

Michelle H. Cameron

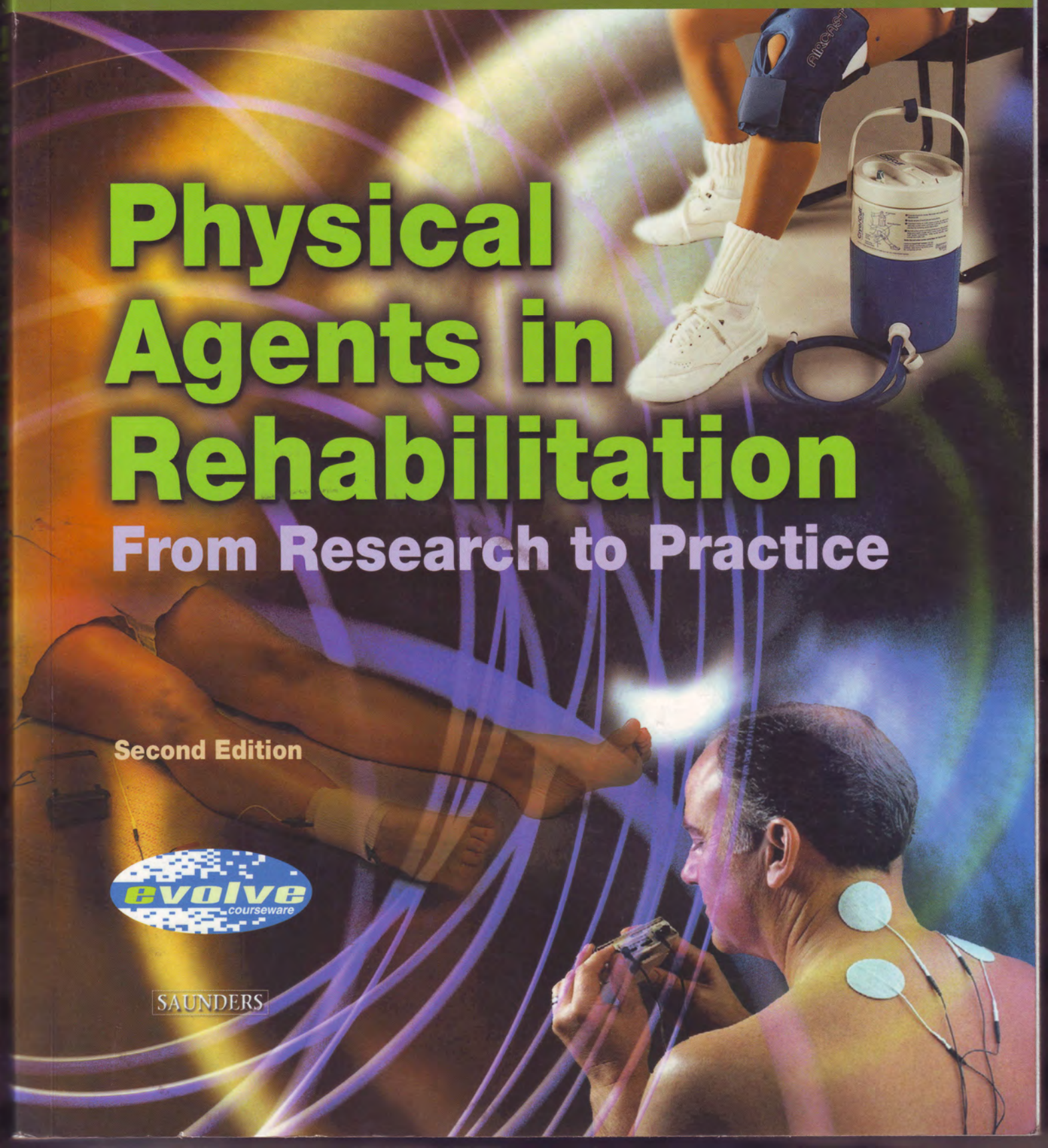
Physical Agents in Rehabilitation

From Research to Practice

Second Edition



SAUNDERS





The Latest Evolution in Learning.

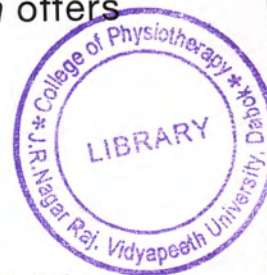
Evolve provides online access to free learning resources and activities designed specifically for the textbook you are using in your class. The resources will provide you with information that enhances the material covered in the book and much more.

