

THE JOURNAL OF CLINICAL ENDOCRINOLOGY & METABOLISM

VOLUME 92, NUMBER 1

JANUARY 2007

From the Editor-in-Chief: It's Not Your Father's—or Your Mother's—JCEM! 1
Paul W. Ladenson

Special Features

APPROACH TO THE PATIENT: Approach to the Patient with Subclinical Hyperthyroidism . . . 3
David S. Cooper

CLINICAL PRACTICE GUIDELINE: Care of Girls and Women with Turner Syndrome: A Guideline of the Turner Syndrome Study Group 10
Carolyn A. Bondy for the The Turner Syndrome Consensus Study Group

IMAGE IN ENDOCRINOLOGY: Intratracheal Ectopic Thyroid Mass 26
Bassam Abboud, Bassam Tabchy, Chawki Atallah, Rony Aouad, Nayla Matar, and Claude Ghorra

REVIEW: ¹³¹I Activity for Remnant Ablation in Patients with Differentiated Thyroid Cancer: A Systematic Review. 28
Allan Hackshaw, Clive Harmer, Ujjal Mallick, Masud Haq, and Jayne A. Franklyn

Editorials

Editorial: Diagnosing Thyroid Dysfunction in Pregnant Women: Is Case Finding Enough? . . . 39
Gregory A. Brent

Editorial: Breast Cancer and the Risk of Osteoporotic Fracture: A Paradox 42
Richard Eastell

Editorial: Secular Decline in Male Reproductive Function: Is Manliness Threatened? 44
Shalender Bhasin

Endocrine Care

RAPID COMMUNICATION: Age at Menarche: Influences of Prenatal and Postnatal Growth. . . 46
Deborah M. Sloboda, Roger Hart, Dorota A. Doherty, Craig E. Pennell, and Martha Hickey

THE JOURNAL OF CLINICAL ENDOCRINOLOGY & METABOLISM (ISSN 0021-972X; IPM 0059676) is the official journal of The Endocrine Society, published monthly by The Endocrine Society, 8401 Connecticut Avenue, Suite 900, Chevy Chase, MD 20815-5817. Periodicals postage paid at Chevy Chase, MD and at additional mailing offices. Subscription rates are \$449 (\$597 international); institutions \$838 (\$972 international); institutions on-line only \$756 (U.S. and international); in training \$254 (\$350 international); single copy \$66 (\$75 international). Society member dues of \$266 (\$334 international) includes print and online access to one primary journal and online access to an additional two primary journals. Subscription prices subject to change. All subscriptions start with the January issue. To order call (301) 941-0210. All subscription orders for customers in Japan must be placed through our exclusive agent, USACO Corporation, 17-12, Higashi-Azabu, Minatu-ku, Tokyo 105, Japan. Telephone 03-3505-6161. Please contact USACO for 2007 yen rates. Printed in the U.S.A. POSTMASTER: send address changes to *The Journal of Clinical Endocrinology & Metabolism*, 8401 Connecticut Avenue, Suite 900, Chevy Chase, MD 20815-5817. Indexed by *Index Medicus*, *Current Contents*, *BIOSIS*, *CAB ABSTRACTS*, *CAB HEALTH*, *Elsevier BIOBASE/Current Awareness in Biological Sciences*, *National Biological Service*, *EMBASE/Excerpta Medica*, and *Sociedad Iberoamericana de Información Científica (SIIC)*. Printed on acid-free paper. Table of Contents and abstracts for each issue available on the issue mail date on The Endocrine Society Home Page at <http://jcem.endojournals.org>. Copyright © 2007 by The Endocrine Society.

