

In your home

The In your home set of articles article is separated into 9 sections, each of which can be individually downloaded. It is a 'work in progress' incorporating new information whenever time permits.

Section 9

Grounding & references

1. Introduction; powerfrequency (ELF) EMFs; radiofrequency (RF) EMFs; measuring EMFs; the importance of timing
2. Appliances A-C; air conditioners, amateur radio transmitters, amplifiers, electric guitars and keyboards, aquarium, baby monitors, bath hoists, battery operated equipment, battery re-charging mats, beds, blood glucose monitors, bottle warmer, bra, burglar alarm, camcorder, carbon monoxide detectors, CD player, central heating, motor-controlled chairs, clock radio, clothes dryer, coffee grinder, coffee maker
3. Computers; monitors (Visual Display Units or VDUs), wired and optical mice, health effects, parental guidelines, laptop computers, wireless enabled laptop, PDA (Personal digital assistant), computer wireless LAN (local area network), Schools' reactions, parents, broadband, computer games consoles, tablets, computers and Electrical Hypersensitivity (EHS), protection devices against EMFs from computers
4. Internet addiction; behaviour changes; cognitive changes; eating disorders; EEG; gambling; life satisfaction; limiting use; links to depression and suicide; parental effects; purpose in life
5. Cooking; electric ovens and hobs, microwave cooking, barbecues, deep fat fryers
6. Appliances D-H; dehumidifier, dishwasher, doorbell, electric (el) blankets, el can opener, el clock, el drill, el guitar, el kettle, el knife, el lawn mowers, el shavers, el shower, el toothbrush, el vehicles, electricity meter, exercise machine, extractor fan, fan, fax machines, fire alarm, fitness devices, floor polisher, food processor, foot spa, foot & hand warmer, fridge, fridge/freezer, hair curlers/tongs, hair dryers, headphones, hearing aids
7. Appliances H-S; heart pacemakers, heaters, central heating boilers, heating pads, hi-fi, etc., hostess trolleys, immersion heater, iron, Jacuzzi, musical keyboard, lift, loudspeaker, magnetic field therapy mats, meters, mixer & blender, music centre, nightlights, pagers, PDAs, pencil sharpeners, personal alarms, personal radios, pet fences, photocopiers, plasma balls, power tools, printers, projectors, radar, radios, radio transmitters, sandwich maker, sauna, scanner, security systems
8. Appliances S-Z; sewing machines, smoke detector, sockets, solar panel water heating, solar photovoltaic panels, soldering irons, spinners, stairlift, static electricity, sun beds, sun lamp, tea maker, telephone, television, TV and radio transmitters, TENS unit, toaster, toys, transformers, trouser press, tumble drier,

typewriters, vacuum cleaners, vagina speakers, washing machines, washer/dryer, waste disposal unit, water filters, water heater, water softener, water supply, wheelchairs, wristwatches

9. Grounding & 156 references

Grounding

The grounding of electrical appliances with two-wire mains leads

Many electrical appliances now come with two-wire mains leads or adapters and are often described as being double-insulated. This is done for a variety of reasons, including protecting against electric shock. It is cheaper to cover metal objects in plastic than it is to ensure good electrical earthing of exposed metal parts. Also, if you are holding a plastic object it doesn't provide an electrical return path to earth in the most unlikely event of your also happening to touch a 240v live electrical conductor, so you will not get a severe electrical shock.

The downside is that the 'workings' of all these appliances tend to 'float' to half the electrical supply voltage (i.e. to about 120 volts) and this causes them to radiate very high electric fields (often several hundreds of volts per metre nearby).

The worst offenders that we have found are televisions, electronic organs, some Hi-Fi units, laptop computers when run off their mains adapter / charger units, and battery chargers.

