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Obesity: Pathology and Therapy

Contributors

P. Björntorp, S.R. Bloom, J.E. Blundell, C. Bouchard, C.F. Burant, L.A. Campfield, J.F. Caro, Y.C. Chagnon, M. DiGirolamo, V. Drapeau, J. Dwyer, B.J. Goldstein, J.G. Granneman, J.C.G. Halford, B.C. Hansen, J.B. Harp, M.D. Hirvonen, R.E. Keesey, J.W. Kolaczynski, R. Konikoff, Y. Ma, K.G. MacDonald, D.E. Moller, L. Pérusse, F.X. Pi-Sunyer, W.J. Pories, M. Rossi, D.M. Smith, F.J. Smith, J. Stevens, M.E. Trautmann, A. Tremblay, A.A. Truett, L.H.T. Van der Ploeg, D.B. West, B. York

Editors:

D.H. Lockwood and T.G. Heffner

Springer

DEAN H. LOCKWOOD, M.D.
Vice President
Department of Clinical Research
Parke-Davis Pharmaceutical Research
Division of Warner Lambert Company
2800 Plymouth Road
Ann Arbor, MI 48105
USA

THOMAS C. HEFFNER, PH.D.
Sr. Director, Neuroscience Therapeutics
Parke-Davis Pharmaceutical Research
Division of Warner Lambert Company
2800 Plymouth Road
Ann Arbor, MI 48105
USA
e-mail: Thomas.Heffner@wl.com

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Preface

Obesity is a serious medical problem that affects millions of people, especially in Western societies. Although long considered a complicating factor in a variety of diseases, there is now widespread agreement that obesity itself should be classified and treated as a disease and that it has important consequences for personal health, quality of life and cost to society. Understanding obesity and the means of treating it have been hampered in the past. There have been misperceptions that obesity is a behavioral disorder and that its treatments provides only cosmetic benefits. Pharmacologic approaches to treatment have suffered from problems of limited efficacy, reduced activity upon chronic use, and serious side effects, including abuse liability, cardiac disease, hypertension, and respiratory complications. Finally, there has been a proliferation of consumer and natural products with unproven benefits. This book attempts to address both the problems associated with obesity and the approaches to treating it.

In the first section devoted to pathology, Drs. DiGirolamo, Harp, and Stevens elaborate in Chap. 1 on how obesity and its medical complications develop. As described by Dr. Pi-Sunyer in Chap. 2, obesity is a disease seen most often in affluent Western societies and is associated with the aforementioned medical problems, as well as Type II diabetes mellitus and gallbladder disease. Drs. Chagnon, Pérusse, and Bouchard review the human genetics of obesity in Chap. 3, and Drs. Goldstein and Kolaczynski review the compelling evidence of the important role that obesity plays in the development of Type II diabetes in Chap. 4

Greater awareness of the consequences of obesity, as well as its recognition as a disease, has stimulated research aimed at understanding its etiology and developing new treatments. The second section of this book is devoted to what is known about the pharmacology and treatment of obesity. The role of fat metabolism is described by Dr. Björntorp in Chap. 5, while in Chap. 6, Drs. Hirvonen and Keesey elaborate on the concept of body weight set point and its use in the understanding of (as well as its implications for) body weight regulation. Pharmacologic approaches to treating obesity have included serotonergic drugs and other agents, as described by Drs. Halford and Blundell in Chap. 7 and by Drs. Campfield and Smith in Chap. 8. Dietary approaches

to the treatment of obesity are reviewed by Drs. DWYER and KONIKOFF in Chap. 9 and by Drs. Driapeau and TREMBLAY in Chap. 10. Use of surgical treatments are discussed by Drs. SMITH, PORIES, and MACDONALD in Chap. 11.

