



## Past Is Prologue

By Lawrence G. Cetrulo,  
Michael J. Cahalane  
and Robert J.L. Moore

**P**rospective defendants should still be advised to prepare for litigation, although actual liability is unlikely to result.

# Still No Service for Cell Phone Radiation Litigation



In May 2011, the International Agency for Research on Cancer (IARC), a research branch of the World Health Organization (WHO), released a press statement indicating that the IARC had classified the radiofrequency elec-

■ Lawrence G. Cetrulo is a founding partner and Michael J. Cahalane and Robert J.L. Moore are associates in the Boston office of Cetrulo & Capone LLP. Mr. Cetrulo chairs the firm's Toxic Tort Practice Group and has more than 35 years of litigation experience. Mr. Cahalane is a member of the firm's Toxic Tort Practice Group where he focuses on multi-jurisdictional, multi-plaintiff complex litigation. Mr. Moore practices primarily in the areas of toxic torts, product liability, personal injury, and complex litigation. The authors specially thank Ryan Hanofee for his contributions to this article.

tromagnetic fields emitted by cellular phones as “possibly” carcinogenic to humans. Press Release No. 208, IARC Classifies Radiofrequency Electromagnetic Fields as Possibly Carcinogenic to Humans, May 31, 2011, [http://www.iarc.fr/en/media-centre/pr/2011/pdfs/pr208\\_E.pdf](http://www.iarc.fr/en/media-centre/pr/2011/pdfs/pr208_E.pdf). The IARC's press release triggered waves of reports in the media that “[r]adiation from cell phones can possibly cause cancer[.]” Danielle Delloroto, *WHO: Cell Phone Use Can Increase Possible Cancer Risk*, CNN Online (May 31, 2011).

Given the IARC classification and the headlines that followed, the public will understandably feel alarm. News reports could turn the 10-year trickle of litiga-





tiffs' attorneys can establish a causal relationship between cell phone radiofrequency electromagnetic field exposure and adverse health effects, regardless of the IARC's alarming classification. Courts previously evaluated the science underlying claims of personal injury caused by electromagnetic fields and found it wanting. *See, e.g., San Diego Gas & Elec. Co. v. Superior Court*, 920 P.2d 669 (Cal. 1996). The science on the supposed danger associated with electromagnetic fields has not materially advanced since the 1990s, and only limited evidence supports the IARC's finding, which ranked radiofrequency electromagnetic fields emitted from cell phones in the same cancer-risk classification group as pickles, coffee, and insecticides.

Second, even if a particular plaintiff could establish specific causation—a *Daubert*-proof causal link between radiation from radiofrequency electromagnetic fields and his or her particular disease—science has not linked radiofrequency electromagnetic field exposure to a “signature disease,” such as asbestosis for asbestos exposure or silicosis for silica exposure. Without a “signature disease,” plaintiffs' attorneys, even the most experienced advocates, will find the burden of proof and expense of establishing specific causation between an exposure and a disease exceptionally daunting.

Third, as most of the appellate courts to address the matter have held, federal law probably preempts lawsuits of this kind. The Federal Communications Commission (FCC) has set standards, including standards for radiofrequency electromagnetic field emissions, to which all cell phones must conform, and federal law establishing these standards likely trumps contrary state law.

Thus, while the recent reporting on the alleged hazards of cell phone radiation will likely lead to litigation, and while prospective defendants should take steps to prepare themselves for this scenario, this litigation is unlikely to result in much actual liability.

### Cellular Phones and Radiofrequency Electromagnetic Fields

Electromagnetic fields are a type of radiation emitted from all electric currents, natural or manmade. Radiofrequency electromagnetic fields are a particular category

of electromagnetic fields, specifically those occupying the radio portion of the electromagnetic spectrum.

