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### Letter to the Editor

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## Letter to the Editor

*To the Editor.*—In their study of multiple sclerosis (MS) in an Illinois community, Schiffer et al.<sup>1</sup> focused on exposures from a zinc smelter, in further support of a zinc hypothesis previously proposed by Stein et al.<sup>2</sup> and based on an MS cluster at a zinc die-casting plant in New York State. A subsequent study at the New York plant, which we performed and published in 1995 (Schiffer et al. did not cite this study), assessed other exposures in addition to zinc that could possibly be associated with neurological disorders that produced MS-like symptoms.<sup>3</sup> We identified a class of synthetic oils—triaryl phosphate esters—that were used widely in the plant as fire-resistant hydraulic fluids; these could plausibly have played a role. Our analysis showed an association between the onset of MS-like disease in work areas where these chemicals were used and where die-casting occurred (correlated exposures). The neurotoxicological properties of some of these organophosphates are well known. For example, the substance tri-ortho-cresyl phosphate causes a delayed dying-back axonopathy.<sup>4</sup> Exposures to these materials, present as crude mixtures of aryl phosphate esters, were proposed as an alternative plausible agent in the MS cluster.

We suggest that, like the zinc hypothesis, the triaryl phosphate ester hypothesis deserves testing for industrial clusters of what appears to be MS. We wonder if organic compounds present at the contaminated Illinois site were identified in the exposure assessment conducted there. It would be especially noteworthy if any MS cases occurred among employees of the smelter, and if phosphate esters were used there, inasmuch as fire-resistant hydraulic fluids and lubricants are commonly used in high-temperature applications.

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*Reply to Letter to the Editor.*—I feel that Dr. Park's letter was well written. I did not know that Park et al. had done a study at the same plant! I believe that their letter should be published, and I have no comments to add.

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