Melatonin May Protect Against Cell Phone Radiation

Brief exposure to radiation emitted by cell phones induces pathological changes in the skin and kidneys that may be attenuated by melatonin, report Turkish researchers.1,2

Cell phones emit and receive radio frequency radiation in the ultra-high frequency range (824-894 megahertz, or MHz). The biological impact of exposure to this radiation is a function of the time exposed and the power of the cell phone signal. Increased oxidative stress induced by radio frequency radiation may contribute to DNA changes and increased risk of certain cancers.

The Turkish researchers investigated the effects of cell phone radiation on the skin and kidneys. The skin, they theorized, serves as the body's protective layer and may be more vulnerable to radiation damage than internal organs. The kidneys may also be vulnerable to radiation damage from cell phones, which are frequently worn on belts.

Thirty laboratory rats were equally divided into three groups. Group 1 rats served as non-treated controls, Group 2 rats received 30 minutes of 900-MHz whole-body irradiation daily for 10 days, and Group 3 rats received melatonin at a dose of 10 mg/kg of body weight each day for 10 days before receiving 30 minutes of 900-MHz whole-body irradiation.1,2 The scientists then examined skin sections for radiation injury and analyzed blood and urine markers of lipid peroxidation, kidney damage, and oxidative stress.

The skin of Group 2 rats exhibited diverse signs consistent with acute injury, and the rats also demonstrated increased lipid peroxidation, kidney impairment, and oxidative stress. As expected, no such changes occurred in the Group 1 controls. In the Group 3 rats, melatonin prevented nearly all skin changes and other signs of radiation-induced damage.1,2

The study authors concluded that the antioxidant and free radical-scavenging properties of melatonin offer significant protection from the damaging effects of routine cell phone use, particularly on the skin and kidneys.

—Linda M. Smith, RN

References
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