. -Chart shows brain and brain function changes produced by excess VGCC activation: depression, autism, schizophrenia; negatively influences language production, influences memory retrieval; associated with attention deficits. -A wide variety of brain & nervous system tissues show changes following exposures; widespread changes in neuronal and neuroendocrine tissues, irreversible when exposure is extended in time; EEG changes. -Substantial recent literature on brain effects. -U.S. government reports listed many apparent neuropsychiatric effects, which are set out in detail in chart at p. 46. -Long-term low level exposure changed sensory fibres in the skin. -Symptoms from cell towers are detailed in chart: headache, sleep disturbance, nausea, lack of appetite, fatigue,… -Microwave workers with doubling of neurological complaints: feeling of heaviness in head, tiredness, irritability, sleepiness, memory loss, skin sensitivity.

				46-48 49	-Credibility assessment of epidemiological studies. Evidence is convincing that the various neuropsychiatric apparent consequences of microwave EMF exposure are in fact caused by exposure. The similarity of these symptoms to the most common EHS symptoms suggest that EHS is a genuine sensitivity to EMF's. **-All the symptoms in Table 4 should be considered established parts of microwave syndrome: sleep disturbance/insomnia; headache; fatigue/tiredness; depression; vision/hearing/olifactory dysfunction; concentration/attention/cognitive dysfunction; dizziness/vertigo; memory changes; restlessness/anxiety; irritability; loss of appetite; skin tingling/burning; nausea. Each of these, having shown positive results in five or more studies, are highly unlikely, therefore, to have occurred by chance.** -The strong similarities from this list and the list produced in a publication by Bise 37 years ago should be noted.
Biological Effects of microwave radiation at non-thermal levels are established	Pall	2015	38		-Dozens of reviews and thousands of primary literature studies have shown the existence of many different non-thermal health effects of microwave radiation/EMF. -Widely held consensus in scientific community that various non-thermal effects are well-established.
Biological Effects of microwave radiation at non-thermal levels are	Trower	2011	51	3 4	-US warned personnel of risk from low-level microwave including flu-like symptoms, depression, suicidal tendencies, cancer, and leukaemia -Describes health effects suffered by US embassy staff following non-

established					thermal microwave exposure, including serious neurological impairments. Causal connection established. 7 -Plethora (thousands) of extensive, well-researched documents showing adverse health outcomes. These are listed, and include reduction in night-time melatonin, sleep problems, mental problems involving depression, headache, dizziness, fatigue. 9-11 -Carcinogenic 11 -Increased neurological impairments. 14 **-Even so-called low levels of microwave radiation are very serious...It is impossible to MW-irradiate the body without an effect.** 15-16 -Large amount of data, both animal and human, support existence of non-thermal effects. 16 -Experts worldwide both in military intelligence and universities have shown that microwave radiation below thermal effects can impinge on human and other living organisms' physiologic functions. 26 -Within the relevant scientific community, it is generally accepted that many bioeffects and adverse health effects occur at far lower levels of radio wave and MW exposure where no measureable heating occurs; some effects are shown to occur at several hundred thousand times below the existing public guidelines.
Biological Effects of microwave radiation at non-thermal levels are established	St. Clair summary of Radiofrequency Toolkit	2013	48	2 3	-Research on behaviour and cognition are mixed with several studies showing adverse effect. -...suggesting that exposure increases permeability of the blood-brain barrier. Neuronal damage observed. -RF exposure was having a physiological effect on cells in

				4	central nervous system. Increased albumin in the brains of male rats. -Significant decrease in pyramidal cells in the brain of exposed rats. -Melatonin has been observed to decline after RF exposure.
Biological Effects of microwave radiation at non-thermal levels are established	Starkey	2016	49	497	-EEG studies show changes. - Many other studies support biological responses being related to the electromagnetic signal, including evidence from cultured cells, in vitro preparations, animals, plants or asleep humans, none of which "imagined" signals to be present. That living things can respond to low power RF signals is now supported by a large body of research.
Biological Effects of microwave radiation at non-thermal levels are established	Hedendahl	2017	22	1 3	-Summarizes studies showing bioeffects of wireless radiation: blood-brain barrier (animals), spatial memory (rats), brain changes, neurotransmitters (rats). -Human: EEG changes, disturbed brain glucose metabolism, DNA damage in hair root cells. -Wi-Fi signal effects on animals: heart rhythm, blood pressure, oxidative stress, inflammation, DNA damage. -Wi-Fi signal effects on humans: exposure during language test showed gender-related effects on EEG in large area of the brain. -Human effects following long-term exposure to cell towers. -More behavioural problems have been seen in children with higher exposure to RF compared with children with lower exposure.
Biological Effects of microwave radiation at non-thermal levels are established	Herbert	2013	25		**-"In fact, there are thousands of papers that have accumulated over decades—and are now accumulating at an accelerating pace, as our ability to measure impacts becomes more sensitive-that document adverse health and neurological impacts of**

					EMF/RFR. Children are more vulnerable than adults, and children with chronic illnesses and/or neurodevelopmental disabilities are even more vulnerable." **-"We know now that there are a large array of impacts that have nothing to do with the heating of tissue. The claim from wifi proponents that the only concern is thermal impacts is now definitively outdated scientifically."** **-"EMF/RFR from wifi and cell towers can exert a disorganizing effect on the ability to learn and remember, and can also be destabilizing to immune and metabolic function. This will make it harder for some children to learn, particularly those who are already having problems in the first place."**
Biological Effects of microwave radiation at non-thermal levels are established	Havas	2013	21		The scientific evidence clearly shows that microwave radiation at levels well below the our federal guidelines (Health Canada's Safety Code 6, 2009) and at levels now commonly found in classrooms with Wi-Fi routers causes cancer in laboratory animals, causes heart palpitations in sensitive adults, causes reduced sperm motility and viability…
Biological Effects of microwave radiation at non-thermal levels are established	EMFscientist.org	2017	15		-International Appeal signed by around 200 scientists engaged in the study of biological and health effects of non-ionizing radiation. -Numerous scientific publications show EMF affects living organisms at levels well below most international and national guidelines. -Effects include cancer, …, learning and memory deficits, genetic damage, changes of reproductive system; neurological disorders,