The third section of this book is devoted to current pharmacologic targets for obesity. Leptin and its critical role in adipocyte-to-brain signaling is described by Drs. CARO and TRAUTMANN in Chap. 12. In Chap. 13, Drs. ROSSI and BLOOM review the important role of central nervous system neuropeptides in feeding, while Dr. GRANNEMAN describes the concept of β3 adrenergic receptors as a target for obesity treatment in Chap. 14. Finally, Dr. BURANT describes the insulin sensitizers in Chap. 15.

Strategies for developing future targets for antiobesity agents are described in the fourth and final section of the book. In Chap. 16, MOLLER and VAN DER PLOEG suggest important future directions for identifying new targets for obesity treatment based on genetic and transgenic approaches. Drs. WEST, MA, TRUETT, and YORK describe approaches for identifying new genes involved in obesity in Chap. 17. Dr. HANSEN reviews the importance of nonhuman primates as experimental models of obesity in Chap. 18.

It is our hope that this volume will provide a useful review of our present understanding of obesity, its etiology, and the future directions in the development of effective treatments of it.

D. LOCKWOOD and T. HEFFNER, EDITORS

List of Contributors

BJÖRNTORP, P., Department of Heart and Lung Disease, Sahlgren's University Hospital, University of Göteborg, S-413 45 Göteborg, Sweden
e-mail: Per.Björntorp@hjl.gu.su

BLOOM, S.R., Endocrine Unit, Imperial Collge of Science, Technology and Medicine, Hammersmith Hospital, DuCane Road, London W12 0NN, United Kingdom
FAX: (208) 383-3142

BLUNDELL, J.E., Biopsychology Group, School of Psychology, University of Leeds, Leeds LS2 9JT, United Kingdom
e-mail: johneb@psychology.leeds.ac.uk

BOUCHARD, C., Executive Director, Pennington Biomedical Research Center, 6400 Perkins Road, Baton Rouge, Louisiana 70808-4124, USA
e-mail: bouchac@mhs.pbrc.edu

BURANT, C.F., Cell Biology, Parke-Davis Pharmaceutical Research, 2800 Plymouth Road, Ann Arbor, MI 48105, USA
e-mail: Charles.Burant@wl.com

CAMPFIELD, L.A., Department of Metabolic Diseases, Hoffman-La Roche Inc., Nutley, NJ 07110, USA
FAX: (973) 235-8128

CARO, J.F., Lilly Research Laboratories, Eli Lilly and Company, Lilly Corporate Center, Indianapolis, IN 46285, USA

CHAGNON, Y.C., Physical Activity Sciences Laboratory, Kinèsiologie, PEPS, Laval University, Ste-Foy, Quèbec G1K 7P4, Canada
e-mail: Yvon.Chagnon@kin.msp.ulaval.ca

DiGirolamo, M., Department of Medicine, Division of Gerontology and Geriatric Medicine, Emory University School of Medicine, Woodruff Memorial Research Building, 1639 Pierce Drive, Atlanta, GA 30322, USA
e-mail: mdigi01@emory.edu

Drapeau, V., Physical Activity Sciences Laboratory, Division of Kinesiology, PEPS, Laval University, Ste-Foy, Québec G1K 7P4, Canada
e-mail: vicky.drapeau@kin.msp.ulaval.ca

Dwyer, J., Tufts Medical School and Tufts School of Nutrition, Science and Policy and Frances Stern Nutrition Center, New England Medical Center, Hospital Boston, MA 02111, USA
e-mail: jdwyer1@lifespan.org

Goldstein, B.J., Division of Endocrinology, Diabetes and Metabolic Diseases, Jefferson Medical College of Thomas Jefferson University, 1020 Locust St, Room 349, Philadelphia, PA 19107, USA

Granneman, J.G., Department of Psychiatry and Behavioral Neuroscience, Wayne State University School of Medicine, 540 East Canfield, Detroit, MI 48201, USA
e-mail: James.Granneman@wl.com

Halford, J.C.G., Department of Phsychology, University of Liverpool, Eleanor Rathbone Building, Liverpool L69 7EA, United Kingdom
e-mail: j.c.g.halford@liverpool.ac.uk

