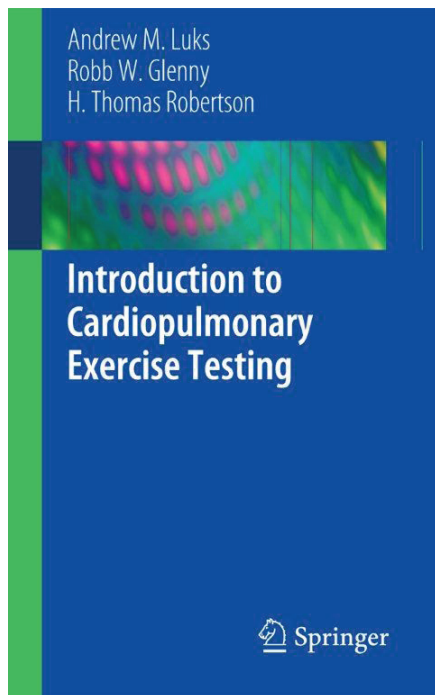


Introduction to Cardiopulmonary Exercise Testing
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“Doctor, I am short of breath when I climb the stairs”. How many times do physicians hear these words in their daily practice? Exercise intolerance is one of the most common symptoms triggering medical advice. This is especially true in respiratory and cardiac diseases where the assessment of the level of impairment plays a critical role in the management and prognosis of various chronic conditions.

There are various ways to assess exercise capacity. Cardiopulmonary exercise testing (CPET) is the most comprehensive tool used to gather information on the interplay between muscular, cardiac and respiratory limitations. CPET has the ability to make the distinction between each of the components adapting to exercise. Despite this, CPET remains rather underused in clinical practice at least, in part, because the procedure is quite demanding, but also because it may be overlooked due to a lack of awareness of the wide range of information it provides.

This book aims to provide readers with an introduction to exercise physiology, as well as demonstrate how the response changes in various conditions, how to conduct CPET and, of course, how to interpret the data. The book is structured in such a way that it is not only easy to read, but also makes the science behind

exercise pathophysiology accessible to non-experts. After a very useful glossary (summarising the terminology used throughout the book), the authors present how healthy normal individuals adapt to exercise. This section is critical to setting the scene for the proper reasoning to determine whether a symptomatic individual presents with a cardiac, respiratory or muscular (i.e. physical deconditioning) limitation. One of the main interests of this chapter is in the box-plot illustration of each scenario. The way it is presented makes it enjoyable for the reader who will easily capture the essentials of pathological response to exercise.

As previously mentioned, conducting CPET is highly demanding but also highly rewarding if performed in a rigorous way and in the proper environment. The chapter dedicated to this describes the procedure in a practical way and provides a checklist of what must be done before, during and after completion of the test. It highlights the importance of pre-test assessment as a means to decrease the risk of procedure-related incidents. The setting is also well described, including recommendations on the materials to use and the protocol to follow.

The chapter on interpretation of results is comprehensive and well-illustrated with graphs and “real-life” printed data. The authors insist on the various variables to be retrieved, including how to identify the ventilatory threshold. An introductory section of data troubleshooting is useful to avoid systematic errors that can mislead the interpretation of the results. The chapter concludes with a discussion of how to generate the report by presenting the data in tables, followed by a summary of the key results and an overall interpretation. This is illustrated with an appendix where the reader will find a very useful commented sample CPET report.

All these chapters provide a comprehensive introduction to the basics of CPET; however, the best is still to come. The final chapters cover commented case studies, illustrating four clinical scenarios: a healthy individual with cardiac limitation, a patient with cardiomyopathy and two subjects with lung conditions (obstructive and interstitial lung diseases). These cases are well-documented and provide a good training guide, before moving on to the last chapter; a self-assessment exercise illustrated with real cases. The reader should be encouraged to take the test but should refrain from turning the pages too fast as the answers and comments are provided in the final pages of the book. A nice touch is also the acknowledgement of the role of physiotherapists who are involved in the performance and interpretation of CPET.

In summary, this book is accessible, easy-to-read, well-structured and practical. It should be recommended to those who want to understand the basics of CPET and actively participate in clinical rounds where it is discussed as part of patient management.

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