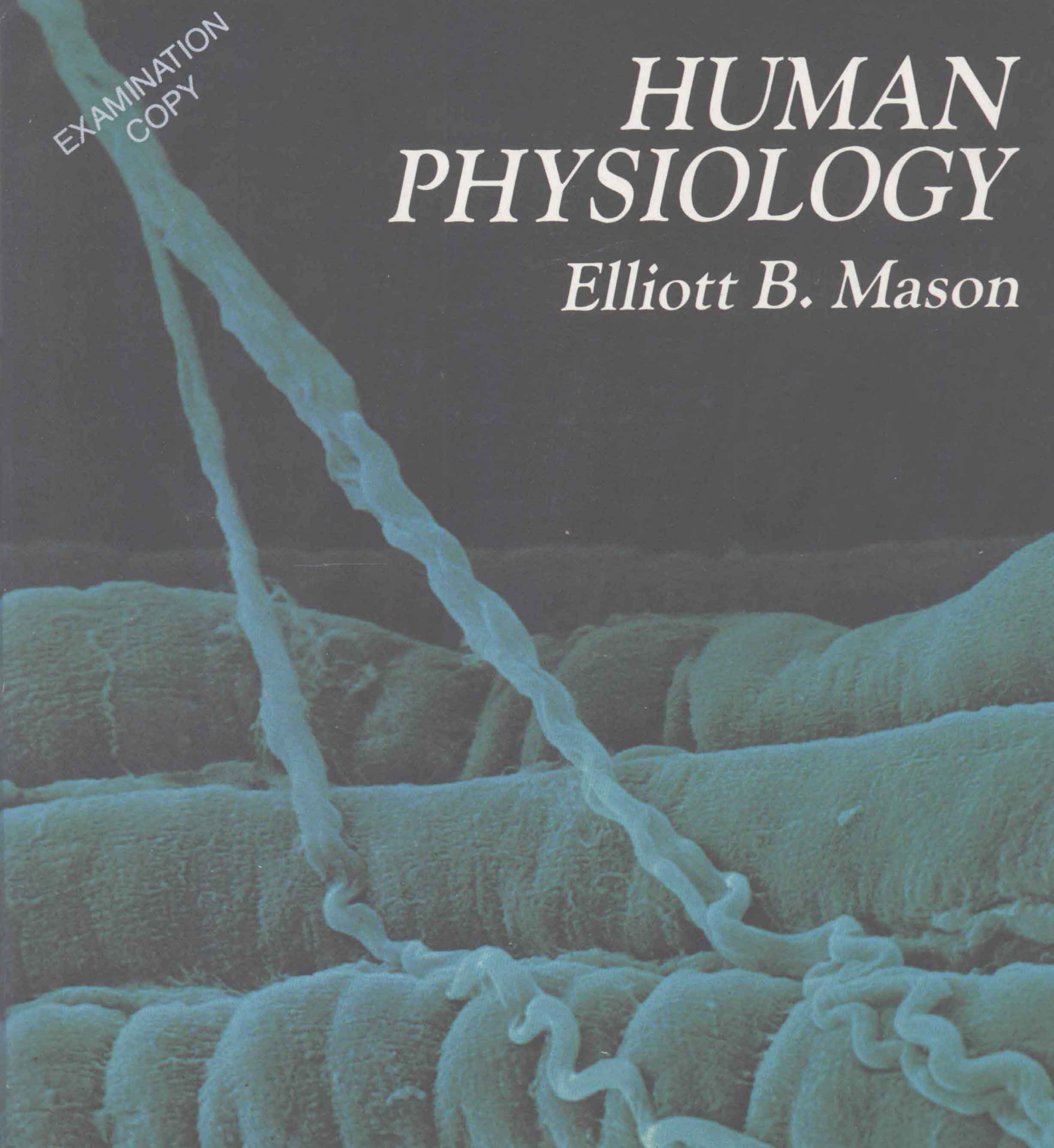


EXAMINATION
COPY

HUMAN PHYSIOLOGY

Elliott B. Mason



PHYSIOLOGY

Elliott B. Mason

State University of New York College
at Cortland

Illustrations by Fran Milner



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Dedication

To my wife Marsha and our children Jennifer, Julie, and Jessica. Their love, patience, encouragement, and understanding made this book possible.