Hansen, B.C., Obesity and Diabetes Research Center, University of Maryland School of Medicine, 10 South Pine Street, MSTF # 6-00, Baltimore, MD 21201, USA
e-mail: bchansen@aol.com

Harp, J.B., Department of Nutrition and Medicine, University of North Carolina at Chapel Hill, CB#7400, McGavran-Greenberg Hall, Chapel Hill, NC 27599, USA
e-mail: jharp@sph.unc.edu

Hirvonen, M.D., University of Wisconsin, Brogden Psychology Building, 1202 W. Johnson Street, Madison, WI 53706, USA
e-mail: mdhirvonen@facstaff.wisc.edu

Keesey, R.E., University of Wisconsin, Brogden Psychology Building, 1202 W. Johnson Street, Madison, WI 53706, USA
e-mail: rekeesey@facstaff.wisc.edu

Kolaczynski, J.W., Novo Nordisk Pharmaceuticals, Inc., 100 Overlook Center, Suite 200, Princeton, NJ 08540-7810, USA
e-mail: jkol@nnpi.com

Konikoff, R., Tufts University, School of Nutrition, Science and Policy and Frances Stern Nutrition Center, New England Medical Center, Hospital Boston, MA 02111, USA

Ma, Y., Parke-Davis Laboratory for Molecular Genetics, 1501 Harbor Bay Parkway, Alameda, CA 94502, USA

MacDonald, K.G., Department of Surgery, Rm. #204, Brody School of Medicine at East Carolina University, Greenville, NC 27858, USA
e-mail: macdonaldk@mail.ecu.edu

Moller, D.E., Departments of Molecular Endocrinology and Metabolic Disorders, Merck Research Laboratories, Rahway, NJ 07065, USA
e-mail: david_moller@merck.com

Pérusse, L., Physical Activity Sciences Laboratory, Kinèsiologie, PEPS, Laval University, Ste-Foy, Québec G1K 7P4, Canada

Pi-Sunyer, F. X., Obesity Research Center, St. Luke's-Roosevelt Hospital Center, 1111 Amsterdam Avenue, New York, NY 10025, USA
e-mail: Fxp1@columbia.edu

Pories, W.J., Department of Surgery, Rm. #204, Brody School of Medicine at East Carolina University, Greenville, NC 27858, USA
e-mail: poriesw@mail.ecu.edu

Rossi, M., Endocrine Unit, Imperial Collge of Science, Technology and Medicine, Hammersmith Hospital, DuCane Road, London W12 0NN, United Kingdom

Smith, D.M., Department of Surgery, Rm. #204, Brody School of Medicine at East Carolina University, Greenville, NC 27858, USA

Smith, F.J., Department of Metabolic Diseases, Hoffman-La Roche Inc., Nutley, NJ 07110, USA

Stevens, J., Departments of Nutrition and Epidemiology, University of North Carolina at Chapel Hill, Chapel Hill, NC 27599, USA

TRAUTMANN, M.E., Lilly Research Laboratories, Eli Lilly and Company, Lilly Corporate Center, Indianapolis, IN 46285, USA
e-mail: trautman_Michael@lilly.com

TREMBLAY, A., Physical Activity Sciences Laboratory, Division of Kinesiology, PEPS, Laval University, Ste-Foy, Québec G1K 7P4, Canada
e-mail: angelo.tremblay@kin.msp.ulaval.ca

TRUETT, A.A., Pennington Biomedical Research Center, 6400 Perkins Road, Baton Rouge, LA 70808, USA

VAN DER PLOEG, L.H.T., Departments of Obesity Research and Metabolic Disorders, Merck Research Laboratories, Rahway, NJ 07065, USA

WEST, D.B., Parke-Davis Laboratory for Molecular Genetics, 1501 Harbor Bay Parkway, Alameda, CA 94502, USA
e-mail: david.west@wl.com

YORK, B., Pennington Biomedical Research Center, 6400 Perkins Road, Baton Rouge, LA 70808, USA

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