All cell phones emit radiofrequency electromagnetic fields. Cell phones operate by transmitting information between a low powered radio transmitter in a phone and a base station, usually a tower with a large antenna. When a cell phone is charged, it

■ ■ ■ ■ ■  
**Science has not determined** whether nonionizing radiation... can directly affect genetic material, and radiofrequency electromagnetic field emission litigation will likely address this question in the future.

tion over radiofrequency electromagnetic fields into a torrent. *See, e.g., Deborah Kotz & Carolyn Johnson, Cell Phones Are Added to List of Potential Risks for Cancer*, Boston Globe Online (June 1, 2011).

In this regard, the past may well be prologue. In the 1990s, media reports insinuated a link between various forms of cancer and electromagnetic fields from, among others, power lines. *See, e.g., Paul Brodeur, The Cancer at Slater School*, The New Yorker (Dec. 7, 1992). Litigation soon followed. The “science” behind the litigation proved meritless, but litigating these claims nonetheless cost defendants a great deal.

Today's headlines may be a harbinger of claims alleging a link between radiofrequency electromagnetic field exposure and adverse health effects. For at least three reasons history is apt to repeat itself, by which we mean that lawsuits stemming from the IARC classification are apt to prove unavailing.

First, the chances are remote that plain-

emits a low level of nonionizing radiation, radiofrequency electromagnetic fields. Ionizing radiation, such as x-rays and gamma rays, can strip electrons from atoms and molecules, changing cellular makeup and causing, at times, tumors. On the other hand, science has not determined whether nonionizing radiation, particularly in the levels emitted by cell phones, can directly affect genetic material, and radiofrequency electromagnetic field emission litigation will likely address this question in the future.

Since 1934, the FCC has regulated radiofrequency emissions. *See Pub. L. No. 73-415, 48 Stat. 1064, 47 U.S.C. 151, et seq.* The National Environmental Policy Act of 1969, 42 U.S.C. 4321, *et seq.*, charged the FCC and all other federal agencies with evaluating the impact of “major” regulatory actions “significantly affecting the quality of the human environment.” 42 U.S.C. 4332(2)(C). The FCC first promulgated standards for radiofrequency exposure in 1985, regulating exposure in

specific facilities that it licensed. See 100 FCC 2d 543 (1985). Excluded from this regulation were “relatively low-powered communications systems” such as cell phones. 2 FCC Rcd. 2064, 2065 ¶14 (1987). In 1993, prompted by the adoption of guidelines that set limits on these exposures by industry consortia, the FCC began the rulemaking process to set federal standards for

■ ■ ■ ■ ■  
**Plaintiffs had a difficult time proving causation, as the science underlying their claims never established a causal link between exposure and adverse health effect.**

radiation from cell phones. 8 FCC Rcd. 2849 (1993).

While the FCC proceeded with rulemaking, Congress enacted the Telecommunications Act of 1996, which directed the FCC to complete federal standards within six months and to “make effective rules regarding the environmental effects of radiofrequency emissions[.]” Pub. L. No. 104-104, §704(b), 110 Stat. 56, 152 (1996); see 47 U.S.C. §332(c). The goals of this directive, according to the House Commerce Committee, which drafted this portion of the Telecommunications Act, were twofold: (1) to safeguard cell phone users from potential hazards; and (2) to ensure that a hodgepodge of conflicting state standards did not retard the development of a nationwide wireless communications network. See H.R. Rep. No. 204, 104th Cong., 1st Sess. Pt. 1, at 94–95 (1995). As the committee report noted, “[a] high quality national wireless telecommunications network cannot exist if each of its component[s] must meet different [radiofrequency] standards in each community[.]” *Id.*

In August 1996, the FCC completed the rulemaking and issued an order setting the maximum radiofrequency electromag-

netic field that a cell phone could emit. See 11 FCC Rcd. 15123, 15127 ¶ 9 (1996). All phones sold in the United States fall under that limit, though some popular phones come close. Additionally, under these standards, the FCC must authorize the sale of cell phones, and the manufacturer of a phone must certify that the equipment will not expose humans to levels of radiofrequency radiation in excess of the established limits. See *Murray v. Motorola, Inc.*, 982 A.2d 764, 775–776 (D.C. 2009).