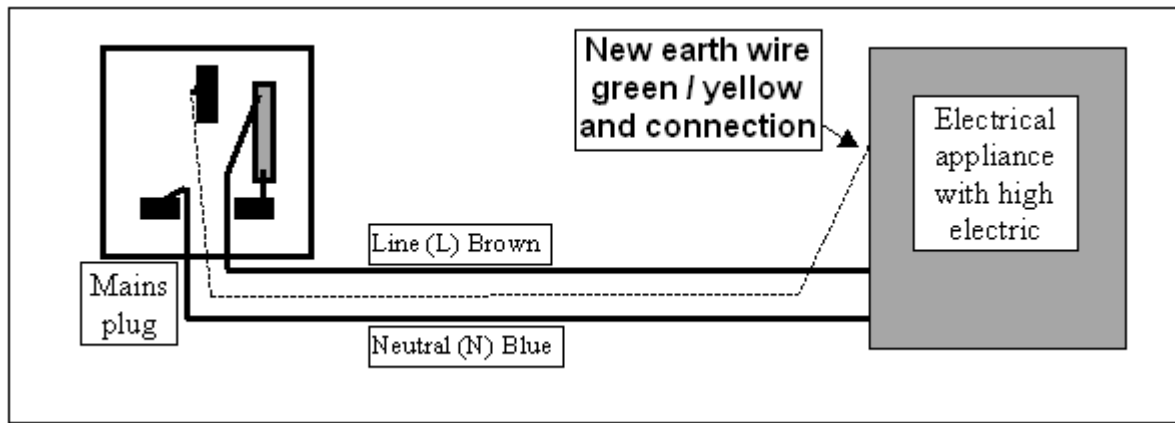
Most of these can be cured of giving off high electric fields by taking an 'earthing' wire from their mains plug to an exposed screw or piece of metal on the appliance.

In the case of an organ, or Hi-Fi unit, the braid screen of one of the audio cables is normally suitable as this is connected to the '0 volt' rail inside the unit.

In the case of a television, the braid (or outside of the co-ax connector) of the aerial lead usually makes a suitable connection point. As the television and DVD player are usually connected together it is not necessary to earth both units.

In the case of a laptop computer, any metal connector shell on the back of the computer will do. It is often convenient to use a 'crocodile' clip on the earth lead so that it is easy to attach and detach when you need to move the computer. If you have an internet connection through a dLAN (through the house wiring, rather than a telephone or wireless system), it is important to earth the laptop even if you run it off batteries, as it will pick up and re-radiate electric fields from the house wiring through the dLAN connection. We have measured 400 V/m at the keyboard of one model.

It is also possible for a qualified electronics engineer to modify the mains charger unit so that it has a three-wire mains lead and the internal 'zero volt' power supply line is connected to the electrical mains safety earth.



Fields from transformers and motors etc., fall off approximately with the cube of the distance, i.e. the field at twice the distance should be about one eighth of the value. There is little you can do to reduce these other than use low-field designs (e.g. torroidal transformers) or increase the distance between you and the source. Steel magnetic screening can be used at the equipment but is rarely economic to do this other than at the time of the manufacture of the appliance.

References:

- Abel EL** et al 2007 - *Use of electric blankets and association with prevalence of endometrial cancer* Eur J Cancer Prev 16(3):243-50 PMID: 17415095
- Ahmadi K & A Saghafi** 2013 - *Psychosocial profile of Iranian adolescents' internet addiction* Cyberpsychol Behav Soc Netw 16(7):543-8 PMID: 23614793
- Alanko T** et al 2011 - *Assessment of exposure to intermediate frequency electric fields and contact currents from a plasma ball* Bioelectromagnetics 32(8):644-51 PMID: 21538405
- Alpaslan AH** et al 2016 - *Problematic Internet use was more common in Turkish adolescents with major depressive disorders than controls* Acta Paediatr 105(6):695-700 PMID: 26849638
- Alpaslan AH** et al 2015 - *The association between internet addiction and disordered eating attitudes among Turkish high school students* Eat Weight Disord 20(4):441-8 PMID: 26049927
- Altpeter ES** et al 2006 - *Effect of short-wave (6-22 MHz) magnetic fields on sleep quality and melatonin cycle in humans: the Schwarzenburg shut-down study* Bioelectromagnetics 27(2):142-50 PMID: 16342198
- Andersen RE** et al 1998 - *relationship of physical activity and television watching with body weight and level of fatness among children: results from the Third National Health and Nutrition Examination Survey* JAMA 279(12):938-42 PMID: 9544768
- Andreou E & H Svoli** 2013 - *The association between internet user characteristics and dimensions of internet addiction among Greek adolescents* International Journal of Mental Health and Addiction 11(2):139-148
- Avendaño C** et al 2012 - *Use of laptop computers connected to internet through Wi-Fi decreases human sperm motility and increases sperm DNA fragmentation* Fertil Steril 97(1):39-45 PMID: 22112647
- Ayala F** et al 2013 - *The role of optical radiations in skin cancer* ISRN Dermatol Apr 24;2013:842359 PMID: 23710365
- Bailin A** et al 2014 - *Health implications of new age technologies for adolescents: A review of the research* Curr Opin Pediatr 26(5):605-19 PMID: 25160783
- Barbovschi M** et al 2015 - *Underage use of social network sites: It's about friends* Cyberpsychol Behav Soc Netw 18(6):328-32 PMID: 26075919

