

## A SELECTION OF TEN CURRENT READINGS ON TOPICS RELATED TO CHRONIC LUNG DISEASE

some available as free full-text and some requiring payment

Selection of readings made by A/Prof Goh Lee Gan

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### READING 1 – CARING FOR OLDER PERSON WITH COPD

**Fried TR, Vaz Fragoso CA, Rabow MW. Caring for the older person with chronic obstructive pulmonary disease. JAMA. 2012 Sep 26;308(12):1254-63. PubMed PMID:23011715.**

URL: <http://jama.jamanetwork.com/article.aspx?doi=10.1001/jama.2012.12422> -- Payment required

Beth Israel Deaconess Medical Center, Harvard Medical School, Boston, MA, USA.

Department of Medicine, Yale University School of Medicine, New Haven, Connecticut, USA. [terri.fried@yale.edu](mailto:terri.fried@yale.edu)

#### ABSTRACT

Chronic obstructive pulmonary disease (COPD), a common disease in elderly patients, is characterized by high symptom burden, health care utilization, mortality, and unmet needs of patients and caregivers. Respiratory failure and dyspnea may be exacerbated by heart failure, pulmonary embolism, and anxiety; by medication effects; and by other conditions, including deconditioning and malnutrition. Randomized controlled trials, which provide the strongest evidence for guideline recommendations, may underestimate the risk of adverse effects of interventions for older patients with COPD. The focus of guidelines on disease-modifying therapies may not address the full spectrum of patient and caregiver needs, particularly the high rates of bothersome symptoms, risk of functional and cognitive decline, and need for end-of-life care planning. Meeting the many needs of older patients with COPD and their families requires that clinicians supplement guideline-recommended care with treatment decision making that takes into account older persons' comorbid conditions, recognizes the trade-offs engendered by the increased risk of adverse events, focuses on symptom relief and function, and prepares patients and their loved ones for further declines in the patient's health and their end-of-life care. A case of COPD in an 81-year-old man hospitalized with severe dyspnea and respiratory failure highlights both the challenges in managing COPD in the elderly and the limitations in applying guidelines to geriatric patients. PMID: 23011715 [PubMed - indexed for MEDLINE]

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### READING 2 – SMOKING CESSATION STRATEGIES IN COPD

**Warnier MJ, van Riet EE, Rutten FH, De Bruin ML, Sachs AP. Smoking cessation strategies in patients with COPD. Eur Respir J. 2013 Mar;41(3):727-34. doi: 10.1183/09031936.00014012. Epub 2012 Aug 30. PubMed PMID: 22936706.**

URL: <http://erj.ersjournals.com/content/41/3/727.long> -- Payment required

Dept of Pharmacoepidemiology and Clinical Pharmacology, Utrecht Institute for Pharmaceutical Sciences, Utrecht, The Netherlands. [m.j.warnier@uu.nl](mailto:m.j.warnier@uu.nl)

#### ABSTRACT

Smoking cessation is the cornerstone of treatment of chronic obstructive pulmonary disease (COPD) patients. This systematic review evaluates the effectiveness of behavioural and pharmacological smoking cessation strategies in COPD patients. MEDLINE was searched from January 2002 to October 2011. Randomised controlled trials evaluating the effect of smoking cessation interventions for COPD patients, published in English, were selected. The methodological quality of included trials was assessed using the Delphi list by two reviewers independently. The relative risks of smoking cessation due to the intervention, compared with controls, were calculated. Eight studies met the inclusion criteria.

Heterogeneity was observed for study population, the intervention strategy, the follow-up period and the outcome. According to the Delphi list methodological quality scores, five studies were considered to be of acceptable quality. Pharmacological therapy combined with behavioural counselling was more effective than each strategy separately. In COPD patients, the intensity of counselling did not seem to influence the results, nor did the choice of drug therapy make a difference. This systematic review makes clear that in COPD patients, pharmacological therapy combined with behavioural counselling is more effective than each strategy separately. Neither the intensity of counselling nor the type of anti-smoking drug made a difference. PMID: 22936706 [PubMed - in process]

### READING 3 – NUTRITIONAL SUPPORT IN COPD

**Collins PF, Elia M, Stratton RJ. Nutritional support and functional capacity in chronic obstructive pulmonary disease: A systematic review and meta-analysis. *Respirology*. 2013 May;18(4):616-29. doi: 10.1111/resp.12070. PubMed PMID: 23432923.**

URL: <http://dx.doi.org/10.1111/resp.12070> – Free full text

Faculty of Medicine, Institute of Human Nutrition, Southampton General Hospital, University of Southampton, Southampton, UK; Faculty of Health, School of Exercise and Nutrition Sciences, Queensland University of Technology, Brisbane, Australia.

