

Before the  
Federal Communications Commission  
Washington, D.C. 20554

In the Matter of	)	
	)	
Connect America Fund	)	WC Docket No. 10-90
	)	
A National Broadband Policy for Our Future	)	GN Docket No. 09-51
	)	
Establishing Just and Reasonable Rates for Local Exchange Carriers	)	WC Docket No. 07-135
	)	
High-Cost Universal Service Support	)	WC Docket No. 05-337
	)	
Developing an Unified Intercarrier Compensation Regime	)	CC Docket No. 01-92
	)	
Federal-State Joint Board on Universal Service	)	CC Docket No. 96-45
	)	
Lifeline and Link Up	)	WC Docket No. 03-109

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Washington, DC 20554

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## **EMR POLICY INSTITUTE (EMRPI) REPLY**

### **INTRODUCTION**

1. If the FCC proceeds with demanding the deployment of broadband everywhere using a “technology neutral” stance to evaluate proposals, it is likely that much of the country will be continuously blanketed with wireless broadband that adversely affects the health of numerous citizens who have not consented to this exposure. Moreover, the deployment of wireless broadband may force these citizens to do without any services delivered only by wireless broadband or flee from areas with wireless broadband. In estimating the “cost” of proposals, the FCC should take into account the cost if wireless broadband causes existing wired infrastructure to be lost. The FCC should calculate the longer range costs of substantial numbers of people becoming ill, unable to participate in the “National Wireless Broadband Initiative,” losing the property values of homes and businesses bathed in wireless signals, losing privacy, losing security, being charged much more causing an about face that requires the rebuilding of wired infrastructure.

**DESPITE “THE MOST FORMATIVE-INDEED TRANSFORMATIVE-PROCEEDING EVER IN THE COMMISSION’S HISTORY” (FCC Acting Chairman Copps), THIS PROPOSED RULEMAKING DOES NOT COMPLY WITH THE NATIONAL ENVIRONMENTAL POLICY ACT. (NEPA)**

2. The FCC is responsible for compliance with NEPA under the regulations issued by the President's Council on Environmental Quality (CEQ) found at 40 CFR 1500. (Emphasis added).

*The primary purpose of an environmental impact statement is to serve as an action-forcing device to insure that the policies and goals defined in the Act are infused into the ongoing programs and actions of the Federal Government. 40 CFR 1502.*

Use the NEPA process to identify and assess the reasonable alternatives to proposed actions that will avoid or minimize adverse effects of these actions upon the quality of the human environment. 40 CFR 1500.2 (e)1.

3. The studies set forth in recent EMRPI Comments and Replies demonstrate to the FCC that the use of wireless to provide high speed internet under the Broadband Plan will have very significant environmental impacts because wireless broadband would greatly expand the human-occupied areas subject to electromagnetic radiation and will increase the quantity of electromagnetic radiation

exposing the public. An Environmental Impact Statement is required to identify and assess reasonable alternatives to using technology that increases the electromagnetic radiation over so large an area and population

4. “The FCC does not have the expertise to evaluate whether the standard (RF safety limits) is appropriate.” (Julius Knapp, Director of FCC Office of Engineering and Technology in response to Congressman Kucinich’s question whether the FCC’s RF safety standards are appropriate to protect children and vulnerable adults and others at Sept. 25, 2008 Congressional Hearing.)

<https://house.resource.org/110/org.c-span.281358-1.pdf> p.107, pp.224-225. The FCC has not even asked any of the federal health agencies to evaluate the effect on the lives of humans, plants and other animals from this proposal. No government agency studies the biological effects of continuous exposure to RF radiation from wireless devices and antennas. The FCC's new proposal fails to outline how wireless infrastructure will be monitored and regulated. It relies entirely on voluntary compliance from the telecom industry.

5. EMRPI shows the necessity for NEPA compliance in its 2009 Comment and Reply in “A National Broadband Plan for Our Future” GN Docket No. 09-51. EMRPI submitted both its request for extension of time and its 71 pages of 2009 comments in this proceeding (FCC 11-13 on April 17, 2011) as Appendix A June 7, 2009 Comments filed in GN Docket No. 09-51, 48 pages; with Exhibits 1-52; and Appendix B Comments filed July 18, 2009 GN Docket No. 09-51, 23 pages; with Exhibits 53-65.

