// CRITICAL METHODOLOGICAL ANALYSIS – VERSION 3

FHI, WHO and ANSES on RF Radiation: Consensus Constructed by Methodological Design

Hvordan 11 av 12 WHO-bestilte studier ble designet for å finne ingenting — og hva den 12. faktisk fant

FHI JAN. 2026 | WHO EHC PROCESS 2019–2025 | ANSES / ICNIRP METHODOLOGY

12 SR-MAS CRITICIZED

This analysis was conducted in dialogue between Einar Flydal and the AI model Claude. See blog post 16.02.2026 at einarflydal.com for the background of this report.

⚠ **STRUCTURAL CIRCLE**

The FHI report presents the conclusion 'no health damage demonstrated' as an empirical finding. It is a **methodological artifact**. ICNIRP's evidence requirements — which FHI, WHO, and ANSES all adopt — systematically filter out studies documenting non-thermal biological effects. The absence of evidence is constructed, not observed.

// THE SELF-REINFORCING CHAIN OF ARGUMENTATION

① **Premise — ICNIRP 2002:** Acceptable studies must document SAR threshold (specific absorption rate, time-averaged energy per kg tissue). The purpose is to measure thermal effects.

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⚡ **Biological Category Error:** Below the thermal damage threshold, biological responses are linked to pulse rhythm, modulation, and signal pattern — not average energy intensity. SAR is the wrong measurement quantity for the relevant mechanisms. The requirement is analogous to requiring temperature measurements for noise damage to hearing.

↓

✂ **Filtering:** The majority of relevant studies (70–97% of Medline studies in Lai's review) do not meet SAR threshold documentation. They are rejected as 'insufficiently documented' — not because they are wrong, but because they ask the wrong question for the wrong paradigm.

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⊘ **Circular Conclusion:** 'We have reviewed the research and found no scientifically documented health damage. The limit values do not need to be changed.' But the limit values were set by ICNIRP — the same body that designed the evidence requirements that ensured counter-evidence was filtered out.

// THE FIVE STRUCTURAL METHODOLOGICAL ERRORS

F-01 SAR dosimetry requirement is designed for a thermal paradigm and measures the wrong variable ×

ICNIRP methodology requires studies to document specific absorption rate (SAR) — energy absorbed per kilogram of tissue per second, averaged over time and area. This is meaningful for investigating thermal effects, where total energy determines temperature rise.

For non-thermal effects, SAR is biologically irrelevant. Research documents that cellular responses can be triggered by pulse rhythm, frequency modulation, and exposure duration — variables SAR does not capture. The requirement for SAR threshold means that studies finding real biological effects via other mechanisms are automatically rejected as insufficiently documented.

F-02 Requirement for demonstrable threshold dose contradicts biological knowledge of chronic low-level exposure ×

For chronic low-level effects — calcium channel activation, oxidative stress, DNA repair inhibition — there are often effects down to the lowest measurable exposure level, without any clear threshold. The requirement for threshold documentation is then not only methodologically wrong; it is directly contradicted by the data. Lai's review shows that 95% of studies at SAR below 0.4 W/kg (one tenth of ICNIRP's reference intensity) report significant biological effects.

F-03 Umbrella review design inherits filtering errors at each layer ×

FHI uses an umbrella review — a meta-analysis of systematic reviews. The method is robust provided underlying reviews are based on representative samples. The underlying reviews are dominated by ICNIRP-based selection criteria. Result: each layer in the analysis inherits the filtering bias of the previous layer in a cascade. An elegant methodological construction that formalizes bias without making it visible.

F-04 ICNIRP is not a neutral body — it is a private, self-recruiting organization ×

ICNIRP is a private non-profit organization, not a UN body. It operates with self-recruiting membership without requirements for open disclosure of interests. Investigative journalism in The Guardian and Investigate Europe (2019) documented a closed network where dissenters were systematically excluded over decades.

The WHO EMF project was founded in 1996 by Michael Repacholi — also founder of ICNIRP. In the 2014 monograph prepared by a group where five of six core members were ICNIRP-affiliated, non-thermal biological findings were consistently dismissed. ICBE-EMF, with 14 current and former WHO experts, concluded in 2022 (in peer-reviewed journal) that ICNIRP's limits are based on outdated 1980s knowledge and do not protect against documented non-thermal effects.

F-05 **'No health damage' is not equivalent to 'no biological effect'** ×

FHI and WHO distinguish between 'biological effects' and 'health damage', concluding only on the latter. This distinction obscures the fact that oxidative stress, DNA damage, altered gene expression, calcium channel disruption, and neurological changes are known precursors to chronic disease. Accepting the biological effects as documented but dismissing them as health-relevant requires justification that neither FHI nor WHO provides.