					and negative impacts on well-being.
Biological Effects of microwave radiation at non-thermal levels are established	Davis Expert Report at tabs 11-13	2015	13		-Growing scientific evidence that the use of wireless devices in classrooms poses a serious health risk to children and those with any underlying illness. -Bioeffects listed. -Studies show changes in brain activity and neurotoxic effects. -Damage to reproductive systems. -Increased headaches in children (tab 11, p. 44) -Multiple references are provided in support of the above. Tab 11 is a literature review supporting statements at Tab 13. -Sleep, behaviour affected (tab 11, p.5) -Neurological effects (tab 11, p. 44). -Sleep problems (tab 11, p. 49).
Biological Effects of microwave radiation at non-thermal levels are established	Kaplan	2016	30	52	-Several studies clearly demonstrate that EMF emitted by cell phones could affect a range of body systems and functions. -Recent work has demonstrated that EMF inhibit the formation and differentiation of neural stem cells during embryonic development and also affect reproductive and neurological health of adults that have undergone prenatal exposure.
Biological Effects - Towers					
Biological Effects - Towers	Gómez-Perretta	2014	17	1-2 2 1-8	-8 out of 10 studies report increased prevalence of neurobehavioural symptoms or cancer in populations living at distances of <500m -Recently, a study measured increased cortisol and salivary amylase. -Dose-response relationship with sleep, neurological. -Confirmed results of fatigue,

					irritability, lack of appetite, sleep troubles, depression, lack of concentration related with cell tower exposure.
Biological Effects - Towers	Arnetz	2007	2		-RF exposure is associated with adverse effects on sleep quality within certain sleep stages.
Biological Effects - Towers	Hedendahl	2017	22	3	-Long-time exposure from new cell tower revealed adverse effects on neurotransmitters which, after 18 months, had not normalized, especially in children and chronically ill adults.
Biological Effects - Towers	Pall	2016	39	46-47	-Symptoms from cell towers are detailed in chart: headache, sleep disturbance, nausea, lack of appetite, fatigue,…

Mechanism of harm					
Mechanism of harm	Maret	2012	32	25-26	
Mechanism of harm	Pall	2017	41	1 4 6	-Most if not all of these effects can be understood and being caused by excessive calcium levels in the cell produced through activation by wireless radiation -**It has not been clear until about 4 years ago how these effects are produced by such exposures**…So clearly it is having a substantial and rapidly increasing impact on the scientific literature. -Mechanism is voltage-gated calcium channels which Pall has proven -The neuropsychiatric effects are almost certainly caused by the impact of EMF's on brain structure which is, in my opinion, horrendous.
Mechanism of harm	Pall	2015	40	99	-Effects are shown in two dozen studies to act via voltage-gated calcium channel (VGCC) activation. -**Downstream effects of VGCC activation explain previously report biological effects including oxidative stress, DNA damage, sleep disruptions, neuropsychiatric effects including depression,…**
Mechanism of harm	Panagopoulos	2015	42		-Wireless radiation is more biologically active than natural electromagnetic radiation, due to polarization, which is why the human body is much more reactive to it. -This explains the increasing number of biological effects discovered during the past few

					decades, in contrast to natural EMF. -This is the reason unnatural EMF can trigger biological effects while much stronger and higher energy unpolarised EMF cannot.
Embryos/fetuses are more susceptible					
Embryos/fetuses are more susceptible	Morgan	2014	37		-Title: **Why children absorb more microwave radiation than adults.** -This article is intended to be read in detail, includes commentary on fetal development.
Embryos/fetuses are more susceptible	Kumar	2010	31	15	-explanation
Embryos/fetuses are more susceptible	Bioinitiative: Summary for the Public	Mr 2014	3		-base stations and Wi-Fi -mice: significantly altered fetal brain development
Embryos/fetuses are more susceptible	Celik	2016	10		-rats pups exposed to Wi-Fiduring gestation: oxidative brain and liver damage
Embryos/fetuses are more susceptible	Zhou	2016	54		-chicks exposed during gestation showed several changes including social, cerebellar retardation/smaller size
Embryos/fetuses are more susceptible	Trower	2011	51	22	-no known safe level for embryo, fetus, child, pregnant woman
Embryos/fetuses are more susceptible	St. Clair summary of Radiofrequency Toolkit	2013	48	1	-Children and fetuses experience higher absorbtion rate ("SAR") which may exceed safety levels.
Embryos/fetuses are more susceptible	Starkey	2016	49	499-500	-To prevent further possible harm, restrictions on exposures are required, particularly for children, pregnant women, and individuals with medical conditions

Embryos/fetuses are more susceptible	Standing Committee, Dr. Riina Bray	2015	28	1530	-We see EHS in those who have predisposing stressors such as…neurological problems,…previous prolonged exposures,.. -Those at highest risk include the fetus, children,…those with predisposing morbidities, usually cardiac and neurological…
Embryos/fetuses are more susceptible	Kaplan	2016	30	52 53 53, 57	-Recent work has demonstrated that EMF inhibit the formation and differentiation of neural stem cells during embryonic development and also affect reproductive and neurological health of adults that have undergone prenatal exposure. -Animal model studies showed that high frequency EMFs may have an influence on the nervous system; study reported significant pyramidal cell loss in the hippocampus of juvenile rats in the postnatal period, which were exposed to EMF in prenatal period. -Rats: prenatal exposure to EMF causes substantial loss of granule cells during the postnatal life and neuronal loss.
Embryos/fetuses are more susceptible	Mallery-Blythe	2014	Ex. G to Elder pp.220& following	224	-Children and fetuses more vulnerable.
Children are more susceptible					
Children are more susceptible	Kaplan	2016	30	57	-Studies in recent years have shown that the EMF is increase of the incidence of brain cancer, furthermore highly affected cognitive function and cause the

					decreased number of neuron in the hippocampus on children CNS.
Children are more susceptible	Morgan	2014	37		Title: **Why children absorb more microwave radiation than adults.** -This article is intended to be read in detail.
Children are more susceptible	Sears	2013	47	16	
Children are more susceptible	Maret	2012	32	28	
Children are more susceptible	Kumar	2010	31	15	
Children are more susceptible	Bioinitiative: Summary for the Public	Mr 2014	3		-effects on neurodevelopment
Children are more susceptible	Carpenter	2012	9	5-7	-developing nervous system, penetration is greater relative to head size, higher absorption rate at Wi-Fi frequencies bc skulls thinner & brains smaller & higher water concentration, faster cell division -safety levels based on adult male -forefront experts recognize large body of scientific literature which establishes without limitation that microwave radiation with chronic duration is quite harmful to humans, particularly children
Children are more susceptible	Pall	2017	41	2 7	-Wi-Fi and other wireless may be particularly active in producing biological damage in young people. It follows that placing Wi-Fi in schools may be particularly problematic. -smaller skulls, effects on embryonic stem cells which are