- Belanger K** et al 1998 – *Spontaneous abortion and exposure to electric blankets and heated water beds* Epidemiology 9(1):36-42 PMID:9430266
- Bener A & D Bhugra** 2013 – *Lifestyle and depressive risk factors associated with problematic internet use in adolescents in an Arabian Gulf culture* J Addict Med 7(4):236-42 PMID: 23666321
- Bilić V** et al 2014 – *Life satisfaction and school performance of children exposed to classic and cyber peer bullying* Coll Antropol 38(1):21-9 PMID: 24851593
- Bozkurt H** et al 2013 – *Prevalence and patterns of psychiatric disorders in referred adolescents with internet addiction* Psychiatry Clin Neurosci 67(5):352-9 PMID: 23859664
- Brockmann PE** et al 2016 – *Impact of television on the quality of sleep in preschool children* Sleep Med 20:140-4 PMID: 26299471
- Burch JB** et al 2006 - *Radio frequency nonionizing radiation in a community exposed to radio and television broadcasting* Environ Health Perspect 114(2):248-253 PMID: 16451862
- Carbonari K** et al 2005 – *Increased micronucleated cell frequency related to exposure to radiation emitted by computer cathode ray tube video display monitors* Genetics and Molecular Biology 28 (3); 469-474
- Carli V** et al 2013 – *The association between pathological internet use and comorbid psychopathology: a systematic review* Psychopathology 46(1):1-13 PMID: 22854219
- Carter B** et al 2016 – *Association between portable screen-based media device access or use and sleep outcomes: A systematic review and meta-analysis* JAMA Pediatr 170(12):1202-1208 PMID: 27802500
- Chang FC** et al 2015 – *The relationship between parental mediation and Internet addiction among adolescents, and the association with cyberbullying and depression* Compr Psychiatry 57:21-8 PMID: 25487108
- Chang FC** et al 2014 – *Predictors of the initiation and persistence of Internet addiction among adolescents in Taiwan* Addict Behav 39(10):1434-40 PMID: 24930050
- Cheng C & AY Li** 2014 – *Internet addiction prevalence and quality of (real) life: A meta-analysis of 31 nations across seven world regions* Cyberpsychol Behav Soc Netw 17(12):755-60 PMID: 25489876
- Chiu S-I** 2014 – *The relationship between life stress and smartphone addiction on Taiwanese university student: A mediation model of learning self-efficacy and social self-efficacy* Computers in Human Behavior 34:49-57
- Chiu S-I** et al 2013 – *An analysis on the correlation and gender difference between college students' internet addiction and mobile phone addiction in Taiwan* ISRN Addict 2013:360607 PMID: 25938115
- Cho SM** et al 2013 – *Does psychopathology in childhood predict internet addiction in male adolescents?* Child Psychiatry Hum Dev 44(4):549-55 PMID: 23242708
- Choi K** et al 2009 – *Internet overuse and excessive daytime sleepiness in adolescents* Psychiatry Clin Neurosci 63(4):455-62 PMID: 19490510
- Christakis DA** et al 2004 – *Early television exposure and subsequent attentional problems in children* Pediatrics 113(4):708-13 PMID: 15060216
- Clough-Gorr KM** et al 2008 – *Exposure to sunlamps, tanning beds, and melanoma risk* Cancer Causes Control 19(7):659-69 PMID: 18273687
- Col-Araz N** 2013 – *Evaluation of factors affecting birth weight and preterm birth in southern Turkey* J Pak Med Assoc 63(4):459-62 PMID: 23905441
- Consiglio W** et al 2003 - *Effect of cellular telephone conversations and other potential interference on reaction time in a braking response* Accid Anal Prev 35(4):495-500 PMID: 12729813
- Cook, W E** 2003 - Foodwise, Clairview books