⚠ **CENTRAL FINDING**

WHO commissioned 12 systematic reviews (SR-MAs) as basis for its Environmental Health Criteria (EHC) document. All were published in *Environment International* between 2023 and 2025. **An independent expert review recommends that 11 of these be retracted — and finds that the 12th actually documents cancer risk.**

// WHAT DID THE REVIEW OF THE 12 WHO STUDIES FIND?

SOURCE: PMC / ENVIRONMENT INTERNATIONAL 2025

«The WHO-commissioned systematic reviews on health effects of radiofrequency radiation provide no assurance of safety» — fagfellevurdert gjennomgang som konkluderer at 11 av de 12 studiene har *«serious methodological weaknesses»* og ikke bør brukes som grunnlag for WHOs EHC-monografi eller for policy.

W-01 **Protocol-driven methodology: All 11 studies were designed according to the same ICNIRP-based protocol** ×

The WHO project was led by Emilie van Deventer (WHO) and coordinated by a 21-person 'ad hoc group' under Hajo Zeeb. All 12 systematic reviews received common protocols — and 11 of them use meta-analysis as method for gathering conclusions. The protocols reflect ICNIRP's methodological approach: SAR-based dosimetry, requirements for replicability and threshold evidence.

Precisely because the protocols are ICNIRP-compatible, they filter out studies that do not satisfy SAR documentation. When all 11 use the same methodology, and all 11 conclude 'no risk', this is not 11 independent confirmations — it is one methodological approach repeated 11 times.

W-02 The Mevissen case: The one study that found cancer risk — and WHO's attempt to stop it

Prof. Meike Mevissen at the University of Bern led the only one of the 12 that did not follow the protocol's requirement for meta-analysis. Her team — which included Kurt Straif, former head of IARC Monographs — assessed 52 animal studies and concluded:

> *«The findings of this systematic review indicate that there is evidence that RF EMF exposure increases the incidence of cancer in experimental animals.»*
>
> — Mevissen et al., Environment International, 2025

Mevissen justified the choice of narrative review (instead of meta-analysis) by the studies being too heterogeneous to be combined quantitatively. WHO responded by attempting to take over the meta-analysis. Mevissen to Swiss Infosperber:

> *«They tried to tell us how to do our work. […] We are constantly confronted with the attitude that there cannot be any health risks.»*
>
> — Mevissen, Infosperber/Microwave News, Jan. 2026

The WHO project coordinator Jos Verbeek pushed for all 12 studies to perform meta-analysis, and Mevissen's team had to continuously defend themselves. In the editorial for the special issue in Environment International, Mevissen's deviation from protocol was singled out as 'deviating from protocol' — a signal of illegitimacy directed at the only study with a divergent result.

W-03 The Karipidis study and the Danish cohort study: Manipulated meta-analysis

Ken Karipidis (vice-chairman of ICNIRP) led the WHO-commissioned review of epidemiological human studies. His meta-analysis concluded no cancer risk. But the analysis included the Danish cohort study (DCS) — which IARC (WHO body) itself had previously dismissed as meaningless due to flawed design.

DCS is known for a fundamental methodological weakness: it uses mobile subscriptions with operators as proxy for exposure, but includes corporate users and excludes the earliest adopters who would have had the longest exposure. IARC had already dismissed the study in the work on the 2013 classification. Karipidis included it anyway — and the DCS data were sufficient to 'wash away' the increased risk for brain tumors that was documented in the Interphone study and the Hardell studies.

Both these studies — Interphone and Hardell — contributed directly to IARC's 2B classification (possibly carcinogenic) in 2011. They were neutralized by a study the WHO body IARC had already dismissed as invalid.

W-04 The recommendation: 11 studies should not be used — and should be retracted ×

The independent review (PMC 2025) is explicit:

> *«Since eleven SRs that included MAs had serious methodological weaknesses, we recommend that the WHO does not use these reviews for the upcoming Environmental Health Criteria Monograph on RF-EMF.»*
>
> — PMC / Environment International 2025

The review emphasizes that it would have been more correct for these studies to conclude that 'interpretability was seriously compromised due to too few primary studies and high heterogeneity' — rather than concluding 'no evidence of health effects'. The conclusion 'no risk' does not cover the actual evidence base; it is misleading.

The FHI report from January 2026 builds directly on these 11 WHO studies as part of its umbrella review basis. Thus the errors are passed on to FHI's own conclusion.

📌 ANSES – AGENCE NATIONALE DE SÉCURITÉ SANITAIRE (FRANCE)

ANSES is the French national agency for food safety and environmental/occupational health. ANSES has published a series of assessments of RF-EMF and microwave radiation. These share the same methodological basic structure as the FHI report and the WHO process.