6. Risks to human health, affidavits of personal injury from wireless broadband, the need to favor wired infrastructure over wireless and EMRPI standing are well documented in Appendix A and B. Despite a Congressional Mandate that standards for RF radiation protection of the public should be adequate, appropriate and necessary, the federal government’s and particularly the FCC’s failure to act to protect the public from nonionizing radiation should nullify any claim to preemption. Appendix A, Paragraphs 16-20, 49-61. Appendix B, Paragraphs 2-7. The right of states to protect their citizens prevents the FCC from compelling the states to implement this proposal. Appendix A, Paragraph 71-76.

7. Various states and the EU have called for greater precaution. Appendix A, Paragraphs 20, 25. Appendix B, Paragraphs 8-11. The National Academies of Science finds the FCC RF Safety Standards deficient. Appendix A, Paragraph 28-30,32. Children are particularly at risk. Appendix A, Paragraph 26. The FDA nominated wireless RF radiation for toxicological studies noting that the FCC is not a health agency and the standards have not kept up with new scientific information. Appendix

A, Paragraph 31. The BioInitiative Report makes the same findings and urges an immediate reduction in current exposures. Appendix A, Paragraphs 33-34; Exhibits 48-50. BioInitiative Report co-editor and author Cindy Sage updates evidence that RF radiation harms humans at levels acceptable to the FCC. Appendix B, Paragraph 12. German physicians working with scientists documented that the risk for patients living 5 years within 400 meters of a cellular transmission site trebled. Appendix A, Paragraph 35; Exhibit 51. International scientific publications show hazards far below FCC RF and EMR limits. Appendix A, Paragraph 62-70. Wireless broadband and cell antennas need to be kept away from schools. Appendix A, Paragraph 36-48. There are other ways to send broadband signal other than through people. Fiber optic is a superior method of deploying broadband for a variety of reasons. Appendix B, Paragraph 23-27.

**No Ruling on Request for Extension of Time Pending Disclosures of Key Information.**

8. EMRPI's April 17, 2011 filing requested an extension of time to file comments until a NEPA Evaluation has been completed and the map of the areas that would be served is provided and attached. No response to this request for extension of time has been received. No NEPA evaluation has been completed. No map of the areas to be affected has been provided. There has been no disclosure of the anticipated frequencies and amount of electromagnetic radiation each person may be subjected to on a daily basis, what current research discloses about the short- and long-term consequences of such radiation exposure, nor a comparison of the amount of energy required to generate and transmit wired and wireless broadband signals.

**Environmental Health Trust Comments adopted.**

9. In addition to the comments previously filed by the EMRPI in 2009, EMRPI concurs with and adopts the Comment filed in this proceeding by L. Loyd Morgan, Sr. Research Fellow of the Environmental Health Trust.

**ELECTROHYPERSENSITIVE CITIZENS' AMERICANS WITH DISABILITIES ACT (ADA) AND CIVIL RIGHTS VIOLATED**

10. This proposed rulemaking violates the rights of citizens with electrohypersensitivity. EHS is defined by the World Health Organization as: "...a phenomenon where individuals experience adverse health effects while in the vicinity of devices emanating electric, magnetic, or electromagnetic fields." There are a significant number of people who are sensitive to electromagnetic fields. Appendix A at paragraphs 10-15, 21 and Exhibits 3,5-13, 18, 19, 24-26, 29, 31, 33-36, 39-41. Appendix B paragraphs

13-20; Exhibits 58-64.

