

CONTENTS

FEBRUARY 2013 / VOLUME 58 / NUMBER 2

FOR INFORMATION, CONTACT:

AARC Membership

or Other AARC Services

American Association for
Respiratory Care
9425 N MacArthur Blvd, Suite 100
Irving, TX 75063-4706
(972) 243-2272 • Fax (972) 484-2720
<http://www.aarc.org>

Therapist Registration or Technician Certification

National Board for
Respiratory Care
8310 Nieman Rd
Lenexa KS 66214
(913) 599-4200 • Fax (913) 541-0156
<http://www.nbrcc.org>

Accreditation of Education Programs

Committee on Accreditation for
Respiratory Care
1248 Harwood Rd
Bedford TX 76021-4244
(817) 283-2835 • Fax (817) 354-8519
<http://www.coarc.com>

Grants, Scholarships, Community Projects

American Respiratory
Care Foundation
9425 N MacArthur Blvd, Suite 100
Irving, TX 75063-4706
(972) 243-2272 • Fax (972) 484-2720

RESPIRATORY CARE

RESPIRATORY CARE (ISSN 0020-1324, USPS 0489-190) is published monthly by Daedalus Enterprises Inc., at 9425 N MacArthur Blvd., Suite 100, Irving, TX 75063-4706, for the American Association for Respiratory Care. One volume is published per year beginning each January. Individual subscription rates are \$89 per year in the US; \$109 in all other countries (for airmail, add \$94).

The contents of the Journal are indexed in *Index Medicus*/MEDLINE, Science Citation Index Expanded, Journal Citation Reports/Science Edition, Current Contents®/Clinical Medicine, Hospital and Health Administration Index, Cumulative Index to Nursing and Allied Health Literature, EMBASE/Excerpta Medica, and RNdex Library Edition. Abridged versions of RESPIRATORY CARE are also published in Italian and Japanese, with permission from Daedalus Enterprises Inc.

Periodicals postage paid at Irving, TX and at additional mailing offices. POSTMASTER: Send address changes to RESPIRATORY CARE, Membership Office, Daedalus Enterprises Inc, 9425 N MacArthur Blvd, Irving, TX 75063-4706

© Printed on acid-free paper.

Printed in the United States of America
Copyright © 2013 by Daedalus Enterprises Inc.

EDITOR'S COMMENTARY

Commentary on the February 2013 Issue

225

EDITOR'S CHOICE

False Positive Rate of Carbon Monoxide Saturation by Pulse Oximetry of Emergency Department Patients

by Lindell K Weaver, Susan K Churchill, Kayla Deru—Salt Lake City, Utah and Darryl Cooney—Durham, North Carolina

232

ORIGINAL RESEARCH

Noninvasive Ventilation Coupled With Nebulization During Asthma Crises: A Randomized Controlled Trial

by Valdecir C Galindo-Filho, Daniella C Brandão, Rita de Cássia S Ferreira, Maria José C Menezes, Paulo Almeida-Filho—Recife, Brazil
Verônica F Parreira—Minas Gerais, Brazil
Tayse N Silva—Recife, Brazil

Maria da Glória Rodrigues-Machado—Minas Gerais, Brazil
Elizabeth Dean—Vancouver, British Columbia, Canada
and Armèle Dornelas de Andrade—Recife, Brazil

241

The Association Between Comorbid Illness, Colonization Status, and Acute Hospitalization in Patients Receiving Prolonged Mechanical Ventilation

by Avelino C Verceles, Elizabeth J Lechner, David Halpin, and Steven M Scharf—Baltimore, Maryland

250

Tracheostomy Tube Change Before Day 7 Is Associated With Earlier Use of Speaking Valve and Earlier Oral Intake

by Daniel F Fisher, Dhimiter Kondili, June Williams, Dean R Hess, Edward A Bittner, and Ulrich H Schmidt—Boston, Massachusetts

