Review

265 The Journey Towards Lung Protective Respiratory Support in Preterm Neonates
Berger, T.M.; Fontana, M.; Stocker, M. (Lucerne)

Original Papers

243 High-Frequency Oscillatory Ventilation with Low Oscillatory Frequency in Pulmonary Interstitial Emphysema
Squires, K.A.G.; De Paoli, A.G.; Williams, C.; Dargaville, P.A. (Hobart, Tas.)

250 Perfusion Index as a Diagnostic Tool for Patent Ductus Arteriosus in Preterm Infants
Khositseth, A.; Muangyod, N.; Nuntnarumit, P. (Bangkok)

275 Antenatal Betamethasone Associates with Transient Immunodepression in Very Low Birth Weight Infants
Palojärvi, A.; Andersson, S.; Turpeinen, U.; Janér, C.; Petäjä, J. (Helsinki)

283 Cardiovascular Consequences of Bronchopulmonary Dysplasia in Prematurely Born Preschool Children
Koroglu, O.A.; Yalaz, M.; Levent, E.; Akisu, M.; Kültürsay, N. (Izmir)

290 Randomised Trial of Volume-Targeted Ventilation versus Pressure-Limited Ventilation in Acute Respiratory Failure in Prematurely Born Infants

298 Risk Factors and Correlates of Neonatal Growth Velocity in Extremely Low Gestational Age Newborns. The ELGAN Study
Bartholomew, J.; Martin, C.R.; Allred, E.; Chen, M.L. (Boston, Mass.); Ehrenkranz, R.A. (New Haven, Conn.); Dammann, O. (Boston, Mass./Hannover); Leviton, A. (Boston, Mass.)

305 The Utility of Special Radiological Signs on Routinely Obtained Supine Anteroposterior Chest Radiographs for the Early Recognition of Neonatal Pneumothorax

Short Communication

255 Functional Neuroimaging of Breastfeeding Analgesia by Multichannel Near-Infrared Spectroscopy
Bembich, S.; Davanzo, R.; Brovedani, R.; Clarici, A. (Trieste); Massaccesi, S. (Padova); Demarini, S. (Trieste)

(Continued on inside front cover)
Cochrane Review Update

260 Cooling for Newborns with Hypoxic Ischemic Encephalopathy
Soll, R.F. (Burlington, Vt.)

Commentary

Keszler, M. (Providence, R.I.)

Letter to the Editor

263 Feeding Regimens and Necrotizing Enterocolitis.
Senterre, T. (Liège)

312 Acknowledgement to Reviewers
315 Author Index Vol. 104, 2013
after 316 Contents Vol. 104, 2013
Neonatology

Fetal and Neonatal Research

Founded 1959 as 'Biologia Neonatorum' (formerly 'Etudes Néo-Natales') and continued from 1983–2006 as 'Biologie of the Neonate'.


Incorporating 'Developmental Pharmacology and Therapeutics', founded by J.V. Aranda, Montreal.

Editors-in-Chief
H.L. Halliday, Belfast
C.P. Speer, Würzburg

Editorial Board
K. Allegaert, Leuven
S. Andersson, Helsinki
E. Bancalari, Miami, Fla.
D. Bassler, Tübingen
J. Bhatia, Augusta, Ga.
C. Bührer, Berlin
W. Carlo, Birmingham, Ala.
R. Christensen, Ogden, Utah
T. Curstedt, Stockholm
C. Dani, Florence
B. Darlow, Christchurch
M. Hallman, Oulu
W.W. Hay, Jr., Aurora, Colo.
S.E. Juul, Seattle, Wash.
M. Kaplan, Jerusalem
B. Kramer, Maastricht
R.J. Martin, Cleveland, Ohio
C.J. Morley, Cambridge
J. Neu, Gainesville, Fla.
P.C. Ng, Hong Kong
M.W. Öbladen, Berlin
W.S. Park, Seoul
A.G.S. Philip, Sebastopol, Calif.
M. Roth-Kleiner, Lausanne
E. Saliba, Tours
O.D. Saugstad, Oslo
M.S. Schimmel, Jerusalem
M.P. Sherman, Columbia, Mo.
E.S. Shinwell, Rehovot
K. Simmer, Perth, W.A.
J. Smith, Tygerberg
(Cochrane Review Updates)
B. Sun, Shanghai
N. Takahashi, Tokyo
N. Vain, Buenos Aires
F. van Bel, Utrecht
J.N. van den Anker, Washington, D.C.
M. Vento Torres, Valencia
F.J. Walther, Leiden
M. Weindling, Liverpool
J.A. Widness, Iowa City, Iowa
T.F. Yeh, Taipei
Neonatology