					more common in children, action on stem cells -literature shows children more susceptible
Children are more susceptible	Trower	2011	51	8 19-20	-Quoting Dr. Carlo commissioned by mobile industry to conduct research: "our data showed increased risk to children...my results were suppressed by the telecommunications industry" -Absorb more radiation; their dimensions approximate the deployment's wavelength; they are neurologically immature, their systems have not yet formed. Microwave alters the blood-brain barrier so that toxins can leak into the brain. This can cause neurologic and psychologic problems more easily in children.
Children are more susceptible	St. Clair summary of Radiofrequency Toolkit	2013	48	1	-Children and fetuses experience higher absorbtion rate ("SAR") which may exceed safety levels.
Children are more susceptible	Starkey	2016	49	499-500	**-The health of some children may be damaged as a result of RF in schools.** **-To prevent further possible harm, restrictions on exposures are required, particularly for children, pregnant women, and individuals with medical conditions.** **-All children in schools...need protection from the harmful effects of RF exposures and not, as is now often the case, a compulsory use of wireless devices in the classroom.**
Children are more susceptible	Hedendahl	2017	22	3	-Long-time exposure from new cell tower revealed adverse effects on neurotransmitters which, after 18 months, had not normalized, especially in children and chronically ill adults.

					-More behavioural problems seen in children with higher exposure.
Children are more susceptible	Herbert	2013	25		**-"In fact, there are thousands of papers that have accumulated over decades—and are now accumulating at an accelerating pace, as our ability to measure impacts becomes more sensitive-that document adverse health and neurological impacts of EMF/RFR. Children are more vulnerable than adults, and children with chronic illnesses and/or neurodevelopmental disabilities are even more vulnerable."** **-"We know now that there are a large array of impacts that have nothing to do with the heating of tissue. The claim from wifi proponents that the only concern is thermal impacts is now definitively outdated scientifically."** **-"EMF/RFR from wifi and cell towers can exert a disorganizing effect on the ability to learn and remember, and can also be destabilizing to immune and metabolic function. This will make it harder for some children to learn, particularly those who are already having problems in the first place."**
Children are more susceptible	Herbert	2013	24	15	-Children with existing neurological problems that include cognitive, learning, attention, memory, or behavioural problems should as much as possible be provided with wired (not wireless) learning, living, and sleeping environments. -All children should be reasonably protected from the

					physiological stressor of significantly elevated EMF/RFR (wireless in classrooms or home environment).
Children are more susceptible	Standing Committee, Dr. Martha Herbert	2015	28	1634-1640	-Children are not little adults. They are developing, and perturbations during windows of development may have lifelong repercussions. -Radiation penetrates deeper into the heads of children which leads to persistent stress on the cells in the brain, and over time, more and more serious problems can develop.
Children are more susceptible	Havas	2013	21		-"Children are likely to be much more sensitive than adults. Students in Canadian schools with Wi-Fi are now complaining of heart palpitations and feelings of weakness and fatigue in the classroom".
Children are more susceptible	Standing Committee, Dr. Riina Bray	2015	28	1530	-We see EHS in those who have predisposing stressors such as…neurological problems,…previous prolonged exposures,.. -Those at highest risk include the fetus, children,…those with predisposing morbidities, usually cardiac and neurological…
Children are more susceptible	Mallery-Blythe	2014	video		-Children are more vulnerable. -New Zealand father won against local school Wi-Fi after boy died of brain cancer.
Children are more susceptible	Mallery-Blythe	2014	Ex. G to Elder pp.220& following	224	-Children and fetuses more vulnerable. -Children have EHS and are more likely to be vulnerable to developing it as their exposure is higher. Outcomes may be worse given their developing systems and greater time for latent effects.

Children are more susceptible	Davis Expert Report at tabs 11-13	2015	13		-Absorbed more deeply into children's brains, bodies, bone marrow of skull, hippocampus, hypothalamus (see tab 11, p.3) -Increased headaches in children (tab 11, p. 44).
People with development or neurological issues are more susceptible					
People with development or neurological issues are more susceptible	Herbert	2013	25		**-"In fact, there are thousands of papers that have accumulated over decades—and are now accumulating at an accelerating pace, as our ability to measure impacts becomes more sensitive- that document adverse health and neurological impacts of EMF/RFR. Children are more vulnerable than adults, and children with chronic illnesses and/or neurodevelopmental disabilities are even more vulnerable."** **-"We know now that there are a large array of impacts that have nothing to do with the heating of tissue. The claim from wifi proponents that the only concern is thermal impacts is now definitively outdated scientifically."** **-"EMF/RFR from wifi and cell towers can exert a disorganizing effect on the ability to learn and remember, and can also be destabilizing to immune and metabolic function. This will make it harder for some children to learn, particularly those who are already having problems in the first place."**
People with development or neurological issues are	Sears	2013	47	16	-those with comorbidities more susceptible

more susceptible					
People with development or neurological issues are more susceptible	Bioinitiative: Summary for the Public	Mr 2014	3		-children with existing neurological problems should be provided with wired (not wireless) learning environments
People with development or neurological issues are more susceptible	Starkey	2016	49	499-500	**-To prevent further possible harm, restrictions on exposures are required, particularly for children, pregnant women, and individuals with medical conditions.**
People with development or neurological issues are more susceptible	Herbert	2013	25		**-"In fact, there are thousands of papers that have accumulated over decades—and are now accumulating at an accelerating pace, as our ability to measure impacts becomes more sensitive- that document adverse health and neurological impacts of EMF/RFR. <u>Children are more vulnerable than adults, and children with chronic illnesses and/or neurodevelopmental disabilities are even more vulnerable.</u>"** **-"We know now that there are a large array of impacts that have nothing to do with the heating of tissue. The claim from wifi proponents that the only concern is thermal impacts is now definitively outdated scientifically."** **-"EMF/RFR from wifi and cell towers can exert a disorganizing effect on the ability to learn and remember, and can also be destabilizing to immune and metabolic function. This will make it harder for some children to**

					learn, particularly those who are already having problems in the first place."
People with development or neurological issues are more susceptible	Herbert	2013	24	15	-Children with existing neurological problems that include cognitive, learning, attention, memory, or behavioural problems should as much as possible be provided with wired (not wireless) learning, living, and sleeping environments.
People with development or neurological issues are more susceptible	Standing Committee, Dr. Riina Bray	2015	28	1530	-We see EHS in those who have predisposing stressors such as…neurological problems,…previous prolonged exposures,.. -Those at highest risk include the fetus, children,…those with predisposing morbidities, usually cardiac and neurological…
Symptoms Associated with Exposure to Non-Thermal Levels					
Symptoms	Pall	2017	41	3	-lowered melatonin & sleep disruption
Symptoms	Pall	2016	39	49	**All the symptoms in Table 4 should be considered established parts of microwave syndrome: sleep disturbance/insomnia; headache; fatigue/tiredness; depression; vision/hearing/olifactory dysfunction; concentration/attention/cognitive dysfunction; dizziness/vertigo; memory changes; restlessness/anxiety; irritability; loss of appetite; skin tingling/burning; nausea. Each of these, having shown positive results in five or more studies, are highly unlikely, therefore, to have occurred by chance.** -The strong similarities from this list and the list produced in a publication by Bise 37 years ago should be noted.
Symptoms	Trower	2011	51	10	-In Freidburger Appeal signed by