An Age-Related Decrease in Creatinine Clearance Is Associated with an Increase in Number of Falls in Untreated Women But Not in Women Receiving Calcitriol Treatment.	51
J. Christopher Gallagher, Prema B. Rapuri, and Lynette M. Smith	
Smoking and Thyroid-Associated Ophthalmopathy: A Novel Explanation of the Biological Link	59
T. J. Cawood, P. Moriarty, C. O'Farrelly, and D. O'Shea	
Dopamine Receptor Expression and Function in Corticotroph Ectopic Tumors.	65
Rosario Pivonello, Diego Ferone, Wouter W. de Herder, Antongiulio Faggiano, Lisa Bodei, Ronald R. de Krijger, Gaetano Lombardi, Annamaria Colao, Steven W. J. Lamberts, and Leo J. Hofland	
Sodium/Iodide Symporter (NIS) Gene Expression Is the Limiting Step for the Onset of Thyroid Function in the Human Fetus	70
Gabor Szinnai, Ludovic Lacroix, Aurore Carré, Fabien Guimiot, Monique Talbot, Jelena Martinovic, Anne-Lise Delezoide, Michel Vekemans, Stefan Michiels, Bernard Caillou, Martin Schlumberger, Jean-Michel Bidart, and Michel Polak	
Effectiveness of Bone Density Measurement for Predicting Osteoporotic Fractures in Clinical Practice.	77
William D. Leslie, James F. Tsang, Patricia A. Caetano, and Lisa M. Lix, for the Manitoba Bone Density Program	
Monitoring Thyroglobulin in a Sensitive Immunoassay Has Comparable Sensitivity to Recombinant Human TSH-Stimulated Thyroglobulin in Follow-Up of Thyroid Cancer Patients	82
Robert C. Smallridge, Shon E. Meek, Melissa A. Morgan, Geoffrey S. Gates, Thomas P. Fox, Stefan Grebe, and Vahab Fatourechi	
Prevalence of Autoantibody-Negative Diabetes Is Not Rare at All Ages and Increases with Older Age and Obesity	88
Jian Wang, Dongmei Miao, Sunanda Babu, Jeesuk Yu, Jennifer Barker, Georgeanna Klingensmith, Marian Rewers, George S. Eisenbarth, and Liping Yu	
Parturition Itself Is the Basis for Fetal Adrenal Involution	93
Shlomit Ben-David, Nehama Zuckerman-Levin, Monica Epelman, Zila Shen-Orr, Moshe Levin, Polo Sujov, and Ze'ev Hochberg	
Association of Weight Gain in Infancy and Early Childhood with Metabolic Risk in Young Adults	98
Ulf Ekelund, Ken K. Ong, Yvonné Linné, Martin Neovius, Søren Brage, David B. Dunger, Nicholas J. Wareham, and Stephan Rössner	
Early Assessment of Hypothalamic-Pituitary-Gonadal Function in Patients with Congenital Hypothyroidism of Central Origin.	104
David A. van Tijn, Eelco J. Schroot, Henriette A. Delemarre-van de Waal, Jan J. M. de Vijlder, and Thomas Vulsmā	
Metabolic Profile and Body Composition in Adult Women with Congenital Adrenal Hyperplasia due to 21-Hydroxylase Deficiency	110
Henrik Falhammar, Helena Filipsson, Gundela Holmdahl, Per-Olof Janson, Agneta Nordenskjöld, Kerstin Hagenfeldt, and Marja Thorén	
Effect of Growth Hormone Therapy on Serum Adiponectin and Resistin Levels in Short, Small-for-Gestational-Age Children and Associations with Cardiovascular Risk Parameters	117
Ruben H. Willemsen, Marije van Dijk, Yolanda B. de Rijke, Albert W. van Toorenbergen, Paul G. Mulder, and Anita C. Hokken-Koelega	
Single-Dose Reginoid Rapidly and Specifically Suppresses Serum Thyrotropin in Normal Subjects.	124
Wendy M. Golden, Katie B. Weber, Teri L. Hernandez, Steven I. Sherman, Whitney W. Woodmansee, and Bryan R. Haugen	
Prevention of Bone Loss in Survivors of Breast Cancer: A Randomized, Double-Blind, Placebo-Controlled Clinical Trial.	131
Susan L. Greenspan, Rajib K. Bhattacharya, Susan M. Sereika, Adam Brufsky, and Victor G. Vogel	

