

## Welcome to the NTP-CERHR Workshop on Thyroid Toxicants: Assessing Reproductive Health Effects

Hypothyroidism and hyperthyroidism are well-studied conditions in humans. Thyroid hormones modulate the growth and function of tissues throughout the body and play an important role in normal reproduction and development. Both hypothyroidism and hyperthyroidism have been reported to be associated with an increased risk of adverse pregnancy outcomes in humans. While pharmaceutical agents are available to enhance or repress thyroid function, some non-pharmaceutical chemicals are also known to affect thyroid function. A recent article identified 116 synthetic chemicals that interfere with production, transport, or metabolism of thyroid hormone. The CERHR organized this workshop to facilitate future evaluations of possible adverse reproductive effects resulting from human exposure to thyroid toxicants.

The purpose of this NTP-CERHR workshop is two-fold:

- To discuss the optimal design of tests to detect adverse reproductive and developmental effects resulting from chemical-induced thyroid dysfunction.
- To discuss the relevance of thyroid-related adverse reproductive and developmental effects observed in rodents for predicting adverse effects in humans.

### About the CERHR

The National Toxicology Program (NTP) Center for the Evaluation of Risks to Human Reproduction (CERHR) is a publicly accessible resource for information about adverse reproductive and/or developmental health effects associated with exposure to environmental, pharmaceutical, or occupational chemicals. A major activity of the CERHR is convening panels of scientists to evaluate the potential for selected chemical exposures to result in adverse effects on human reproduction. The CERHR is located at the National Institute of Environmental Health Sciences (NIEHS), one of the National Institutes of Health, U.S. Department of Health and Human Services.

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Information about CERHR is available on the Internet at <http://cerhr.niehs.nih.gov> or by contacting Dr. Michael Shelby, PO Box 12233, MD EC-32, NIEHS, Research Triangle Park, NC 27709 919-541-3455 (phone) or 919-316-4511(fax) or [shelby@niehs.nih.gov](mailto:shelby@niehs.nih.gov) (email). Information about the NTP is available on the Internet at <http://ntp-server.niehs.nih.gov> or by contacting the NTP Liaison and Scientific Review Office at NIEHS: [liaison@starbase.niehs.nih.gov](mailto:liaison@starbase.niehs.nih.gov) (email) or 919-541-0539 (phone)

**NTP-CERHR Workshop**  
**Thyroid Toxicants: Assessing Reproductive Health Effects**  
**April 28-29, 2003**  
**Alexandria, VA**

**Monday, April 28, 2003**

8:30 am Registration

9:00 Opening remarks **Mike Shelby**, NIEHS

9:15 Summary of 2002 thyroid conference at NIEHS and Introduction to Rodent Testing Protocol Elements  
**Tom Zoeller**, University of Massachusetts

**Session 1. Comparison of Thyroid Development, Control, and Function in Rodents and Humans**

9:45 Thyroid transcription factors and their defects in mice and humans  
**Sam Refetoff**, University of Chicago

10:15 Break

10:30 Thyroid hormone actions in mice and humans: Thyroid hormone receptor isoforms and coactivator interaction  
**Roy Weiss**, University of Chicago

11:00 Iodine uptake and thyroid hormone metabolism in rodents and humans: Normal physiology and influence of thyroid status  
**Gregory Brent**, University of California, Los Angeles

11:30 Discussion

Noon Lunch (on your own)

## Session 2. Reproductive Effects of Selected Thyroid-Active Chemicals in Rodents and Humans.

- 1:30 pm Methimazole and Propylthiouracil  
Paul Cooke, University of Illinois
- 2:15 Phenobarbital  
Lois Lehman-McKeeman, Discovery Toxicology  
Robert Kavlock, U.S Environmental Protection Agency
- 3:00 Break
- 3:30 Sulfamethazine  
Dan Doerge, U.S. Food and Drug Administration
- 4:00 Discussion
- 5:00 Adjourn

Tuesday, April 29, 2003

## Session 3. Protocol Factors and Human Relevance

- 9:00 am Features of safety assessment studies to be considered in assessing thyroid effects on reproduction and their relevance to human health  
Joe Holson, WIL Research Laboratories
- 9:45 Discussion
- 10:00 Break
- 10:30 Summary of thyroid toxicants, reproduction, and predicting health effects in humans  
Jack Moore, Sciences International, Inc.
- 11:00 Discussion
- 11:45 Closing Remarks  
Mike Shelby, NIEHS
- Noon Adjourn

Workshop organized and sponsored by the National Toxicology Program Center for the Evaluation of Risks to Human Reproduction.