

MAJORITY-VIEWPOINT and MINORITY-VIEWPOINT GUIDELINES, and NON-THERMAL EFFECTS

Majority of expert scientists accept non-thermal effects

The vast majority of mainstream expert scientists now support the majority-viewpoint, accepting non-thermal adverse biological effects.

In contrast, the members of ICNIRP, IEEE and the WHO who still follow Schwan's 1953 short-term thermal-only mistake are now in a distinct minority.

- Over 250 scientists have signed the various appeals against the ICNIRP/WHO, in contrast to the cartel of ICNIRP/WHO members who number some 20-30 (about 90% majority-viewpoint to 10% minority-viewpoint).
- The IARC agreed on its non-thermal 2B human carcinogen rating in 2011 by 29 votes for, to 2 against (94% to 6%).

Majority of European Union politicians accept non-thermal effects

The only major political vote between either (a) majority long-term thermal and non-thermal guidelines, or (b) minority short-term thermal guidelines, was 97% in favour of the majority viewpoint accepting non-thermal effects, with 3% supporting the ICNIRP/WHO and only short-term effects.

- The EU Parliament voted on September 4 2008 that ICNIRP/WHO guidelines are outdated and obsolete by 522 for, to 16 against (97% to 3%).

Majority-viewpoint long-term and short-term, non-thermal and thermal, guidelines

The majority-viewpoint mainstream guidelines (e.g. Bioinitiative, EUROPAEM, IGNIR), based on non-thermal and thermal biological adverse effects, are typically up to 1,000 to 10 million times lower than the minority-viewpoint short-term high-level thermal-only guidelines (e.g. ICNIRP, IEEE, WHO).

Type of EMF exposure	Frequency	Metric	Back-ground level	Majority long-term and short-term non-thermal and thermal guidelines	Minority short-term thermal only guidelines	Differences between majority and minority guidelines
	RF or 50 Hz Powerline			e.g. Bioinitiative, EUROPAEM, IGNIR, Seletun, set since 2002, range:	e.g. ICNIRP, IEEE, WHO mostly set in the 1970s, max.	Minority (max.) times higher than majority, range:
Electric field	RF	V/m	0.00002	>0.001 – 0.2	61	305 – 60,000
Power flux density	RF	μW/m ²	0.000001	1 – 3 – 6 – 170	10,000,000	59,000 – 10,000,000
Magnetic field, AC	50Hz (-2kHz)	nT	0	30 – 1,000	500,000	500 – 16,667
Electric field, AC	50Hz (-2kHz)	V/m	0	0.3 – 10 – 1,000	10,000	10 – 33,000
SAR heating. Irrelevant to non-thermal effects	(RF)	W/kg	0.00002	0.003	0.08 – 1.6 – 2.0 – 4.0	26.5 – 1,333

Majority-viewpoint mainstream scientific evidence recognises non-thermal effects

The overwhelming weight of scientific evidence supports the majority mainstream viewpoint in the form of thousands of robust scientific studies showing non-thermal effects. Non-thermal effects were recognised from 1889, electromagnetic-hypersensitivity (EHS) in 1932 and cancer from 1953.

Non-thermal effects have been proven beyond reasonable doubt by numerous studies since 1974 and are used for many modern therapeutic medical procedures, in addition to being the basis of much modern electronic military warfare. RF/ELF is classified as a 2B possible carcinogen.

The minority-viewpoint like the WHO still denies non-thermal effects, making unscientific claims (e.g. 'no adverse health effects') which are anonymous, not peer-reviewed and out of date: EHS (WHO Backgrounder 296) 2005; RF (193) 2014; (304) 2006; ELF (322) 2007; static EF and MF (299) 2006.

- Typically 80% of mainstream robust scientific studies show non-thermal effects, making refusal to accept non-thermal effects a 'fringe' viewpoint.

- [Bioinitiative Report](#) (authoritative scientific review) • Belyaev I et al.: [EUROPAEM EMF Guideline 2016](#) • [EMF Scientist Appeal](#) • Hardell L: [WHO: A hard nut to crack](#) (2017)
- [IGNIR](#) • Investigate Europe: [Controversial Group](#) (2019) • [Selected Studies](#) (2018) • [Seletun](#) (2010) • Starkey S: [Inaccurate AGNIR Assessment](#) (2016) • [The EMF Call](#)

- RF = Radio Frequency • ELF = Extremely Low Frequency. • 10,000,000 μW/m² = 10 W/m² = 1 mW/cm² = 1,000 μW/cm². • 0.02 V/m ≈ 1 μW/m²

