

On February 8, 1996, President Bill Clinton signed the 1996 Telecommunications Act into law, ushering in an era of unparalleled innovation and marketing of wireless communications that has fundamentally changed the way people interact with the world around them. It was a landmark event, hailed by the telecom industry as a great step forward into the future.

Few people outside of the industry knew that Dr. Henry Lai and Narendra Singh at the University of Washington in Seattle had just published a study documenting a breakthrough discovery – single strand DNA breaks resulting from exposure to wireless radiation, the energy produced by virtually all wireless communications devices.<sup>2</sup> DNA strand breaks can impair cell function, change cell structure and even lead to cell death. It's how we age, and how we develop cancer.

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The finding was especially remarkable because biological damage from exposure to wireless radiation was something that electrical engineers and telecom companies had steadfastly claimed was impossible. Exposure could heat tissue if an individual got too close to an antenna, the engineers and physicists told legislators and regulators, but non-ionizing radiation was too weak to damage any biological systems.

Lai and Singh couldn't explain exactly how or why the DNA strands were damaged. Was it a direct effect of the radiation? Or did the radiation interfere with the body's normal DNA repair mechanisms? More research was needed.

## **We are all electric**

Unless we happen to have a pacemaker, few of us appreciate the role that electricity plays in our bodies. Human beings evolved in a natural electrical environment. The earth itself is a giant dipole magnet with poles north and south. There are constant oscillations emanating from the earth's core, and a natural static magnetic field that shifts slightly with the seasons. These magnetic fields play an important role in nature, dictating migration patterns and controlling our own circadian rhythms, among many other things.<sup>3</sup>

Like all animals on earth, our biological systems use an interplay of tiny electrical charges and chemical signals to control and direct precise responses to internal and external stimuli, thus influencing function and development. External influences, both chemical and electrical, can interfere with and adversely affect these biological processes. External influences include both natural and man-made electromagnetic fields (EMFs).

While most doctors, public health experts and scientists understand how environmental factors influence our cell biology, there have always been doubts that people could acquire a chronic illness from non-ionizing RF microwave radiation, even at low levels. These doubts have been compounded by decades of sponsored medical research that appears to show no evidence of harm from exposure. But science is unrelenting, and despite the efforts of industry to play down any possible problem, the majority of independent, non-sponsored studies continue to hone in on the role that electromagnetic fields and wireless radiation play in the etiology of disease.

Dr. Robert O. Becker, surgeon and researcher who was twice nominated for the Nobel Prize, observed in 2001, "I have no