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### **Allergy and Immunology of the Aging Lung**

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The aging process is associated with progressively impaired immune surveillance and decreased ability to mount an appropriate immune response, which potentially leads to increased susceptibility to respiratory insults. In older patients, pneumonias rank high as a reason for hospitalization and cause significant morbidity and mortality. Currently, little is known about how the innate and adaptive immune responses change in the aged human lung or how the changes are linked to increasing susceptibility to respiratory disease. This article reviews the basics of pulmonary host defense and some recently published research on the immune response within the aging lung.

### **Sleep and Older Patients**

John J. Harrington and Teofilo Lee-Chiong Jr

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Sleep disturbances are common among older adults. The elderly population reports more symptoms associated with poor sleep initiation and maintenance and increased daytime napping. Sleep problems may be caused by various factors, including medication use, medical and psychiatric illnesses, and primary sleep disorders. The consequences of poor sleep quality may include cognitive impairment, daytime sleepiness, and reduced quality of life. The evaluation and management of these disorders is discussed in this review.

### **Asthma in Older Adults**

Sidney S. Braman and Nicola A. Hanania

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Asthma is underdiagnosed and undertreated in older adults. The classic symptoms, including episodic wheezing, shortness of breath, and chest tightness, are nonspecific in this age group. Older patients may underrate symptoms, and other diseases, such as chronic obstructive pulmonary disease, congestive heart failure, and angina, may have similar presentations. Objective measurements of lung function always should complement the history taking and physical examination. Management of asthma in older adults should include careful monitoring, controlling triggers, optimizing and monitoring pharmacotherapy, and providing appropriate asthma education. Adverse effects to commonly used asthma medications are more common in older adults, and careful monitoring of their use and adverse effects is important.

<b>Chronic Obstructive Pulmonary Disease in the Older Patient</b> Shoab A. Nazir, Mohammad M. Al-Hamed, and Marcia L. Erbland	<b>703</b>
<p>Chronic obstructive pulmonary disease (COPD) is one of the most common chronic diseases in the world. It is a major cause of morbidity, mortality, and health care use, particularly in older adults. In the following sections, the authors review the diagnosis and management of COPD with a focus on special issues in older adults.</p>	
<b>Pulmonary Hypertension in Older Adults</b> John R. McArdle, Terence K. Trow, and Kathryn Lerz	<b>717</b>
<p>Pulmonary hypertension is a frequently encountered problem in older patients. True idiopathic pulmonary arterial hypertension can also be seen and requires careful exclusion in older patients. Institution of therapies must be tempered with an appreciation of individual comorbidities and functional limitations that may affect patients' ability to comply and benefit from the complex treatments available for pulmonary arterial hypertension. This article reviews the existing data on the various forms of pulmonary hypertension presenting in older patients and on appropriate therapy in this challenging population.</p>	
<b>Treatment of Lung Cancer in Older Patients</b> Lynn T. Tanoue and Scott Gettinger	<b>735</b>
<p>Lung cancer is a disease of older persons. It is the most common cause of cancer death in men and women in the United States. A comprehensive evaluation of medical comorbidities and functional status is important in all patients but perhaps more so in older adults, and it should be included in the assessment of older patients who have lung cancer. Age, per se, should not be a limiting factor to treatment, because a large body of evidence demonstrates that fit older patients who have lung cancer can safely undergo the same treatments as their younger counterparts with equally good results.</p>	
<b>Pneumonia in the Older Patient</b> Michael S. Niederman and Veronica Brito	<b>751</b>
<p>This article examines the bacteriology, clinical features, therapy for, and prevention of pneumonia in older patients. The discussion focuses on patients who develop pneumonia out of the hospital, including individuals with community-acquired pneumonia and health care-associated pneumonia. Health care-associated pneumonia incorporates patients who live in nursing homes when they develop pneumonia and in many instances requires management similar to nosocomial pneumonia. We have chosen not to discuss nosocomial pneumonia in older patients because it does not have distinctive features or a different management approach than when this illness arises in younger patients.</p>	
<b>Tuberculosis and Nontuberculous Mycobacterial Infections in Older Adults</b> Neil W. Schluger	<b>773</b>
<p>Tuberculosis is one of the world's great public health crises. It is estimated by the World Health Organization that roughly one third of the world's populations, or some 2 billion people, are infected with <i>Mycobacterium tuberculosis</i>, the causative agent. More than 8 million people every year develop active tuberculosis disease, and 2 million die as a result. This article reviews tuberculosis and nontuberculous mycobacterial infections in older adults.</p>	

## **Mechanical Ventilation and Acute Respiratory Distress Syndrome in Older Patients**

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Jonathan M. Siner and Margaret A. Pisani

As the population of the United States ages, an increasing number of elderly adults will be cared for in intensive care units. An understanding of how aging affects the respiratory system is important for patient care and ongoing research. The incidence rates of acute respiratory failure and of acute respiratory distress syndrome increase dramatically with age, and therefore understanding the relationship between age and ARDS is important. This article focuses on the age-specific changes in respiratory function. We present a discussion of the management of acute lung injury and acute respiratory distress syndrome with a focus on the role of mechanical ventilation. We conclude with what is known about age and its impact on mortality and functional outcomes after mechanical ventilation.

## **Non-Invasive Ventilation in the Older Patient Who Has Acute Respiratory Failure**

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Layola Lunghar and Carolyn M. D'Ambrosio

Older patients are at significantly increased risk of acute respiratory failure from multiple causes. Noninvasive positive pressure ventilation has been shown to dramatically improve care of patients with acute respiratory failure. Patient selection is important in all patients being treated with noninvasive positive pressure ventilation but is especially important in older patients. Delirium, confusion, and dementia can lead to difficulty for patients in tolerating this procedure and lead to a worsening respiratory status. The presence of a do-not-intubate order does not necessarily preclude the use of noninvasive positive pressure ventilation, and some patients may derive significant benefit from its use. Overall, noninvasive positive pressure ventilation is a reasonable and justifiable option in the treatment of acute respiratory failure in older patients.

## **End-of-Life Considerations in Older Patients Who Have Lung Disease**

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Renee D. Stapleton and J. Randall Curtis

The goal of palliative care is to prevent suffering and manage symptoms, maintain quality of life, and provide physical, emotional, and spiritual support for patients and their loved ones. Research suggests that patients with chronic lung disease receive suboptimal palliative care largely because of inadequate communication with their physicians. When patients have made decisions about life-sustaining therapies, physicians often either do not know patients' wishes or misunderstand them. Clinicians should realize that most patients want more information about end-of-life care and that efforts to initiate and improve communication with their patients are important. This article reviews the potential for enhanced palliative care for older patients with chronic lung disease.

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