

A 54-year Historical Timeline of U.S. Government Actions that Impact those who are Disabled due to Electromagnetic and Chemical Sensitivity

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Date	Action	Details
1968	Accessible Barriers Act	Congress enacts first law to ensure access to the built environment for people with disabilities. The law requires that buildings or facilities that were designed, built, or altered with federal dollars or leased by federal agencies after August 12, 1968, voluntarily meet Federal standards for accessibility for persons who are physically handicapped”. https://www.access-board.gov/law/aba.html
1973	Rehabilitation Act	Section 502 creates the Access Board, originally named the Architectural and Transportation Barriers Compliance Board. The Board is charged with ensuring Federal agency compliance with the ABA and proposing solutions to the environmental barriers problems addressed in the ABA Report. Congress was clear in its intent that compliance be the primary essence of the Board’s function. https://www.access-board.gov/law/ra.html#section-502-the-access-board
1990	Americans for Disability Act (ADA)	The ADA provides comprehensive civil rights protections to individuals with disabilities in the areas of employment, state and local government services, public accommodations, transportation and telecommunications. https://www.ada.gov/ada_intro.htm
1993	ADA Watch—Year One, Prepared by the	A Report to the President and the Congress on Progress in Implementing the Americans with Disabilities Act, April 5, 1993, prepared by the National Council on Disability. Findings and recommendations that relate to people with environmental illness:

	National Council on Disability	<ul style="list-style-type: none"> • People with certain kinds of disabilities, such as vision and hearing impairments, short stature, and environmental illness, are becoming frustrated with the way ADA implementation efforts are being conducted. Finding No. 16, Recommendations No. 13, Pgs. 5 and 60 • Despite the broad scope of the ADA, there still appear to be some gaps in coverage, such as full protection for people with environmental illness. Several previously unrecognized disabilities are emerging in the awareness of the American public... Individuals with multiple chemical sensitivities and environmental illness have become increasingly vocal about the effects of tobacco smoke, chemicals, and perfumes in hotels, restaurants, bars and other places of public accommodation. Recommended regulations and guidelines included prohibiting smoking in public gathering places including hallways, forbidding department stores from spraying perfumes in the air, and removing perfumed deodorizing devices from restrooms and other common areas. Finding No. 17, Recommendation No. 13, Pgs.7 and 61. • Congress and the Administration should consider legislation to address the needs of people with “emerging disabilities”, such as those with head injuries resulting from violence or other trauma and those with environmental illnesses who are severely adversely affected by secondary smoke or other pollutants in public places. Recommendation No. 13, Pgs. 7 and 61 • U.S. Access Board proposed including chemical and environmental sensitivities in its ADA research agenda, published in the Federal Register, Vol.57, No. 92. and on pg. 113 of this report. https://ncd.gov/publications/1993/April51993
1995	Congressional Office of Technology Assessment (OTA)	<p>The Congressional Office of Technology Assessment was an office of the United States Congress that operated from 1974 to 1995. OTA's purpose was to provide congressional members and committees with objective and authoritative analysis of the complex scientific and technical issues of the late 20th century, i.e., technology assessment. Its model was widely copied around the world. OTA is defunded at the end of 1995. This is one year before the passage of the Federal Telecommunications Act of 1996, a landmark bill that ushered in the Wireless Digital Age. https://crsreports.congress.gov/product/pdf/R/R46327/5</p>

1996	Federal Telecommunications Act	<p>Section 4 of the Act states “No State or local government or instrumentality thereof may regulate placement, construction, and modification of personal wireless service facilities on the basis of environmental effects of radio frequency emissions to the extent that such facilities comply with the Commission’s regulations concerning such emissions. https://ehtrust.org/policy/the-telecommunications-act-of-1996/ .</p> <p>Section 255, Requires telecommunications products and services to be accessible to people with disabilities to the extent access is "readily achievable," meaning easily accomplishable, without much difficulty or expense. If manufacturers cannot make their products accessible, then they must design them to be compatible with adaptive equipment used by people with disabilities, where readily achievable. https://www.fcc.gov/general/section-255-disability-rights-office</p>
1998	EMF RAPID Study Report	<p>The National Institute of Environmental Health Services issues the EMF RAPID Study Report on extremely low frequency electromagnetic fields (electricity). https://www.niehs.nih.gov/health/assets/docs_p_z/report_powerline_electric_mg_predates_508.pdf,</p> <ul style="list-style-type: none"> · On Pg. 36, NIEHS summarizes the report by stating: “It is our opinion that based on evidence to date, ELF-EMF exposure would not be listed in the “Report on Carcinogens” as an agent “reasonably anticipated to be a human carcinogen.” This is based on the limited epidemiological evidence and the findings from the EMF-RAPID Program that did not indicate an effect of ELF-EMF exposure in experimental animals or a mechanistic basis for carcinogenicity. · On Pg. 38. The NIEHS summary continues by stating it “believes that there is weak evidence for possible health effects from ELF-EMF exposures, and until stronger evidence changes this opinion, inexpensive and safe reductions in exposure should be encouraged.”. “Certain occupations result in high field exposures. The NIEHS encourages the National Institute for Occupational Safety and Health and the Occupational Safety and Health Administration to review these findings and carefully evaluate if current occupational exposure standards are adequate” “Future Research - The NIEHS is committed to the support of hypothesis-driven research on any environmental exposure that is of concern for human beings. Exposure to ELF-EMF is no different. These exposures warrant continued monitoring because ELF-EMF

