Editors

Jean-Claude Carel
Pediatric Endocrinology and Diabetology, and INSERM U690, University Paris 7
Denis Diderot, Hôpital Robert Debré, 48, boulevard Sérurier
FR–75935 Paris cedex 19, France
Tel. +33 1 40 03 41 05; Fax +33 1 40 03 24 29; E-Mail jean-claude.carel@inserm.fr

Ze’ev Hochberg
Meyer Children’s Hospital, Rambam Medical Center, Faculty of Medicine
Technion-Israel Institute of Technology, POB 9602
IL–31096 Haifa, Israel
Fax +972 (0) 4 854 21 57; E-Mail z_hochberg@rambam.health.gov.il

Associate Editors

Gary E. Butler
Department of Paediatrics and Adolescents
University College London Hospital, 250 Euston Road
London NW1 2PQ, UK
Tel. +44 8451 555 000 ext. 5240
E-Mail gary.butler@ucl.ac.uk

Evangelia Charmandari
Division of Endocrinology and Metabolism
Clinical Research Center
Biomedical Research Foundation of the Academy of Athens
4 Soranou tou Efessiou Street
GR–11527 Athens, Greece
Tel. +30 210 659 7196, Fax +30 210 659 7545, E-Mail evangelia.charmandari@googlemail.com

Francesco Chiarelli
Department of Pediatrics, University of Chieti, Via dei Vestini, 5
IT–66013 Chieti, Italy
Tel +39 0871 358015, Fax +39 0871 574831, E-Mail chiarelli@unich.it

Stefano Cianfarani
Department of Public Health and Cell Biology
Tor Vergata University
Room E178, Via Montpellier 1
IT–00133–Rome, Italy
Tel. +39 06 6859 3074, Fax +39 06 6859 2508, E-Mail stefano.cianfarani@uniroma2.it
Mehul T. Dattani
Developmental Endocrine Research Group
Clinical and Molecular Genetics Unit, Institute for Child Health
University College London
London, WC1N 1EH, UK
Tel. +44 207 905 2657, Fax +44 207 404 6191, E-Mail: mdattani@ich.ucl.ac.uk

Nicolas De Roux
INSERM U 690, Laboratoire d’Hormonologie, AP-HP
Hôpital Robert Debré, 48 Boulevard Sérurier
FR–75019 Paris, France
Tel. +33 1 40 03 19 85, Fax +33 1 40 40 91 95, E-Mail nicolas.deroux@inserm.fr

Outi Mäkitie
Pediatric Endocrinology and Metabolic Bone Diseases
Children’s Hospital
Helsinki University Central Hospital and University of Helsinki
FI–00029 HUS Helsinki, Finland
Tel. +358 9 4711, Fax +358 9 471 75888, E-Mail outi.makitie@helsinki.fi

Ken Ong
Medical Research Council Epidemiology Unit
Institute of Metabolic Science, Addenbrooke’s Hospital, Box 285
Cambridge CB2 0QQ, UK
Tel. +44 1223 769207; Fax +44 1223 330316; E-Mail ken.ong@mrc-epid.cam.ac.uk

Orit Pinhas-Hamiel
Pediatric Endocrine and Diabetes Unit
Safra Children’s Hospital
Sheba Medical Center Ramat-Gan
IL–52621 Ramat-Gan, Israel
Tel. +972 3 5305015, Fax +972 3 5305055, E-Mail orit.hamiel@sheba.health.gov.il

Michel Polak
Service d’endocrinologie pédiatrique
INSERM EMI 0363
Hôpital Necker-Enfants Malades
149, rue de Sèvres
FR– 75015 Paris, France
Tel. +33 1 44 49 48 03/02, +33 1 44 38 16 48, michel.polak@nck.aphp.fr
Olle Söder
Pediatric Endocrinology Unit, Q2:08
Department of Woman and Child Health
Karolinska Institutet and University Hospital, Solna
SE–171 76 Stockholm, Sweden
Tel. +46 8 517 75124, Fax +46 8 517 75128, E-Mail olle.soder@ki.se

Martin Wabitsch
Pediatric Endocrinology, Diabetes and Obesity Unit
Department of Pediatrics and Adolescent Medicine
University of Ulm, Eythstrasse 24
DE–89075 Ulm, Germany
Tel. +49 731 5002 7715; +49 731 50027789; E-Mail martin.wabitsch@uniklinik-ulm.de
# Table of Contents