Aims and Scope
This highly respected and frequently cited journal is a prime source of information in the area of fetal and neonatal medicine, with papers present research on all aspects of neonatology, fetal medicine and developmental biology. These papers encompass both basic science and clinical research including randomised trials, observational studies and epidemiology. Basic science research covers molecular biology, molecular genetics, physiology, biochemistry and pharmacology in fetal and neonatal life. Papers reporting results of animal studies should be based upon hypotheses that relate to developmental processes or disorders in the human fetus or neonate.

Submission
Manuscripts written in English should be submitted using the online submission website at:

www.karger.com/neo

Should you experience any problems with your submission, please contact:

neo@karger.com

S. Karger AG
Editorial Office ‘Neonatology’
P.O. Box
CH–4009 Basel (Switzerland)

All manuscripts must be accompanied by a cover letter and a statement with all authors' signatures (handwritten) saying that they agree with the publication of the paper. Names, postal and e-mail addresses of four international experts in the appropriate area of research should accompany each manuscript. Selected scientist(s) will be invited to act as referee(s). Referees suggested should not be from the same institution as the author and should have expert knowledge of the subject.

Manuscripts may be submitted to the following sections:
- Editorials
- Reviews
- Original Papers
- Consensus Statements
- Short Communications
- Novel Insights from Clinical Practice
- Commentaries
- Research Briefings
- Sources of Neonatal Medicine
- Letters to the Editor

Reviews
Most reviews are submitted upon invitation. However, the editors are open to unsolicited reviews. Authors planning such a review are requested to contact the Editorial Office with a one page outline of the intended review. All reviews are subject to peer review. Systematic reviews should be reported using the format of the Cochrane Neonatal Review Group (www.neonatal.cochrane.org/welcome).

Original Papers
Original articles should not exceed a printed length of 1,400 words of text accompanied by 2 figures or tables and be from 5 to 10 references.

Novel Insights from Clinical Practice (formerly Case Reports)
The publication space available for case reports is very limited. The journal only considers case reports with significant new insights or with an extremely unusual and memorable course. Highlighted boxes containing one or two bullet points on 'Established Facts' (what is already known) and 'Novel Insights' (what new information has been gained) are required and should be placed on the first page of the report. These should be selected so as to reinforce the novelty of the clinical observation. The manuscript should be presented with an abstract (unstructured, max. 150 words), followed by introduction, case report and discussion. Maximum 2 figures or 2 tables or 1 figure and 1 table.

Conditions
All manuscripts are subject to editorial review. Manuscripts are received with the explicit understanding that they are not under simultaneous consideration by any other publishers. Submission of an article for publication implies the transfer of the copyright from the author to the publisher upon acceptance. Accepted papers become the permanent property of Neonatology and may not be reproduced by any means, in whole or in part, without the written consent of the publisher. It is the author's responsibility to obtain permission to reproduce illustrations, tables, etc. from other publications.

Conflict of Interest
All forms of support, including that from drug companies, and any potential source of conflict of interest should be acknowledged in the cover letter to the editor when applicable. The statement will be printed at the end of the article.

Ethics: Published research must comply with the guidelines for human studies and animal welfare regulations. Authors should state that subjects have given their informed consent and that the study protocol has been approved by the institution's committee on human research. Further, they should also state that animal experiments conform to institutional standards.