		<p>exposure is ubiquitous, and the use of electromagnetic technology is growing in our society.” https://www.niehs.nih.gov/health/assets/docs_p_z/report_powerline_electric_mg_predates_508.pdf</p>
1998	Rehabilitation Act Amendments Define Electronics and Information Technology	<p>Rehabilitation Act Amendments passes that require the Architectural and Transportation Barriers Compliance Board (Access Board) establish "a definition of electronic and information technology that is consistent with the definition of information technology specified in section 5002(3) of the Clinger-Cohen Act of 1996. In 2000, the Access Board revised its 508 standards by issuing Electronic and Information Technology Accessibility Standards that provide separate definitions for information technology and electronic and information technology.</p> <ul style="list-style-type: none"> · The definition for information technology is identical to that found in the Clinger-Cohen Act: “any equipment or interconnected system or subsystem of equipment, which is used in the automatic acquisition, storage, manipulation, management, movement, control, display, switching, interchange, transmission, or reception of data or information.” · The definition for electronic and information technology includes information technology but additionally includes "any equipment or interconnected system or subsystem of equipment, which is in the creation, conversion, or duplication of data or information." <p>https://www.fcc.gov/general/section-508-rehabilitation-act</p>
1999	SB 1538 introduced in Congress, authorizes review of the research on radiofrequency radiation	<p>Senate Bill 1538, is introduced by Senator Patrick Leahy, co-sponsored by Senator James Jeffords; A companion bill was introduced in the House by Representative Bernie Sanders. The bill https://www.congress.gov/bill/106th-congress/senate-bill/1538?s=1&r=5275, called for a review of the research on radiofrequency radiation and other matters impacting state and local government due to the Federal Telecommunications Act of 1996. Both the House and Senate versions of this bill died in committee and no public hearings were held where scientists and medical doctors could testify to the need for reviewing radiofrequency research. Senator Leahy introduced a similar bill in 2001 but this bill also died in committee and no public hearings were held.</p>
2000	Promises to Keep: A Decade of Enforcement of the	<p>A National Council on Disability report that “looks at the Americans with Disabilities Act (ADA) enforcement activities from 1990 to 1999 of four key federal agencies: the Department of Justice, the Equal Employment Opportunity Commission, the Department of Transportation,</p>

	Americans with Disabilities Act. Prepared by the National Council on Disability, June 27, 2000,	and the Federal Communications Commission. NCD's findings reveal that while the Administration has consistently asserted its strong support for the civil rights of people with disabilities, the federal agencies charged with enforcement and policy development under ADA have, to varying degrees, been underfunded, overly cautious, reactive, and lacking any coherent and unifying national strategy. In addition, enforcement agencies have not consistently taken leadership roles in clarifying "frontier" or emergent issues. https://ncd.gov/sites/default/files/Documents/Promises%20to%20Keep.pdf
2000	AB 1699, California State Legislature bill calling for review of research on radiofrequency radiation	California's State Legislature passes AB1677, that calls for a review of the research on radiofrequency radiation by the California State Health Department and to report its findings to the Legislature by July 1, 2001. This bill would also require the Director of CA State Health Services to advise the Legislature regarding the need for additional research and legislative action regarding the use of cellular telephones. The bill is later is tossed out by the Rules Committee as there were "too many bills that session." It was a "no money" bill. https://leginfo.legislature.ca.gov/faces/billNavClient.xhtml?bill_id=199920000SB1699
2000	Congress fails to fund EPA research into biological effects of RF emissions on human health:	Congress fails to fund EPA research into biological effects of RF emissions on human health, a legal brief prepared by Whitney Seymour Jr. Esq, who filed a writ for certiorari with the U.S. Supreme Court that was denied by the court. https://ehtrust.org/congress-has-failed-to-fund-epa-research-into-biological-effects-of-rf-emissions-on-human-health/
2001	U.S. DEPARTMENT OF EDUCATION OFFICE OF SPECIAL EDUCATION AND REHABILITATION SERVICES, RSA. INFORMATION MEMORANDUM RSA-IM-02-04.	This document contains information on symptoms associated with MCS, potential causes of MCS, and suggestions on ways to accommodate individuals with MCS. Commonly reported triggers include: <ul style="list-style-type: none"> <input type="checkbox"/> anesthesia <input type="checkbox"/> artificial colors, flavors, and preservatives in foods, drinks, and drugs <input type="checkbox"/> detergents and other cleaners <input type="checkbox"/> electromagnetic fields <input type="checkbox"/> fluorescent lights <input type="checkbox"/> perfumes and fragrances