Visit the Web address listed below to start your learning evolution today!

▶ **LOGIN:** <http://evolve.elsevier.com/Cameron>

Evolve Online Learning Resource for Cameron: *Physical Agents in Rehabilitation: From Research to Practice, 2nd Edition* offers the following features:

- **Frequently Asked Questions (FAQs)**
Common questions related to the topics covered in the textbook.
- **Study Guide**
Questions and answers to help you to increase your knowledge level.
- **Content Updates**
Content is updated to stay current and fresh, optimizing learning and teaching.
- **WebLinks**
Links to places of interest on the web specific to your classroom needs.
- **Links to Related Products**
See what else Elsevier Science has to offer in a specific field of interest.



Think outside the book...evolve.

Physical Agents in Rehabilitation

From Research to Practice

Second Edition

Michelle H. Cameron, PT, OCS

Guest Lecturer

Graduate Program, of Physical Therapy

San Jose State College

Oakland, California

Health Potentials, Owner

A Health Education and Consulting Company

Oakland, California

SAUNDERS

A Harcourt Health Company

Physical Agents in Rehabilitation

From Research to Practice

Second Edition

Michelle H. Cameron, PT, OCS

Guest Lecturer

Graduate Program of Physical Therapy

Samuel Merritt College

Oakland, California

Health Potentials, Owner

A Health Education and Consulting Company

Oakland, California

SAUNDERS

An Imprint of Elsevier

SAUNDERS

An Imprint of Elsevier

11830 Westline Industrial Drive
St. Louis, Missouri 63146

1832

PHYSICAL AGENTS IN REHABILITATION FROM RESEARCH TO PRACTICE
Copyright © 2003, Elsevier. All rights reserved.

0-7216-9378-4

No part of this publication may be reproduced or transmitted in any form or by any means, electronic or mechanical, including photocopying, recording, or any information storage and retrieval system, without permission in writing from the publisher

Permissions may be sought directly from Elsevier's Health Sciences Rights Department in Philadelphia, USA phone. (+1)215-238-7869, fax. (+1)215-238-2239, email: healthpermissions@elsevier.com. You may also complete your request on-line via the Elsevier Science homepage (<http://www.elsevier.com>), by selecting 'Customer Support' and then 'Obtaining Permissions'.

NOTICE

Rehabilitation is an ever-changing field. Standard safety precautions must be followed, but as new research and clinical experience broaden our knowledge, changes in treatment and drug therapy may become necessary or appropriate. Readers are advised to check the most current product information provided by the manufacturer of each drug to be administered to verify the recommended dose, the method and duration of administration, and contraindications. It is the responsibility of the licensed prescriber, relying on experience and knowledge of the patient, to determine dosages and the best treatment for each individual patient. Neither the Publisher nor the author assumes any liability for any injury and/or damage to persons or property arising from this publication.

Previous edition copyrighted 1999

Acquisitions Editor Marion Waldman
Developmental Editors Sue Bredensteiner, Marjory Fraser
Publishing Services Manager John Rogers
Project Manager Kathleen L. Teal
Designer Kathi Gosche
Cover Art Kathi Gosche

Printed in the United States of America

Last digit is the print number 9 8 7 6 5 4 3

*This book is dedicated to the memory of
my husband and dearest friend
John Cameron
for encouraging me to aim high
and teaching me that I could do whatever I put my mind to.*



Michelle H. Cameron, PT, OCS, is the owner of Health Potentials, a health education and consulting company. She is a physical therapist clinician, a teacher, researcher, and author, and now also a full-time medical student at the University of California, San Francisco. She wrote the first edition and the current edition of this book, *Physical Agents in Rehabilitation: From Research to Practice*, published by Saunders. In addition, her research on phonophoresis is published in *Physical Therapy*, the Journal of the American Physical Therapy Association, and in *Clinical Management* mag-

azine, and earned her the California APTA Clinician Research Award. Michelle has also written and edited numerous articles on electrical stimulation, ultrasound and phonophoresis, and wound management, and wrote the section on ultrasound in Saunders' *Manual for Physical Therapy Practice*. Michelle's discussions of ultrasound, electrical stimulation, thermal agents, biofeedback, and wound management bring together current research and practice to provide the decision-making and hands-on tools that support optimal care within today's health care environment.