11. The U.S. Architectural and Transportation Barriers Compliance Board (Access Board) provides an overview of those sensitive to electromagnetic fields. The Access Board, "recognizes that multiple chemical sensitivities and electromagnetic sensitivities may be considered disabilities under the ADA if they so severely impair the neurological, respiratory or other functions of an individual that it substantially limits one or more of the individual's major life activities." "Another California Department of Health Services survey has found that 3 percent of the people interviewed reported that they are unusually sensitive to electric appliances or power lines." P. LeVallois, et al., "Prevalence and Risk Factors of Self-Reported Hypersensitivity to Electromagnetic Fields in California," in California's EMF Program, "An Evaluation of the Possible Risks From Electric and Magnetic Fields (EMFs From Power Lines, Internal Wiring, Electrical Occupations and Appliances, Draft 3 for Public Comment, April 2001" <http://www.access-board.gov/research/ieq/intro.cfmj> Appendix 3.

12. This hypersensitivity to electromagnetic radiation is growing rapidly. Hallberg and Oberfeld1 report a prevalence of electrohypersensitivity (EHS) that has increased from less than 2% prior to 1997 to approximately 10% by 2004 and is expected to affect 50% of the population by 2017. 1. Hallberg O, Oberfeld G. Letter to the Editor: Will we all become electrosensitive? *Electromagn Biol Med* 2006; 25: 189-91. Havas found over 35% of her subjects' heart rates doubled in response to DECT cordless phone base stations being plugged in three feet away. Provocation Study showing how microwave radiation from DECT phone affects autonomic nervous system. M. Havas, J. Marrongelle, B. Pollner, E. Kelley, C.R.G. Rees, L. Tully; *Non-Thermal Effects and Mechanisms of Interaction Between Electromagnetic Fields and Living Matter. Eur. J. Oncol. - Library Vol. 5 p. 273. National Institute for the Study and Control of Cancer and Environmental Diseases "Bernardino Ramazzini" Bologna, Italy 2010.* [http://electromagnetichealth.org/wp-content/uploads/2010/10/Havas\\_HRV\\_Ramazzini1.pdf](http://electromagnetichealth.org/wp-content/uploads/2010/10/Havas_HRV_Ramazzini1.pdf)

13. Just this month, the Council of Europe Committee on Environment, Agriculture, Local and Regional Affairs unanimously recommended reduction in electromagnetic radiation levels across the entire spectrum of frequencies based upon health considerations citing *The BioInitiative Report* (referenced numerous times in EMRPI Exhibits and ignored by the FCC). Research performed by Professor Dominique Belpomme, President of the Association for Research and Treatments Against Cancer (ARTAC), on more than 200 people describing themselves as electrosensitive succeeded, with corroborative results of clinical and biological analyses, in proving that there was such a syndrome of intolerance to electromagnetic fields across the whole spectrum of frequencies. According to these results, not only proximity to the sources of electromagnetic emissions was influential, but also the

time of exposure and often concomitant exposure to chemicals or to (heavy) metals present in human tissues. In this context, Sweden has granted sufferers from electromagnetic hypersensitivity the status of persons with reduced capacity so that they receive suitable protection. Paragraph 60 “The potential dangers of electromagnetic fields and their effect on the environment.”

<http://assembly.coe.int/main.asp?Link=/documents/workingdocs/doc11/edoc12608.htm>

14. Other countries have already recognized EHS as a functional impairment attributed to electromagnetic exposure:

EHS is defined by the World Health Organization as: “...a phenomenon where individuals experience adverse health effects while in the vicinity of devices emanating electric, magnetic, or electromagnetic fields.”

In Sweden, it is classified as a disability and health care facilities with low levels of exposure to electromagnetic fields and radiofrequency radiation are available. The Canadian Human Rights Commission report also acknowledges environmental sensitivity attributed to electromagnetic exposure. (28) Researchers estimate that approximately 3% of the population has severe symptoms of EHS, and another 35% of the population has moderate symptoms such as an impaired immune system and chronic illness (Havas, 2007). <http://www.weepinitiative.org/talkingtoyourdoctor.pdf>

## **MEDICAL IMPLANT MALFUNCTIONS - ADA and CIVIL RIGHTS VIOLATIONS**

15. The proposed actions of this rulemaking will endanger citizens with electronic medical implants that are vulnerable to electromagnetic interference (EMI) from wireless transmissions. A growing number of people rely on various types of medical implants to maintain their health. Eight to ten percent of the population have implants. EMI can prevent the normal therapeutic function of these devices, reset or reprogram the device, bring damaging electrical energy into the device or the body of the person with the implant and even cause injury, including death. Abandonment of landline phones is untenable for Americans with Implanted Medical Devices (IMDs) because of the danger that EMI from cell phones, antennas, and other wireless devices and infrastructure can bring about life- and health-threatening malfunctions of these medically necessary devices. Compliance with NEPA and the ADA requires that the FCC protect Americans who have IMDs from harm to their health and well being from EMI with these medically necessary devices.