Arrangement
Title page: The first page of each paper should indicate the title, the authors' names, the institute where the work was conducted, and a short title for use as running head. Line numbering: Lines should be numbered (1, 2, 3, etc.) and displayed in the left margin of the manuscript (line numbering can be added from the Page Setup or Format menu of word processing programs). The line numbering should be continuous throughout the entire manuscript (i.e., do not begin numbering from 1 again at the top of each page).

Full address: The exact postal address of the corresponding author complete with postal code must be given at the bottom of the title page. Please also supply phone and fax numbers, as well as e-mail address.

Key words: Please supply 3–10 key words in English that reflect the content of the paper.

Abstract: Each paper needs an abstract of up to 250 words. It should be structured as follows:

Background: What is the major motive that prompted the study?

Objectives: What is the purpose of the study?

Methods: How was the study done?

Results: Most important findings

Conclusions: Most important conclusions

Footnotes: Avoid footnotes.

Tables and illustrations: Tables and illustrations (both numbered in Arabic numerals) should be prepared on separate pages. Tables require a heading and figure legends should be supplied on a separate page. For technical reasons, figures with a screen background should not be submitted. When possible, group several illustrations on one block for reproduction (max. size 180 × 223 mm) or provide crop marks. Electronically submitted b/w halftone and color illustrations must have a final resolution of 300 dpi after scaling, line drawings one of 800–1,200 dpi. Figure files must not be embedded in a document file but submitted separately.

Color illustrations

Online edition: Color illustrations are reproduced free of charge. In the print version, the illustrations are reproduced in black and white. Please avoid referring to the colors in the text and figure legends.

Print edition: Up to 6 color illustrations per page can be integrated within the text at CHF 800.– per page.

References: In the text identify references by Arabic numerals [in square brackets]. Material submitted for publication but not yet accepted should be noted as [unpublished data] and not be included in the reference list. The list of references should include only those publications which are cited in the text. Do not alphabetize; number references in the order in which they are first mentioned in the text. The surnames of the authors followed by initials should be given. There should be no punctuation other than a comma to separate the authors. Preferably, please cite all authors. Abbreviate journal names according to the Index Medicus system. Also see International Committee of Medical Journal Editors: Uniform requirements for manuscripts submitted to biomedical journals (www.icmje.org).

Examples
(b) Papers published only with DOI numbers: AlFalih K, Anabrees J, Basler D: Probiotics reduce the risk of necrotizing enterocolitis in preterm infants: a meta-analysis. Neonatology DOI: 10.1159/000235684.

SI Units
SI units should be used. Listings of SI units may be found in the following publications:

THE POWER OF PROGRAMMING 2014

International Conference on Developmental Origins of Adiposity and Long-Term Health

MARCH 13 - 15, 2014
Munich, Germany

Conference Details & Scientific Program now available on:
munich2014.project-earlynutrition.eu
A joint meeting of: British Maternal and Fetal Medicine Society (BMFMS), British Association of Perinatal Medicine (BAPM) & the Neonatal Society (NNS)

Programme highlights:

THE BAPM FOUNDERS LECTURE:
The intestinal microbiome, inflammation, and neonatal morbidity
**Professor Josef Neu MD, Florida, USA**

BMFMS SOCIETY LECTURE:
Noninvasive prenatal diagnosis in routine clinical care: The opportunities, risks and the changing face of our subspecialty
**Professor Lyn Chitty, London**

TIZARD LECTURE:
The potential life-long implications of neonatal hyper and hypoglycaemia
**Professor Andrew Hattersley, Exeter**

THE BAPM PETER DUNN LECTURE
**Professor Steve Robson, Newcastle upon Tyne**: Prenatal investigation and management of the small for gestational age baby

Additional confirmed speakers:

**Professor Paul Griffiths, Sheffield**: The role of fetal MRI as an imaging modality of brain abnormalities

**Professor Neena Modi, London**: The phenotype of the young adult born preterm

**Professor Jonathan Wells, London**: The evolution of human adiposity

**Professor Fionnula McAuliffe, Dublin**: Maternal obesity: The maternal and fetal effects: can we intervene prenatally?

**Professor Irene Roberts, London**: Haematological insights from Downs Syndrome

**Professor Basky Thilaganathan, London**: Timing of delivery in twin pregnancies

**Professor Phillip Gordon, Florida, USA**: Necrotizing Enterocolitis

**Professor Stephen Matthews, Ontario, Canada**: The role of prenatal programming and epigenetics on long-term childhood outcomes

**Professor Allyson Pollock, London**: The New NHS

**Professor Scott Nelson, Glasgow**: Assisted conception in women with serious pre-existing medical complications: a bridge too far for maternal and perinatal mortality

**Mr Simon Eccles, London**: Reconstructing congenital craniofacial malformations

**Professor Siddharthan Chandran, Edinburgh**: Brain repair & stem cells

**Professor Stéphane Marret, Rouen, France**: The role of maternally administered Magnesium Sulphate in the antenatal period for neuroprotection in the premature baby

What next for NICE?
**Professor David Haslam, Chair, National Institute for Health and Care Excellence**

Abstract Submission Deadline: 24th January 2014

Secretariat:
Hampton Medical Conferences Ltd
Rapier House, 4-6 Crane Mead
Ware, Hertfordshire, SG12 9PW, UK
Tel: +44 (0) 1920 88 5162
Fax: +44 (0) 870 900 7783
hmc@hamptonmedical.com

Abstracts are invited for possible oral or poster presentation and accepted abstracts will be published as a supplement of the Journal: Fetal & Neonatal – an edition of Archives of Diseases in Childhood.
For further information on the programme, registration and abstracts submission visit the website:
www.perinatalmedicine2014.ukevents.org
Contents

See the journal website for contents
Dear Librarian,

I have reviewed this publication and would like to recommend it for our library.

Recommended by: 

Department: 

Date: 

Signature: 

Orders may be placed with any bookseller, subscription agency, directly with the publisher or through a Karger distributor.

The easiest way to order: www.karger.com/nniws

Maternal and Child Nutrition:
The First 1,000 Days

Editors
Jatinder Bhatia
Zulfiqar A. Bhutta
Satish C. Kalhan

Growth and nutrition during the fetal period and the first 24 months after birth are important determinants of development in early childhood. Optimal nutrition and health care of both the mother and infant during these first 1,000 days of an infant’s life are closely linked to growth, learning potential and neurodevelopment, in turn affecting long-term outcomes.

Children with low birth weight do not only include premature babies, but also those with intrauterine growth restrictions who consequently have a very high risk of developing metabolic syndrome in the future. Epidemiology, epigenetic programming, the correct nutrition strategy and monitoring of outcomes are thus looked at carefully in this book. More specifically, two important nutritional issues are dealt with in depth: the first being the prevention of low birth weight, starting with the health of adolescent girls, through the preconception period to pregnancy and pregnancy stages and ending with lactation. The second point of focus concerns the nutritional follow-up and feeding opportunities in relation to dietary requirements of children with low birth weight.

Contents

Prevention of Low Birthweight, Epidemiology
• The Epidemiology of Low Birthweight: Kramer, M.S.
• Fetal Malnutrition and Long-Term Outcomes: Fall, C.H.D.
• Discussion on Epidemiology of Low Birthweight and Long-Term Outcomes of Fetal Malnutrition: Krawinkel, M.B.
• Intervention Strategies for Preventing Low Birthweight in Developing Countries: Importance of Considering Multiple Interactive Factors: Uauy, R.; Corvalan, C.; Casanello, P.; Kuzanovic, J.
• Effect of Multiple Micronutrient versus Iron-Folate Supplementation during Pregnancy on Intrauterine Growth: Ramakrishnan, U.; Grant, F.K.; Imdad, A.; Bhutta, Z.A.; Martorell, R.
• Importance of Intervening in the Preconception Period to Impact Pregnancy Outcomes: Dean, S.V.; Imam, A.M.; Lassi, Z.S.; Bhutta, Z.A.
• Commentary on Prevention of Low Birthweight in Low-Income Societies: Osendarp, S.J.M.

