

**Joint Public Meeting on Equivalence of Levothyroxine Sodium Products**  
Co-sponsored with the FDA by the American Thyroid Association, The Endocrine Society and  
the American Association of Clinical Endocrinologists

**Monday, May 23, 2005**

**National Transportation Safety Board  
L'Enfant Plaza  
Washington, DC**

**AGENDA AND SCHEDULE**

8:30 – 8:45 am Welcoming Remarks:  
Steve K. Galson, M.D., MPH  
Acting Director, Center for Drug  
Evaluation and Research (CDER)/FDA

Paul W. Ladenson, M.D.  
Johns Hopkins University  
School of Medicine

**Session I: Background: Clinical Issues and New Drug Applications for Levothyroxine**

8:45 – 9:15 am Levothyroxine Sodium: A Widely Employed Narrow Therapeutic  
Range Drug  
Paul W. Ladenson, M.D.  
Johns Hopkins University, School of Medicine

9:15 – 9:30 am Overview of FDA General Regulatory Requirements and Methods for  
Demonstration of Therapeutic Equivalence  
Dale P. Conner, Pharm.D., CDER/FDA

9:30 – 9:45 am Manufacturing Standards  
Eric P. Duffy, PhD, CDER/FDA

9:45 – 10:00 am Bioavailability/Bioequivalence Studies in Evaluation of New  
Levothyroxine Products  
Henry J. Malinowski, PhD, CDER/FDA

10:00 – 10:15 am Report of Recently Approved Products' Performance in  
Bioequivalence Testing  
Barbara Davit, PhD, CDER/FDA

10:15 – 10:35 am Limitations of Current Bioequivalence Standards  
James Hennessey, M.D.  
Brown Medical School

10:35 – 10:50 am **BREAK**

10:50 – 11:50 am Public Comment Period - Questions and Panel Discussion

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11:50 am-12:50 pm **LUNCH**

12:50 – 1:20 pm Public Comment Period – Questions and Panel Discussion (Continued)

### **Session II: Approach to Comparing Levothyroxine Products: Serum Thyrotropin (TSH) Concentration as a Pharmacodynamic Measure of Thyroxine Bioequivalence and Study Design Considerations**

1:20 – 1:40 pm Rationale for TSH as a Marker of Thyroid Hormone Tissue Effects  
E. Chester Ridgway, M.D.  
University of Colorado, School of Medicine

1:40 – 1:55 pm Levothyroxine or TSH for Determination of Bioequivalence: Study Design Considerations (including study populations and controls, crossover vs. parallel group, sample size, etc.)  
Steven I. Sherman, M.D.  
University of Texas, Anderson Cancer Center

1:55 – 2:15 pm FDA Perspective on Pharmacodynamic Bioequivalence Measures, Methodological and Regulatory Considerations and Study Design Issues in TSH-based BE Studies  
Robert Lionberger, PhD, CDER/FDA

2:15 – 3:15 pm Public Comment Period - Questions and Panel Discussion

### **Session III: Summary of Issues/Next Steps**

3:15 – 3:35 pm Society concerns regarding current U.S. Prescribing and Dispensing Practices  
Leonard Wartofsky, MD  
Uniformed Services, University of the Health Sciences

3:35 – 3:50 pm FDA Summary  
David G. Orloff, M.D., CDER/FDA

3:50 – 4:05 pm **BREAK**

4:05 – 5:05 pm Public Comment Period - Questions and Panel Discussion

5:05 – 5:30 pm Closing Remarks:  
David Orloff, M.D., CDER/FDA

Paul Ladenson, M.D.  
Johns Hopkins University  
School of Medicine