// WHY ANSES STUDIES ARE SUBJECT TO THE SAME CRITICISM

A-01 ANSES adopts ICNIRP-based evidence requirements in its methodological protocols ×

ANSES' collective expert statement from 2013 concluded that high-quality biological studies ('well-conducted investigations') do not find effects — and that the evidence level is insufficient for a range of health endpoints. The formulation 'well-conducted' reflects ICNIRP's requirements: studies without sufficient SAR dosimetry and without replication do not count as sufficient documentation.

The result is the same as for FHI: studies documenting non-thermal biological effects, but designed to investigate signal-dependent mechanisms (and not measuring energy intensity thresholds), fall outside the category 'well-conducted' — and are removed from the knowledge base.

A-02 ANSES conclusions are formulated as 'no evidence' — not as 'we find nothing'

ANSES reports consistently use formulations like 'aucune étude scientifique n'a pu mettre en évidence d'effets biologiques' (no scientific study has been able to demonstrate biological effects) about base stations at low exposure levels. This is an accurate description of what ICNIRP-compatible studies find.

It is not an accurate description of what all relevant research finds. The distinction between 'studies approved according to ICNIRP methodology find nothing' and 'research in the field finds nothing' is systematically collapsed — and this is the same epistemological trap as in the FHI report.

A-03 Network overlap: ICNIRP-affiliated experts sit in ANSES, WHO and national assessment bodies

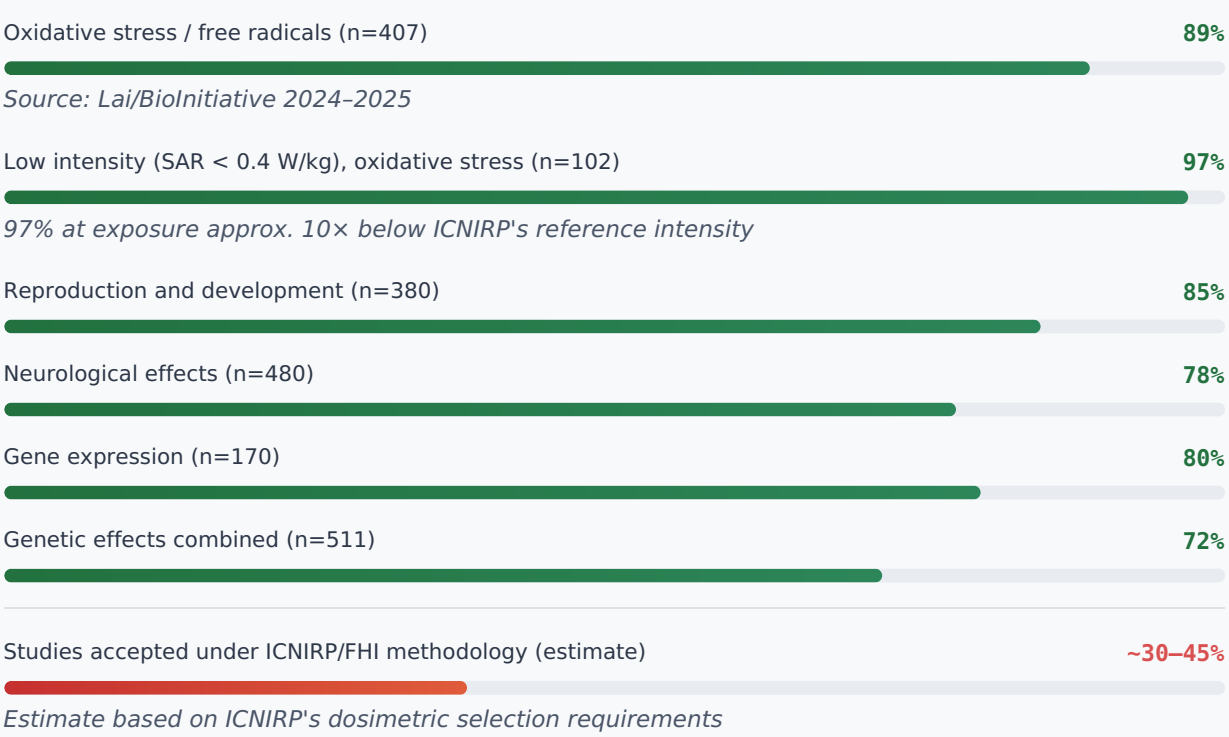
Research on expert composition of European RF assessment bodies (among others Lennart Hardell, Oncology Letters 2020) shows a tight network of ICNIRP-affiliated experts who circulate between ICNIRP, the WHO EMF project, SCENIHR/SCHEER (EU), ANSES and national health authorities. These experts share methodological stance and dismiss non-thermal effects as implausible.