- Corazza M** et al 2016 – *Modern electronic devices: An increasingly common cause of skin disorders in consumers* *Dermatitis* 27(3):82-9 PMID: 27172301
- Dennison BA** et al 2002 – *Television viewing and television in bedroom associated with overweight risk among low-income preschool children* *Pediatrics* 109(6):1028-35 PMID: 12042539
- De Santis V** et al 2015 – *Human exposure from pulsed magnetic field therapy mats: a numerical case study with three commercial products* *Bioelectromagnetics* 36(2):149-61 PMID: 25639237
- Dinleyici M** et al 2016 – *Media use by children, and parents' views on children's media usage* *Interact J Med Res* 5(2):e18 PMID: 27267624
- Dockerty JD** et al 1998 – *Electromagnetic field exposures and childhood cancers in New Zealand* *Cancer Causes Control* 9(3):299-309 PMID: 9684710
- Dreier M** et al 2017 – *Free-to-play: About addicted whales, at risk dolphins and healthy minnows. Monetization design and Internet gaming disorder* *Addict Behav* 64:328-333 PMID: 27178749
- Estécio MR & AE Silva** 2002 – *Chromosome abnormalities caused by computer video display monitor's radiation* *Rev Saúde Pública* 36: 330-336 PMID: 12131973
- FAC** 2002 – Food Additive Contamination, June 2002
- Falbe J** et al 2014 – *Longitudinal relations of television, electronic games, and digital versatile discs with changes in diet in adolescents* *Am J Clin Nutr* 100(4):1173-81 PMID: 25240080
- FSA** 2005 - University of Newcastle Research on the Transfer of DNA from GM Food Into Bacteria in the Human Gut, Soil Association (UK) v.2 1 July, and Nature, Biotechnology, January 2004
<http://www.soilassociation.org/web/sa/saweb.nsf/0/cc6cdacf049756b980257006003ad8ad?>
- Fu KW** et al 2010 – *Internet addiction: prevalence, discriminant validity and correlates among adolescents in Hong Kong* *Br J Psychiatry* 196(6):486-92 PMID: 20513862
- Gammon MD** 1999 – *Cigarette smoking and other risk factors in relation to p53 expression in breast cancer among young women* *Cancer Epidemiol Biomarkers Prev* 8(3):255-63 PMID: 10090304
- Garcia-Viguera C** 2003 - *Journal of the Science of Food and Agriculture* 93; 14
- George DF** 2008 - *Non-thermal effects in the microwave induced unfolding of proteins observed by chaperone binding* *Bioelectromagnetics* 29(4):324-30 PMID: 18240290
- Gittleman, AL** - Health Scientist Institute
- Gür K** et al 2015 – *Internet addiction and physical and psychosocial behaviour problems among rural secondary school students* *Nurs Health Sci* 17(3):331-8 PMID: 25494971
- Ha M** et al 2007 – *Radio-frequency radiation exposure from AM radio transmitters and childhood leukemia and brain cancer* *Am J Epidemiol* 166(3):270-9 PMID: 17556764
- Ha M** et al 2003 – *Incidence of cancer in the vicinity of Korean AM radio transmitters* *Arch Environ Health* 58(12):756-62 PMID: 15859510
- Haldimann M** et al 2007 - *Exposure to antimony from polyethylene terephthalate (PET) trays used in ready-to-eat meals* *Food Addit Contam* 24(8):860-8 PMID: 17613073
- Hale L & S Guan** 2015 – *Screen time and sleep among school-aged children and adolescents: a systematic literature review* *Slepp Med Rev* 21:50-8 PMID: 25193149
- Hallberg O & O Johansson** 2004 - *Malignant melanoma of the skin - not a sunshine story!* *Med Sci Monit* 10(7):CR336-40 PMID: 15232509
- Hallberg O & O Johansson** 2002 - *Melanoma incidence and frequency modulation (FM) broadcasting* *Arch Environ Health* 57(1):32-40 PMID: 12071358

Hancox RJ et al 2005 - *Association of television viewing during childhood with poor educational achievement* Arch Pediatr Adolesc Med 159(7):614-8 PMID: 15996992

Hancox RJ et al 2004 - *Association between child and adolescent television viewing and adult health: a longitudinal birth cohort study* Lancet 364(9430):257-62 PMID: 15262103

Hansson Mild K et al 2017 - *Exposure to the magnetic field from an induction loop pad for a hearing aid system* Int J Occup Saf Ergon 23(1):143-145 PMID: 27541365

Haque MM & S Washington 2014 - *A parametric duration model of the reaction times of drivers distracted by mobile phone conversations* Accid Anal Prev 62C:42-53 PMID: 24129320

Hardy LL et al 2006 - *Descriptive epidemiology of small screen recreation among Australian adolescents* J Paediatr Childs Health 42(11):709-14 PMID: 17044899

Hareuveny R et al 2015 - *Characterization of extremely low frequency magnetic fields from diesel, gasoline and hybrid cars under controlled conditions* Int J Environ Res Public Health 12(2):1651-66 PMID: 25647323