#### ABSTRACT

Currently, there is confusion about the value of using nutritional support to treat malnutrition and improve functional outcomes in chronic obstructive pulmonary disease (COPD). This systematic review and meta-analysis of randomized, controlled trials (RCT) aimed to clarify the effectiveness of nutritional support in improving functional outcomes in COPD. A systematic review identified 12 RCT (n = 448) in stable COPD patients investigating the effects of nutritional support (dietary advice (1 RCT), oral nutritional supplements (10 RCT), enteral tube feeding (1 RCT)) versus control on functional outcomes. Meta-analysis of the changes induced by intervention found that while respiratory function (forced expiratory volume in 1 s, lung capacity, blood gases) was unresponsive to nutritional support, both inspiratory and expiratory muscle strength (maximal inspiratory mouth pressure +3.86 standard error (SE) 1.89 cm H<sub>2</sub>O, P = 0.041; maximal expiratory mouth pressure +11.85 SE 5.54 cm H<sub>2</sub>O, P = 0.032) and handgrip strength (+1.35 SE 0.69 kg, P = 0.05) were significantly improved and associated with weight gains of ≥2 kg. Nutritional support produced significant improvements in quality of life in some trials, although meta-analysis was not possible. It also led to improved exercise performance and enhancement of exercise rehabilitation programmes. This systematic review and meta-analysis demonstrates that nutritional support in COPD results in significant improvements in a number of clinically relevant functional outcomes, complementing a previous review showing improvements in nutritional intake and weight. © 2013 The Authors. *Respirology* © 2013 Asian Pacific Society of Respirology. PMID: 23432923 [PubMed - in process]

### READING 4 – BEHAVIOR MEDICINE APPROACHES IN COPD

**von Leupoldt A, Fritzsche A, Trueba AF, Meuret AE, Ritz T. Behavioral medicine approaches to chronic obstructive pulmonary disease. *Ann Behav Med*. 2012 Aug;44(1):52-65. doi: 10.1007/s12160-012-9348-7. PubMed PMID: 22351032; PubMed Central PMCID: PMC3612952.**

URL: <http://www.ncbi.nlm.nih.gov/pmc/articles/PMC3612952/> -- free full text

Department of Psychology, University of Hamburg, Von-Melle-Park 5, 20146 Hamburg, Germany.  
andreas.vonleupoldt@uni-hamburg.de

ABSTRACT

**BACKGROUND:** Chronic obstructive pulmonary disease (COPD) is a prevalent respiratory disease and associated with considerable individual and socioeconomic burden. Recent research started examining the role of psychosocial factors for course and management of the disease. **PURPOSE:** This review provides an overview on recent findings on psychosocial factors and behavioral medicine approaches in COPD. **RESULTS:** Research has identified several important psychosocial factors and effective behavioral medicine interventions in COPD. However, there is considerable need for future research in this field. **CONCLUSIONS:** Although beneficial effects of some behavioral medicine interventions have been demonstrated in COPD, future research efforts are necessary to study the effects of distinct components of these interventions, to thoroughly examine promising but yet not sufficiently proven interventions, and to develop new creative interventions. PMID: PMC3612952 PMID: 22351032 [PubMed - indexed for MEDLINE]

**READING 5 – INHALER USE IN COPD**

**Yawn BP, Colice GL, Hodder R. Practical aspects of inhaler use in the management of chronic obstructive pulmonary disease in the primary care setting. *Int J Chron Obstruct Pulmon Dis.* 2012;7:495-502. doi: 10.2147/COPD.S32674. Epub 2012 Jul 25. Review. PubMed PMID: 22888221; PubMed Central PMCID: PMC3413176.**

URL: <http://dx.doi.org/10.2147/COPD.S32674> -- Free full text

Department of Research, Olmsted Medical Center, Rochester, MN 55904 USA. [byawn@olmmed.org](mailto:byawn@olmmed.org)