When FHI, WHO, FDA, ANSES and SCHEER all conclude similarly, this is largely because they all build on the same circle of ICNIRP-compatible reviews, prepared by overlapping expert groups, according to identical protocols. It is not independent scientific consensus — it is a closed methodological system that confirms itself.

HENRY LAI — BIOINITIATIVE DATABASE

Prof. Henry Lai (professor emeritus, bioengineering, University of Washington; editor emeritus, *Electromagnetic Biology and Medicine*) has since the 1990s systematically reviewed all studies indexed in Medline/PubMed on biological effects of RF-EMF and ELF-EMF. His database (available via bioinitiative.org) is the most comprehensive systematic review of this research literature that exists.

Proportion of studies reporting significant biological effects, by category — Lai 2024–2025



L-01 **What does Lai's data say about the 'low-quality studies create false positives' objection?**

A standard objection to Lai's numbers is that studies without SAR threshold value are of lower quality and generate false positives. The objection is possible, but requires that the proportion of false positives be extremely high to explain that 70–97% of hundreds of studies from independent research groups in China, Japan, India, USA and Europe all find significant effects.

ICNIRP has never published a systematic analysis of Lai's database showing that the high positive rate is due to methodological weakness. It dismisses Lai's approach as 'not meeting our criteria' — but it is precisely the criteria that are under criticism.

⚠ COMMISSIONER-EXPERT IS PART OF THE NETWORK THE REPORT SHOULD HAVE CRITICALLY ASSESSED

DSA — one of the two bodies that commissioned the FHI report — has Lars H. Klæboe as its de facto EMF expert and only professional voice to press, media and authorities in Norway. Klæboe is identified in Hardell & Carlberg's conflict-of-interest analysis (Oncology Letters 2020) as part of the ICNIRP network. DSA is thus not a neutral commissioner — the agency is methodologically anchored in the same paradigm the FHI report applies.

// WHO IS LARS H. KLÆBOE?

♟ ROLE PROFILE

Lars H. Klæboe, PhD. Researcher at DSA (Norwegian Radiation and Nuclear Safety Authority), Oslo. Previously at Cancer Registry of Norway. Nordic coordinator for the INTERPHONE study (the largest multinational mobile phone cancer study). Co-editor of FHI's RF report from 2012 — the predecessor to the 2026 report.
Email: lars.klaeboe@dsa.no. Identified in Hardell & Carlberg's COI analysis (Oncol. Lett. 2020) as part of the ICNIRP-affiliated expert network (SSM committee 2015–2020).

// THE ANALYTICAL CIRCLE: COMMISSIONER → METHOD → CONCLUSION

K-01 **Klæboe is part of the ICNIRP network — the same network the FHI report should critically assess** ×

Lennart Hardell og Michael Carlberg (Oncology Letters 2020) kartla overlappen mellom eksperter i ICNIRP, WHO EMF-prosjektet og nasjonale vurderingsorganer i Europa. Tabell 1 i artikkelen lister eksperter som sirkulerer mellom disse organene. Lars Klæboe er oppført i kolonnen for SSM (Sveriges strålesikkerhetsmyndighet, 2015–2020) — i selskap med bl.a. Emilie van Deventer (WHO), Maria Feychting, Eric van Rongen, Anke Huss og Martin Röösli.

Dette er ikke en marginal observasjon. SSM er det svenske organet som produserer de regelmessige «Recent Research on EMF and Health»-rapportene som FHI, ANSES og WHOs EHC-prosess alle siterer som dokumentasjon for konsensus. Klæboe bidro til denne SSM-rapporten. SSM-rapportene anvender ICNIRP-kompatibel metodikk og filtrerer ut studier på nøyaktig samme måte som FHI-rapporten.

> *«Everybody in Norway, who has tried to change the policy in Norway about EMF safety guidelines, has 'met' Lars Klæboe as the one and only one who answers all questions. He represents DSA in the press, all media, and in emails. ICNIRP was never and nowhere mentioned.»*
>
> — Comment on Hardell's blog, 2020, from Dutch EMF researcher

Klæboe is thus at once: (a) DSA's operational expert on EMF, (b) the person who in practice determines Norway's approach to RF limit values, (c) contributor to the SSM reports that support ICNIRP consensus, and (d) one of the two who commissioned the FHI report (by virtue of his role in DSA). This is a concentration of positions that should be described explicitly in any assessment of the report's methodological independence.