Aldosterone-to-Renin Ratio as a Marker for Disease Severity in 21-Hydroxylase Deficiency Congenital Adrenal Hyperplasia	137
Saroj Nimkarn, Karen Lin-Su, Niklas Berglind, Robert C. Wilson, and Maria I. New	
Fat Mass Is Not Beneficial to Bone in Adolescents and Young Adults	143
Agnieszka Janicka, Tishya A. L. Wren, Monique M. Sanchez, Frederick Dorey, Paul S. Kim, Steven D. Mittelman, and Vicente Gilsanz	
Prognostic Parameters of Metastatic Adrenocortical Carcinoma	148
Guillaume Assié, Guillemette Antoni, Frédérique Tissier, Bernard Caillou, Gwenaëlle Abiven, Christine Gicquel, Sophie Leboulleux, Jean-Paul Travagli, Clarisse Dromain, Xavier Bertagna, Jérôme Bertherat, Martin Schlumberger, and Eric Baudin	
Prematurity May Be a Risk Factor for Thyroid Dysfunction in Childhood	155
Giorgio Radetti, Antonio Fanolla, Lucia Pappalardo, and Elena Gottardi	
Risk Factors for Diabetes Mellitus Type 2 and Metabolic Syndrome Are Comparable for Previously Growth Hormone-Treated Young Adults Born Small for Gestational Age (SGA) and Untreated Short SGA Controls	160
Marije van Dijk, Ellen M. N. Bannink, Yvonne K. van Pareren, Paul G. H. Mulder, and Anita C. S. Hokken-Koelega	
Chronic Treatment with Pioglitazone Does Not Protect Obese Patients with Diabetes Mellitus Type II from Free Fatty Acid-Induced Insulin Resistance	166
Mireille J. Serlie, Gideon Allick, Johanna E. Groener, Mariette T. Ackermans, Rik Heijligenberg, Barbara C. Voermans, Johannes M. Aerts, Alfred J. Meijer, and Hans P. Sauerwein	
Corticotroph Tumor Progression after Adrenalectomy in Cushing's Disease: A Reappraisal of Nelson's Syndrome	172
Guillaume Assié, Hélène Bahurel, Joël Coste, Stéphane Silvera, Michèle Kujas, Marie-Annick Dugué, Foued Karray, Bertrand Dousset, Jérôme Bertherat, Paul Legmann, and Xavier Bertagna	
Cardiac Effects of Growth Hormone Treatment in Chronic Heart Failure: A Meta-Analysis ..	180
Philippe Le Corvoisier, Luc Hittinger, Philippe Chanson, Olivier Montagne, Isabelle Macquin-Mavier, and Patrick Maison	
Atherogenic Lipoprotein Phenotype and Low-Density Lipoproteins Size and Subclasses in Women with Polycystic Ovary Syndrome	186
Kaspar Berneis, Manfredi Rizzo, Veronica Lazzaroni, Franca Fruzzetti, and Enrico Carmina	
Gender, Body Weight, Disease Activity, and Previous Radiotherapy Influence the Response to Pegvisomant	190
Craig Parkinson, Pia Burman, Michael Messig, and Peter J. Trainer	
A Population-Level Decline in Serum Testosterone Levels in American Men	196
Thomas G. Travison, Andre B. Araujo, Amy B. O'Donnell, Varant Kupelian, and John B. McKinlay	
BRIEF REPORT: Detection of Thyroid Dysfunction in Early Pregnancy: Universal Screening or Targeted High-Risk Case Finding?	203
Bijay Vaidya, Sony Anthony, Mary Bilous, Beverley Shields, John Drury, Stewart Hutchison, and Rudy Bilous	
BRIEF REPORT: A Brief Exposure to Moderate Passive Smoke Increases Metabolism and Thyroid Hormone Secretion	208
Giorgos S. Metsios, Andreas D. Flouris, Athanasios Z. Jamurtas, Andres E. Carrillo, Demetrios Kouretas, Anastasios E. Germenis, Konstantinos Gourgoulianis, Theodoros Kiroopoulos, Manolis N. Tzatzarakis, Aristeidis M. Tsatsakis, and Yiannis Koutedakis	
BRIEF REPORT: Thyroid Hormone Synthesis and Secretion in Humans after 80 Milligrams of Iodine for 15 Days and Subsequent Withdrawal	212
Anastasia Theodoropoulou, Apostolos G. Vagenakis, Maria Makri, and Kostas B. Markou	

