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Environmental contaminants and reproductive abnormalities in wildlife: implications for public health?

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Abstract

At the onset of the industrial age, environmental contaminants began to pose a major threat to the health of wildlife. That threat appears to continue today. In the last three decades, the focus of our concern on the health consequences of environmental pollution has been on lethal, carcinogenic, and/or extreme teratogenic manifestations. Evidence from a number of sources suggests that another mechanism, endocrine-disruption, also must be examined. There is excellent laboratory and field evidence that man-made chemicals (xenochemicals) released into the environment act as hormones or antihormones. They act as endocrine-disrupting contaminants (EDCs). The release of EDCs occurred in the past and continues today. The development of the reproductive system is vulnerable to perturbation by EDCs. Wildlife studies demonstrate that both sexes are affected and experience modifications of gonadal and reproductive tract development or functioning and abnormal synthesis or metabolism of hormones. A number of abnormalities seen in the reproductive system of various wildlife species correlate with similar abnormalities described as rising in human populations. We suggest that wildlife are excellent sentinels of ecosystem health. Data from these wildlife studies present models and methodologies for examining human health.

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