

World-renowned researchers examine physical activity in treating type 2 diabetes

PHYSICAL ACTIVITY

and

TYPE 2 DIABETES

*Therapeutic Effects and
Mechanisms of Action*

JOHN A. HAWLEY
JULEEN R. ZIERATH

editors

©2008 • Hardback • 232 pp
ISBN 978-0-7360-6479-8
\$75.00 (\$82.95 CDN)

Audiences: A professional reference for clinical research scientists, research fellows, academic and pharmacological scientists, clinical investigators, governmental agencies, and health care clinicians in the areas of basic and applied research, wellness, and health care promotion; a research-based text for graduate-level courses and seminars.

Over the past 50 years, there has been a dramatic increase in the prevalence of interrelated metabolic disease states, including obesity, insulin resistance, and type 2 diabetes mellitus. In modern Western nations, the population-based prevalence of insulin resistance is approaching 20%, and type 2 diabetes is now the most common endocrine disorder in adults. No longer a disease reserved for the aging population, type 2 diabetes is also on the rise in adolescents. Approximately 30% of all newly diagnosed cases (between 1982 and 1994 in the United States alone) are among people 10 to 19 years of age.

For those engaged in a struggle against this modern-day epidemic, *Physical Activity and Type 2 Diabetes* provides cutting-edge research to energize current efforts in diabetes prevention, management, and treatment. The most in-depth and up-to-date book on the topic, *Physical Activity and Type 2 Diabetes* presents a series of independent but related chapters

authored by the foremost researchers of insulin resistance examining topics such as these:

- Physical inactivity as a primary cause for the rising incidence of insulin resistance
- The emergence of an “exercise-deficient” phenotype
- The effects of exercise training on selected aspects of substrate metabolism
- The role of endurance and resistance training programs for the prevention and treatment of insulin resistance
- The identification of new molecular targets and pathways useful for the treatment of insulin resistance and type 2 diabetes.

Based on extensive research, *Physical Activity and Type 2 Diabetes* presents a wealth of information to assist the biomedical and research community in creating prescriptive therapeutic tools for type 2 diabetes intervention—and offers hope for the alleviation of the global epidemic of insulin resistance.

About the Editors

John A. Hawley, PhD, is professor and head of the Exercise Metabolism and Diabetes Research Group in the School of Medical Sciences at the Royal Melbourne Institute of Technology in Melbourne, Australia. A fellow of the American College of Sports Medicine and a member of the American Physiological Society, he has published more than 150 papers in medical, biochemical, and sport science journals, three books, and 15 book chapters.

Juleen R. Zierath, PhD, is professor of physiology and head of the section of integrative physiology in the department of surgical science, Karolinska Institutet, Stockholm, Sweden, and an adjunct professor of biochemistry at Boston University School of Medicine. She has published more than 150 peer-reviewed scientific papers, including 35 review articles in journals focused on endocrinology, metabolism, diabetes mellitus, and exercise physiology.

Visit us online at www.HumanKinetics.com!

Contents

Part I: Aetiology of Insulin Resistance and Type 2 Diabetes: Prevalence and Consequences of the "Diabesity" Epidemic

- Chapter 1:** The Increasing Burden of Type 2 Diabetes: Magnitude, Causes, and Implications of the Epidemic
- Chapter 2:** Waging War on Type 2 Diabetes: Primary Prevention Through Exercise Biology

Part II: Defects in Metabolism and Insulin Resistance

- Chapter 3:** Fatty Acid Uptake and Insulin Resistance
- Chapter 4:** Lipid Metabolism and Insulin Signaling
- Chapter 5:** Metabolic Inflexibility and Insulin Resistance
- Chapter 6:** Nutrient Sensor Links Obesity With Diabetes Risk
- Chapter 7:** Inflammation-Induced Insulin Resistance in Obesity: When Immunity Affects Metabolic Control