					270 medical consultants, scientists, GP's, MP's and physicians and now has many thousands of signatories world wide. Lists disorders from low-level microwaves including migraines and sleeplessness.
Symptoms	Mallery-Blythe	2014	video		-Symptoms happen at levels below guidelines: headache, fatigue, insomnia, indigestion. -Symptoms linked with EMF exposure: ADHD/behavioural, headache, migraine, insomnia, EHS. Particularly insomnia in children.
Symptoms, EHS	Sears	2013	47	18	-headache, poor sleep, fatigue, pain, headache, nausea
Symptoms, EHS	Maret	2012	32	18, 25-26	-dizziness, nausea, nervousness, anxiety, headache, fatigue, depression, sleep disruption
Symptoms, EHS	Bioinitiative: Summary for the Public	Mr 2014	3		-Changes on exposure objectively measured by McCarty (heart-rate variability) -Electrical rhythms in our brains can be influenced
Symptoms, EHS	Trower	2011	51	2 4	-microwave sickness symptoms: severe tiredness, fatigue, fitful sleep, headaches -Describes health effects sufferred by US embassy staff following non-thermal microwave exposure, including serious neurological impairments. Causal connection established.
Symptoms, EHS	Tuengler	2013	52	271	-headache, sleeping problems,... -List includes: headaches, nausea, sleep problems, tiredness, dizziness…
Symptoms, EHS	Havas	2010	19	273	-Top 10 EHS symptoms include: sleep disorder, headache, dizziness, chronic fatigue…
Symptoms, EHS	Standing Committee, Dr. Riina Bray	2015	28	1530	-Include: headaches, dizziness, fatigue, nausea… -EHS is characterized by these signs and symptoms which occur due to prolonged exposures and abate when the person has been

					removed from that environment.
Symptoms, EHS	Genius	2011	16	2	In the 1950's, various centres in Easter Europe began to describe and treat thousands of microwave-exposed workers complaining of: headaches, weakness, sleep disturbance, emotional instability, dizziness, memory impairment, fatigue, heart palpitations.
Symptoms, EHS	Pall	2016	39	44 46 49	-EHS symptoms: fatigue, headache, insomnia… -Substantial recent literature on brain effects. -Microwave workers with doubling of neurological complaints: feeling of heaviness in head, tiredness, irritability, sleepiness, memory loss, skin sensitivity. **-All the symptoms in Table 4 should be considered established parts of microwave syndrome: sleep disturbance/insomnia; headache; fatigue/tiredness; depression; vision/hearing/olifactory dysfunction; concentration/attention/cognitive dysfunction; dizziness/vertigo; memory changes; restlessness/anxiety; irritability; loss of appetite; skin tingling/burning; nausea. Each of these, having shown positive results in five or more studies, are highly unlikely, therefore, to have occurred by chance.** -The strong similarities from this list and the list produced in a publication by Bise 37 years ago should be noted.
Symptoms, EHS	Hedendahl	2015	23	3	-**Hyperreactivity to sensory stimulation**.
Symptoms, EHS	Mallery-Blythe	2014	Ex. G to Elder pp.220& following	222	-Include: headaches, dizziness, sleep disturbance, sensory up-regulation, visual disturbances, fatigue, heightened skin sensitivity.

Symptoms, Tower	Sears	2013	47	16	-sleep problems, headache, dizziness
Symptoms, Tower	Maret	2012	32	22	-mice: sterility -human: fatigue, sleep disturbances, headaches, depressive tendency
Symptoms, Tower	Kumar	2010	31	21	-sleep disturbance, headache, nausea, dizziness, depression
Symptoms, Tower	Bioinitiative: Summary for the Public & Conclusions Table 1-1	Mr 2014	3		-headache, sleep disturbances
Symptoms, Tower	Gómez-Perretta	2014	17	1-2 8	-headache, dizziness, depressive symptoms, sleep disturbance, nervousness,... -Confirmed results of fatigue, irritability, lack of appetite, sleep troubles, depression, lack of concentration related with cell tower exposure.
Symptoms, Tower	Arnetz	2007	2		-RF exposure is associated with adverse effects on sleep quality within certain sleep stages.
Symptoms, Tower	Tressider in Rosch	2015	44	571	-tiredness, poor quality sleep, heart palpitations, pressure in the head, dizziness,…
Symptoms, Tower	Pall	2016	39	47 49	-Symptoms from cell towers are detailed in chart: headache, sleep disturbance, nausea, lack of appetite, fatigue,… **-All the symptoms in Table 4 should be considered established parts of microwave syndrome: sleep disturbance/insomnia; headache; fatigue/tiredness; depression; vision/hearing/olifactory dysfunction; concentration/attention/cognitive dysfunction; dizziness/vertigo; memory changes; restlessness/anxiety; irritability; loss of appetite; skin tingling/burning; nausea. Each of these, having shown positive**

					results in five or more studies, are highly unlikely, therefore, to have occurred by chance. -The strong similarities from this list and the list produced in a publication by Bise 37 years ago should be noted.
Symptoms, Tower	Mallery-Blythe	2014	video		-Cell tower symptoms: fatigue, headache, sleep disturbance, loss of appetite. Many studies show this same data.
Symptoms, Wi-Fi in Schools	Trower	2011	51	20	**-In all of the schools I have visited around the world with Wi-Fi, every one has reported the same symptoms in students: <u>fatigue, headaches, nausea</u>...**
Symptoms, Wi-Fi in Schools	Tressider in Rosch	2015	44	571	-Case study of teacher: **severe head pain, nausea, dizziness, insomnia…**
Symptoms, Wi-Fi in Schools	Havas	2013	21		The scientific evidence clearly shows that microwave radiation at levels well below the our federal guidelines (Health Canada's Safety Code 6, 2009) and at levels now commonly found in classrooms with Wi-Fi routers causes cancer in laboratory animals, causes heart palpitations in sensitive adults, causes reduced sperm motility and viability, and is associated with symptoms of electrosensitivity that include–but are not limited to– cognitive dysfunction, pain, fatigue, mood disorders (depression, anxiety, irritability), dizziness, nausea, weakness, skin problems, and tinnitus". -Students in Canadian schools with Wi-Fi are now complaining of heart palpitations and feelings of weakness and fatigue in the classroom
Symptoms, Wi-Fi in Schools	Hedendahl	2015	23	3	-Wi-Fi in schools has been followed by reports of teachers and children experiencing **tiredness, headaches**, dizziness, difficulty with concentration and memory,