		<ul style="list-style-type: none"> <input type="checkbox"/> prescribed medications <input type="checkbox"/> smoke from tobacco products <input type="checkbox"/> solvents from dry cleaning, felt pens, etc. <p>Individuals affected by MCS have created "sanctuaries" relatively free from chemical emissions and electromagnetic fields in their homes...and depression from not being able to have an active work, family, or social life. As a result, they may experience intense isolation, loss of self-esteem. One of the recommendations is minimizing exposure to electromagnetic fields from computers, fluorescent light ballasts and other equipment. Prepared by Mary Lamielle, Susan Molloy and others. Dated: 11/05/01.</p> <p>Sent to: STATE VOCATIONAL REHABILITATION AGENCIES (GENERAL); STATE VOCATIONAL REHABILITATION AGENCIES (BLIND); STATEWIDE INDEPENDENT LIVING COUNCILS CENTERS FOR INDEPENDENT LIVING; CLIENT ASSISTANCE PROGRAMS; PROTECTION & ADVOCACY OF INDIVIDUAL RIGHTS PROGRAMS; REGIONAL REHABILITATION CONTINUING EDUCATION PROGRAMS; AMERICAN INDIAN VOCATIONAL REHABILITATION PROGRAMS; AND RSA SENIOR MANAGEMENT TEAM</p>
2002	International Agency on Research on Cancer Monograph on Extremely Low Frequency (ELF) EMFs	The World Health Organizations, International Agency on Research on Cancer classified ELF/EMF as a Group 2 possible human carcinogen, based on limited evidence in humans for the carcinogenicity of extremely low frequency magnetic fields in relation to childhood leukemia. IARC Volume 80. https://monographs.iarc.who.int/wp-content/uploads/2018/06/mono80.pdf
2002	Defunding of NIOSH RF/EMF and ELF/EMF Hazard Research Programs starts	The National Institute of Occupational Safety and Health (NIOSH) EMF Hazard Research Program on radiofrequency radiation is defunded. The NIOSH EMF/ELF research program was also defunded a few years later (2006?) https://www.cdc.gov/niosh/topics/emf/#rffield

2005	Smart Grid Provision of Energy Policy Act of 2005	<p>Congress passes the Energy Policy Act of 2005., Smart Grid describes a next-generation electric power system that is classified by the increased use of communication and information technology in the generation, delivery, and consumption of electrical energy to include smart utility meters on every building. Since enactment, the smart grid is becoming integrated as part of the 5th Generation Wireless infrastructure.</p> <p>https://www.congress.gov/109/plaws/publ58/PLAW-109publ58.pdf; https://en.wikipedia.org/wiki/Smart_grid_policy_in_the_United_States</p>
2005	National Institute of Building Services Report	<p>U.S. Access Board funded a report prepared by the National Institute of Building Services on the effects of indoor environmental quality on persons who are electromagnetically or chemically sensitive. Reasonable accommodations for a chemically sensitive and/or electromagnetically sensitive individual can include providing a space or meeting area that addresses one or more of the Cleaner Air criteria, upon request, such as:</p> <ul style="list-style-type: none"> • Remove fragrance-emitting devices (FEDS) • Delay or postpone indoor or outdoor pesticide applications, carpet cleaning, or other cleaning or remodeling until after the meeting • Provide room or meeting area near exterior door or with window(s) that can be opened • Require cell phones and computers be turned off • Provide incandescent lighting in lieu of fluorescent lighting • Provide at least one nonsmoking, fragrance-free person per shift to provide services (e.g. nurse, police officer, security guard, clerk) <p>For individuals who are unable to use or meet in a building or facility, or who are too severely impacted by chemical and/or electromagnetic exposures to use a designated Cleaner Air Room, accommodations may include:</p> <ul style="list-style-type: none"> • Meet an individual at the door or outside to conduct business • Allow a person to wait outside or in car until appointment • Provide a means, such as a phone, intercom, bell, or buzzer to summon staff to an outside door for assistance • Permit business to be conducted by phone, fax, mail, or e-mail rather than in person • Allow participation in a meeting by speakerphone

		<p>As stated in the Background for its Final Rule Americans with Disabilities Act (ADA) Accessibility Guidelines for Buildings and Facilities; Recreation Facilities, the Board recognizes that multiple chemical sensitivities and electromagnetic sensitivities may be 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. The Board plans to closely examine the needs of this population and undertake activities that address accessibility issues for these individuals.</p> <p>The NIBS IEQ committee offers several recommendations for further action. It is recommended that a follow-on project organize and convene one, or more, workshops to deliberate the issues and recommendations in this report. It is also recommended that a project be organized to develop a single guidelines document. Such guidelines would be based on refinement and coordination of the recommendations of the Design & Construction and Products & Materials committees in this report. This same, or a separate project, should develop new building code provisions to accelerate the implementation of improved IEQ. Lastly, it is recommended that a project be organized to develop guidelines for the design of an “ideal space” for people with MCS and EMS. The recommended follow-up projects should involve collaborative effort and funding from a range of organizations across the building community, e.g., American Institute of Architects (AIA), Associated General Contractors of America (AGC), Building Owners & Managers Association International (BOMA), American Society of Heating, Refrigerating and Air-Conditioning Engineers (ASHRAE), Environmental Protection Agency (EPA), and, of course, the Access Board.</p> <p>https://www.access-board.gov/research/building/indoor-environmental-quality/</p>
2008	NIBS Report to Congress and the Department of Energy on High Performance Buildings	<p>Prepared by the National Institute of Building Services (NIBS).</p> <p>Accessibility: Given the nation’s aging population, high-performance buildings that ignore the realities of accessibility will fail at a fundamental level of providing for higher performance levels of buildings. Technological changes in all phases of the building process from design to operation and changes in the actual technological aids available for variously able-bodied persons force constant reconfigurations of the intersecting details that satisfy the various attributes. Universal accessibility will promote the technological advancement of controls and sensors that will compensate for the reduced sensory and mobility abilities of building occupants. Significant savings and productivity gains can be realized by accommodating the</p>