Hatch EE et al 1998 - *Association between childhood acute lymphoblastic leukemia and use of electrical appliances during pregnancy and childhood* Epidemiology 9(3):234-45 PMID: 9583414

Hinkley T et al 2014 - *Early childhood electronic media use as a predictor of poorer well-being: a prospective cohort study* JAMA Pediatr 168(5):485-92 PMID: 24639016

Hoff J et al 2013 - *Distracted driving and implications for injury prevention in adults* J Trauma Nurs 20(1):31-4 PMID: 23459429

Ji S et al 2011 - *Electric vehicles in China: emissions and health impacts* Environ Sci Technol 46(4):2018-24 PMID: 22201325

Johansson O 2002 - *Screen dermatitis and electrosensitivity: Preliminary observations in the human skin* Proceedings of the conference "Electromagnetic Environments and Health in Buildings, May 16-17, at the Royal College of Physicians, London, UK

Johansson et al 1999 - *A case of extreme and general cutaneous light sensitivity in combination with so-called 'screen dermatitis' and 'electrosensitivity' - a successful rehabilitation after vitamin A treatment - a case report* J Aust Coll Nutr & Env Med; 18:13-16

Johansson et al 2001 - *Cutaneous mast cells are altered in normal healthy volunteers sitting in front of ordinary TVs/PCs - results from open-field provocation experiments* J Cutan Pathol; 28: 513-519 PMID: 11737520

Jordan AB et al 2006 - *reducing children's television-viewing time: a qualitative study of parents and their children* Pediatrics 118(5):e1303-10 PMID: 17079531

Jorgensen AG et al 2016 - *Internet addiction and other behavioural addictions* Child Adolesc Psychiatr Clin N Am 25(3):509-20 PMID: 27338971

Kabali HK et al 2015 - *Exposure and use of mobile media devices by young children* 136(6):1044-50 PMID: 26527548

Kameda T et al 2013 - *Magnetic fields from electric toothbrushes promote corrosion in orthodontic stainless steel appliances but not in titanium appliances* Dent Mater J 32(6):959-69 PMID: 24240898

Karaagac AT 2015 - *Undesirable effects of media on children: Why limitation is necessary?* Indian Pediatr 52(6):469-71 PMID: 26121718

Kim K 2013 - *Association between Internet overuse and aggression in Korean adolescents* Pediatr Int 55(6):703-9 PMID: 23809177

Kleinerman RA et al 2005 - *Self-reported electrical appliance use and risk of adult brain tumors* Am J Epidemiol 161(2):136-46 PMID: 15632263

- Ko CH** et al 2015 – *Bidirectional associations between family factors and Internet addiction among adolescents in a prospective investigation* *Psychiatry Clin Neurosci* 69(4):192-200 PMID: 24836367
- Koivusilta LK** et al 2007 – *Orientations in adolescent use of information and communication technology: a digital divide by sociodemographic background, educational career, and health* *Scand J Public Health* 35(1):95-103 PMID: 17366093
- Kopp W** - US researcher, reporting on Russian findings (KR)
- Koronzai B** et al 2013 – *The mediating effect of self-esteem, depression and anxiety between satisfaction with body appearance and problematic internet use* *Am J Drug Alcohol Abuse* 39(4):259-65 PMID: 23841866
- Küçer N & T Pamukçu** 2014 – *Self-reported symptoms associated with exposure to electromagnetic fields: a questionnaire study* *Electromagn Biol Med* 33(1):15-7 PMID: 23730819
- Lachmann Bet** al 2016 – *Life satisfaction and problematic Internet use: Evidence for gender specific effects* *Psychiatry Res* 238:363-367 PMID: 27011335
- Lakshmi NK** et al 2010 – *Investigations on DNA damage and frequency of micronuclei in occupational exposure to electromagnetic fields (EMFs) emitted from video display terminals (VDTs)* *Genet Mol Biol* 33(1):154-8 PMID: 21637620
- Lam LT & EM Wong** 2015b – *Stress moderates the relationship between problematic Internet use by parents and problematic Internet use by adolescents* *J Adolesc Health* 56(3):300-6 PMID: 25703319
- Lam LT** 2015a – *Parental mental health and Internet addiction in adolescents* *Addict Behav* 42:20-3 PMID: 25462649
- Lam LT** et al 2009 – *Factors associated with Internet addiction among adolescents* *Cyberpsychol Behav* 12(5):551-5 PMID: 19619039
- Lange K** et al 2015 – *Electronic media use and insomnia complaints in German adolescents: gender differences in use patterns and sleep problems* *J Neural Transm (Vienna)* 124(Suppl1):79-87 PMID: 26577762
- Lee J** et al 2014 – *Differential resting-state EEG patterns associated with comorbid depression in Internet addiction* *Prog Neuropsychopharmacol Biol Psychiatry* 50:21-6 PMID: 24326197
- Leitgeb N** et al 2008 – *Magnetic emissions of electric appliances* *Int J Hyg Environ Health* 211(1-2):69-73 PMID: 17611151
- Lewicka M** et al 2015b – *The effect of electromagnetic radiation emitted by display screens on cell oxygen metabolism – in vitro studies* *Arch Med Sci* 11(6):1330-9 PMID: 26788099
- Lewicka M** et al 2015 – *The impact of electromagnetic radiation of different parameters on platelet oxygen metabolism – in vitro studies* *Adv Clin Exp Med* 24(1):31-35 PMID: 25923084
- Li P** et al 2009 – *Maternal occupational exposure to extremely low frequency magnetic fields and the risk of brain cancer in the offspring* *Cancer Causes Control* 20(6):945-55 PMID: 19224378
- Li W** et al 2014 – *Family factors in internet addiction among Chinese youth: a review of English- and Chinese-language studies* *Computers in Human Behaviour* 31:393-411
- Lim JA** et al 2015 – *Are adolescents with internet addiction prone to aggressive behaviour? The mediating effect of clinical comorbidities on the predictability of aggression in adolescents with internet addiction* *Cyberpsychol Behav Soc Netw* 18(5):260-7 PMID: 25902276
- Lin YH & SS Gau** 2013 – *Association between morningness-eveningness and the severity of compulsive internet use: the moderating role of gender and parenting style* *Sleep Med* 14(12):1398-404 PMID: 24157101