BRIEF REPORT: Prognostic Value of the Sixth Edition AJCC/UICC TNM Classification for Differentiated Thyroid Carcinoma with Extrathyroid Extension 215
 Nobuyuki Wada, Hiroataka Nakayama, Nobuyasu Suganuma, Yoshihiko Masudo,
 Yasushi Rino, Munetaka Masuda, and Toshio Imada

Other Original Articles

Growth Hormone Is Effective in Treatment of Short Stature Associated with Short Stature Homeobox-Containing Gene Deficiency: Two-Year Results of a Randomized, Controlled, Multicenter Trial. 219
 Werner F. Blum, Brenda J. Crowe, Charmian A. Quigley, Heike Jung, Dachuang Cao,
 Judith L. Ross, LeeAnn Braun, and Gudrun Rappold, for the SHOX Study Group

Obestatin Is Not Elevated or Correlated with Insulin in Children with Prader-Willi Syndrome 229
 Won Hah Park, Yoo Joung Oh, Gae Young Kim, Sang Eun Kim, Kyung-Hoon Paik,
 Sun Ju Han, An Hee Kim, Su Hyun Chu, Eun Kyung Kwon, Seon Woo Kim, and
 Dong-Kyu Jin

A Common Mitochondrial DNA Variant and Increased Body Mass Index as Associated Factors for Development of Type 2 Diabetes: Additive Effects of Genetic and Environmental Factors 235
 Chia-Wei Liou, Tsu-Kung Lin, Hsu Huei Weng, Cheng-Feng Lee, Tzu-Ling Chen,
 Yau-Huei Wei, Shang-Der Chen, Yao-Chung Chuang, Shao-Wen Weng, and Pei-Wen Wang

Granulosa Cell Production of Anti-Müllerian Hormone Is Increased in Polycystic Ovaries . . 240
 Laura Pellatt, Laurine Hanna, Mark Brincat, Ray Galea, Henrietta Brain,
 Saffron Whitehead, and Helen Mason

Gestational Age Correlates to Genotype in Girls with CYP21 Deficiency 246
 Sebastian Gidlöf, Anna Wedell, and Anna Nordenström

Acute Effects of Triiodothyronine on Endothelial Function in Human Subjects. 250
 Raffaele Napoli, Vincenzo Guardasole, Valentina Angelini, Emanuela Zarra,
 Daniela Terracciano, Carolina D'Anna, Margherita Matarazzo, Ugo Oliviero,
 Vincenzo Macchia, and Luigi Saccà

Plasma Adiponectin Levels and Endometrial Cancer Risk in Pre- and Postmenopausal Women. 255
 Anne E. Cust, Rudolf Kaaks, Christine Friedenreich, Fabrice Bonnet, Martine Laville,
 Annkatrin Lukanova, Sabina Rinaldi, Laure Dossus, Nadia Slimani, Eva Lundin,
 Anne Tjønneland, Anja Olsen, Kim Overvad, Françoise Clavel-Chapelon, Sylvie Mesrine,
 Virginie Joulin, Jakob Linseisen, Sabine Rohrmann, Tobias Pischon, Heiner Boeing,
 Dimitrios Trichopoulos, Antonia Trichopoulou, Vassiliki Benetou, Domenico Palli,
 Franco Berrino, Rosario Tumino, Carlotta Sacerdote, Amalia Mattiello, J. Ramón Quirós,
 Michelle A. Mendez, María-José Sánchez, Nerea Larrañaga, M. J. Tormo, Eva Ardanaz,
 H. Bas Bueno-de-Mesquita, Petra H. M. Peeters, Carla H. van Gils, Kay-Tee Khaw,
 Sheila Bingham, Naomi Allen, Tim Key, Mazda Jenab, and Elio Riboli