16. EMRPI submits here the Comment filed by Gary Olhoeft PhD, Professor of Geophysics at Colorado School of Mines. in FCC Docket No. ET-10-120 on the [www.regulations.gov](http://www.regulations.gov) website at: <http://www.regulations.gov/#!documentDetail;D=FDA-2010-N-0291-0029.1> on July 15, 2010 (tracking number 80b1a6f5). Prof. Olhoeft, who is also an electrical engineer, has a Deep Brain Stimulator to treat his Parkinson’s Disease and has done extensive research on EMI effects on IMDs.

His comment provides an extensive list of peer-reviewed published scientific papers on this issue. He has also researched the number of Americans with IMDs with the National Institutes of Health whose estimate is 8-10% of the population, approximately 20-25 million Americans. See also Prof. Olhoeft's 20-minute presentation on YouTube entitled, "Electromagnetic interference with medical implants," presented at The EMR Policy Institute Conf., 8 Nov 2009, Colorado School of Mines, Golden, CO at: [http://www.youtube.com/results?search\\_query=olhoeft&aq=f](http://www.youtube.com/results?search_query=olhoeft&aq=f) ). Slides 12-18 from Prof. Olhoeft's PowerPoint that references the NIH data are appended to this EMRPI Reply document.

## **WIRELESS BROADBAND SHOULD NOT BE DEPLOYED**

### **Landlines are safe.**

17. Children, people with medical implants, people with Radiofrequency Sickness, and people who don't want to increase their risk of cancer can use only landlines. Published research on RF radiation exposure indicates increased cancer incidence, altered blood glucose levels, weakened blood-brain barrier. Many in the public cannot use any cordless or wireless phone without developing headaches that are often severe.

### **Landlines are secure. Cabled phones ensure privacy.**

18. Using mobile phones and wireless internet devices makes people vulnerable to hackers who commit financial fraud. It makes us vulnerable to terrorists.

### **Landlines are reliable.**

19. During power outages and natural disasters, landlines are dependable. Teleconferencing can be unreliable with broadband connections. Failure to initiate a conference call is a common problem with VoIP (Voice over Internet Protocol) carriers. Teleconference systems often cannot decode the DTMF tones sent by VoIP service providers so that the systems are unable to recognize some of the keys entered for the passcode resulting in failure to initiate the teleconference. VoIP calls are also often dropped midstream. Wireless telecom equipment can cause disasters. ABC News confirmed on April 26, 2009 that the Malibu, California fires were caused by utility poles overburdened by cellular phone gear.

### **Landlines are affordable.**

20. The infrastructure for landlines already exists. Mobile phone fees are unregulated.

Mobile phones and computers need constant repair, upgrades and replacement. Seniors and low-income citizens cannot afford this. Equipment for landlines is durable and economical.

**Landlines are easy to use.**

21. Imagine people with Alzheimers or other dementia trying to learn how to initiate computer/VoIP calls.

**Landlines are Green.**

22. Corded landlines require minimal electricity compared with antennas that emit radiation continuously. Cellphones require recharging. This is not the time to require new devices or install new infrastructure that demands more electricity production.

**The FCC has the duty to facilitate communications for all citizens.**

23. Landline telephone service is absolutely essential to many people and must be preserved. There is a portion of the populace who cannot use wireless technologies due to health constraints, especially those with electromagnetic sensitivities. This prevents them from using the cellular phone system. These people rely exclusively on the landline switched telephone network for voice communication. Removing landline service would deny these people access to phone service, a fundamental and essential right and resource. This would also constitute a serious violation of the ADA. In light of these facts, it is clear that elimination of landline service should be prohibited.