### **Previous Electromagnetic Field Radiation Litigation Led to Insignificant Liability**

Commentators began to express concern about a link between electromagnetic field exposure and adverse health effects in the late 1980s, and it reached a peak in the 1990s. After widespread publicity about these potential hazards, plaintiffs initiated a number of lawsuits, a large majority of which courts dismissed.

As mentioned, Paul Brodeur, a well-known investigative reporter and author, published several articles in *The New Yorker* magazine in 1989 regarding potential hazards of electromagnetic field exposure. See, e.g., Paul Brodeur, *The Hazards of Electromagnetic Fields I—Power Lines*, *The New Yorker* (June 12, 1989). Brodeur’s previous articles on environmental hazards and health risks, including asbestos, had set off media frenzies that led to entire industries of litigation, and his writing on the hazards of electromagnetic fields drew the attention of many, including some plaintiffs’ attorneys.

According to the 1989 articles, the previous decades saw a marked increase in the number of electric power lines across the country, and these power lines emitted radiation in the form of electromagnetic fields. Citing epidemiological studies, the articles indicated that exposure to these electromagnetic fields was associated with adverse health effects, such as cancer and birth defects. Brodeur further suggested that various levels of government conspired with the utility industry to cover up and discredit evidence of an association between electromagnetic field exposure and adverse health effects.

Follow-up pieces by others in the media resulted in what one commentator called

an “atmosphere of suspicion” concerning electromagnetic field exposure. Harold R. Piety, *What We Don’t Know About EMF*, 128 Pub. Util. Fort. 14, 16 (Nov. 15, 1991). That Brodeur did not have a motive to disclose the potential dangers of electromagnetic field exposure lent credibility to his arguments in the eyes of many commentators and readers. In contrast, the utility industry employed most of those who offered different views of the science at the time, a fact that led some to discount statements that proof of adverse health effects did not exist.

As the media continued to publish articles on the hazards of electromagnetic field exposure and the almost limitless number of exposed persons, massive numbers of lawsuits seemed inevitable. Some prognosticators proclaimed that electromagnetic field radiation would become the “next asbestos.” Patsy W. Thomley, *EMF at Home: The National Research Council Report on the Health Effects of Electric and Magnetic Fields*, 13 J. Land Use & Envtl. L. 309, 319 (1998). One legal scholar in the early 1990s predicted that “the omnipresence of EMF [electromagnetic fields] in our lives suggests that EMF litigation could dwarf the ‘legal abyss’ created by asbestos.” Roy W. Krieger, *On the Line*, 80 A.B.A. J. 40, 41 (Jan. 1994).

At one point in the early 1990s, it appeared that these predictions would prove correct, as plaintiffs’ attorneys filed lawsuits arising from electromagnetic field exposure as frequently as once a month. However, plaintiffs did not win verdicts in any of these lawsuits. In fact, courts dismissed nearly all the claims before trials. Plaintiffs had a difficult time proving causation, as the science underlying their claims never established a causal link between exposure and adverse health effect. See, e.g., *San Diego Gas & Elec. Co. v. Superior Court*, 920 P.2d 669 (Cal. 1996). *But see Zuidema v. San Diego Gas & Elec. Co.*, No. 638222 (Cal. Super. Ct. Apr. 30, 1993) (rendering a defense verdict in the first electromagnetic field case tried). Over time, the number of lawsuits alleging injury from electromagnetic field exposure from electric utilities diminished. In the late 1990s, research into the hazards of electromagnetic field exposure shifted to the study of electromagnetic fields from the soon-ubiquitous cell phones.

