

Human Motor Development

FOURTH
EDITION

A Lifespan Approach



V. Gregory Payne — Larry D. Isaacs

HUMAN MOTOR DEVELOPMENT

A Lifespan Approach

FOURTH EDITION

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Cover photograph: © Karen Kasmanski 1998 Matrix. The photo features 83-year-old George Nissen having just pressed to a handstand. Nissen, who invented the trampoline and currently serves as a consultant for the California Governor's Council on Physical Fitness and Sports, is admired by his grandson, one-year-old Jake Ramirez.

Figure 7-3, p. 125 Used with permission of Ross Laboratories, Columbus, Ohio, from *Nutritional Assessment of the Elderly through Anthropometry*. © 1984 Ross Laboratories.

Preface

As in the first three editions of *Human Motor Development: A Lifespan Approach*, this new edition covers well-established undergraduate material. However, our approach to the subject is unique in many ways.

SPECIAL FEATURES AND ORGANIZATION

Traditionally, motor development has been studied and presented as a process that ceases at the onset of adulthood. Our book treats such development differently. Recognizing today's dramatic demographic changes and the increasing need to study people of all ages, we examine motor development as it continues throughout the lifespan.

This book is also influenced by the philosophy that movement impacts and is impacted by social, cognitive, and physical changes in human development. Therefore, separate chapters are allocated to each of these areas of development and how they interrelate with human movement.

Chapter 15, Youth Sports, and Chapter 18, Planning and Conducting Developmental Movement Programs, present information commonly omitted in traditional texts of this kind. In addition, Chapter 18 provides information necessary for those interested in establishing their own developmental movement program.

Several features assist both student and instructor. For one, we have written the book specifically for the undergraduate student. We have made every effort to explain concepts in a manner understandable to the motor development novice. In addition, each chapter concludes with a list of key terms. Complete references by chapter follow at the end of the book.

For the instructor, we have provided an expanded and updated instructor's manual, which provides a sample syllabus, more than 500 multiple-choice test questions, essay questions, suggested assignments, and more than 100 transparency masters highlighting key information—all designed to enhance the joy of learning and facilitate instruction. Several expanded assignments are also included. Similar to the suggested assignments, these have been expanded to include such details as expected length, criteria for evaluation, and problems the student may encounter in completing the assignment. These assignments are ready to use or easily adaptable to the instructor's curriculum.

The organization of our book remains straightforward. Part One provides an overview of human development and includes chapters on many of the developmental aspects just mentioned. Part Two covers factors affecting development, including effects of early stimulation and deprivation. Part Three, Physical Changes Across the Lifespan, and Part Four, Movement Across the Lifespan, present the

book's core concepts. Part Five, the culminating section, addresses assessment in motor development and ways of implementing a motor development program.

NEW FEATURES

In this edition, most chapters have been updated and modified to reflect current thought and theory and to improve the book's readability for students. Here follow some of the most significant modifications:

- Chapter 1, Introduction to Motor Development, now includes a revised and updated section on demographic changes in our population and a discussion of the term “developmentally appropriate.” Furthermore, based on recent information from the Motor Development Task Force of the National Association for Sports and Physical Education, we now discuss developmental change, its components, and the notion of a developmental perspective.
- In Chapter 5, Prenatal Development Concerns, we have completely revised the section on exercise and pregnancy to include the latest guidelines from the American College of Obstetricians and Gynecologists. In addition, we have added a table to highlight contraindications to exercise during pregnancy.
- Chapter 7, Growth and Maturation, now includes the latest national data from the HANES III study along with new sections on body mass index, measuring skeletal health, and skeletal development. We have also expanded the section on the effect of physical activity on skeletal health and development. Recommendations for achieving peak bone mass are included, as is a discussion on the most recent technique for measuring bone density through the use of dual-energy X-ray absorptiometry.
- Chapter 8, Physiological Changes: Health-Related Physical Fitness, has been completely revised and updated to include findings from two landmark reports, *The Surgeon General's Report on Physical Activity and Health* and the Centers for Disease Control's *Guidelines for School and Community Programs to Promote Lifelong Physical Activity Among Young People*. The sections on development of muscular strength are expanded, and we have included new sections on body composition: Prevalence of Obesity in America, and Association Between Childhood and Adulthood Obesity. This latter section makes possible the prediction of adulthood obesity based on childhood body mass index values. These new sections are based on new data from the latest HANES III national data set.
- Chapter 13, Fundamental Locomotion Skills of Childhood, now includes sections on developmental sequences and performance trends of the vertical jump.
- In Chapter 14, Fundamental Object-Control Skills of Childhood, we have added new sections on factors affecting the development and performance of throwing and catching. The role of instructional cues and the roles of