		<p>needs of workers with disabilities and for the similar needs of older citizens in order to reduce the requirement for dedicated assisted living environments. Pg 10.</p> <p>https://www.nibs.org/reports/assessment-us-congress-and-us-department-energy-high-performance-buildings</p>
2009	National Disability Policy: A Progress Report	<p>National Disability Policy: A Progress Report - March 2009</p> <p>https://www.ncd.gov/progress_reports/Mar312009#r1</p> <ul style="list-style-type: none"> · Access to the Internet. Use of the Internet is an inherent part of life today. For people with disabilities, however, access is not guaranteed. Because the ADA was passed before the Internet became pervasive, and the Department of Justice (DOJ) regulations do not address Internet access specifically, many Web sites still are not designed to be accessible by people with certain disabilities. As a result, people with disabilities have had to struggle to gain access to public and commercial websites. Some people have even had to resort to litigation. · Implementation of the Section 508 Web Accessibility standards in the Federal sector, as well as the global impact of the World Wide Web Consortium's Web accessibility standards, demonstrate that the means for making Web sites accessible are well-established, and a Federal requirement for full accessibility of public Web sites is long overdue. · Assistive Technology. Assistive technology (AT) is technology that enables people with disabilities to maintain or improve their ability to function. AT includes the tools, resources, and technology to help increase independence, improve personal productivity, and enhance the quality of life for people with disabilities. Frequently, for people with functional limitations, the availability of AT makes it possible to participate in education, employment, recreation, government services, and commerce, particularly on the Internet. · The range of hardware and software comprising the AT sector is growing rapidly, creating new and exciting functional capabilities almost daily. However, data are lacking on whether these opportunities are fully understood and utilized by the service providers in the VR and special education systems. Data indicate that many people with disabilities who could benefit from AT are not aware of its existence or cannot afford it. Given the growing centrality of technology in every aspect of life, it is vital to gain better knowledge about how effectively the service systems are using their authority to provide appropriate AT devices and AT services,

		<p>particularly in the important realm of education and vocational rehabilitation, where access to AT can determine success or failure for a person with a disability.</p> <ul style="list-style-type: none"> · Digital Technology. The advent of digital media offers the potential for enhanced access, as well as challenges, to Americans with disabilities. Digital television, for example, offers opportunities and challenges regarding captioning. Unlike analog closed captions, digital caption capability provides tremendous flexibility and a new level of user control over caption display, including font style, text size and color, and backgrounds. However, set design, remote control design, and transmission within cable systems are all critical factors that can determine whether captioning can be used at all. · Similar issues exist regarding video description. The system for transmission must be implemented, and viewers must learn to access it. Viewer education and broadcaster instruction and implementation are both necessary for digital television to be available to people with disabilities. · Digital radio also offers opportunities and challenges for Americans with disabilities. For people who are deaf or hard of hearing, digital radio offers perhaps the first opportunity to receive radio information in an accessible manner via captioning. Additionally, persons who are blind or visually impaired may find new ways to enjoy radio reading services that are delivered at the listener's time preference rather than at the station's broadcast times. As with digital television, however, product design, consumer education, and broadcaster development and implementation are critical aspects of achieving the increased access available via this new medium.
2009	U.S. Senate Appropriations Committee on HELP Hearings	The Senate Appropriations Committee on Health, Education, Labor and Pensions, hearing, chaired by Senator Tom Harkin with the late Senator Arlen Specter. Invited scientists testified on the biological and health effects of cell phone radiation. A 10-minute summary of the hearing as well as the full hearing can be viewed by going to https://icems.eu/public_education.html , September 15, 2009
2010	21 st Century Communications and	The CVAA updates federal communications law to increase the access of persons with disabilities to modern communications. The CVAA makes sure that accessibility laws enacted

	Video Accessibility Act (CVAA)	in the 1980s and 1990s are brought up to date with 21st century technologies, including new digital, broadband, and mobile innovations FCC rulemakings: https://www.fcc.gov/consumers/guides/21st-century-communications-and-video-accessibility-act-cvaa https://www.fcc.gov/general/twenty-first-century-communications-and-video-accessibility-act-0
2010	Bioinitiative Report	The Bioinitiative Report is initiated to present scientific evidence on the biological and health effects of electromagnetic fields, particularly focused on effects seen below the EMF safety limits set by the FCC and international standard setting organizations. Some of these papers were also published in professional journals. www.bioinitiative.org ,
2011	NCD Report: The Power of Digital Inclusion	Technology's Impact on Employment and Opportunities for People with Disabilities <ul style="list-style-type: none"> · Recommendation 3: Address issues of Internet access as a critical component of the vectors. · The Federal Communications Commission's (FCC) National Broadband Plan includes several accessibility initiatives for people with disabilities, under the heading "Address issues of accessibility for broadband adoption and utilization." These initiatives include the Executive Branch to convene a Broadband Accessibility Working Group (BAWG) to maximize broadband adoption by people with disabilities; the FCC to establish an Accessibility and Innovation Forum; and Congress, the FCC, and the U.S. Department of Justice (DOJ) to consider modernizing accessibility laws, rules, and related subsidy programs. Congress appropriated substantial funds to assist industry to build out broadband. The industry should support an effort specifically targeted to increasing broadband access for people with disabilities. · We recommend that the FCC collaborate with the U.S. Access Board through a working group or committee to take an active role in identifying the barriers that people with disabilities face with regard to broadband access and introduce policy proceedings to facilitate broadband adoption and use by the disability community. We further recommend that virtual town-hall meetings (telephone, Internet, and other technologies) be conducted to build awareness for this initiative.