Epigenetic Factors before and during Pregnancy
• Nutritional Regulation of Fetal Growth: Bloomfield, F.H.; Jaquier, A.L.; Oliver, M.H.
• Endocrine Interactions in the Control of Fetal Growth: Fowden, A.L.; Forhead, A.J.
• Discussion on Nutritional and Endocrine Regulation of Fetal Growth: Makrides, M.
• Developmental Programming of Obesity and Metabolic Dysfunction: Role of Prenatal Stress and Stress Biology: Entringer, S.; Wadhwa, P.D.
• Commentary on the Role of Prenatal Stress in Developmental Programming of Obesity and Metabolic Dysfunction: Koletzko, B.V.
• One-Carbon Metabolism, Fetal Growth and Long-Term Consequences: Kalhan, S.C.
• Discussion on One-Carbon Metabolism, Fetal Growth and Long-Term Consequences: Kurpad, A.
• Influence of Maternal Vitamin B12 and Folate on Growth and Insulin Resistance in the Offspring: Deshmukh, U.; Katre, P.; Yajnik, C.S.

Clinical Outcome of Low Birthweight, Long-Term Consequences
• Immediate Metabolic Consequences of Intrauterine Growth Restriction and Low Birthweight: Bhatia, J.; Gates, A.
• Commentary on Immediate Metabolic Consequences of Intrauterine Growth Restriction and Low Birthweight: Kler, N.; Gupta, N.P.
• Amino Acid Homeostasis in the Preterm Infant: Vlaardingerbroek, H.; van den Akker, C.H.; van der Schoor, S.R.D.; van Goudoever, J.B.
• Commentary on Amino Acid Homeostasis in the Preterm Infant: Kler, N.; Gupta, N.P.
• Interventional Strategies to Promote Appropriate Growth: Ziegler, E.E.; Carlson, S.J.; Nelson, S.E.
• Discussion on Interventional Strategies to Promote Appropriate Growth: Vaidya, U.
• Iron and Other Micronutrient Deficiencies in Low-Birthweight Infants: Domellöf, M.
• Discussion on Iron and Other Micronutrient Deficiencies in Low-Birthweight Infants: Vaidya, U.
• Improving the Neurodevelopmental Outcomes of Low-Birthweight Infants: Makrides, M.; Anderson, A.; Gibson, R.A.; Collins, C.T.
• Commentary on Improving Outcomes of Low-Birthweight Infants: Kler, N.; Gupta, N.P.
This volume is a 'must read' resource on 40 years of research to develop and guide interventions for improving sexual and reproductive health by HRP, a Special Programme for Research, Development and Research Training in Human Reproduction hosted by WHO and co-sponsored by UNDP, UNFPA, WHO and The World Bank.

Insights are provided on how HRP was established to conduct research to address evolving needs in human reproduction. Over the years, HRP has been a global leader in the generation and synthesis of evidence on new methodologies in the field. It contributed to defining the concept of reproductive health and assists countries in their efforts to attain the Millennium Development Goals and targets, especially that for achieving universal access to reproductive health.

This special issue provides a chronicle of its achievements and includes significant references on its pioneering work. It traces the history of HRP through informative articles. This work will provide valuable reading for all those interested in the areas of family planning, obstetrics, fertility, gynecology, AIDS research, andrology and epidemiology.
Rediscover Vesalius
The medical revolution of the 16th century brought to life for the 21st century

ANDREAS VESALIUS

The Fabric of the Human Body
An Annotated Translation of the 1543 and 1555 Editions of “De Humani Corporis Fabrica” by

DANIEL H. GARRISON
MALCOLM H. HAST
with contributions by Vivian Nutton and Nancy Siraisi

For the first time ever, both editions of Andreas Vesalius’ masterpiece “De Humani Corporis Fabrica” are accessible in the English language. They were critically compared and published in a modern layout transforming the Renaissance anatomical atlas for the 21st-century reader. More than 5,000 annotations cover anything from antique sources over Galenic references to the medical and cultural background of Vesalius’ time. Also included are Vesalius’ handwritten notes for a never published third edition.