<table>
<thead>
<tr>
<th>Page</th>
<th>Section</th>
<th>Authors</th>
</tr>
</thead>
<tbody>
<tr>
<td>XI</td>
<td>Preface</td>
<td>Ze’ev Hochberg and Jean-Claude Carel</td>
</tr>
<tr>
<td>1</td>
<td>Neuroendocrinology</td>
<td>Lucie Chevrier, Lukas Huijbregts, Carine Villanueva and Nicolas De Roux</td>
</tr>
<tr>
<td>13</td>
<td>Pituitary</td>
<td>Evelien F. Gevers and Mehul T. Dattani</td>
</tr>
<tr>
<td>33</td>
<td>Thyroid</td>
<td>Michel Polak, Mireille Castanet, Aurore Carré and Gabor Szinnai</td>
</tr>
<tr>
<td>47</td>
<td>Growth and Growth Factors</td>
<td>Stefano Cianfarani</td>
</tr>
<tr>
<td>63</td>
<td>Bone, Growth Plate and Mineral Metabolism</td>
<td>Outi Mäkitie and Ola Nilsson</td>
</tr>
<tr>
<td>81</td>
<td>Reproductive Endocrinology 2011</td>
<td>Lena Sahlin and Olle Söder</td>
</tr>
<tr>
<td>99</td>
<td>Adrenals</td>
<td>Erica L.T. van den Akker and Evangelia Charmandari</td>
</tr>
<tr>
<td>121</td>
<td>Type 1 Diabetes: Clinical and Experimental</td>
<td>Francesco Chiarelli and M. Loredana Marcovecchio</td>
</tr>
<tr>
<td>141</td>
<td>Obesity and Weight Regulation</td>
<td>Martin Wabitsch, Daniel Tews, Michaela Keuper, Carsten Posovszky,</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Christian Denzer, Primoz Kotnik, Anja Moss, Julia von Schnurbein and</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Pamela Fischer-Posovszky</td>
</tr>
<tr>
<td>159</td>
<td>Type 2 Diabetes, the Metabolic Syndrome and</td>
<td>Orit Pinhas-Hamiel</td>
</tr>
<tr>
<td></td>
<td>Dyslipidemia in Children and Adolescents</td>
<td></td>
</tr>
<tr>
<td>175</td>
<td>Population Genetics and Pharmacogenetics</td>
<td>Ken K. Ong</td>
</tr>
<tr>
<td>193</td>
<td>Evidence-Based Medicine in Pediatric Endocrinology</td>
<td>Gary Butler, Carrie Williams and Stephen O’ Riordan</td>
</tr>
<tr>
<td>215</td>
<td>Editor’s Choice</td>
<td>Jean-Claude Carel and Ze’ev Hochberg</td>
</tr>
<tr>
<td>231</td>
<td>Science and Medicine</td>
<td>Ze’ev Hochberg</td>
</tr>
<tr>
<td>239</td>
<td>Author Index</td>
<td></td>
</tr>
<tr>
<td>257</td>
<td>Subject Index</td>
<td></td>
</tr>
</tbody>
</table>
Preface

This was an exciting year (the Yearbook counts years from June to June, when we submit the manuscripts to the publisher): The Neanderthal genome was sequenced and compared to ours, *H. sapiens*, and it shows that Neanderthals shared more genetic variants with present-day humans in Eurasia than with present-day humans in sub-Saharan Africa; gene flow from Neanderthals into our ancestors of non-Africans occurred before the divergence of Eurasian groups from each other. This was also the year when the price of whole genome sequencing dropped such that it is now affordable by many investigators and clinicians. It was also the year when we learnt that the skeleton was part of the endocrine system beyond minerals regulating hormones: the skeleton controls reproductive and energy balance, while adipose tissue and insulin regulate bone metabolism.

The gargantuan advances of 2010–11 provide a new insight in pediatric endocrinology, and have been recapped by the Associate Editors of this 2010 Yearbook. These are based on discoveries in varied fields of genomics and genetics, molecular biology and systems biology, evolutionary biology, clinical trials and medical reports. As the complexity increases, the Yearbook becomes an essential reading for clinical scientists and practitioners who wish to update on the most recent developments in pediatric endocrinology and beyond.

In the Yearbook Preface we annually recognize a prize given in the field of endocrinology. Time and again, hormones are recognized as groundbreaking discoveries, and this year we salute Douglas Coleman and Jeffrey M. Friedman for their Lasker Award granted to them for the discovery of leptin.

We also mention annually important anniversaries: in 1911, Ernest Rutherford postulated that atoms have their positive charge concentrated in a very small nucleus, and thereby pioneered the Rutherford model, or planetary, model of the atom. Using isotopes in medicine reveals just some of the ways in which his work has been utilized.

These were labeled the four most deadliest words that will prevent progress on the personal but also at the scholar level: ‘I already know that’. Our twelve Associate Editors and their coauthors do not take anything for granted, and have once again done an enormous work to discern this year’s advances. The European Society for Paediatric Endocrinology (ESPE) endorses the Yearbook in its 8th year, and we acknowledge the generous support of Pfizer that makes the Yearbook project possible. We thank again the Associate Editors who have contributed during these 8 years to the success of the Yearbook which has become a landmark in the yearly cycle of pediatric endocrinology. Our publisher, Karger, has also done a tremendous job to bring paperbacks on time to the ESPE meeting with so little time for preparation, thanks to the dedication of Mr. Hermann Frei. Several Associate Editors have come and gone, some of them might come back again. The same is true of the Editors and we welcome Ken Ong as the new Editor of the Yearbook with Ze’ev Hochberg for 2012.

Ze’ev Hochberg (Haifa)
Jean-Claude Carel (Paris)