		<p>· Recommendation 4: Explore industry partnerships to address cost, for example, by providing in-kind services, devices, or partnerships to minimize cost to the end-user.</p> <p>www.ncd.gov/publications/2011/Oct42011</p>
2011	SB 932 introduced in the California Legislature (Senator Mark Leno)	<p>Public-Right-To-Know Bill would require retailers to include notices on product packaging that cell phones emit radio frequency (RF) energy. A second notice also must be posted at the point of sale when purchasing online or in a physical store. The bill died in committee and no hearings were held.</p> <p>https://leginfo.legislature.ca.gov/faces/billHistoryClient.xhtml?bill_id=201120120SB932; https://www.cnet.com/tech/mobile/california-senate-to-consider-cell-phone-radiation-bill/</p>
2012	H.R. 6358, The Cell Phone Right to Know Act is introduced	<p>H.R. 6358 is introduced by U.S. Representative Dennis Kucinich, calling for:</p> <ul style="list-style-type: none"> • Labels on mobile devices at point of sale • A comprehensive national research program to study whether exposure to wireless devices causes adverse biological effects to be directed by NIEHS and the EPA. • Authorizes EPA to develop radiofrequency radiation exposure guidelines that protect public health. <p>It received strong support from many organizations including the American Academy of Pediatrics. This Bill did not make it out of committee and did not become law in the United States. This bill serves as an excellent example of legislation on radiofrequency radiation and wireless devices.</p> <p>https://www.congress.gov/bill/112th-congress/house-bill/6358/text https://ehtrust.org/he-cell-phone-right-to-know-act-h-r-6358-federal-legislation-on-wireless/</p>
2013	International Agency on Research on Cancer Monograph on Radiofrequency Radiation (RFR) EMFs	<p>The World Health Organization's International Agency on Research on Cancer classified RFR/EMF as a Group 2 possible human carcinogen. Cancer in humans: There is limited evidence for the carcinogenicity of radiofrequency radiation. Positive associations have been observed between radiofrequency radiation from wireless phones, and glioma and acoustic neuroma. Cancer in animals: There is limited evidence in experimental animals for the carcinogenicity of radiofrequency radiation. IARC Monograph 102,</p> <p>https://publications.iarc.fr/Book-And-Report-Series/Iarc-Monographs-On-The-Identification-Of-Carcinogenic-Hazards-To-Humans/Non-ionizing-Radiation-Part-2-Radiofrequency-Electromagnetic-Fields-2013</p>

2015	International EMF Scientist Appeal to the United Nations	<p>International EMF Scientist Appeal to the United Nations launched, now signed by over 245 scientists in 45 nations who have published EMF papers in professional journals.</p> <p>The Appeal recommends children and pregnant women be protected; guidelines and regulatory standards be strengthened; manufacturers be encouraged to develop safer technology; utilities responsible for the generation, transmission, distribution, and monitoring of electricity maintain adequate power quality and ensure proper electrical wiring to minimize harmful ground current; the public be fully informed about the potential health risks from electromagnetic energy and taught harm reduction strategies; medical professionals be educated about the biological effects of electromagnetic energy and be provided training on treatment of patients with electromagnetic sensitivity; governments fund training and research on electromagnetic fields and health that is independent of industry and mandate industry cooperation with researchers; media disclose experts' financial relationships with industry when citing their opinions regarding health and safety aspects of EMF-emitting technologies; and safe zones (radiation-free areas) be established. www.emfscientist.org.</p>
2016	European Guidelines for the Prevention, Diagnosis and Treatment of EMF Associated Illness	<p>Igor Belyaev et al. European Guidelines for the Prevention, Diagnosis and Treatment of EMF Associated Illness, Rev Environ Health 2016 DOI 10.1515/reveh-2016-0011.</p> <p>Abstract: Chronic diseases and illnesses associated with non-specific symptoms are on the rise. In addition to chronic stress in social and work environments, physical and chemical exposures at home, at work, and during leisure activities are causal or contributing environmental stressors that deserve attention by the general practitioner as well as by all other members of the health care community. It seems necessary now to take “new exposures” like electromagnetic fields (EMF) into account. Physicians are increasingly confronted with health problems from unidentified causes. Studies, empirical observations, and patient reports clearly indicate interactions between EMF exposure and health problems. Individual susceptibility and environmental factors are frequently neglected. New wireless technologies and applications have been introduced without any certainty about their health effects, raising new challenges for medicine and society. For instance, the issue of so-called non-thermal effects and potential</p>

long-term effects of low-dose exposure were scarcely investigated prior to the introduction of these technologies.

Common electromagnetic field or EMF sources: Radio-frequency radiation (RF) (3 MHz to 300 GHz) is emitted from radio and TV broadcast antennas, Wi-Fi access points, routers, and clients (e.g., smartphones, tablets), cordless and mobile phones including their base stations, and Bluetooth devices. Extremely low frequency electric (ELF EF) and magnetic fields (ELF MF) (3 Hz to 3 kHz) are emitted from electrical wiring, lamps, and appliances. Very low frequency electric (VLF EF) and magnetic fields (VLF MF) (3 kHz to 3 MHz) are emitted, due to harmonic voltage and current distortions, from electrical wiring, lamps (e.g., compact fluorescent lamps), and electronic devices.