MAJORITY-VIEWPOINT AND MINORITY-VIEWPOINT GUIDELINES; NON-THERMAL EFFECTS

NON-THERMAL EFFECTS		MAJORITY VIEWPOINT		MINORITY VIEWPOINT	
		<i>Long- and Short-Term, Non-thermal and Thermal Guidelines</i>		<i>Short-Term and Thermal only Guidelines</i>	
1762	non-thermal ES symptoms	1935	USSR physiotherapy guidelines: 100,000 $\mu\text{W}/\text{m}^2$	1953	US: Schwan: short-term heating guidelines: 100,000,000 $\mu\text{W}/\text{m}^2$
1932	non-thermal EHS - RF and ELF	1959	USSR non-thermal guidelines: 100,000 $\mu\text{W}/\text{m}^2$	1959	World Health Organization (WHO) legally subservient on all radiation matters to the International Atomic Energy Authority
1938	non-thermal effects are basic	1961	Poland non-thermal guidelines: 100,000 $\mu\text{W}/\text{m}^2$	1966	US ANSI C-95.1: no limit; 1 min. 600,000,000 $\mu\text{W}/\text{m}^2$ 10 times per hour
1946	blood rouleaux formation	1965	Czechoslovakia non-thermal: 100,000 $\mu\text{W}/\text{m}^2$	1974	ANSI: 10,000,000 $\mu\text{W}/\text{m}^2$ av.6 min; 200 V/m
1948	cognition and memory affected	1966	ANSI: vulnerable groups (e.g. circulatory conditions) under moderate environmental conditions	1979	ANSI prop: 50,000,000 $\mu\text{W}/\text{m}^2$, av. 6 min.
1953	cancer from RF	1972	Poland non-thermal guidelines: 1,000 $\mu\text{W}/\text{m}^2$	1979	Canada: 10,000,000 $\mu\text{W}/\text{m}^2$ av.1 min; 60V/m
1959	magnetoreception	1975	Germany non-thermal guidelines: 100,000 $\mu\text{W}/\text{m}^2$	1981	IRPA and WHO, IRPA 1984, and WHO
1961	tinnitus from RF	1979	Czechoslovakia non-thermal: 25,000 $\mu\text{W}/\text{m}^2$	1984	Environmental Health Criteria 1993 no.137:
1962	cardiovascular effects	1986	US NCRP: accepts non-thermal; limit of 0.08 W/kg	1993	10,000,000 $\mu\text{W}/\text{m}^2$, 0.08 W/kg, av. 6 min.
1966	EHS from ELF confirmed	1992	US EPA: assess susceptible persons separately	1982	ANSI 10,000,000 $\mu\text{W}/\text{m}^2$ for 0.4 W/kg SAR
1974	calcium flux (VGCCs) from RF	1999	IARC: x and γ rays: class 1 human carcinogen	1990	UK AGNIR 'front'; COMARE from 2017
1974	blood-brain barrier leakage	2000	Nordic Council: ICD-10: EI- Allergy	1992	ANSI/IEEE C95.1-1992: 10,000,000 $\mu\text{W}/\text{m}^2$
1977	non-linear effects, 'windows'	2000	Sweden: legal recognition EHS functional impairment	1992	ICNIRP, private group of 14, created by the International Radiation Protection Association
1979	cancer from ELF	2001	IARC: ELF: 2B possible human carcinogen	1998	ICNIRP: 9,200,000 $\mu\text{W}/\text{m}^2$ (1.8 GHz), 4,500,000 $\mu\text{W}/\text{m}^2$ (900 MHz)
1979	depression, infertility	2002	Salzburg Appeal: 100 $\mu\text{W}/\text{m}^2$ maximum (0.2 V/m)	1999	EU & UK: ICNIRP short-term heating limits
1980	RF as cancer promoter	2002	Freiburg Appeal, Germany: 3,000 doctors	2005	IEEE C95.1-2005: 10,000,000 $\mu\text{W}/\text{m}^2$, av. 30 min.; 0.08 W/kg
1981	melatonin reduction	2002	ICNIRP: vulnerable need non-thermal guidelines	2006	WHO supports ICNIRP and IEEE's ELF short-term very high level heating guidelines
1982	skin cancer	2005	Irish Doct. Environ. Assoc. recognises EHS increase	2007	WHO supports ICNIRP and IEEE's RF short-term very high level heating guidelines
1986	ALS, motor neuron disease	2007	IARC: light at night: 2A probable human carcinogen	2016	FCC refuses to wait for 5G safety standards
1991	brain tumours	2009	EU Parliament: votes ICNIRP guidelines obsolete	2018	ICNIRP draft guidelines at even higher levels than its 1998 short-term heating guidelines
1994	DNA damage	2010	Seletun: 170 $\mu\text{W}/\text{m}^2$		
1994	mast cell degranulation	2011	C.of Europe: protect EHS; ICNIRP serious limitations		
1995	ELF geomagnetic resonance	2011	IARC: RF: 2B possible human carcinogen		
2000	grounding effects	2012	Bioinitiative: 3.0 (children) 6.0 (adults) $\mu\text{W}/\text{m}^2$		
2003	geomagnetic gender effects	2012	India adopts non-thermal guidelines, 10% of ICNIRP		
2004	all subjects sensitive to 60 Hz	2012	UK and other courts: ES disability compensation		
2007	4.0% of pop. electrosensitive	2015	International EMF Scientist Appeal: 250 scientists		
2007	1.8% of pop. severely affected	2016	EUROPAEM EMF Guidelines: 0.1-100 $\mu\text{W}/\text{m}^2$		
2008	ELF: cancer, genetic variants	2017	The 5G Appeal: 250 signatories		
2009	ELF: Alzheimer's	2017	UK PHE: precautionary advice on children		
2014	RF: EHS, genetic variants	2018	International Appeal Stop 5G, 150,000 signatories		
2015	oxidative stress confirmed	2018	IGNIR Guidelines: 0.006-0.2 V/m; 0.1-100 $\mu\text{W}/\text{m}^2$		
2015	EHS reduced cerebral blood flow	2018	The EMF Call, for protective limits, 260 signatories		
2017	3d fMRI scans for EHS	2019	US Supreme Court backs warnings for mobiles		
2017	autoimmune dis. affected by RF	2019	Brussels and other cities refuse 5G		
2018	NTP & Ramazzini confirm cancer	2020	Legal actions against 5G. International 5G protests		
2019	sufficient animal studies +proven mechanisms =human carcinogen				
2019	magnetoreception confirmed				