

ATA 2009 Research Summit: Thyroid Hormone in Pregnancy and Development
(Held in conjunction with the one-day American Thyroid Association Spring Symposium)
(Draft agenda as of 3/5/2009)

Steering Committee: Gregory Brent (UCLA)
Douglas Forrest (NIH-NIDDK)
Yun-Bo Shi (NIH-NICHD)

Date: Thursday, April 16, 2009, 9:30 am – 5:00 pm

Location: The Madison Hotel, 1177 15th Street, NW, Washington, DC

Overview

Thyroid hormone is essential for normal development. Both excess and deficient maternal thyroid hormone levels can alter normal developmental pathways resulting in permanent defects in brain, sensory development, growth, and bone development. There are many potential sites of regulation of thyroid hormone action including: ligand activation and inactivation by thyroid hormone metabolizing enzymes in tissues, selective thyroid hormone transport into different cell types, thyroid hormone receptor isoform-selectivity, thyroid hormone receptor interaction with co-factors, regulation of iodine transport, and placental transport of iodine and thyroid hormone. Environmental toxicant exposure during pregnancy have been recognized that can interfere with thyroid hormone regulation at many of these sites. Key and emerging research focused on the mechanisms of thyroid hormone action in development and maternal-fetal interactions will be discussed. Special emphasis will be given to the role of thyroid hormone and maternal thyroid status on brain and sensory development. Rodent models of development will be emphasized, although discussion of amphibian models and application to human studies will be included.

Audience

Scientists and trainees in the fields of endocrinology, developmental biology, cell biology, toxicology, environmental health, neuroscience, and physiology. Correlations to human physiology and disease will be of interest to clinicians in endocrinology, obstetrics and gynecology, pediatrics, and occupational health.

Agenda

9:30 am – 10:00 am	Keynote: Basic Mechanisms of Thyroid Hormone Production, Action, and Regulation in Development: Interaction Between Mother and Fetus <i>Donald St Germain</i>
10:00 am – 12:00 pm	Thyroid Hormone Action in Development Pharmacological and Transgenic Analysis of Thyroid Hormone Control of Development in a Vertebrate Model System <i>J. David Furlow</i> Embryonic Stem Cell Differentiation as a Model of Thyroid Hormone Action in Early Development <i>Gregory Brent</i> Regulation of Developmental Rate and Timing by Thyroid Hormone Receptor Cofactors <i>Yun-Bo Shi</i> Thyroid Hormone and Bone Development <i>Graham Williams</i>
12:00 pm – 1:00 pm	Lunch: Trainee Poster Session

- 1:00 pm – 2:15 pm **Thyroid Hormone Effects on Brain and Sensory Development**
Role of Thyroid Hormone Transporters in Neural Development
Samuel Refetoff
- Thyroid Hormone Actions in Early Brain Development
Juan Bernal
- Thyroid Hormone Regulation of Sensory Development
Douglas Forrest
- 2:15 pm – 3:30 pm Clinical Correlates to **Basic Research: Human Studies of Maternal-Fetal Interactions**
Maintaining Thyroid Hormone Sufficiency in Pregnancy: Thyroid Supply to Mother and Fetus
Erik Alexander
- Increasing Precision of Thyroid Function Testing in Pregnancy
Offie P. Soldin
- Designing Studies to Assess the Impact of Thyroid Status on Pregnancy
John Lazarus
- 3:30 pm – 3:40 pm Break
- 3:40 pm – 5:00 pm **Environmental Toxicants in Pregnancy and Fetal Development**
Influence of Thyroid Hormone Action Disrupters on Brain Development
J. Thomas Zoeller
- Models of Thyroid Toxicants and Brain Development
Kevin Crofton
- Impact of Iodine Transport Inhibitors on Development
Nancy Carrasco
- 5:00 pm – 6:00 pm **CLOSED Roundtable Discussion: Priorities in Research on Thyroid Hormone in Pregnancy and Development**
(Speakers, ATA Officers and Staff, NIH Program Staff)

Faculty

Erik Alexander, Brigham and Women's Hospital, Harvard Medical School
Juan Bernal, Universidad Autonoma de Madrid
Gregory Brent, David Geffen School of Medicine at UCLA
Nancy Carrasco, Albert Einstein College of Medicine of Yeshiva University
Kevin Crofton, Environmental Protection Agency
Douglas Forrest, National Institutes of Health, NIDDK
J. David Furlow, University of California, Davis
John Lazarus, University Hospital of Wales, Cardiff University
Samuel Refetoff, University of Chicago
Yun-Bo Shi, National Institutes of Health, NICHD
Offie P. Soldin, Department of Medicine, Georgetown University
Donald St Germain, Dartmouth University School of Medicine
Graham Williams, Hammersmith Hospital
J. Thomas Zoeller, University of Massachusetts, Amherst