On the one hand, there is strong evidence that long-term exposure to certain EMFs is a risk factor for diseases such as certain cancers, Alzheimer's disease, and male infertility. On the other hand, the emerging electromagnetic hypersensitivity (EHS) is more and more recognized by health authorities, disability administrators and case workers, politicians, as well as courts of law.

We recommend treating EHS clinically as part of the group of chronic multisystem illnesses (CMI), but still recognizing that the underlying cause remains the environment. In the beginning, EHS symptoms occur only occasionally, but over time they may increase in frequency and severity. Common EHS symptoms include headaches, concentration difficulties, sleep problems, depression, a lack of energy, fatigue, and flu-like symptoms. A comprehensive medical history, which should include all symptoms and their occurrences in spatial and temporal terms and in the context of EMF exposures, is the key to making the diagnosis.

The EMF exposure is usually assessed by EMF measurements at home and at work. Certain types of EMF exposure can be assessed by asking about common EMF sources. It is very important to take the individual susceptibility into account. The primary method of treatment should mainly focus on the prevention or reduction of EMF exposure, that is, reducing or eliminating all sources of high EMF exposure at home and at the workplace. The reduction of EMF exposure should also be extended to public spaces such as schools, hospitals, public

		<p>transport, and libraries to enable persons with EHS an unhindered use (accessibility measure). If a detrimental EMF exposure is reduced sufficiently, the body has a chance to recover and EHS symptoms will be reduced or even disappear. Many examples have shown that such measures can prove effective.</p> <p>To increase the effectiveness of the treatment, the broad range of other environmental factors that contribute to the total body burden should also be addressed. Anything that supports homeostasis will increase a person’s resilience against disease and thus against the adverse effects of EMF exposure. There is increasing evidence that EMF exposure has a major impact on the oxidative and nitrosative regulation capacity in affected individuals. This concept also may explain why the level of susceptibility to EMF can change and why the range of symptoms reported in the context of EMF exposures is so large. Based on our current understanding, a treatment approach that minimizes the adverse effects of peroxynitrite – as has been increasingly used in the treatment of multisystem illnesses – works best. This EMF Guideline gives an overview of the current knowledge regarding EMF-related health risks and provides recommendations for the diagnosis, treatment and accessibility measures of EHS to improve and restore individual health outcomes as well as for the development of strategies for prevention.</p>
2018	2018 NIH Conference: Health in Buildings Today and Tomorrow – Making Connections	<p>Participants from the green building industry, BOMA, International WELL Building Institute, experts on indoor air quality, a panel on Electromagnetic field hazards and was attended by representatives of several federal agencies and health advocates. Presentations focused on the need to monitor indoor lighting, heating, cooling as well as indoor air quality levels to detect chemical levels, using RF sensors. See link to an 8:35 min. presentation made by Frank Clegg, CEO for Canadians for Safe Technology, and former President of Microsoft Canada: https://www.youtube.com/watch?v=syR095I_KXQ&t=515s , July 19-20, 2018.</p> <p>In 2019. Clegg et al, published an article in <i>Building and Environment</i>: Clegg FM, Sears M, Friesen M, Scarato T, Metzinger R, Lee Russell C, Stadtner A, Miller AB, “Building Science and Radiofrequency Radiation: What makes smart and healthy buildings’, <i>Building and Environment</i> (2019), https://doi.org/10.1016/j.buildenv.2019.106324.</p>

		<p>Abstract: Radiofrequency radiation (RFR), used for wireless communications and “smart” building technologies, including the “Internet of Things,” is increasing rapidly. As both RFR exposures and scientific evidence of harmful effects increase apace, it is timely to heed calls to include low RFR levels as a performance indicator for the health, safety and wellbeing of occupants and the environment. Adverse biochemical and biological effects at commonly experienced RFR levels indicate that exposure guidelines for the U.S., Canada and other countries, are inadequate to protect public health and the environment. Some industry liability insurance providers do not offer coverage against adverse health effects from radiation emitted by wireless technologies, and insurance authorities deem potential liability as “high.” Internationally, governments have enacted laws, and medical and public health authorities have issued recommendations, to reduce and limit exposure to RFR. There is urgent need to implement strategies for no-or-low RFR emitting technologies, and shielding, in building design and retrofitting. These strategies include installing wired (not wireless) Internet networks, corded rather than cordless phones, and cable or wired connections in building systems (e.g., mechanical, lighting, security). Building science can profit from decades of work to institute performance parameters, operationalizing prudent guidelines and best practices. The goal is to achieve RFR exposures that are ALARA, “As Low as Reasonably Achievable.”</p> <p>We also challenge the business case of wireless systems, because wired or cabled connections are faster, more reliable and secure, emit substantially less RFR, and consume less energy in a sector with rapidly escalating green-house gas emissions.</p>
2018	<p>The National Council on Disability Report: Has the promise been kept? Federal Enforcement of Disability Rights Laws (Part 1)</p>	<p>An assessment of “disability civil rights enforcement since 2000, this 2018 report addresses the efforts of the EEOC, Department of Labor (DOL), and the Access Board to enforce and implement the ADA and other federal disability rights laws and programs</p> <p>Recommendations:</p> <p>That the EEOC create a specific method to assess the quality of ADA investigations, develop simpler documents, provide explicit explanation for requesting accommodations in the charge filing process, improve the response time to complainants, and study the charge investigations priority system; that ODEP (under the Department of Labor) revisit prior recommendations and evaluate how they have been adopted, continue to focus on persons with significant long-term disabilities seeking to enter the workforce, and that Congress and the President require relevant agencies to consult with ODEP; that OFCCP modify its compliance review procedures and</p>