ABSTRACT

Sustained bronchodilation using inhaled medications in moderate to severe chronic obstructive pulmonary disease (COPD) grades 2 and 3 (Global Initiative for Chronic Obstructive Lung Disease guidelines) has been shown to have clinical benefits on long-term symptom control and quality of life, with possible additional benefits on disease progression and longevity. Aggressive diagnosis and treatment of symptomatic COPD is an integral and pivotal part of COPD management, which usually begins with primary care physicians. The current standard of care involves the use of one or more inhaled bronchodilators, and depending on COPD severity and phenotype, inhaled corticosteroids. There is a wide range of inhaler devices available for delivery of inhaled medications, but suboptimal inhaler use is a common problem that can limit the clinical effectiveness of inhaled therapies in the real-world setting. Patients' comorbidities, other physical or mental limitations, and the level of inhaler technique instruction may limit proper inhaler use. This paper presents information that can overcome barriers to proper inhaler use, including issues in device selection, steps in correct technique for various inhaler devices, and suggestions for assessing and monitoring inhaler techniques. Ensuring proper inhaler technique can maximize drug effectiveness and aid clinical management at all grades of COPD. PMID: PMC3413176 PMID: 22888221 [PubMed - indexed for MEDLINE]

**READING 6 – PHARMACOLOGICAL INTERVENTIONS FOR ANXIETY DISORDERS IN COPD**

**Usmani ZA, Carson KV, Cheng JN, Esterman AJ, Smith BJ. Pharmacological interventions for the treatment of anxiety disorders in chronic obstructive pulmonary disease. *Cochrane Database Syst Rev.* 2011 Nov 9;(11):CD008483. doi: 10.1002/14651858.CD008483.pub2. Review. PubMed PMID: 22071851.**

URL: <http://dx.doi.org/10.1002/14651858.CD008483.pub2> -- Payment required

The Queen Elizabeth Hospital, Adelaide, Australia. [drzusmani@yahoo.co.uk](mailto:drzusmani@yahoo.co.uk).

ABSTRACT

**BACKGROUND:** Chronic Obstructive Pulmonary Disease (COPD) is characterised by inflammation of the airways and

destruction of pulmonary tissue with post bronchodilator FEV1/FVC of <0.70 (forced expiratory volume in one second/forced vital capacity). Evidence indicates an increased prevalence of anxiety disorders in patients with chronic obstructive pulmonary disease (COPD), as compared with the general population and persons suffering from many other chronic illnesses. Anxiety in people with COPD has been shown to increase disability and impair functional status, resulting in an overall reduction in quality of life. As such, pharmacological interventions are commonly used to treat anxiety disorders in patients with COPD. OBJECTIVES: To assess the effect of pharmacological interventions on anxiety disorders in people with COPD, in terms of improvement of anxiety symptoms, quality of life, exercise tolerance, reduction in length of hospital stay and FEV1. We also evaluated adverse drug reactions. SEARCH METHODS: Two Cochrane Review Group Specialised Registers were searched (up to the 1st of June 2011) to identify trials for this review. Complementary searches of PsycINFO and the Cochrane Central Register of Controlled Trials (CENTRAL) were also carried out. We did not apply any language restrictions. SELECTION CRITERIA: We considered all randomised controlled trials (RCTs), cluster randomised trials and cross-over trials of pharmacological interventions for patients (age > 40 years) with COPD and co-existing anxiety disorders (as confirmed by recognised diagnostic criteria or a validated measurement scale) for the review. DATA COLLECTION AND ANALYSIS: Two of the three review authors individually evaluated each article and extracted data. Any conflicts that arose were resolved through discussion with a third party, if necessary. Trial investigators were contacted to obtain missing/raw data. Meta-analyses of continuous outcomes were performed using the random-effect model. MAIN RESULTS: Four studies met all of the inclusion criteria (with a total of 40 participants). Three subclasses of anxiety medications were used including selective serotonin reuptake inhibitors (SSRIs), tricyclic antidepressants (TCAs) and azapirones. Although two studies used SSRIs as the intervention (total of 21 participants), we were unable to meta-analyse the anxiety outcomes as one study had a standard deviation of zero for the control group. Included studies had relatively poor quality including small sample sizes and short follow-up periods. Due to the small number of included studies, we were unable to meta-analyse all the subclasses of medications. AUTHORS' CONCLUSIONS: Due to the sub-optimal quality of the trials and statistically non-significant results, it is not possible to draw any conclusions for treatment. This review highlights the paucity of data in this area. As such, there is a need for scientifically rigorous research trials to evaluate the role of pharmacological interventions for anxiety disorders in patients with COPD, using a sample size large enough to demonstrate meaningful clinical significance. PMID: 22071851 [PubMed - indexed for MEDLINE]

