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"Dirty electricity": what, where, and should we care?

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Abstract

Environmental exposure to high-frequency voltage transients (HFVT), also termed dirty electricity, has been advocated among electro(hyper)sensitive interest groups as an important biological active component of standard electromagnetic pollution. A literature search was conducted in PubMed, in which only seven articles were identified. Exposure to HFVT was associated with increased cancer risks, while preferential removal of 4–100 kHz HFVT from 50–60 Hz ELF circuits was linked to a variety of improvements in health (plasma glucose levels in diabetic patients, symptoms of multiple sclerosis, asthma and other respiratory illnesses, and insomnia), well-being (tiredness, frustration, general health, irritation, sense of satisfaction, mood), and student behavior. However, all these published studies were subject to significant methodological flaws in the design of the studies, the assessment of exposure, and the statistical analysis, which prevented valid assessment of a causal link between this exposure metric and adverse effects. Environmental exposure to HFVT is an interesting EMF exposure metric, which might explain the spurious results from epidemiological studies using 'standard' ELF and RF exposure metrics. However, at present, methodological problems in published studies prohibit the valid assessment of its biological activity.

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Ethics declarations

Competing interests
The authors declare no conflict of interest.

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