257

Evaluation of 4 New Generation Portable Ventilators

by Thomas C Blakeman and Richard D Branson—Cincinnati, Ohio

264

Middle Ear Effusion in Mechanically Ventilated Patients: Effects of the Nasogastric Tube

by Miriam González Pena, Enric Figuerola Massana, Pilar Hernández Gutiérrez—Tarragona, Spain and Jordi Rello Condomines—Barcelona, Spain

273

Adherence to Airway Clearance Therapies by Adult Cystic Fibrosis Patients

by Josani Silva Flores, Fernanda Ângela Teixeira, Paula Maria Eidt Rovedder, Bruna Ziegler, and Paulo de Tarso Roth Dalcin—Porto Alegre, Brazil

279

Assessing Exercise Capacity Using Telehealth: A Feasibility Study in Adults With Cystic Fibrosis

by Narelle S Cox—Melbourne, Victoria, Australia

Jennifer A Alison—Sydney, New South Wales, Australia

Brenda M Button, John W Wilson, and Anne E Holland—Melbourne, Victoria, Australia

286

Static Hyperinflation Is Associated With Decreased Peak Exercise Performance in Children With Cystic Fibrosis

by Aleksandar D Sovtic, Predrag B Minic, Jovan Kosutic, Gordana P Markovic-Sovtic, and Milan B Gajic—Belgrade, Serbia

291

Mechanical Behaviors of Flutter VRP1, Shaker, and Acapella Devices

by Alexandre Pereira dos Santos—Rio de Janeiro, Brazil

Rogério Contato Guimarães, Eliane Maria de Carvalho—Minas Gerais, Brazil

and Ada Clarice Gualdi—São Paulo, Brazil

298

Noninvasive CPAP With Face Mask: Comparison Among New Air-Entrainment Masks and the Boussignac Valve

by Giovanni Mistraretti, Matteo Giacomini, Giovanni Sabbatini—Milan, Italy
Riccardo Pinciroli—Monza, Italy

Elena S Mantovani, Michele Umbrello, Debora Palmisano, Paolo Formenti, Anne LL Destrebecq, and Gaetano Iapichino—Milan, Italy

305

Pleural Fluid Amino-Terminal Brain Natriuretic Peptide in Patients With Pleural Effusions

by Altug Cincin—Bayburt, Turkey

Yasin Abul—Trabzon, Turkey

Beste Ozben, Azra Tanrikulu—Istanbul, Turkey

Nurhayat Topaloglu—Bolu, Turkey

Gulseven Ozgul, Sait Karakurt, and Ahmet Oktay—Istanbul, Turkey

313

Asynchronous Thoraco-abdominal Motion Contributes to Decreased 6-Minute Walk Test in Patients With COPD

by Jung-Yien Chien, Sheng-Yuan Ruan—Taipei, Taiwan

Yuh-Chin T Huang—Durham, North Carolina

Chong-Jen Yu, and Pan-Chyr Yang—Taipei, Taiwan

320

CONTENTS

CONTINUED...

ALSO IN THIS ISSUE

392	Professional Opportunities
395	Call for Abstracts
398	Calendar
399	Author Index
400	Advertisers Index & Help Line



Become a fan!
[www.facebook.com/
RespiratoryCare](http://www.facebook.com/RespiratoryCare)



Follow us!
[www.twitter.com/
RespCare](http://www.twitter.com/RespCare)

RESPIRATORY CARE

A Monthly Science Journal
Established in 1956

The Official Journal of the
American Association for
Respiratory Care



Feasibility and Effectiveness of an Educational Program in Italian COPD Patients Undergoing Rehabilitation <i>by Mara Paneroni—Lumezzane, Italy Enrico Clini, Ernesto Crisafulli—Pavullo, Italy Enrico Guffanti, Alessia Fumagalli—Casatenovo, Italy Antonella Bernasconi, Antonella Cabiaglia—Varese, Italy Antonello Nicolini—Levante, Italy Stefania Brogi, Nicolino Ambrosino—Pisa, Italy Roberta Peroni, Luca Bianchi, and Michele Vitacca—Lumezzane, Italy</i>	327
---	-----

