

# Preface

With more than 40 years of experience between us teaching exercise testing on the national level, it is a pleasure for us to present a book on exercise testing for primary physicians. As primary care physicians, we both share strong interests in sports medicine, exercise promotion and testing, and prevention of cardiovascular disease. It is our desire to develop a text that primary care physicians can use to assess fitness, encourage and prescribe exercise, and discuss tools to evaluate our patients and athletes. We also wanted to share the basic and advanced concepts behind exercise testing so that readers can master the principles and use the exercise test in their practices. We strongly believe that the exercise test is invaluable for many of these purposes and should be widely used by primary care physicians.

Over the years we have been fortunate to teach and write with many of the national leaders in the field of exercise and exercise testing including Drs. Myrvin Ellestad, Victor Froelicher, and Nora Goldschlager. We have included these nationally recognized leaders as coauthors in this text and we appreciate their support.

It is our desire to help the reader know when statements are evidence based and the strength of the evidence. To that end, we have used a common rating system, used by the American College of Cardiology and others. When possible statements and recommendations will be categorized into three classes, based on the evidence and consensus of experts:

- Class I: There is evidence and/or general agreement that a given procedure, treatment, or recommendation is useful and effective.
- Class II: There is conflicting evidence and/or a divergence of opinions about the usefulness/efficacy of a treatment, procedure, or recommendation
  - Class IIa: Weight of evidence/opinion is in favor of usefulness/efficacy
  - Class IIb: Usefulness/efficacy is less well established.
- Class III: Conditions for which there is evidence and/or general agreement that the treatment/procedure is not useful/effective or actually harmful.

In addition, where applicable we use the following levels of evidence:

- Level of evidence A: Data were derived from multiple randomized clinical trials that involved large numbers of patients.

- Level of evidence B: Data were derived from a limited number of randomized trials that involved small numbers of patients or from careful analysis of nonrandomized studies or observational registries.
- Level of evidence C: Expert consensus was the primary basis for the recommendation.

The book is divided into initial chapters on the physiology of exercise and the performance of the exercise test. This includes the equipment, protocols, and interpretation. The next section discusses common abnormal examples, exercise testing coupled with imaging techniques, and the important area of risk stratification. This includes using the exercise test and other tests to stratify patients with chest pain, asymptomatic patients, preoperative patients, and those after angioplasty and coronary artery bypass graft (CABG) surgery.

Because health promotion is essential to improving our patients' lives, we included a chapter on using the exercise test and other tools in our practices to create lifestyle changes. The medical–legal aspects of exercise testing are also discussed.

The final section deals with fitness and sports medicine topics. It is important for primary physicians to understand how to evaluate and promote fitness. Since gas analysis is the best way to directly measure fitness, we felt it was important to introduce readers to gas analysis as an additional component of the exercise test. The last two chapters deal with testing both asymptomatic and symptomatic athletes. Finally, we have included a chapter using case studies to illustrate many of the important and interesting points. We certainly want to thank all of the authors for their contributions toward making this book a reality, for without their efforts we could never have finished this project. Also, many thanks to the help and patience of our editor, Margaret Burns.

We sincerely hope the readers find this text helpful in the day-to-day management of patients as we all strive to improve the lives of our patients. As we battle against obesity, diabetes, and heart disease in the US, we hope this reference enables the primary care physicians to promote fitness and exercise as well as to use tools herein to evaluate the diseases associated with obesity and inactivity.

On a personal note we would like to acknowledge our families for their support. I (RDW) would like to thank my wife, Dara, for her constant encouragement. And I (CHE) would like to thank my father, Paul Evans, for his loving support and lifelong commitment to a personal exercise program. Dad, you certainly set a great example, and now in your eighties, you are still reaping the benefits. May my boys and I continue this great tradition.

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