Association of Acylated and Nonacylated Ghrelin with Insulin Sensitivity in Overweight and Obese Postmenopausal Women. 264
 David H. St-Pierre, Antony D. Karelis, Lise Coderre, Florin Malita, Jonathan Fontaine,
 Diane Mignault, Martin Brochu, Jean-Philippe Bastard, Katherine Cianflone, Eric Doucet,
 Pascal Imbeault, and Rémi Rabasa-Lhoret

The *in Vitro* Effects of Resistin on the Innate Immune Signaling Pathway in Isolated Human Subcutaneous Adipocytes 270
 Christine M. Kusminski, Nancy F. da Silva, Steven J. Creely, Ffolliott M. Fisher,
 Alison L. Harte, Adam R. Baker, Sudhesh Kumar, and Philip G. McTernan

Primary Hyperparathyroidism and the Presence of Kidney Stones Are Associated with Different Haplotypes of the Calcium-Sensing Receptor 277
 Alfredo Scillitani, Vito Guarneri, Claudia Battista, Simona De Geronimo,
 Lucia Anna Muscarella, Iacopo Chiodini, Mauro Cignarelli, Salvatore Minisola,
 Francesco Bertoldo, Cristiano M. Francucci, Nazzarena Malavolta, Alessandro Piovesan,
 Maria Lucia Mascia, Silvana Muscarella, Geoffrey N. Hendy, Leonardo D'Agruma,
 David E. C. Cole

High-Fat/Low-Carbohydrate Diet Reduces Insulin-Stimulated Carbohydrate Oxidation but Stimulates Nonoxidative Glucose Disposal in Humans: An Important Role for Skeletal Muscle Pyruvate Dehydrogenase Kinase 4.	284
K. Chokkalingam, K. Jewell, L. Norton, J. Littlewood, L. J. C. van Loon, P. Mansell, I. A. Macdonald, and K. Tsintzas	
Haplotypes in the Lipoprotein Lipase Gene Influence Fasting Insulin and Discovery of a New Risk Haplotype	293
Mark O. Goodarzi, Kent D. Taylor, Xiuqing Guo, John E. Hokanson, Steven M. Haffner, Jinrui Cui, Yii-Der I. Chen, Lynne E. Wagenknecht, Richard N. Bergman, and Jerome I. Rotter	
The Ghrelin Response to Exercise before and after Growth Hormone Administration.	297
E. T. Vestergaard, R. Dall, K. H. W. Lange, M. Kjaer, J. S. Christiansen, and J. O. L. Jorgensen	
Sex Hormone Status May Modulate Rate of Expansion of Proximal Femur Diameter in Older Women alongside other Skeletal Regulators	304
S. Kaptoge, N. Dalzell, E. Folklerd, D. Doody, K.-T. Khaw, T. J. Beck, N. Loveridge, E. B. Mawer, J. L. Berry, M. J. Shearer, M. Dowsett, and J. Reeve	
Vascular Endothelial Cadherin Regulates Vascular Permeability: Implications for Ovarian Hyperstimulation Syndrome	314
A. Villasante, A. Pacheco, A. Ruiz, A. Pellicer, and J. A. Garcia-Velasco	
Thyroid Hormone Signaling in Human Ovarian Surface Epithelial Cells	322
M. T. Rae, O. Gubbay, A. Kostogiannou, D. Price, H. O. D. Critchley, and S. G. Hillier	
Differential Gene Expression Profile in Omental Adipose Tissue in Women with Polycystic Ovary Syndrome	328
Marta Cortón, José I. Botella-Carretero, Alberto Benguría, Gemma Villuendas, Angel Zaballos, José L. San Millán, Héctor F. Escobar-Morreale, and Belén Peral	
Accumulation of Nonphosphorylated β-Catenin and <i>c-myc</i> in Primary and Uremic Secondary Hyperparathyroid Tumors	338
Peyman Björklund, Göran Åkerström, and Gunnar Westin	
Association of $\alpha 2$-Heremans-Schmid Glycoprotein Polymorphisms with Subclinical Atherosclerosis	345
Allison B. Lehtinen, Kathryn P. Burdon, Joshua P. Lewis, Carl D. Langefeld, Julie T. Ziegler, Stephen S. Rich, Thomas C. Register, J. Jeffrey Carr, Barry I. Freedman, and Donald W. Bowden	
BRIEF REPORT: Thyroid Hormone Increases mRNA and Protein Expression of $\text{Na}^+\text{-K}^+$-ATPase α_2 and β_1 Subunits in Human Skeletal Muscles	353
Bunyong Phakdeekitcharoen, Suchart Phudhichareonrat, Chathchai Pookarnjanamorakot, Chusak Kijkunasathian, Nattha Tubtong, Wassana Kittikanokrat, and Piyanuch Radinahamed	
BRIEF REPORT: Lack of Association of the 11β-Hydroxysteroid Dehydrogenase Type 1 Gene 83,557insA and Hexose-6-Phosphate Dehydrogenase Gene R453Q Polymorphisms with Body Composition, Adrenal Androgen Production, Blood Pressure, Glucose Metabolism, and Dementia.	359
Pauline Smit, Marieke J. H. J. Dekker, Frank Jan de Jong, Annewieke W. van den Beld, Jan W. Koper, Huibert A. P. Pols, Albert O. Brinkmann, Frank H. de Jong, Monique M. B. Breteler, and Steven W. J. Lamberts	
BRIEF REPORT: Studies of the Common <i>DIO2</i> Thr92Ala Polymorphism and Metabolic Phenotypes in 7342 Danish White Subjects	363
Niels Grarup, Mette K. Andersen, Camilla H. Andreassen, Anders Albrechtsen, Knut Borch-Johnsen, Torben Jørgensen, Johan Auwerx, Ole Schmitz, Torben Hansen, and Oluf Pedersen	

