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## Scientific panel on electromagnetic field health risks: consensus points, recommendations, and rationales.

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### Abstract

In November, 2009, a scientific panel met in Seletun, Norway, for three days of intensive discussion on existing scientific evidence and public health implications of the unprecedented global exposures to artificial electromagnetic fields (EMF). EMF exposures (static to 300 GHz) result from the use of electric power and from wireless telecommunications technologies for voice and data transmission, energy, security, military and radar use in weather and transportation.

The Scientific Panel recognizes that the body of evidence on EMF requires a new approach to protection of public health; the growth and development of the fetus, and of children; and argues for strong preventative actions. **New, biologically-based public exposure standards are urgently needed to protect public health worldwide.**

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### 10 Key Points:

1. The Global Population Is At Risk. Global populations are not sufficiently protected from electromagnetic fields (EMF) from emerging communication and data transmission technologies that are being deployed worldwide, affecting billions of people;
2. Sensitive Populations Are Currently Vulnerable. Sensitive populations (for example, the elderly, the ill, the genetically and/or immunologically challenged) and children and fetuses may be additionally vulnerable to health risks; their exposures are largely involuntary and they are less protected by existing public safety standards; and they may amount to 40-50% of the population;
3. Government Actions Are Warranted Now Based on Evidence of Serious Disruption to Biological Systems. The Seletun Scientific Panel urges governments to adopt an explicit statement that “the standard for judging and acting on the scientific evidence shall be based on prudent public health planning principles rather than scientific certainty of effect (causal evidence)”. Actions are warranted based on limited, or weak, scientific evidence, or a sufficiency of evidence – rather than a conclusive scientific evidence (causation or scientific certainty) where the consequence of doing nothing in the short term may cause irreparable public health and economic harm, where the populations potentially at risk are very large, where there are alternatives without similar risks, or where the exposures are largely involuntary;
4. The Burden of Proof for the Safety of Radiation-Emitting Technologies Should Fall on Producers and Providers Not Consumers. The Seletun Scientific Panel urges governments to make explicit that the burden of proof of safety rests with the producers and providers of EMF- producing technologies, not with the users and consumers.
5. EMF Exposures Should Be Reduced in Advance of Complete Understanding of Mechanisms of Action. EMF exposures should be reduced now rather than waiting for proof or understanding of mechanisms of harm before acting. This recommendation is in keeping with traditional public health principles, and is justified now given abundant evidence that biological effects and adverse health effects are occurring at exposure levels many orders of magnitude below existing public safety standards around the world;
6. The Current Accepted Measure of Radiation Risk—the Specific Absorption Rate (‘SAR’)—Is Inadequate, and Misguides on Safety and Risk. SAR is not an adequate approach to predict many important biologic effects in studies that report increased risks for cancer, neurological diseases, impairments to immune function, fertility and reproduction, and neurological function (cognition, behaviour, performance, mood status, disruption of sleep, increased risk for auto collisions, etc);
7. An International Disease Registry Is Needed To Track Time Trends of Illnesses to Correlate Illnesses with Exposures. The Seletun Scientific Panel recommends an international registry be established to track time-trends in incidence and mortality for cancers and neurological and immune diseases. Tracking effects of EMF on children and sensitive EHS populations is a high priority. There should be open access to this information;
8. Pre-Market Health Testing and Safety Demonstration of All Radiation-Emitting Technologies. There is a need for mandatory pre-market assessments of emissions and risks before deployment of new wireless technologies. There should be convincing evidence that products do not cause health harm before marketing;
9. Parity Needed for Occupational Exposure Standards. The Panel discourages use of more lenient public safety standards for workers, as compared to the general public. Separate safety limits are not ethically acceptable. Workers include women of childbearing age and men who wish to retain their fertility;
10. Functional Impairment Designation for Persons with Electrohypersensitivity. The Panel strongly recommends that persons with electrohypersensitivity symptoms (EHS) be classified as functionally impaired rather than with ‘idiopathic environmental disease’ or similar indistinct categories. This terminology accepts responsibility for the environmental cause of the related health challenges and will encourage governments to make adjustments in the living environment to better address social and well-being needs of this subpopulation of highly sensitive members of society. [[IEMFA](#)]