Endocrine Disruption: Lessons Learned

Schwetz's editorial, "Responding to Environmental Issues: Lessons Learned" (*1*), was stimulating and raised many pertinent points concerning the current interface of politics with the scientific process. I would like to discuss two issues raised by Schwetz. First, Schwetz (*1*) noted that effort should have been expended over the past few years to build a database with which to evaluate how endocrine-disrupting (ED) agents may cause adverse effects in animals and humans. Later, he stated that we still do not have validated test methods for the detection of endocrine-disrupting activity. These two statements are in apparent conflict, given that ED assays would be required to establish a database. However, there are many reliable ED assays in current use, and all that is needed in many cases is agreement on key aspects of the test protocols and limitations on data extrapolation. The picture is far from gloomy.

Second, Schwetz observed that

> As the issue gained momentum, many scientists who were active in ED-related research segregated into camps focused on discrediting the results of other researchers.

The single supporting reference for this statement was a study by Cagen et al. (*2*), who reported their inability to confirm low-dose ED effects for bisphenol A (BPA) on the CF-1 mouse prostate gland. We too have been unable to reproduce some recently published studies. These include our failure to reproduce the low-dose ED effects of the following: *a*) butyl benzyl phthalate in the rat (*3*), as originally reported by Sharpe et al. (*4*); *b*) BPA in the CF-1 mouse (*5*), as originally reported by Nagel et al. (*6*); and *c*) nonylphenol in the Noble rat (*7*), as originally reported by Colerangle and Roy (*8*). The stimulus for the repeat studies was not to discredit the work of others, but to establish a model of these unexpected low-dose ED effects in our own laboratory in order to study their mechanisms of action and to derive extended dose–response relationships. In each case, the model could not be established; given the cost and time involved, that was disappointing. In our papers describing those studies (*3,5,7*), we were respectful of the original investigators, and we emphasized the possible inadequacies of our own work.

It is critical to confirm independently at least some of the recently reported low-dose ED effects, and although science thrives on debate, that debate must be considered and leavened by new data. In particular, the more unexpected a new ED effect is, the greater the need for it to be described precisely with the aid of raw data and for it to be confirmed before publication. The study of endocrine disruption has had an imperfect start over the past few years, but the topic demands attention. We should now work to resolve the major outstanding issues identified by Schwetz (*1*).

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References and Notes

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