- Liu XY** et al 2007 – [Risk factors in the living environment of early spontaneous abortion pregnant women] *Zhongguo Yi Xue Ke Xue Yuan Xue Bao* 29(5):661-4 PMID: 18051725
- Lopez-Berenguer** et al 2007 - *Effects of microwave cooking conditions on bioactive compounds present in broccoli inflorescences* *J Agric Food Chem* 55(24):10001-7 PMID: 17979232
- López-Fernández O** et al 2013 – *The problematic internet entertainment use scale for adolescents: Prevalence of problem internet use in Spanish high school students* *Cyberpsychology, behaviour, and Social Networking* 16(2):108-118
- McNicol ML & EB Thorsteinsson** 2017 – *Internet addiction, psychological distress, and coping responses among adolescents and adults* *Cyberpsychol Behav Soc Netw* 20(5):296-304 PMID: 28414517
- Mills KL** 2014 – *Effects of Internet use on the adolescent brain: despite popular claims, experimental evidence remains scarce* *Trends Cogn Sci* 18(8):385-7 PMID: 25064168
- Mortazavi S** et al 2014 – *Electromagnetic radiofrequency Radiation Emitted from GSM Mobile Phones Decreases the Accuracy of Home Blood Glucose Monitors* *J Biomed Phys Eng* 4(3):111-6 PMID: 25505778
- Mueller PA & DM Oppenheimer** 2014 – *The Pen is Mightier Than the Keyboard: Advantages of Longhand Over Laptop Note Taking* *Psychol Sci* 25(6):1159-1168 PMID: 24760141
- O’Leary E** et al 2004 – *Re:Use of electric bedding devices and risk of breast cancer in African-American women* *Am J Epidemiol* 159(12): 1201
- Orsal O** et al 2013 – *Evaluation of internet addiction and depression among university students* *Procedia – Social and Behavioral Sciences* 82:445-454
- Papageorgiou CC** 2011 – *Effects of wi-fi signals on the p300 component of event-related potentials during an auditory hayling task* *J Integr Neurosci* 10(2):189-202 PMID: 21714138
- Park DK** et al 2006 - *Microbial inactivation by microwave radiation in the home environment* *J Environ Health* 69(5):17-24 PMID: 17190338
- Park SK** et al 2004 – *Ecological study on residences in the vicinity of AM radio broadcasting towers and cancer death: preliminary observations in Korea* *Int Arch Occup Environ Health* 77(6):387-94 PMID: 15338224
- Pesonen AK** et al 2010 - *Sleep duration and Regularity are Associated with Behavioral Problems in 8-year-old children* *Int J Behav Med* 17(4):298-305 PMID: 19844792
- Piguet C** et al 2015 – *What keeps female problematic Internet users busy online?* *Eur J Pediatr* 174(8):1053-9
- Prabhakaran MC** et al 2016 – *Factors associated with internet addiction among school-going adolescents in Vadodara* *J Family Med Prim Care* 5(4):765-769 PMID: 28348987
- Punamäki RL** et al 2007 – *Use of information and communication technology (ICT) and perceived health in adolescence: the role of sleeping habits and waking-time tiredness* *J Adolesc* 30(4):569-85 PMID: 16979753
- Rajani R** et al 2008 – *Wii seems safe with pacemakers* *BMJ* 337:a3103 PMID: 19109329
- Reif JS** et al 2005 – *Human Responses to Residential RF Exposure Final report 2 ROI ES008117-04*
- Rikkers W** et al 2016 – *Internet use and electronic gaming by children and adolescents with emotional and behavioural problems in Australia – results from the second child and adolescent survey of mental health and wellbeing* *BMC Public Health* May 13;16:399 PMID: 27178325
- Romer D** et al 2013 – *Older versus newer media and the well-being of United States youth: results from a national longitudinal panel* *J Adolesc Health* 52(5):613-9 PMID: 23375827