## Neither the IARC Report nor Its Cited Studies Prove Causation

Plaintiffs alleging that they have suffered adverse health due to cell phone radiation will have difficulty proving causation. As discussed above, previous electromagnetic field-related litigation failed largely because the science available at the time did not establish credible general causation paradigms between exposure to electromagnetic fields and adverse health effects. While the May 31, 2011, IARC press statement classifying radiofrequency electromagnetic fields emitted by cellular phones as “possibly” carcinogenic to humans grabbed headlines, the report released shortly afterward describing the work on which that classification rested neither proffered nor relied on new science establishing such carcinogenicity. Robert Baan, *et al.*, *Carcinogenicity of Radiofrequency Electromagnetic Fields*, 12 *The Lancet Oncology* 624–626 (July 2011). Consequently, regardless of the uproar caused by the press release and the report, cell phone litigation plaintiffs probably will not succeed relying on the report or the studies that it cites.

In May 2011, an IARC working group consisting of 30 scientists from 14 countries met to assess the carcinogenicity of radiation from radiofrequency electromagnetic fields. While the IARC working group most extensively considered exposure through cell phones, radiofrequency electromagnetic fields also emanate from occupational sources such as industrial equipment, broadcast antennas, and medical devices. However, as the IARC working group acknowledged, most human exposure to radiofrequency electromagnetic fields stems from devices, such as cell phones, held close to someone’s body. Baan, *supra*, at 624.

The IARC had asked the working group members to classify various particles, materials, and radiation into categories that corresponded to the agents’ carcinogenicity to humans and the quantum of evidence indicating that degree of carcinogenicity. The classifications range from “carcinogenic to humans” to “probably not carcinogenic to humans.” Press Release No. 208, IARC Classifies, *supra*, at 4–6 (defining the possible classifications).

In performing the assessment, the IARC working group reviewed hundreds of past scientific articles but did not indepen-

dently conduct testing or experiments. Ultimately, the IARC working group’s conclusion rested upon six human studies that it deemed most credible and about 40 animal studies assessing the carcinogenicity of radiofrequency electromagnetic field exposure to rodents. *Id.* at 624–25. Several of the human studies found an increased risk of glioma, a type of tumor, in mobile phone users. *Id.* Another study in Japan found some evidence of heightened risk of acoustic neuroma, another type of tumor, within the human study population. *Id.* at 625. Though the animal studies appeared to show some increased cancer incidence, the predictive value of those studies for human cancer is unknown, as the IARC working group acknowledged. *Id.*

Consequently, the IARC working group classified radiofrequency electromagnetic field exposure as belonging in the Group 2B, “possibly carcinogenic to humans,” in view of the “limited evidence” of carcinogenicity in humans and animals. According to the IARC, the category is reserved for agents for which there is limited evidence of carcinogenicity in humans and insufficient evidence in animals, or when there is inadequate evidence of carcinogenicity in humans but sufficient evidence in of carcinogenicity animals. Press Release No. 208, IARC Classifies, *supra*, at 5 (defining Group 2B). The Group 2B category contains 267 agents, including coffee, pickled vegetables, exposure to dry cleaning and firefighting. David Spiegelhalter, a professor of the University of Cambridge in England, commented that “[the] report is clear that any risk appears to be so small that it is very hard to detect—even in the masses of people now using mobile phones.” Ben Hirschler, *Evidence “Increasingly Against” Phone Cancer Risk*, Reuters Online (July 1, 2011). Spiegelhalter’s characterization highlights how statistically weak the existing epidemiological evidence is to support a causative connection between cell phone use and cancer.

The IARC working group finding that “limited evidence” indicates that radiofrequency electromagnetic fields are carcinogenic to humans is misleading. The carcinogenicity evidence is actually decidedly mixed. For every study that the IARC working group identified that found a causal or even correlative link between cell phone radiation and cancer, another study

reached the opposite conclusion. To wit, according to the National Cancer Institute, the incidence of brain cancer actually has “changed little in the past decade,” while cell phone use has drastically increased to over five billion users. See National Cancer Institute, Cell Phones and Cancer Risk, Fact Sheet, <http://www.cancer.gov/cancertopics/factsheet/Risk/cellphones>. The IARC working group itself added nothing to this mélange of contradictory studies. It did not perform any new studies itself. Rather, it simply selected certain studies without articulating the methodology underlying the selections and deemed them reliable and supportive of the position that it took.