				4	**problems sleeping** at night. -Case Study 1: headaches, tired at school. -Case Study 2: **severe headaches**, **tired, sleep problems, stomach problems, balance, memory, dizziness**. Wi-Fi in classroom, and neighbours, and lives near cell tower.
Symptoms, Wi-Fi in Schools	Maret	2015	video		-12-year old with **headaches**. EHS child responded with headaches to high exposure consistently.
Symptoms, Wi-Fi in Schools	Davis Expert Report at tabs 11-13	2015	13		-Increased **headaches** in children (tab 11, p. 44) -**Sleep**, behaviour affected (tab 11, p.5) -Neurological effects (tab 11, p. 44). -**Sleep problems** (tab 11, p. 49).
EHS Established					
EHS Established	Hedendahl	2015	23	3	-Objective observable changes on exposure of EHS people: pupil, heart rate, damage to erythrocytes, disturbed glucose metabolism in the brain, influence on electrical activity in the brain. Increased activity in the sympathetic nervous system and **hyperreactivity to sensory stimulation**. **-**Rea study: 16 of 100 self-reported EHS suffers reacted to exposure but not to blanks.
EHS Established	Brussels Declaration Signed by physicians and scientists	2015	45	3	-objective biological markers [of EHS] are detectable in patients as well as animals
EHS Established	Trower	2011	51	2 4	-Microwave sickness symptoms: severe tiredness, fatigue, fitful sleep, headaches. -Describes health effects sufferred by US embassy staff following non-thermal microwave exposure, including serious neurological impairments. Causal connection

				5	established. -Microwave sickness was well documented in 1997.
EHS Established	Heuser	2017	27		**-Functional brain MRI's of EHS patients show almost identical abnormalities**
EHS Established	McCarty	2011	36		**-Female physician self-diagnosed with EHS exhibited, in double-blind testing, statistically reliable somatic reactions to exposure.** **-EHS can occur as a *bona fide* environmentally induced neurological syndrome.**
EHS Established	Marino	2012	35		**-**Explains McCarty study. -Previous provocation studies had been based on the assumption that, if it existed, EHS was a linear phenomenon. Study design used methodology known to be inefficient for detecting nonlinear phenomena. -Our study was designed to detect whether EHS was linear or nonlinear—it is nonlinear. We recognized the dynamic complexity, and designed our study accordingly. -Our subject developed headaches,… -We proved in a scientific fashion that EMF caused disease in this subject and did so by means of a nonlinear process.
EHS Established	Marino	2013	35		-Clarifies methodology of McCarty study.
EHS Established	Tuengler	2013	52	284-286 288-289	-On provocation, a consistent pattern of physiological changes can be found in genuine EHS individuals. -McCarty demonstrated that EMF effects could lead to somatic reactions in a sensitive individual.
EHS Established	Tresidder in Rosch	2015	44	567 571-574 569-572	-EHS defined. -EHS case studies. -Mechanisms discussed.

				572 576	-Effects can be cumulative, delayed onset. -"The mainstay of diagnosis is a good history"
EHS Established	Havas	2010	19	273	-**Provocation Study documents immediate and dramatic changes in 40 percent of EHS subjects: heart rate and heart rate variability associated with microwave exposure well below federal guidelines in Canada.**
EHS Established	Genius	2011	16	3	-Rea: reported abnormal responses to certain EMR frequencies in comparison with blank challenges, including cardiac and pulmonary changes. -Johansson: confirmed dermal changes.
EHS Established	Pall	2016	39	44 44-45 45-46	-Microwave syndrome ("EHS") has been disputed largely because of lack of an apparent mechanism for generating these symptoms. -EHS symptoms: fatigue, headache, insomnia… -Mechanism now known to be activation of voltage-gated calcium channels (VGCC) in the brain which are exquisitely sensitive to EMF. -Chart shows brain and brain function changes produced by excess VGCC activation: depression, autism, schizophrenia; negatively influences language production, influences memory retrieval; associated with attention deficits. -A wide variety of brain & nervous system tissues show changes following exposures; widespread changes in neuronal and neuroendocrine tissues, irreversible when exposure is extended in time; EEG changes. -Substantial recent literature on brain effects. -U.S. government reports listed many apparent neuropsychiatric effects, which are set out in detail

					in chart at p. 46.
				46	-Long-term low level exposure changed sensory fibres in the skin.
				46-48	-Credibility assessment of epidemiological studies. Evidence is convincing that the various neuropsychiatric apparent consequences of microwave EMF exposure are in fact caused by exposure. The similarity of these symptoms to the most common EHS symptoms suggest that EHS is a genuine sensitivity to EMF's.
				49	**-All the symptoms in Table 4 should be considered established parts of microwave syndrome: sleep disturbance/insomnia; headache; fatigue/tiredness; depression; vision/hearing/olifactory dysfunction; concentration/attention/cognitive dysfunction; dizziness/vertigo; memory changes; restlessness/anxiety; irritability; loss of appetite; skin tingling/burning; nausea. Each of these, having shown positive results in five or more studies, are highly unlikely, therefore, to have occurred by chance.** -The strong similarities from this list and the list produced in a publication by Bise 37 years ago should be noted.
EHS Diagnosis & Treatment					
EHS Diagnosis & Treatment	Mallery-Blythe	2014	Ex. G to Elder pp.220& following	224	-Research has shown that avoidance can be the only reliable form of management. -Most reliable way to diagnose EHS is via history, ie. it is a clinical diagnosis.
EHS Diagnosis & Treatment	Genius	2011	16	6	-Treatment: avoid environmental triggers.