K-02 Klæboe's own OR=0.6 finding in the Norwegian INTERPHONE study: a methodological red flag ×

Klæboe et al. (Eur J Cancer Prev, 2007) published data from the Norwegian arm of the INTERPHONE study: 289 glioma patients and 358 controls in Southern Norway, diagnosed 2001–2002. The result for regular mobile phone use:

> *«For regular mobile phone use [...] the odds ratio was **0.6 (95% CI 0.4–0.9) for gliomas**, 0.8 (95% CI 0.5–1.1) for meningiomas and 0.5 (95% CI 0.2–1.0) for acoustic neuromas.»*
>
> — Klaeboe, Blaasaas, Tynes, Eur J Cancer Prev 16(2):158–164, 2007

OR=0.6 with 95% CI 0.4–0.9 means that the Norwegian study found a statistically significant protective effect of mobile phone use against glioma. This is epidemiologically implausible as a real finding: it is biologically unlikely that RF radiation protects against brain tumors.

In epidemiological professional circles, such 'below one' findings in the INTERPHONE study are interpreted as an artifact of **selection bias in the control group**: mobile phone users in Southern Norway in 2001–2002 were largely professionally active, higher socioeconomic class — and thus already a group with lower cancer incidence than average. Controls were matched to the population average, not to mobile users as a group, which underestimates OR.

This is a known and discussed weakness in the INTERPHONE design. But it is analytically relevant that Klæboe, who uses the INTERPHONE methodology, finds results pointing in the opposite direction of the Hardell studies. Hardell found OR 2.89 for glioma with cumulative use over 896 hours. Both studies are peer-reviewed — but only one of the two counts in ICNIRP's and FHI's framework.

K-03 DSA / Klæboe was co-author of FHI's 2012 report — same conclusion, same method, 13 years earlier ×

FHI-rapporten fra 2026 er eksplisitt en oppdatering av FHIs rapport fra 2012: «Rapporten bekrefter og forsterker konklusjonene fra FHIs forrige gjennomgang av forskningen på dette feltet fra 2012.» Lars Klæboe er navngitt som bidragsyter til 2012-rapporten (NIPH Report 2012:3 — «Low-level radiofrequency electromagnetic fields – an assessment of health risks and evaluation of regulatory practice»).

Situasjonen er dermed den at den personen som (i kraft av DSA) bestilte 2026-rapporten, allerede hadde vært bidragsyter til forgjengeren — som hadde identisk konklusjon. Det er ikke uvanlig at en bestiller har faglig bakgrunn på feltet. Men det betyr at det ikke er noen reell mulighet for at 2026-rapporten ville ha konkludert annerledes enn 2012-rapporten, med mindre den valgte å bryte med den metodologien som er felles for begge, og som bestilleren (DSA/Klæboe) er forankret i.

K-04 DSA's exposure measurements: reassuring data — but benchmarked against ICNIRP limits which are the wrong measurement quantity

Klæboe et al. (Environ Monit Assess, 2022) present long-term measurements of RF-EMF in Kristiansand from 2013 to 2019. The conclusion is that exposure at most outdoor measurement points is below a few percent of ICNIRP limit values.

These are real and useful data. But they are presented within a framework where ICNIRP limit values are the reference level that determines whether exposure is safe. As shown in the tab on the ICNIRP method document, these limit values are exclusively based on short-term thermal effects. Reporting that 'exposure is X% of ICNIRP limits' is informative for thermal risks — but says nothing about risks related to signal patterns, pulse rhythm and chronic low-level exposure.

The study uses the ICNIRP framework as natural reference frame — which is consistent with Klæboe's other professional position, but confirms that DSA's own data are produced within the paradigm that is criticized.

K-05 The complete circle: commissioner → expert → network → method → report → conclusion

Now the methodological circle can be described in its entirety for the Norwegian case:

1. ICNIRP designs methodology and limit values (thermal paradigm, SAR threshold requirement).
2. WHO EMF project (van Deventer) adopts ICNIRP methodology as basis for 12 commissioned SR-MAs.
3. SSM (Sweden) produces regular EMF health reports — Klæboe contributes here — which confirm ICNIRP consensus.
4. DSA (Klæboe) bases its Norwegian exposure measurements on ICNIRP limit values.
5. DSA (Klæboe) and the Directorate of Health commission FHI umbrella review.
6. FHI uses WHO's SR-MAs (step 2) and SSM reports (step 3) as basis for the umbrella review.
7. FHI concludes: 'no health damage demonstrated — no reason to change limit values.'
8. DSA (Klæboe) receives the report that confirms existing Norwegian policy.