**REQUEST FOR HEARING**

24. Because the FCC has failed to disclose substantial amounts of relevant information necessary for considered debate, because of the constantly evolving discoveries of adverse effects to the health of humans, bees and other organisms from wireless broadband radiation, because of noncompliance with NEPA, ADA and the U.S. Constitution and because the EMRPI has evidence that the FCC reliance on the industry to self report its NEPA compliance is totally misplaced (i.e., the industry exceeds the EMR limits more often than complying with the EMR limits), EMRPI requests a hearing on this FCC proposed rulemaking.

**CONCLUSION**

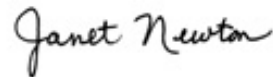
25. The FCC's proposal values wireless telecom services more than city and state charters, the Americans with Disabilities Act, and the Constitution and human health. This proposal clearly



promotes the interests of telecom corporations over citizens' health and safety. Citizens must be allowed the choice to keep landline phones. Landlines are safe, secure, reliable and affordable. Mobile phones have not been proven safe. Citizens have the right to choose a landline phone. Citizens have the right to opt out of wireless devices. If the FCC's proposal passes, citizens will be denied the right to choose a landline. Existing landlines should not be replaced with wireless infrastructure. The FCC's duty is to facilitate communications for the whole country. Its new proposal ignores issues of health, safety, privacy, affordability, reliability and security.

Respectfully submitted by

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**Appendix to Reply of The EMR Policy Institute in FCC 11-13, 20 May 2011.**

**Slides 12-18 from PowerPoint from Presentation of Gary Olhoeft PhD -  
Electromagnetic Interference with Medical Implants.**

See Prof. Olhoeft's 20-minute presentation on YouTube entitled, "Electromagnetic interference with medical implants," presented at The EMR Policy Institute Conf., 8 Nov 2009, Colorado School of Mines, Golden, CO at:

[http://www.youtube.com/results?search\\_query=olhoeft&aq=f](http://www.youtube.com/results?search_query=olhoeft&aq=f) ).

Professor of Geophysics at Colorado School of Mines, Professor Olhoeft specializes in Electrical Engineering, Physics and Solid State Physics.

Electromagnetic energy can play havoc with cutting edge medical implants. Translating the complex science and drawing upon personal experience of such interference with his own implant, Dr. Olhoeft's information poses important public policy questions on protecting the disabled from interference. <http://inside.mines.edu/~golhoeft/>

# Medical Implants

- Cardiac pacemakers/defibrillators
- Neurostimulators (Deep Brain Stimulators)  
for Parkinson's Disease  
Obsessive Compulsive Disorder  
Depression
- Infusion pumps (diabetes)
- Artificial Hearts
- Metal rods to support broken bones
- Spinal stimulators
- Hearing aids

# Medical Implants

One definition of implants is as having a minimum lifespan of 3 months, as penetrating living tissue, as having a physiologic interaction, and as being retrievable.

There is no tracking for medical implant devices (MIDs), but NIH says they have been used widely for more than 40 years, and it is estimated that 8 percent to 10 percent of Americans (20-25 million people) currently have such a device.

# Interference with Medical Implants

- Interference can:
  - Prevent normal therapeutic function
  - Reset or reprogram the device
  - Bring damaging energy into the device or body
  - Cause injury including death