Announcements and Resources

Erratum97
Erratum142
Endocrine-Related Resources from the National Institutes of Health367

Contents *continued*

National Hormone & Peptide Program (NHPP): New Recombinant Hormones, Hypothalamic Peptides, Natural Hormones, New Antisera, & Expanded Hormone Assay Services Available . . . 371

The Endocrine Society

Editorial Board	4A
Endocrinology & Metabolism News	17A
Author and Subscription Information	23A
Affirmation of Originality and Assignment of Copyright	24A
Long Instructions to Authors	25A
Ethical Guidelines	33A
Instructions—Disclosure of Potential Conflicts of Interest	37A
Disclosure of Potential Conflicts of Interest Form	38A
Employment Opportunities	374

Patient Information Page from The Hormone Foundation

Prediabetes

Facing Listing by Interests

COVER: Hierarchical average linkage clustering of dysregulated genes between polycystic ovary syndrome (P1-8) and control (C1-7) omental adipose tissue samples. Genes are grouped according to the similarity of their expression patterns across all samples. Each *column* represents a single probe set and each *row* represents an experimental sample. Increasing *green* and *red* intensities denote genes that decrease and increase in expression, respectively, in polycystic ovary syndrome patient samples compared with controls. From the article by Cortón *et al.*, in this issue, pages 328–337.

INDEX OF ADVERTISERS

Abbott Laboratories	16A, 57A–58A, Before 33A-2	Novartis Pharmaceuticals Corporation	Cover 2 & 1A, 13A–15A
Eli Lilly & Company	40A–41A, Before 57A, Before 61A-2, 61A	Novo Nordisk Pharmaceuticals, Inc.	11A–12A, Before 33A-1, 43A–44A, 51A–52A, Covers 3 & 4
Genta Incorporated	21A–22A	Pfizer U.S. Pharmaceuticals	46A–49A
GlaxoSmithKline	63A–65A	Sanofi-Aventis	2A–3A, 18A–20A, Before 61A-1
Insmed Inc.	54A–56A	Takeda Pharmaceuticals America, Inc.	Before 45A, 45A
Lifescan, Inc.	59A		
Merck Human Health Division	Before 17A		