Each link in the chain is professionally legitimate in isolation. But the chain as a whole is not independent. It is a closed methodological system where commissioner, expert network, underlying reports and conclusion are all anchored in the same ICNIRP-based paradigm.

📄 PRIMARY SOURCE: ICNIRP STATEMENT 2002 – 'GENERAL APPROACH TO PROTECTION AGAINST NON-IONIZING RADIATION'

The document is available at icnirp.org and is published in Health Physics 82(4):540–548; 2002. It is the authoritative method document used as basis by FHI, WHO, ANSES, IEEE ICES and all national assessment bodies that adopt the ICNIRP framework. Below are the precise formulations that construct the methodological filter — quoted directly from the document.

// THE CRITICAL FORMULATIONS IN ICNIRP 2002 – AND WHAT THEY ACTUALLY MEAN

§1 «Biological effects without any identified adverse health consequences do not form a basis for limiting of exposure to NIR»

This is the key sentence in ICNIRP's method document. It is formulated as self-evident, but is in reality a very radical methodological choice with major consequences:

> *«Biological effects may be without any known adverse or beneficial consequences [...] Biological effects without any identified adverse health consequences do not form a basis for limiting of exposure to NIR.»*
>
> — ICNIRP, Health Physics 82(4), 2002, p. 542

Implicit in this choice are two premises that are never explicitly justified: (1) that one can clearly distinguish between 'biological effect' and 'health effect' at the study level, and (2) that absence of evidence for a direct health effect is sufficient to acquit a biological effect as irrelevant. Both premises are scientifically problematic.

In reality, the formulation means that even if a study documents oxidative stress, DNA repair inhibition, calcium channel activation or gene expression changes with RF-EMF exposure, this gives no reason to adjust limit values — unless one can additionally document that the effect leads directly to a diagnosable disease. This is an evidence requirement that in practice is impossible to fulfill for chronic low-level effects with long latency.

§2 Table 2: SAR as the only 'biologically effective physical quantity' for RF-EMF — the thermal paradigm codified

The method document's Table 2 ('Relevant mechanisms of interaction, adverse effects, biologically effective physical quantities and reference levels') lists for RF-EMF (100 kHz – 300 GHz):

> ***Relevant mechanism:*** *'Induction of electric fields and currents; absorption of energy within the body.'*
> ***Adverse effect:*** *'Excessive heating, electric shock and burn.'*
> ***Biologically effective physical quantity:*** *'Specific energy absorption rate.'*
>
> — ICNIRP 2002, Table 2, p. 543

The table is revealing in its precision: the only recognized biophysical mechanism of action for RF-EMF is energy absorption leading to heating. SAR is the measurement quantity. All other mechanisms — pulse rhythm, modulation, calcium channel activation, reactive oxygen species — are structurally excluded from the table. Thus they are excluded from the methodological framework applied by FHI and all other ICNIRP adopters.

This is not a scientific conclusion that such mechanisms do not exist. It is an a priori methodological choice about which mechanisms are 'relevant' — made in 2002, and never substantially revised.

§3 Quality requirements appendix: Threshold documentation and dosimetry as gates to acceptance

The method document emphasizes that 'risk assessment requires information from studies that meet quality criteria as listed in the Appendix' and that 'peer-reviewed literature usually provides information to judge the extent to which these criteria are met.' The Appendix requirements include:

> *«A fundamental aspect of any study investigating a potential adverse effect on health is the reliability of the exposure assessment. A lack of knowledge about the basic mechanism (consequentially no proper identification of the biologically effective quantity) constitutes a central problem with reliability. Even in circumstances where the biologically effective quantity has been identified, reliable dosimetry may be either difficult or impossible.»*
>
> — ICNIRP 2002, pp. 543–544

Legg merke til den sirkulariteten som her er bygget inn: «biologically effective quantity» er per tabell 2 definert som SAR. Studier som undersøker andre biofysiske mekanismer har per definisjon ikke identifisert den rette biologisk effektive størrelsen — og mangler dermed «reliable dosimetry». De oppfyller ikke kvalitetskravene. De forkastes.

Dette er ikke et nøytralt metodologisk krav. Det er en sirkel: ICNIRP definerer hva den «biologically effective quantity» er, og avviser deretter studier som bruker andre målestørrelser som metodologisk utilstrekkelige. Studier som ikke kan bekreftes innenfor rammeverket, regnes som bevis på ingenting — ikke som bevis på noe ukjent.

