

HOSPITAL PHYSICIAN®

PULMONARY DISEASE BOARD REVIEW MANUAL

PUBLISHING STAFF

PRESIDENT, GROUP PUBLISHER

Bruce M. White

EDITORIAL DIRECTOR

Debra Dreger

SENIOR EDITOR

Becky Krumm, ELS

ASSOCIATE EDITOR

Lamont Williams

ASSISTANT EDITOR

Jennifer M. Vander Bush

EXECUTIVE VICE PRESIDENT

Barbara T. White, MBA

EXECUTIVE DIRECTOR**OF OPERATIONS**

Jean M. Gaul

PRODUCTION DIRECTOR

Suzanne S. Banish

PRODUCTION ASSOCIATES

Tish Berchtold Klus

Mary Beth Cunney

PRODUCTION ASSISTANT

Stacey Caiazzo

ADVERTISING/PROJECT MANAGER

Patricia Payne Castle

MARKETING MANAGER

Deborah D. Chavis

NOTE FROM THE PUBLISHER:

This publication has been developed without involvement of or review by the American Board of Internal Medicine.



The Association for Hospital Medical Education endorses HOSPITAL PHYSICIAN for the purpose of presenting the latest developments in medical education as they affect residency programs and clinical hospital practice.

Pulmonary Rehabilitation

Series Editor:

Robert A. Balk, MD, FACP, FCCP, FCCM

Professor of Internal Medicine, Rush Medical College; Director of Pulmonary and Critical Care Medicine, Rush-Presbyterian-St. Luke's Medical Center, Chicago, IL

Contributors:

Robert A. Balk, MD, FACP, FCCP, FCCM

Professor of Internal Medicine, Rush Medical College; Director of Pulmonary and Critical Care Medicine, Rush-Presbyterian-St. Luke's Medical Center, Chicago, IL

Ellen H. Elpern, RN, MSN

Pulmonary Nurse Specialist, Rush-Presbyterian-St. Luke's Medical Center, Chicago, IL

Table of Contents

Introduction	2
Case Presentation	2
Patient Selection and Evaluation for a Rehabilitation Program.	2
Components of a Rehabilitation Program.	4
Patient Outcomes.	8
Conclusion	9
Summary Points	9
Board Review Questions.	10
Answers	10
References	10
Suggested Readings	11

Cover Illustration by May Cheney

Copyright 2002, Turner White Communications, Inc., 125 Strafford Avenue, Suite 220, Wayne, PA 19087-3391, www.turner-white.com. All rights reserved. No part of this publication may be reproduced, stored in a retrieval system, or transmitted in any form or by any means, mechanical, electronic, photocopying, recording, or otherwise, without the prior written permission of Turner White Communications, Inc. The editors are solely responsible for selecting content. Although the editors take great care to ensure accuracy, Turner White Communications, Inc., will not be liable for any errors of omission or inaccuracies in this publication. Opinions expressed are those of the authors and do not necessarily reflect those of Turner White Communications, Inc.

Pulmonary Rehabilitation

Robert A. Balk, MD, FACP, FCCP, FCCM, and Ellen H. Elpern, RN, MSN

INTRODUCTION

Patients with advanced chronic respiratory diseases who continue to have reduced pulmonary function and remain symptomatic despite receiving standard medical care have been shown to benefit from pulmonary rehabilitation.¹⁻⁴ Although pulmonary rehabilitation was once thought of as an effort of last resort to help only those patients with severe impairment of pulmonary function, it is now considered to be an integral component of the management of patients with a wide range of chronic respiratory diseases.⁵ Pulmonary rehabilitation has been shown to reduce symptoms, increase functional ability, and improve the quality of life of patients with chronic irreversible respiratory disease.^{1,5}

The American Thoracic Society (ATS) statement on Pulmonary Rehabilitation (1999) defines a pulmonary rehabilitation program as a multidisciplinary program of care for patients with chronic respiratory impairment that is individually tailored and designed to optimize physical and social performance and autonomy.¹ The ATS describes respiratory impairment as loss or abnormality of psychologic, physiologic, or anatomic structure or function resulting from respiratory disease.¹

Respiratory disability is defined as the inability of a patient to perform an activity in a manner within the normally expected range because of pulmonary disease. This includes reductions in dynamic function, task limitations, and limitations of physical performance. A respiratory handicap refers to the disadvantage resulting from an impairment or disability; for example, the inability to sustain employment as a result of pulmonary impairment or disability is a handicap. Severe respiratory disease can have a number of consequences that can significantly impact a patient's function. A list of these effects on nonrespiratory function is provided in **Table 1**.

Through a case-based format, this manual reviews the indications, patient selection criteria, and essential components of pulmonary rehabilitation, as well as methods of assessing patient outcomes.

CASE PRESENTATION

A 68-year-old man with chronic obstructive pulmonary disease (COPD) continues to have respiratory symptoms despite the use of inhaled bronchodilators and supplemental oxygen. He stopped smoking cigarettes 1 year ago when he was placed on supplemental oxygen. He had been active until 6 months ago, at which time he stopped most of his nonessential activities. He is reasonably knowledgeable about the use of his medications but on occasion has become confused with regard to which of his medications to take for an acute exacerbation; he is fairly adherent to his medication regimen.

Despite his ongoing medical therapy, he has a daily cough that is productive of clear sputum. He continues to have mild use of his accessory muscles of respiration, and there are decreased breath sounds along with a prolongation of his expiratory phase. The patient has not developed any new medical conditions, and the results of his physical examination are unremarkable except for the clinical manifestations of his respiratory disease. He appears to be depressed and voices his concern about his current state and prospects for the future. He asks if there is some way to reverse the trend of decreased lung function and return to his former level of activity. The clinician suggests enrollment in a pulmonary rehabilitation program.

PATIENT SELECTION AND EVALUATION FOR A REHABILITATION PROGRAM

COMMON INDICATIONS

Although it was previously believed that patients with end-stage lung disease were the optimum candidates for pulmonary rehabilitation, it is believed that patients with a wide range of chronic respiratory illnesses may benefit from a multidisciplinary pulmonary rehabilitation program. Common indications for pulmonary rehabilitation include respiratory disease resulting in