EHS-Likelihood of Developing EHS					
EHS-Likelihood of Developing EHS	Tuengler	2013	52	282	**-The probability of adverse effects in relation to EMF exposure depends on the individual constitution, pre0-existing disease, duration of exposure,...how sensitized the individual is by prior exposures and intensity,...**
EHS-Likelihood of Developing EHS	Hedendahl	2017	22	11	-There seems to be a big difference in sensibility to RF radiation between individuals both among humans and animals in studies.
EHS-Likelihood of Developing EHS	Herbert	2013	25		**- Children are more vulnerable than adults, and children with chronic illnesses and/or neurodevelopmental disabilities are even more vulnerable."**
EHS-Likelihood of Developing EHS	Standing Committee, Dr. Riina Bray	2015	28	1530	-We see EHS in those who have predisposing stressors such as…neurological problems,…previous prolonged exposures,.. -Those at highest risk include the fetus, children,…those with predisposing morbidities, usually cardiac and neurological…
EHS-Likelihood of Developing EHS	Mallery-Blythe	2014	Ex. G to Elder pp.220& following	224	-Children and fetuses more vulnerable. -Children have EHS and are more likely to be vulnerable to developing it as their exposure is higher. Outcomes may be worse given their developing systems and greater time for latent effects.

EHS: Nocebo effect invalid					
EHS: Nocebo effect invalid	Brussels Declaration Signed by physicians and scientists	2015	45	3	-due to study design flaws, provocation studies are not suitable to prove or disprove causality because responses to EMFs are highly individual and depend on a variety of exposure parameters -test conditions obscure evidence of a possible effect -the nocebo effect is not a relevant nor a valid explanation when considering scientifically valuable blind provocation studies, since objective biological markers [of EHS] are detectable in patients as well as animals
EHS: Nocebo effect invalid	Trower	2011	51	7-8	-Many cases where disguised, stealth, or concealed transmitters have been erected without local knowledge and similar illnesses still occur. Similar health conditions arise in animals near new transmitters. Animals do not have a psychological component (fear of wireless), yet still respond similarly in the ways that humans do.
EHS: Nocebo effect invalid	Dieudonné	2016	14		-Overall, symptoms appear before subjects start questioning effects of EMF on their health, which is not consistent with the hypothesis that EHS originates from nocebo responses to perceived EMF exposure...
EHS: Nocebo effect invalid	Heuser	2017	27		**-Functional brain MRI's of EHS patients show almost identical abnormalities**
EHS: Nocebo effect invalid	Starkey	2016	49	496-497	-Provocation studies exposed all subjects to the same short wireless signal...If the speed with which symptoms develop and types of trigger differ between individuals, then in a group

					overall lack of significance might be expected for identical acute provocations, but this does not mean that some individuals cannot respond to certain fields given adequate exposure durations, intervals between provocations and low background EMF. -Imagining a signal to be present is unlikely to explain all responses...particularly symptoms reported under blind or double-blind conditions. Many other studies support biological responses being related to the electromagnetic signal, including evidence from cultured cells, in vitro preparations, animals, plants or asleep humans, none of which "imagined" signals to be present. That living things can respond to low power RF signals is now supported by a large body of research.
EHS: Nocebo effect invalid	Tuengler	2013	52	282, 288 288	-68% of those who claim to suffer from EHS could, in fact, suffer from other conditions. With this in mind, it is no surprise that provocation studies with self-reported EHS individuals could not find any association between symptoms and EMF. -Provocation studies have assumed that symptoms would be similar and could be provoked in the short term. Thus they could not demonstrate effect. -Explains McCarty study which was based on assuming that subjective symptoms vary considerably across subjects.
EHS: Nocebo effect invalid	Marino	2012	35		**-**Explains McCarty study. -Previous provocation studies had been based on the assumption that, if it existed, EHS was a linear phenomenon. Study design used methodology known to be

					inefficient for detecting nonlinear phenomena. -Our study was designed to detect whether EHS was linear or nonlinear—it is nonlinear. We recognized the dynamic complexity, and designed our study accordingly. -Our subject developed headaches,… -We proved in a scientific fashion that EMF caused disease in this subject and did so by means of a nonlinear process. **-Rubin study was well funded by industry.**
EHS: Nocebo effect invalid	Genius	2011	16	7-8	Explanation of Rubin and other similar findings: -EHS individuals sensitive to different frequencies. Exposing them to one frequency problematic. -Tolerance can change over the long and short term depending on changing levels of the total body burden. -Delayed onset of symptoms. -Differing clinical outcomes: multiplicity of interconnected determinants. -Physiological interventions lead to recovery without psychological interventions. -Conflict of interest issues, industry affiliation, biased reporting.
EHS: Nocebo effect invalid	Pall	2016	39		See above commentary by Pall in EHS Established section.
EHS: Nocebo effect invalid	Hedendahl	2015	23	3-4	-Provocation studies critiqued: Background EMF can have considerable influence. EHS subjects may have sensitivity to many different frequencies but not all. Timing of appearance of symptoms may vary, as well as type of symptoms. -Rubin: “sham” signal with low, but not negligible signal may

					account for some positive reactions from “sham” exposure.
EHS: Nocebo effect invalid	Mallery-Blythe	2014	Ex. G to Elder pp.220& following	223-224 275-283	-Individual histories render this concept invalid in the majority of cases as does evidence of EHS symptoms in fetuses and small children. -Summarizes papers that refute the nocebo effect via demonstration of symptoms in fetuses, children, animals.
Wi-Fi is harmful to children					
Wi-Fi is harmful to children	WiFiinschools.org.uk	Accessed 2017	53		**Summarizes extensive list of papers finding adverse biological effects or damage to health from Wi-Fi frequencies.**
Wi-Fi is harmful to children	Carpenter	2012	9	5, 6 6 14-15 22	-Wi-Fi radiation in schools exceeds natural background microwave radiation by trillions of times.Long-term exposure. -May have impact on development, cognition, learning -Wi-Fi frequency is worse for brain because is most absorbable by the brain and most resonant with the water molecule -Wi-Fi in school especially harmful because pulsed and multiple sources
Wi-Fi is harmful to children	Celik	2016	10		-Rat pups exposed to Wi-Fi during gestation: oxidative brain and liver damage
Wi-Fi is harmful to children	Pall	2017	41	1 2 5-6	-I have listed 11 health effects, 7 of which have been found to be produced by Wi-Fi. Effects have been replicated more than once in studies. -Wi-Fi and other wireless may be particularly active in producing biological damage in young people. It follows that placing Wi-Fi in schools may be particularly problematic. -Observations on Wi-Fi exposures are highly probable to be correct.