Relationship Between Depression in Patients With COPD and the Percent of Predicted FEV ₁ , BODE Index, and Health-Related Quality of Life <i>by Asuka Iguchi, Hideaki Senju, Yoshika Hayashi, Rumi Kanada, Shoko Iwai, Sumihisa Honda, Chika Kitagawa, Hiroki Ozawa, and Naoto Rikitomi—Nagasaki, Japan</i>	334
---	-----

Severe Tracheomalacia in the ICU: Identification of Diagnostic Criteria and Risk Factor Analysis From a Case Control Study <i>by Chitra Kandaswamy, Garrett Bird, Narinder Gill, Edward Math, and Jose Joseph Vempilly—Fresno, California</i>	340
--	-----

REVIEW

A Rational Framework for Selecting Modes of Ventilation <i>by Eduardo Mireles-Cabodevila, Umur Hatipoğlu, and Robert L Chatburn—Cleveland, Ohio</i>	348
--	-----

AARC CLINICAL PRACTICE GUIDELINE

Surfactant Replacement Therapy: 2013 <i>by Brian K Walsh, Brandon Daigle—Dallas, Texas Robert M DiBlasi—Seattle, Washington and Ruben D Restrepo—San Antonio, Texas</i>	367
--	-----

EDITORIALS

Noninvasive Carbon Monoxide Detection: Insufficient Evidence for Broad Clinical Use <i>by Susan R Wilcox and Jeremy B Richards—Boston, Massachusetts</i>	376
---	-----

Additional Evidence to Support the Use of Noninvasive Ventilation in Asthma Exacerbation <i>by Timothy B Op't Holt—Mobile, Alabama</i>	380
---	-----

Incomplete Network for Survivors of Catastrophic Illness After Release From ICUs <i>by Michele Vitacca—Lumezzane, Italy and Stefano Nava—Bologna, Italy</i>	383
--	-----

APPRECIATION OF REVIEWERS

Listing of the 2012 RESPIRATORY CARE manuscript reviewers	386
---	-----

PUBLISHED ONLINE (WWW.RCJOURNAL.COM)

CASE REPORTS

Successful Epoprostenol Withdrawal in Pulmonary Arterial Hypertension: Case Report and Literature Review <i>by Eftychia A Demerouti, Athanassios N Manginas, George D Athanassopoulos, George T Karatasakis, Evangelos D Leontiadis, and Gregory S Pavlides—Athens, Greece</i>	e1
---	----

Successful Use of Extracorporeal Membrane Oxygenation in a Hematopoietic Stem Cell Transplant Patient With Idiopathic Pneumonia Syndrome <i>by Wen-I Liao, Shih-Hung Tsai, and Sheng-Kang Chiu—Taipei, Taiwan</i>	e6
--	----

TEACHING CASE

Trepopnea Due to Amiodarone-Induced Diffuse Alveolar Hemorrhage <i>by Luis Miguel Blasco—Cantabria, Spain</i>	e11
--	-----

CORRESPONDENCE

Expiratory Reserve Volume Maneuver May Be the Preferred Method for Some Patients During Spirometry Testing <i>by Jeffrey M Haynes—Nashua, New Hampshire author response by Brigitte M Borg and Bruce R Thompson—Melbourne, Victoria, Australia</i>	e14
---	-----

Predicting Noninvasive Mechanical Ventilation Outcome: Early May Be Too Early! <i>by Christophe Girault—Rouen, France Antonio M Esquinas—Murcia, Spain and Terzi Nicolas—Caen, France author response by Katherine M Berg and Michael W Donnino—Boston, Massachusetts</i>	e15
--	-----