knowledge and experience as influential factors have been included. In addition, we have addressed the use of a glove for catching.

- Chapter 15, Youth Sports, has been completely revised to incorporate the findings of the recent Carnegie Corporation of New York report, “The Role of Sports in Youth Development.” The section on youth sport injuries has also been revised, including a new section on in-line skating. We have also identified many of the major organizations seeking to foster youth development through sport participation. Readers will also now find a substantial list of world wide web sites linking them to these organizations and to additional information on the topics covered in this chapter.
- In Chapter 16, Movement in Adulthood, we have expanded the section on falls and their dramatic impact on aging adults to include valuable new data from the National Center for Injury Prevention and Control, such as information on avoiding falls during later adulthood. In addition, a section on Activities of Daily Living has been added. Further, the chapter now culminates with an examination of the World Health Organization’s new Heidelberg guidelines, which are aimed at developing strategies to maintain or increase the physical activity of older adults.
- In Chapter 17, Assessment, we have completely revised the section on physical fitness assessment and included new sections on the FITNESSGRAM, the President’s Challenge, and the National Youth Physical Fitness Program. Also new to the fourth edition is a description of the Bayley II, along with addresses where instruments described can be acquired.
- We have added four appendices to the fourth edition. Appendix A lists world wide web sites germane to human motor development. Appendix B summarizes the landmark *Surgeon General’s Report on Physical Activity and Health*. Appendix C similarly summarizes the Centers for Disease Control’s *Guidelines for School and Community Programs to Promote Lifelong Physical Activity Among Young People*. Finally, Appendix D includes “observation guides” to simplify fundamental movement assessment using the component approach described in Chapters 13 and 14.

ACKNOWLEDGMENTS

Thanks are again extended to Mayfield Publishing Company for guiding us through the publication process in a friendly and focused manner. Our new editor, Michele Sordi, has been particularly helpful in guiding the process and assuring that our book is as useful as it can be to our readers. We also appreciate the unusually large number of reviews that Mayfield is willing to solicit to help us adjust the quality and content of our book. As usual, reviews were constructive in helping us update and modify the book to meet the needs of instructors and students. We are particularly grateful to Peter Aufesser, San Diego State; Alan Coelho, Eastern Washington University; Virginia L. Fortney, Pennsylvania State

University; Charles H. Imwold, Florida State University; Diana L. Jones, Illinois State University; and Robert E. Kraft, University of Delaware.

We express our appreciation again to Allen Burton of the University of Minnesota, who provided particularly detailed and creative recommendations for previous editions. Similarly, Karyn Nelson wrote large portions of the first edition of our instructor's manual, showing uncanny compassion and insight as an instructor and as a motor developmentalist. Lastly, we again thank John Haubentricker, Vern Seefeldt, and their colleagues at Michigan State University for providing us with research data and supporting studies pertaining to the "total body approach" for describing developmental sequences (presented in chapters 13, 14, and 17). Film tracings for this work were made by Joy Kiger, a former doctoral student at Michigan State University and currently a faculty member at the University of Wisconsin, Whitewater.

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