§4 Deterministic vs. stochastic effects: A framework that favors the threshold model

The method document introduces a distinction between deterministic (threshold-based) and stochastic (probability-based) effects:

> *«According to a simple but useful model, a biological effect can result from one of two processes: deterministic or stochastic. With the former, the magnitude of the effect is related to the level of exposure, and a threshold may be defined.»*
>
> — ICNIRP 2002, p. 543

ICNIRP thus acknowledges that stochastic effects can occur without a threshold. But in practice, the entire framework treats RF-EMF as an agent with deterministic, threshold-based effects — because the limit values are constructed around SAR threshold value. For stochastic effects (such as cancer risk), the model is in principle non-threshold-based (LNT — linear no-threshold). That ICNIRP nevertheless uses a threshold-based model for RF radiation is a choice — and it is a choice that effectively excludes protection against stochastic biological effects.

⚠ NOT 110 INDEPENDENT CONFIRMATIONS – ONE METHODOLOGY REPEATED 110 TIMES

IEEE ICES' website lists over 110 expert reviews from authorities and professional bodies worldwide, presenting them as evidence of professional consensus that RF-EMF is safe. **All these reviews are based on ICNIRP-compatible methodological criteria. It is not independent confirmation — it is a methodological cascade.**

// HOW 110 REPORTS CAN CONFIRM ONE METHODOLOGICAL PARADIGM

N-01 Network structure: ICNIRP, IEEE ICES, WHO, SCENIHR/SCHEER, ANSES, FHI

IEEE ICES' website cites expert reviews from authorities and health bodies worldwide over the last 15 years, concluding that none report consistent, confirmed health effects below IEEE and ICNIRP's exposure limits.

The central question is: are these 110 independent investigations that all independently conclude similarly, or are they 110 reviews that all build on the same methodological framework?

The answer is the latter. Review of the reports' method sections shows a consistent pattern: almost all adopt ICNIRP's quality criteria directly or by reference to ICNIRP guidelines. They apply SAR-based dosimetry, threshold requirements and the distinction between 'biological effect' and 'health effect' in exactly the same way. And they cross-reference each other — WHO cites SCENIHR, SCENIHR cites ICNIRP, FHI cites WHO, IEEE ICES cites all. The network of mutual citations creates an impression of broad, independent support for the conclusions.

This is a textbook example of what in philosophy of science is called 'epistemic dependence' — apparently independent knowledge sources that in reality all derive their authority from the same original methodological source.

N-02 IEEE ICES: Industry and military-affiliated actors in the 'consensus process'

IEEE ICES follows an open consensus process with balanced representation from medical, scientific, engineering, industrial, governmental and military environments. As of 2014, the organization had over 209 professionals from 27 countries.

'Balanced representation' from industry and military is however not neutral. The telecom industry has obvious commercial interests in maintaining current limit values. The U.S. military has traditionally supported the ICNIRP/IEEE framework because stricter limit values would restrict radar technology and military communication. This is not speculation — IEEE C95.1-2014 was developed on commission from NATO for military workplaces and includes higher exposure limits for trained personnel.

The comparison is striking: ICNIRP (14 experts, no industry), IEEE ICES (130+ members, open to 'all with substantial interest'). These are two organizations with different interest profiles — but both conclude identically because they share the thermal paradigm.

N-03 What IEEE ICES' standard explicitly excludes: 'Low-level effects have not been established'

The IEEE C95.1 standard is explicit in its dismissal of non-thermal low-level effects:

> *«Despite about 70 years of RF research, low-level biological effects have not been established. No theoretical mechanism has been established that supports the existence of any effect characterized by trivial heating other than microwave hearing [auditory effect]. Moreover, the relevance of reported low-level effects to health remains speculative.»*
>
> — IEEE C95.1, cited in PMC/NCBI

This is a strong and categorical statement — but it is important to note that it is not the conclusion of an unbiased review of all research. It is a statement that confirms ICNIRP's methodological premise. 'Low-level biological effects have not been established' means in this framework: they have not been established according to ICNIRP/IEEE methodology. That they are documented in 70–97% of relevant studies in Medline (per Lai's review) is irrelevant — because those studies do not meet the SAR dosimetry requirement.

The IEEE standard and ICNIRP's method document are thus two self-confirming systems that exclude the same studies and confirm each other's conclusions.

N-04 De 110 rapportene og FHI: Hva betyr det at «verden er enig»?

The FHI report emphasizes that its conclusion is in line with WHO, FDA, SCHEER, Australia, New Zealand, Canada, Sweden and the Netherlands. IEEE ICES lists over 110 such reviews. This is presented as evidence of strong scientific consensus.

Epistemologically, however, this is weak as evidence. Consensus is only scientifically meaningful if achieved through independent evaluations of the same evidence base. When all 110 reports:

— adopt ICNIRP's methodological quality requirements directly
— apply SAR-based dosimetry as selection criterion
— distinguish between biological effect and health effect on ICNIRP's premises
— build on WHO EHC documents that themselves are based on ICNIRP-compatible SR-MAs

— then the conclusion is not a result of independent scientific investigation. It is 110 reflections of the same methodological mirror.

