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Electromagnetic Fields: Mechanisms of Interaction with Biological Systems

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Electromagnetic fields (EMF) probably interact with biological systems at different levels, e.g., molecular, cellular, and physiological system. Studies on extremely-low-frequency (ELF) and radiofrequency (RF) electromagnetic fields showed similar effects. This is very surprising because one would expect that these two forms of energy interact with biological systems via different mechanisms. Studies on both forms of energy show that they act like a 'stressor' and they affect 'free radical' in biological systems. These effects could explain many reported biological effects of EMF. An interesting implication of this argument is that: since low-intensity ELF EMF dose not cause an increase in temperature, some of the effects observed are nonthermal.