The IARC working group *ipse dixit* pronouncement of these studies’ reliability, however, is just one of the methodological flaws in its selections. The IARC working group report failed to quantify the possible risk for glioma and acoustic neuroma, the two types of cancer allegedly associated with cell phone use. Baan, *supra*, at 625; Press Release No. 208, IARC Classifies, *supra*, at 2.

Further, each study selected by the IARC working group had flaws. One study had a case-control participant bias; another relied on suspect data on cell phone usage. Multiple members of the IARC working group noted these flaws and inconsistencies between studies in declining to endorse the group’s overall finding.

For these reasons, neither the IARC working group report nor the studies cited in the report will likely assist plaintiffs to prove causation if they allege that they suffer from the effects of cell phone radiation. With only contradictory, flawed studies on which plaintiffs can rely, plaintiffs’ attorneys probably could not defeat defense motions for summary judgment.

## Scientists Have Not Identified a Cell Phone Radiation Signature Disease

Another factor weighing against cell phone radiation becoming cottage litigation similar to asbestos is that it is not associated with a “signature disease.” A “signature disease” is a specific adverse health effect associated with exposure to a particular toxin and few, if any, other potential causes. Many experts consider pleural mesothelioma, for example, a signature asbestos-related disease. The two cancers most

commonly associated with radiofrequency electromagnetic field exposure, glioma and acoustic neuroma, fall well short of meeting the standard for “signature diseases,” as evidenced by the fact that the IARC working group report did not list those conditions specifically as among the diseases that may be linked to radiofrequency electromagnetic field exposure, and the press

■ ■ ■ ■ ■  
**With only** contradictory, flawed studies on which plaintiffs can rely, plaintiffs’ attorneys probably could not defeat defense motions for summary judgment.

release simply stated that the evidence of an association between the two diseases and cell phone use was “limited.” Press Release No. 208, IARC Classifies, *supra*, at 2.

The lack of a signature disease will likely prove an impediment to cell phone radiation litigation. Once a toxin is associated with a signature disease, plaintiffs’ attorneys can conduct screenings for that disease to find new clients more easily. Plaintiffs’ counsel also can invest heavily in developing the science of causation for just a single disease, rather than many, and could encounter difficulty finding appropriate experts to establish causation for the particular disease at issue in a case. Without a signature disease, plaintiffs’ attorneys will have difficulty identifying potential clients suitable for pursuing cell phone radiation claims. These attorneys will also need to find and demonstrate that experts qualify as experts to establish causation for whatever diseases plaintiffs allege that they developed in their cases, which will increase the attorneys’ expenses. These impediments promise to reduce the number of cell phone radiation-related lawsuits.

### **FCC Standards Probably Preempt Cell Phone Radiation Litigation**

Under federal law, the FCC is charged with,

among other things, promulgating standards for emissions from cell phones. Most, but not all, courts addressing the issue have ruled that this federal law conflicts with lawsuits that seek to impose liability for emissions from cell phones in compliance with all applicable FCC standards, and the federal law preempts such lawsuits. Courts adjudicating cell phone radiation claims henceforth likely will adopt this position as well.

Cell phone radiation lawsuits to date have not alleged that the cell phones at issue failed to comply with FCC standards for radiation, but, rather, that such standards are inadequate. See *Farina v. Nokia, Inc.*, 625 F.3d 97, 122 (3d Cir 2010); *Murray v. Motorola, Inc.*, 982 A.2d 764, 775 (D.C. 2009). The circuits have split, therefore, on whether federal law preempts these lawsuits.