		<p>improve staff levels to better identify and deter violations of Section 503 and ensure the focus in regulatory development is on the advancement of employment of people with disabilities; that WHD improve data collection and analysis, use directed investigations in Section 14(c) enforcement, increase education on the rights of workers paid a 12 National Council on Disability¹⁷ subminimum wage, and analyze Family and Medical Leave Act violations; and, that the Access Board expedite the development of needed standards, investigate key parts of a facility during a complaint investigation, ensure timely completion of investigations, and partner with other enforcement agencies.</p> <p>https://ncd.gov/progressreport-publications/2018/has-promise-been-kept</p>
2018	The NIEHS/National Toxicology Program	<p>NTP reports finding clear evidence of cancer based on its 10-year long term exposure study of rats and mice exposed to radiofrequency radiation. RFR exposure is not listed in “NTP’s Report on Carcinogens” as an agent “, reasonably anticipated to be a human carcinogen. FDA commissioned this study in 1999 but, at the time the study was published in final, Jeffrey Shuren, M.D., Director of the FDA’s Center for Devices and Radiological Health, issued this statement: “<i>Based on this current information, we believe the current safety limits for cell phones are acceptable for protecting the public health</i>”</p> <p>https://ntp.niehs.nih.gov/whatwestudy/topics/cellphones/index.html https://ehtrust.org/science/the-niehs-national-toxicology-program-study-on-cell-phone-radiation-and-cancer-2018-update-resources/.</p>
2019	Magda Havas, Ph.D., Published paper: EHS as an Environmentally Induced Disability that Requires Immediate Attention	<p>Havas M, Electrosensitivity (EHS) is an Environmentally Induced Disability that Requires Immediate Attention.</p> <p>Abstract: A growing number of countries are beginning to acknowledge that electrosensitivity (EHS) exists and a few countries have classified it as a disability or a functional impairment attributable to the environment. Epidemiological studies and <i>in vivo</i> experiments show that exposure to non-ionizing radiation (NIR) from extremely low to microwave frequency electromagnetic fields (EMF) at exposure intensities far below the maximum limits in international guidelines increases anxiety, depression, and physiological stress and impairs cognitive functions that include concentration, memory and learning.</p> <p>Furthermore, exposure to NIR contributes to neurodegenerative diseases including dementia, Alzheimer’s disease, amyotrophic lateral sclerosis, multiple sclerosis, Parkinson’s disease, attention deficit hyperactivity disorder and autism spectrum disorder. Exposure of the fetus to</p>

		<p>NIR (mobile phone) affects the neonatal heart and can lead to emotional and behavioral problems in human offspring. Similar exposures in laboratory studies report impaired cognitive performance, neuronal losses and pathological changes in the brain of rat offspring. The scientific and medical communities have repeatedly sent out urgent warnings, in the form of appeals, declarations and testimonies, that exposure to NIR needs to be reduced from a public health perspective. These warnings have been largely ignored.</p> <p>With continued development of wireless technology and the imminent roll out of new and densified technologies (e.g., 5G technology, satellite constellations, repeaters, wearables, Internet of Things), society will pay an enormous price for disregarding these warnings. It is long overdue for those responsible for public health, the health of children and health policy to take these warnings seriously and to provide a refuge for those afflicted by EHS. EHS is real, it is exacerbated by exposure to NIR, it is increasing among the population and when severe it becomes a disability. Action is long overdue to minimize exposure to NIR and to provide a safe environment that all can enjoy.</p> <p>J Sci Discov (2019); 3(1):jsd18020; DOI:10.24262/jsd.2.2.18020; Published February 2nd, 2019.</p>
2019	FCC decision 19-26 not to update 1996 RF limits	FDA issued a rulemaking announcing their decision to not revise its 1996 radiofrequency radiation human exposure guidelines to accommodate the 5 th Generation and Internet of Things Wireless Infrastructure. See https://www.fcc.gov/edocs/search-results?t=quick&fccdaNo=19-126 .
2020	Congress Fails to Fund EPA Research	Congress fails to fund EPA research into biological effects of RF emissions on human health--prepared by The Environmental Health Trust: https://ehtrust.org/congress-has-failed-to-fund-epa-research-into-biological-effects-of-rf-emissions-on-human-health/
2020	EHT Files Case Against the FCC re 2019 Decision	<p>EHT files case against the FCC arguing the 2019 decision was not based on adequate review of the FCC 13-84 record: https://www.fcc.gov/edocs/search-results?t=quick&fccdaNo=13-84.</p> <ul style="list-style-type: none"> • Court decision in 2021 found that “the FCC failed to respond to “record evidence that exposure to RF radiation at levels below the Commission’s current limits may cause negative health effects unrelated to cancer.” Further, the agency demonstrated “a