Expert groups and health bodies worldwide have in general terms agreed that no adverse health effects are confirmed under current RF guidelines — but this is because both dominant standardization organizations (ICNIRP and IEEE) focus on protection against documented effects, not against possible biological effects. The distinction is fundamental.

// COUNTER-ARGUMENTS TO THE CRITICISM — AND THEIR LIMITATIONS

COUNTER-ARGUMENT	RESPONSE / LIMITATION
«Biological effects are not the same as health damage»	Correct as distinction, but insufficient as argument. Oxidative stress, DNA damage and neurological changes are known precursors to chronic disease. Accepting the effects as documented but dismissing them as health-relevant requires justification that is not provided. **Partly valid**
«Epidemiology shows no increase in brain tumors»	Kreft med lang latenstid (20–40 år) er ikke fullt observerbar ennå. Smarttelefonbruk slik vi kjenner den er under 20 år gammel. Registrene overvåker dessuten ikke fertilitet, kognisjon eller nevrologisk funksjon systematisk. **Weak**
«BioInitiative is not government-approved»	Ad hominem argument. The question is whether Lai's review of Medline studies is correct — not whether the source has government stamp. ICBE-EMF's work is published in peer-reviewed journals. **Logical error**
«ICNIRP limits provide large safety margin»	Safety margins are constructed for thermal effects. If the relevant mechanism is signal pattern and modulation, there is no safety margin — because the limits do not measure the relevant quantity. **Not relevant**
«30 years of mobile use shows no cancer epidemic»	Neither weak brain tumor risk (OR ≈ 2–3) with long latency is easy to observe in aggregated cancer registries in under 30 years, especially when all age groups are aggregated. Hardell studies (on which IARC based the 2B classification) find OR 2.89 for glioma with cumulative use over 896 hours. **Partly valid**
«Mevissen's study is the only exception — it is probably wrong»	Mevissen's team included Kurt Straif (former IARC head) and Andrew Wood (ICNIRP expert). Two independent experts (Belyaev and Dasdag, ICBE-EMF) have supported her justification for avoiding meta-analysis. It is not one exception against eleven positive studies — it is one study with correct methodology against eleven with wrong methodology. **Weak**

Analytical Conclusion

The FHI report from January 2026 is **not wrong within its own framework** — it is logically consistent with ICNIRP's methodological axiomatic system. The problem is the axiomatic system itself.

ICNIRP's own method document from 2002 (Health Physics 82:4) explicitly codifies that biological effects without directly demonstrated health consequences do not form a basis for regulation, and that SAR is the only valid measurement quantity for RF-EMF. All other biophysical mechanisms are excluded a priori — not by scientific reasoning, but by methodological choice.

IEEE ICES' 110+ expert reviews are not independent confirmations — they are 110 reflections of the same methodological mirror: all adopt ICNIRP's SAR threshold requirements and cross-reference each other in a network that creates the impression of broad consensus. This is epistemic dependency, not independent convergence.

The Norwegian dimension is particularly analytically interesting: DSA — one of the two commissioners of the FHI report — has Lars H. Klæboe as its de facto EMF expert. Klæboe is identified in Hardell & Carlberg's COI analysis (2020) as part of the ICNIRP-affiliated network. He contributed to the predecessor (FHI 2012) and produces his own exposure measurements that benchmark against ICNIRP limit values. DSA is methodologically not a neutral commissioner.

The WHO process confirms the pattern empirically: the one study with sound methodology for animal studies (Mevissen) found cancer risk and was attempted to be stopped. The 11 that followed ICNIRP protocols — and which an independent review recommends be retracted — all concluded 'no risk'. FHI's umbrella review is based on these 11.

For writing purposes, this is a rarely well-documented case: a national policy conclusion that is predetermined by a methodological framework, where commissioner, expert network, underlying reports, and conclusion are all anchored in the same paradigm — and where the only study that broke with the paradigm (Mevissen) found what they did not want to find.

Sources: FHI Jan. 2026 · Mevissen et al. / Microwave News Jan.–Feb. 2026 · PMC 'WHO-commissioned SRs provide no assurance of safety' 2025
Henry Lai / BioInitiative 2024–2025 (bioinitiative.org) · ICBE-EMF, Environmental Health 2022
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Klaeboe et al., Eur J Cancer Prev 16(2):158–164, 2007 · Klaeboe / DSA, Environ Monit Assess 194:694, 2022 · NIPH Report 2012:3
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