### CONTENTS

OCTOBER 2013 / VOLUME 58 / NUMBER 10

### FOR INFORMATION, CONTACT:

### AARC Membership and 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

### Credentialing Organization for RRT, CRT

National Board for Respiratory Care 18000 W 105th St Olathe KS 66061 (913) 895-4900 • Fax (913) 895-4650 http://www.nbrc.org

#### Accreditation of Education Programs

Commission 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
http://www.arcfoundation.org

# 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/Exerpta 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 October 2013 Issue

1577

#### EDITOR'S CHOICE

The Impact of Hospital-Wide Use of a Tapered-Cuff Endotracheal Tube on the Incidence of Ventilator-Associated Pneumonia by David L Bowton, R Duncan Hite, R Shayn Martin,

by David L Bowton, R Duncan Hite, R Shayn Martin, and Robert Sherertz—Winston-Salem, North Carolina

1582

#### Original Research

Decreasing the Adverse Effects of Endotracheal Suctioning During Mechanical Ventilation by Changing Practice

by Salvatore Maurizio Maggiore—Rome, Italy François Lellouche, Claudia Pignataro, Emmanuelle Girou, Bernard Maitre, Jean-Christophe M Richard, François Lemaire, Christian Brun-Buisson, and Laurent Brochard—Créteil, France

A Comparative Study of 3 Portable Oxygen Concentrators During a 6-Minute Walk Test in Patients With Chronic Lung Disease

by Carole J LeBlanc, Lyne G Lavallée, Judy A King, Rebecca E Taylor-Sussex, Andrew Woolnough, and Douglas A McKim—Ottawa, Ontario, Canada 1598

1588

Are Oxygen-Conserving Devices Effective for Correcting Exercise Hypoxemia? by Sergi Martí, Virginia Pajares, Fátima Morante, Maria-Antònia Ramón, Jordi Lara, Jaume Ferrer, and Maria-Rosa Güell—Barcelona, Spain

1606

Emergency Department Management of Suspected Carbon Monoxide Poisoning: Role of Pulse CO-Oximetry

by Mustapha Sebbane—Montpellier, France Pierre-Géraud Claret—Nimes, France

Grégoire Mercier, Sophie Lefebvre, Richard Théry, Richard Dumont, Michel Maillé, Jean-Paul Richard, Jean-Jacques Eledjam—Montpellier, France and Jean-Emmanuel de La Coussaye—Nimes, France

Pressures Delivered By Nasal High Flow Oxygen During All Phases of the Respiratory Cycle by Rachael L Parke and Shay P McGuinness—Auckland, New Zealand

1621

1625

1637

Outcome of Nicotine Replacement Therapy in Patients Admitted to ICU: A Randomized Controlled Double-Blind Prospective Pilot Study

by Vikas Pathak, Iliana Samara Hurtado Rendon, Roxana Lupu, Nancy Tactuk, Toyosi Olutade—Bronx, New York

Toyosi Otutade—Bronx, New York
Carolyn Durham—Chapel Hill, North Carolina
and Richard Stumacher—Bronx, New York

Oxygen Injection Site Affects F<sub>IO2</sub> During Noninvasive Ventilation by Bing Dai, Jian Kang, Na Yu, Wei Tan, and Hong-Wen Zhao—Shenyang, China

1630

Laboratory Test of a Visual Sputum Suctioning System by Jingjing Lv, Jingxing Wu, Rui Guo, Xun Liu, Bingbing Yan, and Huisheng Deng—Chongqing, China

Relationship Between Spontaneous Expiratory Flow-Volume Curve Pattern and Air-Flow Obstruction in Elderly COPD Patients

by Masafumi Nozoe—Sasayama, Hyogo, Japan

Kyoshi Mase-Kobe, Hyogo, Japan

Shigefumi Murakami, Makoto Okada, Tomoyuki Ogino, Kazuhiro Matsushita—Sasayama, Hyogo, Japan Sachie Takashima—Kobe, Hyogo, Japan

Noriyasu Yamamoto, Yoshihiro Fukuda—Sasyama, Hyogo, Japan and Kazuhisa Domen—Nishinomiya, Hyogo, Japan

1643

#### 28th Annual New Horizons Symposium: The Scientific Basis for Respiratory Care

Science and Evidence: Separating Fact from Fiction by Dean R Hess—Boston, Massachusetts

1649

# ALSO IN THIS ISSUE

1818	Calendar
1821	Membership Application
1823	Author Index
1824	Advertisers Index & Help Line





## RESPIRATORY CARE

A Monthly Science Journal Established in 1956

The Official Journal of the American Association for Respiratory Care



### CONTENTS

CON The Scientific Basis for Protocol-Directed Respiratory Care by Ariel M Modrykamien—Omaha, Nebraska and James K Stoller—Cleveland, Ohio	1662
Airway Clearance Therapy: Finding the Evidence Teresa A Volsko—Akron, Ohio	1669
Evidence for Oxygen Use in the Hospitalized Patient: Is More Really the Enemy of Good? by Thomas C Blakeman—Cincinnati, Ohio	1679
AARC CLINICAL PRACTICE GUIDELINE	
Blood Gas Analysis and Hemoximetry: 2013 by Michael D Davis—Richmond, Virginia Brian K Walsh—Boston, Massachusetts Steve E Sittig—Rochester, Minnesota and Ruben D Restrepo—San Antonio, Texas	1694
Editorials	
Too Passive to Prevent Ventilator-Associated Pneumonia by Juan Felipe Fernandez and Marcos I Restrepo—San Antonio, Texas	1704
Endotracheal Suctioning May or May Not Have an Impact, But It Does Depon What You Measure! by George Ntoumenopoulos—North Sydney, Australia	1707
Long-Term Oxygen Therapy: In a Perfect World by William C Pruitt-Mobile, Alabama	1711
2013 Open Forum Abstracts	
Introduction	1714
2013 OPEN FORUM Abstracts	1715
OPEN FORUM Author Index	1805
Appreciation of Reviewers	1814
AARC Congress 2013	
Exhibitor Index	1815
Published Online (www.rcjournal.com)	
Case Reports	
Spontaneous Pulmonary Hernia: A Case Report by Pablo Edgardo Gómez, Sebastián Ferreiro, Soledad M Esteban, Rodrigo Fodor, Marcelo E Palavecino, and Fernando G Rios—Buenos Aires, Argentina	e 1 1 9
Diabetic Myonecrosis in a Cystic Fibrosis Patient by Benjamin T Kopp, Stephen Kirkby, Don Hayes Jr, and Kevin M Flanigan—Columbus, Ol	nio e123
Teaching Case	
Pulmonary Talcosis With Intravenous Drug Abuse by Mohammad F Siddiqui, Sabah Saleem, and Sridhar Badireddi—Little Rock, Arkansas	e 1 2 6
Correspondence	
S <sub>pCO</sub> : Let's Not Throw the Baby Out With the Bath Water by Mike McEvoy—Albany, New York author reply by Lindell K Weaver, Susan K Churchill, and Kayla Deru—Salt Lake City, Utal author reply by Jeremy B Richards and Susan R Wilcox—Boston, Massachusetts	e129
Anxiety Disorders in Patients With COPD	

e131

Anxiety Disorders in Patients With COPD by Samer Alkhuja—East Stroudsburg, Pennsylvania

author reply by Abebaw Mengistu Yohannes—Manchester, United Kingdom