- Rosen LD** et al 2014 – *Media and technology use predicts ill-being among children, preteens and teenagers independent of the negative health impacts of exercise and eating habits* *Comput Human Behav* 35:364-375 PMID: 25717216
- Sage C & DO Carpenter** 2009 - *Public health implications of wireless technologies* *Pathophysiology* 16(2-3):233-46 PMID: 19285839
- Sage C** et al 2007 - *Personal digital assistant (PDA) cell phone units produce elevated extremely-low frequency electromagnetic field emissions* *Bioelectromagnetics* 28(5):386-92 PMID: 17357117
- Sakurai T** et al 2009 – *Intermediate frequency magnetic fields generated by an induction heating (IH) cooktop do not affect genotoxicities and expression of heat shock proteins* *Int J Radiat Biol* 85(10):883-90 PMID: 19863202
- Serino M** et al 2016 – *Pokémon Go and augmented virtual reality games: a cautionary commentary for parents and paediatricians* *Curr Opin Pediatr* 28(5):673-7 PMID: 27479151
- Seyrek S** et al 2017 – *Factors associated with Internet addiction: Cross-sectional study of Turkish adolescents* *Pediatr Int* 59(2):218-222
- Sirav B & N Seyhan** 2009 – *Radio frequency radiation (RFR) from TV and radio transmitters at a pilot region in Turkey* *Radiat Prot Dosimetry* 136(2):114-7 PMID: 19671591
- Spada MM** 2014 – *An overview of problematic internet use* *Addict Behav* 39(1):3-6 PMID: 24126206
- Spartari G** et al 2007 - *[Screen dermatitis and visual display units]* *G Ital Med Lav Ergon* 29(3 Suppl):846-7 PMID: 18409994
- Stavropoulos V** et al 2017 – *The longitudinal association between anxiety and Internet addiction in adolescence: The moderating effect of classroom extraversion* *J Behav Addict* May 18:1-11 PMID: 28517956
- Strasburger VC** et al 2010 – *Health effects of media on children and adolescents* *Pediatrics* 125(4):756-67 PMID: 20194281
- Subrahmanyam K** et al 2000 – *The impact of home computer use on children's activities and development* *Future Child* 10(2):123-44 PMID: 11255703
- Swing EL** et al 2010 – *Television and video game exposure and the development of attention problems* *Pediatrics* 126(2):214-21 PMID: 20603258
- Szabó J** et al 2006 – *Occupational 50 Hz magnetic field exposure measurements among female sewing machine operators in Hungary* *Bioelectromagnetics* 27(6):451-7 PMID: 16622866
- Tan TC** et al 2014 – *Lifestyle risk factors associated with threatened miscarriage: A case-control study* *J Fertil In Vitro* 2(2):100123
- Tang J** et al 2014 – *prevalence of internet addiction and its association with stressful life events and psychological symptoms among adolescent internet users* *Addict Behav* 39(3):744-7 PMID: 24388433
- Tell RA** et al 2014 - *Very-low-frequency and low-frequency electric and magnetic fields associated with electric shuttle bus wireless charging* *Radiat Prot Dosimetry* 158(2):123-34 PMID: 24043876
- Tomitsch J** et al 2009 – *Survey of electromagnetic field exposure in bedrooms of residences in lower Austria* *Bioelectromagnetics* 31(3):200-8 PMID: 19780092
- Tomopoulos S** et al 2014 – *Children under the age of two are more likely to watch inappropriate background media than older children* *Acta Paediatr* 103(5):546-52 PMID: 24812713
- Von Olshausen G** et al 2016 – *Electromagnetic interference in implantable cardioverter defibrillators: present but rare* *Clin Res Cardiol* 105(8):657-65 PMID: 26825328
- Waqas A** et al 2016 – *Exploring the association of ego defense mechanisms with problematic internet use in a Pakistani medical school* *Psychiatry Res* 243:463-8 PMID: 27504797