Elliott B. Mason

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PREFACE

My major goal in writing this book is to provide a comprehensive treatment of human physiology accessible to students in a wide variety of programs, including allied health and nursing, physical education, the biological sciences, and the liberal arts. I have included enough of the relevant anatomy to make the inseparable relationship between structure and function meaningful. The book is written at a level that should make it readable by students who have had no prerequisite courses. Physical and chemical principles required to understand human physiology are presented within Chapter 2.

Sequence of Chapters

The chapters of this book are organized in the sequence most commonly used in the classroom. I recognize that there are other sequences in which the material might also be effectively presented so I have made each chapter as independent as possible. Cross-references have been included where they seem most useful.

Special Features

To enhance the text's usefulness as a teaching tool and to increase student interest, the following special features are included:

- An outstanding art program has been carefully integrated with the text. Clear and concise drawings by Fran Milner, complemented by many light micrographs and photographs, make the illustrations a valuable learning aid. When the book was designed, a special effort was made to ensure each illustration was positioned as closely as possible to the correspond-

ing text. There are insets to help orient students to particular aspects of many of the figures.

- The introductory chapter begins with discussions of homeostasis and negative feedback mechanisms. These important concepts of human physiology are integrated throughout the remainder of the text and provide a unifying theme for the course.
- The specific immune responses and other mechanisms by which the body protects itself from infection and disease are topics of increasing importance. These topics are given special emphasis in Chapter 9, Defense Mechanisms of the Body.
- Many instructors include inheritance as a topic in their courses. Therefore, the material on reproduction in Chapter 20 includes a section presenting basic concepts of human genetics.
- Discussions of a number of diseases and dysfunctions and the effects of stress are included throughout the book. These serve to provide the student with a better understanding of the normal condition and emphasize the importance of maintaining homeostasis.
- Where relevant, brief discussions of the effects of aging are included. Aging is an area of active investigation, and students will gain some insight into its effects on homeostasis from the treatment it receives in this book.

Learning Aids

This book includes a number of learning aids to assist the diverse groups of students who take courses in human physiology.

Each chapter includes:

- learning objectives
- an introductory chapter outline
- a study outline (with page references back to the text)
- a self-quiz. (The answer key to the self-quiz is located in an appendix and includes references to the text pages on which the answers can be found.)

The appendices include:

- a guide to word roots, prefixes, suffixes, and combining forms
- a glossary, which contains over 1,000 definitions and provides a phonetic pronunciation of each term

Supplements

A comprehensive Instructor's Guide has been developed to accompany this book. The Instructor's Guide includes 40 chapter end quizzes set up for easy photocopying, plus two alternate final exams. Numerous references and resource bibliographies are also included.

Acknowledgments

In the preparation of this book, much was gained from the constructive comments and advice of a number of people who reviewed various portions and drafts of the manuscript (see list that follows). Their assistance and suggestions are gratefully acknowledged.

Dr. Louis Gatto of the State University of New

York College at Cortland generously provided many of the photomicrographs used in this book. Ms. Fayann Searfoss deserves special thanks for the many hours she spent typing the manuscript. Finally, a special thanks to the people at Benjamin/Cummings who were involved in this project. All of them provided valuable ideas, suggestions, and enthusiasm—particularly Jim Behnke, Executive Editor, Karen Bierstedt, Production Editor, and Bonnie Garmus, Associate Editor. The final form of this book owes much to the talents of John Hendry, the developmental editor, John Edeen, the book designer, and Fran Milner, the artist. Their contributions can never be adequately acknowledged.

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