



The Feline Thyroid Gland: A Model for Endocrine Disruption by Polybrominated Diphenyl Ethers (PBDEs)?

The U.S. has only recently stopped production and importation of PBDEs; therefore, contaminants are still ubiquitous in household goods, and subsequently, in homes and the environment. Several studies have been conducted linking PBDEs to many animal and human health issues, but ISTC's senior chemist, John Scott, and a team of researchers from the University of Illinois and the Shelter Research and Development of the American Society for the Prevention of Cruelty to Animals (Northampton, MS) hypothesized that cats with thyroid disorders may be an environmental indicator for PBDEs similar to canaries affected by carbon monoxide in mines before humans.

The team tested many client-owned domestic cats and a few feral cats for euthyroid (normal function) and hyperthyroidism (overproduction of the hormone) as well as T4 (thyroxine, the hormone), PBDEs, and TSH (a hormone that stimulates the thyroid to produce thyroxine). They also tested 10 different types of fish-based canned cat food and household dust for PBDEs.

Contrary to what the team predicted, they did not find any correlations between PBDEs in the blood and hyperthyroidism. In addition, they did not find significantly high levels of PBDEs in the fish-based canned cat food. As an interesting side note, the researchers found that the same PBDE congeners were always associated with the same species of fish used in canned cat food, suggesting that PBDEs may bioaccumulate in various fish species differently. The team did find that high concentrations of PBDEs in household dust were correlated with cat hyperthyroidism. The team suggested that further testing is needed to confirm their findings.

Energy

Pollutants

Microplastics

Metals

Metalworking Fluids

Per- and Polyfluoroalkyl Substances (PFASs)

Agricultural Chemicals

PPCPs in the Environment

PCBs & PBDEs

Contaminant Exposure and Biomarker Response in Embryos of Black-crowned Night-herons (*Nycticorax nycticorax*) Nesting Near Lake Calumet, Illinois

The Feline Thyroid Gland: A Model for Endocrine Disruption by Polybrominated Diphenyl Ethers (PBDEs)?

Polycyclic Aromatic Hydrocarbons (PAHs)

Waste Utilization

Water Use and Reuse

Hazardous Waste Research Fund

Meet the Scientists

John Scott

Publications

The Feline Thyroid Gland: A Model for Endocrine Disruption by Polybrominated Diphenyl Ethers (PBDEs)?



One Hazelwood Drive, MC-676
Champaign, IL 61820
p: 217-333-8940
[Email us](#)

Home of Illinois' State Scientific Surveys

- Illinois Natural History Survey
- Illinois State Archaeological Survey
- Illinois State Geological Survey
- Illinois State Water Survey
- Illinois Sustainable Technology Center



Email the [Web Administrator](#) with questions or comments. For permissions information, [contact the Illinois Sustainable Technology Center](#).
©2020 University of Illinois Board of Trustees. All rights reserved.

[Privacy statement](#) | [Intranet](#) | [Admin](#)