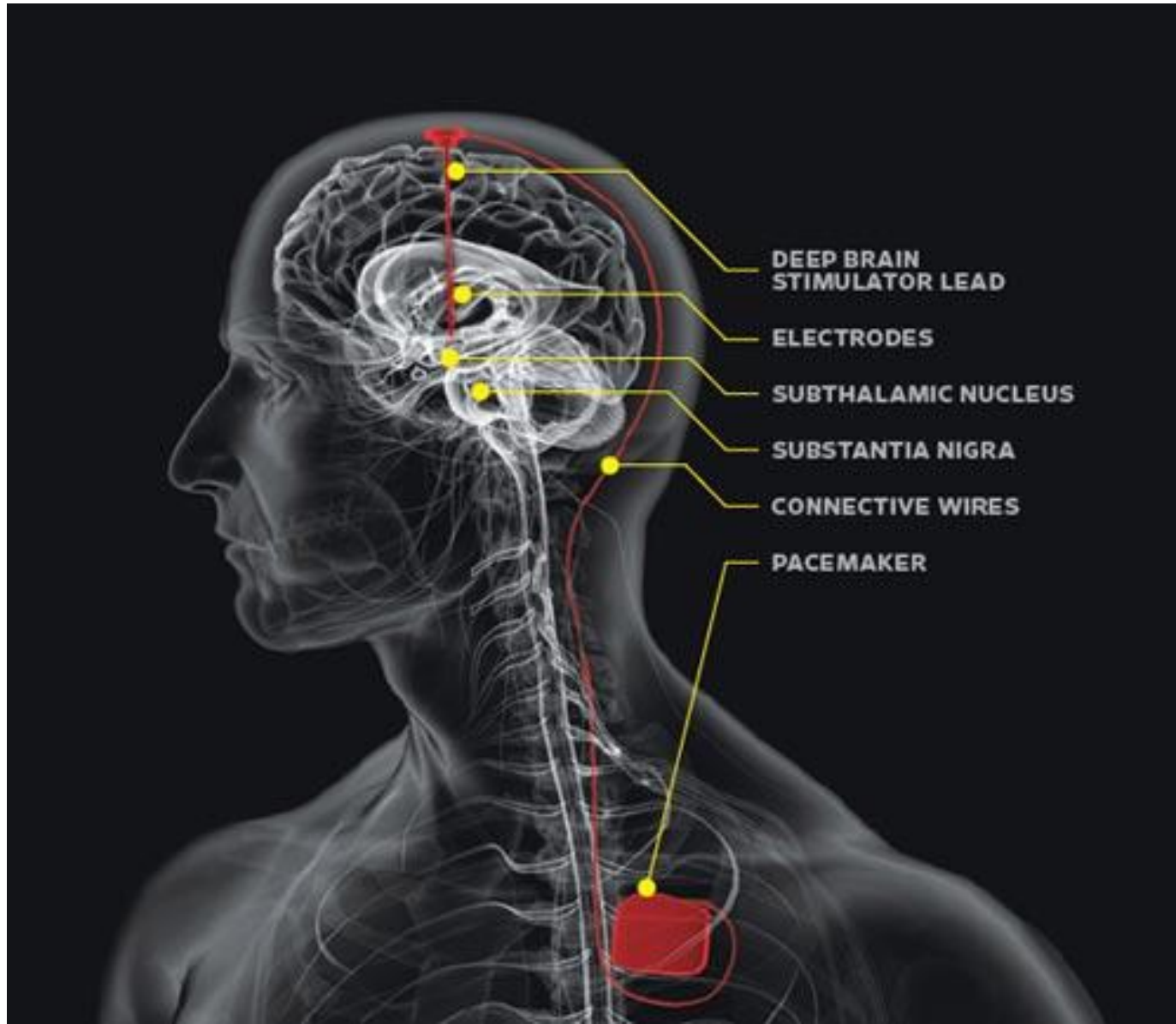
# EMI/RFI

- Any metal object can act as antenna
- If the metal is not the right size, shape and orientation, it will not be very efficient, but still an antenna



- A metal tooth filling can be a radio receiver

# The red DBS parts are metal



# Medtronic Kinetra DBS Patient Manual

- Lists more than 16 pages of EMI warnings:
  - Cardiac Defibrillators (1 kV), Diathermy and MRI
  - Theft detectors and security gates (airports, schools, courts, libraries and retail stores)
  - CB or ham radios, TV & radio transmitting towers
  - Electric arc welding equipment
  - Induction heaters and Industrial blast furnaces
  - Power lines, electric substations and generators
  - Cell phones





# DBS and Diathermy EMI

- Shortwave, Microwave, or Ultrasonic Diathermy (deep heat treatment)



- “Energy from diathermy can be transferred through your implanted system, can cause tissue damage and can result in severe injury or death.”
  - Medtronic Kinetra neurostimulator patient manual