To enable the reader and medical student to really study Vesalius’ woodcut illustrations, the images were digitally enhanced and often enlarged to feature his painstaking work of marking each pertinent anatomical part with characters. All over Vesalius’ descriptive text, the standard Latin Nomina Anatomica and Terminologia Anatomica provide the reader with the modern medical terminology.

Vesalius, A., The Fabric of the Human Body
An Annotated Translation of the 1543 and 1555 Editions of “De Humani Corporis Fabrica Libri Septem” by D.H. Garrison and M.H. Hast
CXV + 1338 p., 340 fig., in two volumes, hard cover, with slip case, 2014 315x435 mm / 12x17", 16 kg / 35 lbs
CHF 1,500.– / EUR 1,250.– / USD 1,650.00

www.karger.com
Postage and handling included
VAT & import taxes excluded, no right to return
Prices subject to change, EUR price for Germany, USD price for USA and Latin America only

www.vesalius-fabrica.com
The body of knowledge in most medical specialties is rapidly expanding, making it virtually impossible to follow all advances in clinical and basic sciences that are relevant to a given field. This is particularly true in pediatric endocrinology, at the cross-road of pediatrics, endocrinology, development and genetics. Providing abstracts of articles that report the year’s breakthrough developments in the basic sciences and evidence-based new knowledge in clinical research and clinical practice that are relevant to the field, the ‘Yearbook of Pediatric Endocrinology 2013’ keeps busy clinicians and scientists, pediatric endocrinologists, and also pediatricians and endocrinologists informed on new advances.

Twelve Associate Editors and their co-authors selected from several thousand papers those that brought the most meaningful new information, summarized them and provided comments to put them into perspective. The papers are classified into those that identify new genes involved in diseases, new hormones, concepts revised or re-centered, important observations for clinical practice, large-scale clinical trials, new mechanisms, new paradigms, important review articles, new fears and new hopes.

Because the Yearbook is endorsed by the European Society for Paediatric Endocrinology (ESPE), its publication is linked to the annual meeting of the ESPE. The ‘Yearbook of Pediatric Endocrinology 2013’ covers the medical and scientific literature from June 2012 through May 2013.

## Contents

- Preface
  - Ze'ev Hochberg and Ken Ong
- Neuroendocrinology
  - Lucie Chevrier, Brooke Tata and Nicolas de Roux
- Pituitary
  - Evelien F. Gevers, Carles Gaston-Massuet and Mehul T. Dattani
- Thyroid
  - Aurore Carré, Gabor Szinnai, Dulanjalee Kariyawasam, Mireille Castanet and Michel Polak
- Growth and Growth Factors
  - Stefano Cianfarani
- Growth Plate, Bone and Mineral Metabolism
  - Quzi Makite, Agnès Linglart and Terhi J. Heino
- Reproductive Endocrinology
  - Lena Sahlin and Ollie Soder
- Adrenals
  - Erica L.T. van den Akker and Evangelia Charmandari
- Oncology and Chronic Disease
  - Tilman Rohrer, Thomas M.K. Völkl and Helmut G. Dörr
- Type 1 Diabetes: Clinical and Experimental
  - M. Loredana Marcovecchio and Francesco Chiarelli
- Obesity and Weight Regulation
  - Martin Wabitsch, Daniel Tews, Christian Denzer, Anja Moss, Belinda Lennerz and Pamela Fischer-Posovszky
- Type 2 Diabetes, Metabolic Syndrome and Lipids
  - Orit Pinhas-Hamiel and Hofit Cohen
- Evidence-Based Medicine in Pediatric Endocrinology
  - Christopher J.H. Kelnar and Roderick T. Mitchell
- Editors’ Choice
  - Ken Ong and Ze’ev Hochberg
- Science and Medicine
  - Ze’ev Hochberg and Ken Ong
- Author Index
- Subject Index