The *Farina* case illustrates the view that federal law preempts cell phone radiation litigation. There, a putative class consisting of Pennsylvania cell phone purchasers and lessees alleged that cell phones expose users to unsafe levels of radiofrequency electromagnetic fields when they hold their phones to their heads and that phones should not have been sold or leased without headsets. The putative class further alleged that this fact rendered untrue statements that cell phone manufacturers and others in the mobile phone industry made in advertisements, and, in that respect, those advertisements were deceptive. The U.S. District Court for the Eastern District of Pennsylvania ruled that federal law preempted the plaintiffs’ claims. On appeal, the United States Court of Appeals for the Third Circuit affirmed. The plaintiffs’ claims would “erect an obstacle to the accomplishment of the objectives of Congress[,]” specifically “protecting the health and safety of the public, [and] ensuring the rapid development of an efficient and uniform network, one that provides effective and widely accessible service at a reasonable cost.” *Farina*, 625 F.3d. at 105–107, 124–127; accord *Bennett v. T-Mobile USA, Inc.*, 597 F. Supp. 2d 1050, 1053 (C.D. Cal. 2008) (“a jury verdict finding cell phones unsafe because of the [radiofrequency electromagnetic fields that] they emit would “unquestionably trample upon the FCC’s authority to determine the maximum standard for RF emissions[.]”). The plaintiffs have petitioned the Supreme Court

of the United States for a writ of certiorari. The Court, however, seems unlikely to grant the writ, judging by the fact that it requested the view of the United States on the writ petition, and the United States opposes granting the writ.

Those courts that ruled that federal law did not preempt cell phone radiation litigation would likely reach a different outcome today. In *Pinney v. Nokia, Inc.*, the Fourth Circuit held that a conflict did not exist between this litigation and federal law, and the litigation, therefore, was not preempted. See *Pinney v. Nokia, Inc.*, 402 F.3d 430 (4th Cir. 2005). This opinion, and the others that reached that conclusion, predated public FCC statements that such litigation conflicts with FCC regulations. A 2009 amicus curiae brief submitted jointly by the FCC and the United States in a cell phone radiation case stated that “state-law claims would upset the balance” of safety and efficiency struck by the FCC standards. Amicus Curiae Br. of United States & Fed. Comm. Comm’r, *Murray v. Motorola, Inc.*, 982 A.2d 764 (D.C. 2009). In the future, courts likely will defer to this agency determination of conflict with state laws. See *Williamson v. Mazda Motor of Am., Inc.*, 131 S. Ct. 1131, 1139 (2011).

### **Conclusion**

Though cell phone radiation litigation probably will not succeed, attorneys representing defendants and potential defendants can and should nonetheless recommend the following two measures to reduce exposure.

First, recommend that potential defendants continue to follow the science on the hazards of radiofrequency electromagnetic field exposure as it develops, to stay on the cutting edge of consumer safety. And recommend that potential defendants also document their consumer safety efforts informed by the science. While this science now does not appear to establish a link between radiofrequency electromagnetic field exposure and adverse health effects, conceivably the prevailing scientific view could change. In that event, defendants that could point to a record of inquiry into and adherence to state-of-the-art safety standards would have a potent defense during trials.

**Cell Phone**, continued on page 81

---

**Cell Phone**, from page 30

Second, when representing defendants in state courts, defense attorneys should consider removal. Some states have more lenient standards for the admission of expert testimony, raising the possibility that a court could admit as evidence the questionable science cited in the IARC report. The IARC does plan to release a longer version of the report, although it probably will not include anything that would

make the IARC cell phone findings more credible evidence. *See* Press Release 208, IARC Classifies, *supra*, at 1; Baan, *et al.*, *supra*, at 624.

Also, federal courts tend to rule on issues of preemption more frequently than state courts. Given federal courts' relative familiarity with preemption doctrine, it is more probable that they will rule that federal law preempts a radiofrequency electromagnetic field lawsuit.

In sum, although it appears unlikely at this point that those involved in mobile telephony will incur significant liability for personal injuries caused by radiofrequency electromagnetic field emissions, defense attorneys advising those parties would do well by those clients by preparing them to defend themselves on the general causation front, given the potential number of claimants. 