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## READING 7 – PULMONARY REHABILITATION

**Nici L, Zuwallack R. Scope, background and definition of pulmonary rehabilitation. Eur J Phys Rehabil Med. 2011 Sep;47(3):465-74. Review. PubMed PMID: 21946404.**

URL: <http://www.minervamedica.it/en/journals/europa-medicophysica/article.php?cod=R33Y2011N03A0465>  
– full free text

### ABSTRACT

Pulmonary Diseases, Providence VA Hospital, Providence, RI, USA. The optimal therapy of an individual with chronic respiratory disease usually requires a combination of pharmacologic and non-pharmacologic therapies. A case of a 68-year-old man with advanced chronic obstructive pulmonary disease is given to illustrate this point. He is a recent ex-smoker with severe chronic obstructive pulmonary disease by spirometric criteria, frequent exacerbations of this disease, considerable recent health care utilization, dyspnea with minimal activities, severe functional status limitation, prominent systemic effects of the disease (e.g., weight loss) and substantial comorbidities. The primary respiratory disease cannot be isolated from and treated independently of these important factors. Pulmonary rehabilitation is an important therapeutic option in situations like this, providing a mode of integrating care, complementing otherwise standard medical therapy, and producing significant gains across multiple outcome areas of importance to the patient. Pulmonary rehabilitation has been defined by the American Thoracic Society and European Respiratory Society as: "an evidence-based, multidisciplinary, and comprehensive intervention for patients with chronic respiratory diseases who are symptomatic and often have decreased daily life activities. Integrated into the individualized treatment of the patient, pulmonary rehabilitation is designed to reduce symptoms, optimize functional status, increase participation, and reduce health care costs through stabilizing or reversing systemic manifestations of the disease". Its components include comprehensive assessment, education, exercise training, and

psychosocial intervention. Outcomes assessment is usually performed for quality assessment. Pulmonary rehabilitation produces the greatest improvements of any available therapy in dyspnea, exercise capacity, and health-related quality of life. These gains are realized despite the fact that pulmonary rehabilitation has no direct effect on lung function. It works primarily through reducing the impact of the systemic manifestations of the disease and frequent comorbidity. Pulmonary rehabilitation also leads to substantial reductions in subsequent health care utilization, possibly through collaborative self-management strategies emphasized in the program. Although pulmonary rehabilitation has been utilized by astute clinicians for many years, its science has been developed over the past two decades. PMID: 21946404 [PubMed - indexed for MEDLINE]

## READING 8 – REHABILITATION REDUCES ACUTE EXACERBATIONS

**Burtin C, Decramer M, Gosselink R, Janssens W, Troosters T. Rehabilitation and acute exacerbations. Eur Respir J. 2011 Sep;38(3):702-12. doi: 10.1183/09031936.00079111. Epub 2011 Jun 30. Review. PubMed PMID: 21719481.**

URL: <http://erj.ersjournals.com/cgi/pmidlookup?view=long&pmid=21719481> – Free full text

University Hospitals KU Leuven, Respiratory Rehabilitation and Respiratory Division, Leuven, Belgium.

Comment in Eur Respir J. 2011 Sep;38(3):514-5.

### ABSTRACT

Recent evidence indicates that acute exacerbations of chronic obstructive pulmonary disease aggravate the extrapulmonary consequences of the disease. Skeletal muscle dysfunction, a sustained decrease in exercise tolerance, enhanced symptoms of depression and fatigue are reported. Avoidance of physical activities is likely to be a key underlying mechanism and increases the risk of new exacerbations. Pulmonary rehabilitation is an intervention targeting these systemic consequences. Exercise strategies need to be adapted to the increased feelings of dyspnoea and fatigue. This review aims to describe the systemic consequences of acute exacerbations and compiles evidence for the feasibility and effectiveness of different rehabilitation strategies to counteract these consequences during and/or immediately after the acute phase of the exacerbation. Resistance training and neuromuscular electrical stimulation have been applied safely in frail, hospitalised patients and have the potential to prevent muscle atrophy. Comprehensive pulmonary rehabilitation, including general exercise training, can be implemented immediately after the exacerbation, leading to a reduction in hospital admissions and an increase in exercise tolerance and quality of life. Self-management strategies play a crucial role in changing disease-related health behaviour and preventing hospital admissions. PMID: 21719481 [PubMed - indexed for MEDLINE]