		<p>complete failure to respond to comments concerning environmental harm caused by RF radiation.” The court found the FCC ignored numerous organizations, scientists and medical doctors who called on them to update limits and the court found the FCC failed to address these issues:</p> <ul style="list-style-type: none"> • impacts of long-term wireless exposure • impacts to children, • the testimony of people injured by wireless radiation, • impacts to wildlife and the environment • impacts to the developing brain and reproduction. <ul style="list-style-type: none"> • The court decision requires the FCC, not a health agency, to “provide a reasoned explanation for its decision to retain its testing procedures for determining whether cell phones and other electronic devices comply with its guidelines, (ii) address the impacts of RF radiation on children, the health implications of long-term exposure to RF radiation, the ubiquity of wireless devices, and other technological developments that have occurred since the Commission last updated its guidelines, and (iii) address the impacts of RF radiation on the environment.” https://www.fcc.gov/document/fcc-review-rf-exposure-policies https://ehtrust.org/eh-takes-the-fcc-to-court/
2019	National Council on Disability: Promises to Keep Report (Part 2)	<p>Recommends that DOJ should develop regulations on web accessibility for entities covered under Title II and III of the ADA, adopt the Access Board’s guidance on accessible medical equipment and diagnostic equipment, increase Olmstead investigations and enforcement, and maintain a stronger and more consistent level of litigation around disability rights; HUD should increase training and technical assistance around the application of the Fair Housing Act to multifamily housing, increase the use of Secretary- initiated complaints, and increase the number of Section 504 reviews; The FCC should ensure that pay rates for the various telecommunications relay services available are sufficient to attract providers and provide quality service to people with disabilities who rely on such services; Congress should require DOJ to collect and make available statistical information on disability rights complaints and enforcement as already occurs for HUD and the EEOC.</p> <p>https://ncd.gov/sites/default/files/NCD_Progress%20Report_508.pdf</p>

2020	National Council on Disability Report	<p>National Council on Disability Report “Promises to Keep” suggests that EEOC develop technical assistance and policy instruments to address unmet needs. “As but two examples, the workplace implications of multiple chemical sensitivity and traumatic brain injuries have not received adequate attention in EEOC policy and technical assistance documents.” Pg. 231. The heart of this problem is perhaps threefold. First, there are a great many people who have been “counted out” of work on the basis of disability who should not have been—those who are qualified to work, given rapid advancements in accommodations, technology, and newfound workplace flexibilities, but who now require support and access to these innovations that are necessary to enter the competitive marketplace. Second, strong disincentives to work that have been built into the important public safety net have kept many others from entering or reentering work, even though they are qualified to work. Finally, efforts to engage employers in recruiting and hiring people with disabilities have yet to be scaled as aggressively as is required to offset the employment disparity created by having left so many people that can and want to work out. This means that the public workforce system’s employer engagement efforts must become more sophisticated and robust and include a wider array and diversity of employers to be effective.</p> <p>https://ncd.gov/sites/default/files/NCD_Progress_Report_508_0.pdf</p>
2021	International EMF Medical Conference 2021	<p>International EMF Medical Conference 2021 for health practitioners, “Prevention, Diagnosis and Treatment of EMF Associated Illness” a 29-hour online program, featuring twenty-nine expert presentations by scientists, physicians and EMF testing and mitigation experts, which was attended by over eight hundred people from thirty nations. Two online courses based on the conference offering up to 24.5 Continuing Medical Education Credits and a Certificate of Completion are offered through Acknowledging Healthcare (AKH) are available for enrollments until July 1, 2023; video subscriptions through VIMEO On Demand are available until February 2023. www.emfconference2021.com</p>
2021	President Biden’s Executive Order (EO) 13985, dated January 20, 2021	<p>President Biden’s Executive Order (EO) 13985, dated January 20, 2021, On Advancing Racial Equity and Support for Underserved Communities Through the Federal Government</p>

2022	Equity Action Plans	Equity Action Plans submitted by Federal government agencies, to implement E.O. 13895 (1/20/21) https://www.performance.gov/equity/#action-plans
2022	U.S. Access Board Equity Action Plan	U.S. Access Board Equity Action Plan. https://assets.performance.gov/cx/equity-action-plans/2022/EO%2013985_AB_Equity%20Action%20Plan_2022.pdf
2022	National Council on Disability Health Equity Framework.	National Council on Disability Health Equity Framework. Released February 23, 2021, https://ncd.gov/sites/default/files/NCD_Health_Equity_Framework.pdf
2022	Environmental Protection Equity Plan	Environmental Protection Equity Plan, Overall Plan: https://www.performance.gov/agencies/epa/ ; Released March 17, 2022: https://www.epa.gov/newsreleases/epa-announces-clean-air-buildings-challenge-help-building-owners-and-operators-improve
2022	FCC Digital Equity Action Plan	FCC Digital Equity Action Plan, released April 7, 2022, https://www.fcc.gov/equity
2022	Department of Labor Disability Employment Policy	Department of Labor' Office of Disability Employment Policy's grantee: Job Accommodation Network (JAN) offers guidance to people with all categories of disability, including environmental exposure in the workplace that can be disabling. https://askjan.org/ , funded under a grant from the U.S Department of Labor's Office of Disability Employment Policy.
2022	National Council on Disability's Health Equity Framework addresses all categories of disability, people who are electromagnetically and chemically sensitive.	The National Council on Disability's Health Equity Framework, released February 23, 2022, acknowledges "decades of health disparities experienced by people with disabilities, and of physical and systemic barriers to access to healthcare for people with disabilities; and the desire to address these inequalities and achieve health equity for all persons with disabilities"...including recommended policies, training and best practices, to address the needs of people disabled by exposure to low level chemical, electromagnetic, and other environmental exposures." (pg. 10). https://ncd.gov/publications/2022/health-equity-framework