The Brain as a Target for Environmental Toxicants that alter Ovarian Function.

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Abstract.

In this review we discuss the ovarian cycle of the laboratory rat in order to familiarize the reader with the well-understood timing of the neuroendocrine events controlling ovarian function. This is followed by a discussion of the location and function of the estrogen and progesterone receptors in the brain. This review will also provide the reader with an understanding of the role of the different brain (hypothalamic) structures involved in the regulation of reproductive function. We then discuss the evidence that there are environmental toxicants that adversely impact ovarian function by targeting specific molecular sites in the brain. The identification of these molecular targets provides the basis for constructing a toxicity pathway responsible for the loss of reproductive function. This type of information is important for rational decisions about the potential impact of a substance on human health as it can provide a mode of action and identifies the toxicity pathway of the chemical and provides critical information for extrapolation of finding in the rat to the human.