## READING 9 – LONG TERM SYSTEMIC ANTIMICROBIAL IN COPD

**Berim I, Sethi S. The benefits of long-term systemic antimicrobial therapy in chronic obstructive pulmonary disease. Ther Adv Respir Dis. 2011 Jun;5(3):207-16. doi: 10.1177/1753465811398372. Epub 2011 Mar 4. Review. PubMed PMID: 21378062.**

URL: <http://tar.sagepub.com/cgi/pmidlookup?view=long&pmid=21378062> – fee full text

University at Buffalo, SUNY, Buffalo, NY, USA.

### ABSTRACT

Acute exacerbations of chronic obstructive pulmonary disease (AECOPD) are major contributors to the morbidity and mortality associated with this disease. Current approaches that likely reduce chronic obstructive pulmonary disease (COPD) exacerbations include smoking cessation, influenza and pneumococcal vaccinations, long-acting bronchodilator and inhaled corticosteroid therapy, pulmonary rehabilitation, and mucolytic drugs. However, with optimal treatment using all of these

modalities, we are only able to reduce exacerbations by about 40%. A significant proportion of COPD exacerbations are bacterial, therefore long-term antimicrobial therapy could have a role in preventing exacerbations. Long-term antibiotic treatment in COPD regimens that are being evaluated include low-dose macrolide therapy, pulsed fluoroquinolone administration and the use of inhaled antibiotics. Although initial results have been promising with significant reductions in exacerbations with these regimens, additional studies are required to identify the appropriate patient and regimen and elucidate the risk-benefit as well as cost effectiveness of long-term antibiotics in COPD. PMID: 21378062 [PubMed - indexed for MEDLINE]

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## READING 10 – COPD MANAGEMENT IN SWISS PRIMARY CARE: ROOM FOR IMPROVEMENT

**Steuere-Stey C, Dallalana K, Jungi M, Rosemann T. Management of chronic obstructive pulmonary disease in Swiss primary care: room for improvement. Qual Prim Care. 2012;20(5):365-73. Review. PubMed PMID: 23114004.**

URL: <http://www.ingentaconnect.com> – Payment required

Institute of General Practice, University of Zurich, Pestalozzistrasse 24, 8091 Zurich, Switzerland. [claudia.stey@usz.ch](mailto:claudia.stey@usz.ch)

### ABSTRACT

**BACKGROUND:** Information on the quality of care for patients with chronic obstructive pulmonary disease (COPD) in Swiss primary care is limited. **AIM:** To identify gaps and quality improvement potential in COPD primary care in Switzerland. **METHODS:** Pooled analysis of selected published data. Six international COPD guidelines (German, Swiss, United Kingdom, Canadian, Australian and New Zealand, and the global initiative on obstructive lung disease [GOLD] guidelines) were reviewed for care elements with a level of evidence rated II and higher in at least three of the six guidelines. We compared published data on COPD management in Swiss primary care with these recommendations and with published international benchmarks. **RESULTS:** Nine elements fulfilled the criteria for evidence level II or higher in at least three of six COPD guidelines. These were summarised in six key domains: diagnosis, smoking cessation counselling, influenza vaccination, pharmacological treatment, patient education and pulmonary rehabilitation (long-term oxygen and palliative care are not the focus of COPD primary care in Switzerland and outpatient exacerbation management was subordinated to pharmacological treatment and education). Swiss primary care data revealed spirometric confirmation of diagnosis in 55% of patients, smoking cessation counselling in 50% and influenza vaccination in 66%. Inadequate prescription of inhaled corticosteroids (ICS) was high at 38% in mild COPD and 43% in moderate COPD. Referral for pulmonary rehabilitation, even for patients with severe COPD, was low at 19% and data on patient education were rare. Diagnosis, patient education and referral for pulmonary rehabilitation revealed the highest, and influenza vaccination the lowest performance gap. **CONCLUSION:** Gaps between current care and recommended best practice exist in Swiss primary care COPD management. Promoting and implementing evidence-based frameworks for developing high quality care for patients with COPD are necessary. PMID: 23114004 [PubMed - indexed for MEDLINE]