				7	These include: EEG changes, neuropsychiatric changes, hormonal changes, oxidative stress, DNA damage, infertility. -Studies may greatly underestimate the damage Wi-Fi may do over much longer time periods. -"It follows…that the placement of Wi-Fi into schools around the country may well be a high level threat [sic] the health of our children as well [sic] being a threat to teachers and any fetuses teachers may be carrying, as well."
Wi-Fi is harmful to children	Trower	2011	51	19 22 23-24	-Wi-Fi in classroom is more powerful energy than having a cell tower 300m away. **-"I have never...seen a single scientist brave enough to submit for peer review a safety level of microwave radiation for a child or embryo. There is not one that exists...I challenge...industry and the government to produce a scientist who will...cite a safe level for children. In 12 years, no one has ever come forward.** -No known safe level for children. -Cumulative exposure over the lifetime of a child.
Wi-Fi is harmful to children	St. Clair summary of Radiofrequency Toolkit	2013	48	2 5	-Concern about effect of long-term exposure. **-"Given that the balance of evidence is for some adverse effect...it seems reasonable to proceed with caution."**
Wi-Fi is harmful to children	Starkey	2016	49	499-500	**-Schools...have legal responsibilities to safeguard the health, safety, well-being and development of children....But they are unable...when they have been provided with inaccurate information and the evidence of possible harm has been covered up...they have not been accurately informed of the**

					risks. **-The health of some children may be damaged as a result.** **-To prevent further possible harm, restrictions on exposures are required, particularly for children, pregnant women, and individuals with medical conditions.** **-All children in schools...need protection from the harmful effects of RF exposures and not, as is now often the case, a compulsory use of wireless devices in the classroom.** **-Children may unjustly face losing their human right to an education if they do not want to absorb RF fields every day at school.** **-Public health...cannot be protected when evidence of harm, no matter how inconvenient, is covered up.**
Wi-Fi is harmful to children	Hedendahl	2017	22	1 3	-Study measuring exposure of teachers in order to approximate children's exposure. -Summarizes studies showing bioeffects of wireless radiation. -More behavioural problems have been seen in children with higher exposure to RF compared with children with lower exposure. -Wi-Fi signal effects on animals: heart rhythm, blood pressure, oxidative stress, inflammation, DNA damage. -Wi-Fi signal effects on humans: exposure during language test showed gender-related effects on EEG in large area of the brain.
Wi-Fi is harmful to children	Herbert	2013	25		**-"In fact, there are thousands of papers that have accumulated over decades—and are now accumulating at an accelerating pace, as our ability to measure impacts becomes more sensitive-that document adverse health**

					and neurological impacts of EMF/RFR. Children are more vulnerable than adults, and children with chronic illnesses and/or neurodevelopmental disabilities are even more vulnerable." **-"We know now that there are a large array of impacts that have nothing to do with the heating of tissue. The claim from wifi proponents that the only concern is thermal impacts is now definitively outdated scientifically."** **-"EMF/RFR from wifi and cell towers can exert a disorganizing effect on the ability to learn and remember, and can also be destabilizing to immune and metabolic function. This will make it harder for some children to learn, particularly those who are already having problems in the first place."**
Wi-Fi is harmful to children	Herbert	2013	24	15	-**Children with existing neurological problems** that include cognitive, learning, attention, memory, or behavioural problems should as much as possible be provided with wired (not wireless) learning, living, and sleeping environments. -**All children should be reasonably protected** from the physiological stressor of significantly elevated EMF/RFR (wireless in classrooms or home environment). -**Monitoring the effects of wireless technology in learning and care environments should be performed…**
Wi-Fi is harmful to children	Havas	2013	21		- "The safest way to connect to the Internet in the classroom is through either Ethernet cable or through fiber optics. The worst way to connect to the Internet,

					from a health perspective, is through Wi-Fi routers. However, if Wi-Fi routers are deployed in the classroom it is essential that the routers be turned off when not in use and/or turned down to minimize exposure of students and staff. Ideally it would be useful to have a Wi-Fi free zone (commonly referred to as a "white zone") for those who are unable to tolerate this radiation. -The scientific evidence clearly shows that microwave radiation at levels well below the our federal guidelines (Health Canada's Safety Code 6, 2009) and at levels now commonly found in classrooms with Wi-Fi routers causes cancer in laboratory animals, causes heart palpitations in sensitive adults, causes reduced sperm motility and viability, and is associated with symptoms of electrosensitivity that include–but are not limited to–cognitive dysfunction, pain, fatigue, mood disorders (depression, anxiety, irritability), dizziness, nausea, weakness, skin problems, and tinnitus". -"Children are likely to be much more sensitive than adults. Students in Canadian schools with Wi-Fi are now complaining of heart palpitations and feelings of weakness and fatigue in the classroom".
Wi-Fi is harmful to children	Standing Committee, Dr. Martha Herbert	2015	28	1634-1640	-Children are not little adults. They are developing, and perturbations during windows of development may have lifelong repercussions. -Radiation penetrates deeper into the heads of children which leads to persistent stress on the cells in

					the brain, and over time, more and more serious problems can develop.
Wi-Fi is harmful to children	Mallery-Blythe	2014	video		-Wi-Fi signal strength higher than cell tower 100m away. Stewart Report says no part of a school should fall in beam of highest strength from a tower. -Symptoms happen at levels below guidelines: headache, fatigue, insomnia, indigestion. -Symptoms linked with EMF exposure: ADHD/behavioural, headache, migraine, insomnia, EHS. Particularly insomnia in children. -Children are more vulnerable. -Cell tower symptoms: fatigue, headache, sleep disturbance, loss of appetite. Many studies show this same data. -Nervous system is highly electrically dependent. -Many scientist are prediction wireless radiation to be the worst public health disaster in human history. -Industry-funded studies: 72% no effect, 28% effect. Non-industry funded studies: 33% no effect, 67% effect. -2B carcinogen. -New Zealand father won against local school Wi-Fi after boy died of brain cancer.
Wi-Fi is harmful to children	Davis Expert Report at tabs 11-13	2015	13		-Growing scientific evidence that the use of wireless devices in classrooms poses a serious health risk to children and those with any underlying illness. -Bioeffects listed. -Absorbed more deeply into children's brains, bodies, bone marrow of skull, hippocampus, hypothalamus (see tab 11, p.3) -Studies show changes in brain activity and neurotoxic effects. -Damage to reproductive systems.