- Wang CW** et al 2014 - *Prevalence and correlates of video and internet gaming addiction among Hong Kong adolescents: a pilot study* ScientificWorldJournal 2014:874648 PMID: 25032242
- Watanabe F** et al 1998 - *Effects of Microwave Heating on the Loss of Vitamin B(12) in Foods* J Agric Food Chem 46(1):206-10 PMID: 10554220
- Weis A** et al 2015 - *Emissions and cost implications of controlled electric vehicle charging in the U.S. PJM connection* Environ Sci Technol 49(9):5813-9 PMID: 25830471
- West J** et al 2013 - *Multifocal breast cancer in young women with prolonged contact between their breasts and their cellular phones* Case Rep Med 2013:354682 PMID: 24151509
- Wu AM** et al 2013 - *Psychological needs, purpose in life, and problem video game playing among Chinese young adults* Int J Psychol 48(4):583-90 PMID: 22506646
- Wu CST** et al 2016 - *Parenting approaches, family functionality, and internet addiction among Hong Kong adolescents* BMC Pediatr 16:130 PMID: 27538688
- Wu XS** et al 2016 - *Prevalence of Internet addiction and its association with social support and other related factors among adolescents in China* J Adolesc 52:103-11 PMID: 27544491
- Yadav P** et al 2013 - *internet addiction and its correlates among high school students: a preliminary study from Ahmedabad, India* Asian J Psychiatr 6(6):500-5 PMID: 24309861
- Yan W** et al 2014 - *The relationship between recent stressful life events, personality traits, perceived family functioning and internet addiction among college students* Stress Health 30(1):3-11 PMID: 23616371
- Yau YH** et al 2013 - *Problematic internet use, mental health and impulse control in an online survey of adults* J Behav Addict 2(2):72 PMID:24294501
- Yildirim ME** et al 2015 - *What is harmful for male fertility: cell phone or the wireless Internet?* Kaohsiung J Med Sci 31(9):480-4 PMID: 26362961
- Yoo YS** et al 2014 - *Associations between overuse of the internet and mental health in adolescents* Nurs Health Sci 16(2):193-200 PMID: 23991723
- Yu M-O** et al 2014 - *A study on smartphone addiction, mental health and impulsiveness for high school students at Korea* Journal of Digital Convergence 12(4):409-18
- Yuan Y** et al 2007 - *A comparative study of acrylamide formation induced by microwave and conventional heating methods* J Food Sci 72(4):C212-6 PMID: 17995763
- Yuksel T & JJ Michalek** 2015 - *Effects of regional temperature on electric vehicle efficiency, range and emissions in the United States* Environ Sci Technol 49(6):3974-80 PMID: 25671586
- Zajdel R** et al 2012 - *The sound of a mobile phone ringing affects the complex reaction time of its owner* Arch Med Sci 8(5):892-8 PMID: 23185201
- Zhu K** et al 2003 - *Four authors reply to O'Leary letter - Use of electric bedding devices and risk of breast cancer in African-American women* Am J Epidemiol 19(12):1201
- Zhu K** et al 2003 - *Use of electric bedding devices and risk of breast cancer in African-American women* Am J Epidemiol 158(8):798-806 PMID: 14561670
- Zimmerman FJ & DA Christakis** 2005b - *Children's television viewing and cognitive outcomes: a longitudinal analysis of national data* Arch Pediatr Adolesc Med 159:619-625 PMID: 15996993
- Zimmerman FJ** et al 2005a - *Early cognitive stimulation, emotional support, and television watching as predictors of subsequent bullying among grade-school children* Arch Pediatr Adolesc Med 159(4):384-8 PMID: 15809395
- Zuzak TJ** et al 2009 - *Magnetic toys: forbidden for pediatric patients with certain programmable shunt valves?* Childs Nerv Syst 25(2):161-4 PMID: 19057906