Part III: Prevention of Type 2 Diabetes Through Exercise Training

- Chapter 8:** Transcription Factors Regulating Exercise Adaptation
- Chapter 9:** Exercise and Calorie Restriction Use Different Mechanisms to Improve Insulin Sensitivity
- Chapter 10:** Mitochondrial Oxidative Capacity and Insulin Resistance
- Chapter 11:** Effects of Acute Exercise and Exercise Training on Insulin Action in Skeletal Muscle
- Chapter 12:** Resistance Exercise Training and the Management of Diabetes

Part IV: Prevention of Type 2 Diabetes: Identification of Novel Molecular Targets and Pathways

- Chapter 13:** AMPK: The Master Switch for Type 2 Diabetes?
- Chapter 14:** Protein Kinase C and Insulin Resistance
- Chapter 15:** Evidence for the Prescription of Exercise as a Therapy for the Treatment of Patients With Type 2 Diabetes

ORDER FORM—4 easy ways to order!

- 1. Call Toll-Free:** In the U.S., 1-800-747-4457, Monday - Friday, 7 am to 7 pm CST
In Canada, 1-800-465-7301, Monday - Friday, 8 am to 5 pm EST
Calls outside the U.S. and Canada, 1-217-351-5076 (not a toll-free call)
- 2. Fax this form:** In the U.S., fax to 1-217-351-1549, 24 hours a day
In Canada, fax to 1-519-971-9797, 24 hours a day
- 3. Mail this form:** In the U.S., mail to Human Kinetics • P.O. Box 5076 • Champaign, IL 61825-5076
In Canada, mail to Human Kinetics • 475 Devonshire Rd, Unit 100 • Windsor, Ontario, N8Y 2L5
- 4. Visit our Web site:** www.HumanKinetics.com

Please send me: copy(ies) of **Physical Activity and Type 2 Diabetes: Therapeutic Effects and Mechanisms of Action**
ISBN 978-0-7360-6479-8 • \$75.00 (\$82.95 CDN)

Subtotal _____

State Sales Tax (IL-7.75%; CA-7.25%)* _____

*CA also add all applicable local taxes _____

Add Postage/Handling* _____

**If your state is on the list, add tax after Postage/Handling and all local taxes _____

In Canada add 6% GST _____

Total _____

SHIP TO:

Name (Please Print) _____
Street Address (Needed for UPS delivery) _____

City _____ State _____ Zip _____
Country _____ Daytime Phone _____
E-mail _____

(Please provide your e-mail address for customer service and online journal access)

May we e-mail you with marketing information including new product announcements and special offers? Yes No

May we share your postal mailing address with partners who have a mutual interest in our physical activity mission? Yes No

Personal Orders: (Orders placed to the U.S. must be paid in U.S. funds drawn on a U.S. bank: orders placed to Canada must be paid in Canadian funds drawn on a Canadian bank.)

My check or money order is enclosed. (Please make checks payable to Human Kinetics. A fee of \$25.00 will be charged for checks returned for insufficient funds.)

Charge my: VISA MasterCard AmericanExpress
Account No. _____

VISA or MC expiration date _____

American Express valid from _____ to _____

Cardholder Name _____

Signature _____

Note: We cannot process credit card orders without your signature!

*Postage/Handling Charges			
	U.S.	Canada	Other Countries
	UPS	Canada Post	1st Class/Int'l Priority
1st item	\$6.70	\$7.50	\$18.00
Each add'l item	\$1.95	\$2.90	\$10.00

**FL—6.0%
MD—5.0%
MI—6.0%
NC—4.0%
NY—4.0%
OH—5.5%
PA—6.0%
SD—4.0%
TX—6.25%
VA—5.0%
WA—6.25%

Return Policy: If you are not completely satisfied with your purchase, return it within 30 days of the purchase date, in saleable condition, and you'll receive a full refund less shipping and handling. (Sorry, we don't accept returns on opened software, videos, CD-ROMs, or DVDs.)