					-Increased headaches in children (tab 11, p. 44) -Multiple references are provided in support of the above. Tab 11 is a literature review supporting statements at Tab 13. -Sleep, behaviour affected (tab 11, p.5) -Current exposure guidelines were not set to protect children (tab 11 p.22) -Neurological effects (tab 11, p. 44). -Sleep problems (tab 11, p. 49).
Study Bias					
Study Bias: Industry	Sears	2013	47	7 10	-68 percent of studies show significant biological effects, but industry-funded studies are ten times more likely to report no significant problems. -Health Canada has a bad track record in protecting the public, and has not disclosed details of evidence considered and how it was weighed re Safety Code 6.
Study Bias: Industry	Mallery-Blythe	2014	video		-Industry-funded studies: 72% no effect, 28% effect. Non-industry funded studies: 33% no effect, 67% effect.
Study Bias: Industry-influenced	Trower	2011	51	8-9 9 12	-Studies funded exclusively by industry least likely to report statistically significant result wrt harms. -Industrial affiliation being concealed by research scientists, as reported in Journal of Industrial Medicine -University study bias also explained. Science being corrupted by industry.
Study Bias: ICNIRP	EMFscientist.org	2017	15		-International Appeal signed by around 200 scientists engaged in the study of biological and health effects of non-ionizing radiation. -ICNIRP in 2009 made statement

					that scientific literature has provided no evidence of any adverse non-thermal effects. ICNIRP continues to make these statements despite growing scientific evidence to the contrary.
Study Bias: AGINAR	Starkey	2016	49	All 499	**-Thorough and detailed discussion and exposure of conflict of interest and lack of scientific accuracy in reporting (including misleading and incorrect statements) by Advisory Group on Non-ionising Radiation (AGINAR) report, which has been relied on internationally with regard to safety standards.** **-The denial of the existence of adverse effects of RF below guidelines is not supported by the scientific evidence (which is described).** **-The involvement of ICNIRP scientists in the misleading report calls into question the basis and validity of international exposure guidelines.**
Study Bias: ICNIRP & WHO	Hardell	2017	18		-5 of 6 WHO Core Group members of Monograph of RF had a serious conflict of interest due to affiliation with ICNIRP, and industry-loyal NGO -Close collaboration between ICNIRP and WHO retaining individuals with close connections to industry. -Conflict also arises by the same individuals reviewing the health guidelines that they themselves had set. -WHO makes no statement of these conflicts of interest in its report. -WHO statements not based on scientific evidence. “Only thermal-effect” paradigm has been rebutted by scientific

					evidence. -WHO selectively reported and omitted crucial findings. There is a striking imbalance in comments made on positive versus negative studies. -WHO has refused to accept new scientific evidence of health risks of non-thermal radiation.
Study Bias: Report to Health Canada	CAMJ	2013 & 2014	5, 6		-Royal Society of Canada which was retained to review Canada's safety standards, had a member who failed to disclose an industry contract. -Royal Society: "We realized some of these members had previously had close connections to the [radiofrequency] industry. -Dr. Anthony Miller: Panel included members with major links to industry and insufficient expertise in epidemiology. -**Dr. Martin Blank: The panel's position on maintaining the current standards is so fixed that it leads them to conclusions one would never expect from policy officials in the field of health…I am almost certain that the reluctance of the panel to be guided by biological evidence reflects a lack of expertise in cell biology.** [Note: Dr. Blank's CV is included in the Complainants' binder.]
Study Bias: Report to Health Canada	Pall	2015	40		-This article should be examined in detail. -Provides a detailed and careful explanation of the flawed methodology in the Royal Commission Report denying non-thermal effects. -Report is not a comprehensive review, but selects studies consistent with its assumptions, often ignoring studies that are inconsistent with its assumptions.

Study Bias: Provocation Studies, Rubin	Marino	2012	35		-Previous provocation studies had been based on the assumption that, if it existed, EHS was a linear phenomenon. Study design used methodology known to be inefficient for detecting nonlinear phenomena. -**Rubin study was well funded by industry.**
Safety Standards					
Safety Standards	CAMJ	2013 & 2014	5, 6		-Royal Society of Canada which was retained to review Canada's safety standards, had a member who failed to disclose an industry contract. -Royal Society: "We realized some of these members had previously had close connections to the [radiofrequency] industry. -Dr. Anthony Miller: Panel included members with major links to industry and insufficient expertise in epidemiology. -**Dr. Martin Blank: The panel's position on maintaining the current standards is so fixed that it leads them to conclusions one would never expect from policy officials in the field of health…I am almost certain that the reluctance of the panel to be guided by biological evidence reflects a lack of expertise in cell biology.** [Note: Dr. Blank's CV is included in the Complainants' binder.]
Safety Standards	Herbert	2013	25		**-"In fact, there are thousands of papers that have accumulated over decades—and are now accumulating at an accelerating pace, as our ability to measure impacts becomes more sensitive-that document adverse health and neurological impacts of**

					EMF/RFR. Children are more vulnerable than adults, and children with chronic illnesses and/or neurodevelopmental disabilities are even more vulnerable." **-"We know now that there are a large array of impacts that have nothing to do with the heating of tissue. <u>The claim from wifi proponents that the only concern is thermal impacts is now definitively outdated scientifically</u>."** **-"EMF/RFR from wifi and cell towers can exert a disorganizing effect on the ability to learn and remember, and can also be destabilizing to immune and metabolic function. This will make it harder for some children to learn, particularly those who are already having problems in the first place."**
Safety Standards	EMFscientist.org	2017	15		-International Appeal signed by around 200 scientists engaged in the study of biological and health effects of non-ionizing radiation. -Existing standards fail to protect children. -ICNIRP in 2009 made statement that scientific literature has provided no evidence of any adverse non-thermal effects. ICNIRP continues to make these statements despite growing scientific evidence to the contrary. -Guidelines do not cover long-term exposure and are insufficient to protect public health.
Safety Standards	Report of the Standing Committee on Health	2015	Ex. G to aff'd of Keven Elder p. 171	182 193	-Health Canada should review levels to ensure safety margin for Canadians, including newborn infants and children. -Recommendation that an independent scientific body

					examine whether measures taken and guidelines provided in other countries, such as France and Israel, to limit exposure of vulnerable populations, including infants, and young children in the school environment, should be adopted in Canada.
Safety Standards	Davis Expert Report at tabs 11-13	2015	13		-Absorbed more deeply into children's brains, bodies, bone marrow of skull, hippocampus, hypothalamus (see tab 11, p.3) -Studies show changes in brain activity and neurotoxic effects. -Current exposure guidelines were not set to protect children (tab 11 p.22)
Safety Standards	Pall	2017	41	5	**-Limiting safety guidelines to heating effects means that these guidelines allow exposures that are something like 7.2 million times too high.**