

MECHANICAL VENTILATION

JUNE 12- 14
2018
TORONTO

FROM **PHYSIOLOGY** TO **CLINICAL PRACTICE**

Presented by: The Interdepartmental Division of Critical Care Medicine, University of Toronto



UNIVERSITY OF
TORONTO

Interdepartmental Division of
Critical Care Medicine



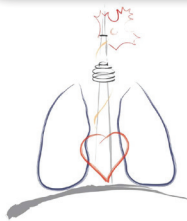
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FORUM

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CRITICAL CARE
MEDICINE



Course Directors:

Laurent Brochard MD, HDR

Ewan Goligher MD, PhD

Niall Ferguson MD, MSc

Organization:

University of Toronto IDCCM
Critical Care Canada Forum
SMH Centre of Excellence in Mechanical Ventilation
UHN/MSH Critical Care Medicine

Accreditation:

Continuous Education and Professional
Development

Partners:

Respiratory Therapists training centre;
Industry (ventilation, monitoring)

Faculty:

Andre Amaral MD	Matias Madorno MD
Vagia Campbell RRT, MSc	Nava Maham MD
Lu Chen MD	Victoria McCredie MBChB, PhD
Lorenzo Del Sorbo MD	Sangeeta Mehta MD
Eddy Fan MD, PhD	Thomas Piraino RRT
Alberto Goffi MD	Arthur Slutsky MASc, MD
John Granton MD	Irene Telias MD
Margaret Herridge MSc, MD, MPH	Elizabeth Wilcox MD, MPH
Vincent Lo PT	Takeshi Yoshida MD, PhD

LEARNING OBJECTIVES

Goals:

- 1. Enhance ICU clinicians' understanding** of the physiological principles informing assessment and management of mechanical ventilation and strengthen their skills in assessing patient-ventilator interaction
- 2. Increase awareness** of the many relevant aspects of conventional and novel invasive and non-invasive mechanical ventilation techniques
- 3. Enhance ICU clinicians' knowledge** of the management of specific clinical problems in mechanically ventilated patients: acute respiratory distress syndrome, chronic obstructive pulmonary disease exacerbations, and difficult weaning from mechanical ventilation.

Objectives:

- 1. Explain and assess** basic physiological aspects of patient-ventilator interaction: respiratory mechanics, respiratory muscle activity and function, patient-ventilator synchrony, and ventilator-induced lung and respiratory muscle injury.
- 2. Determine why and when** mechanical ventilation can be a treatment, a supportive therapy or a source of complications.
- 3. Describe the optimal approach** to liberating patients from mechanical ventilation and conduct a comprehensive clinical assessment to identify and treat causes of difficult ventilator weaning.
- 4. Deliver evidence-based management** of acute respiratory failure using both non-invasive and invasive ventilatory techniques for the following conditions: acute respiratory distress syndrome, chronic obstructive pulmonary disease, and weaning from mechanical ventilation.

PROGRAM

Pressure
(cm H₂O)

Tuesday, June 12, 2018

Day 1: Physiological Principles

7:30 am – 5:00 pm	REGISTRATION	
8:00 am – 8:30 am	LIGHT BREAKFAST	
8:30 am - 9:20 am	Equation of motion: pressures, volumes, and flow	Laurent Brochard
9:25 am - 10:00 am	Monitoring patient-ventilator interaction	Ewan Goligher
10:05 am - 10:30 am	Determinants of inspiratory effort	Laurent Brochard
10:30 am - 10:45 am	BREAK	
10:45 am - 11:15 am	Patient-ventilator synchrony	Laurent Brochard
11:20 am - 11:45 am	Heart-lung interactions	John Granton
11:50 am - 12:15 pm	Ventilation and the brain	Victoria McCredie
12:15 pm - 1:15 pm	LUNCH	
1:15 pm - 1:40 pm	Ventilator-induced lung injury	Arthur Slutsky
1:45 pm - 2:10 pm	Ventilator-induced diaphragm dysfunction	Ewan Goligher
2:10 pm - 2:20 pm	BREAK	
2:20 pm - 2:45 pm	Spontaneous breathing in ARDS	Takeshi Yoshida
2:50 pm - 3:15 pm	Spontaneous breathing: who, when, how, and why?	Laurent Brochard Eddy Fan Niall Ferguson Ewan Goligher Irene Telias Takeshi Yoshida
3:15 pm - 3:30 pm	BREAK	
3:30 pm - 3:55 pm	PEEP, lung recruitment, and prone positioning	Lorenzo del Sorbo
4:00 pm - 4:25 pm	How I do it: managing refractory hypoxemia	Niall Ferguson
4:30 pm - 4:55 pm	How I do it: assessing respiratory mechanics	Laurent Brochard
5:00 pm - 6:30 pm	WELCOME RECEPTION - 382 Yonge St. (10 min walk) Midtown REDS Tavern	

Wednesday, June 13, 2018

Day 2: Modes of Ventilation & Liberation from Ventilation

7:30 am – 4:30 pm	REGISTRATION	
8:00 am – 8:30 am	LIGHT BREAKFAST	
8:30 am - 8:55 am	Conventional and advanced modes of ventilation	Niall Ferguson
9:00 am - 9:25 am	High-flow nasal cannula and non-invasive ventilation	Thomas Piraino
9:30 am - 9:55 am	PAV and NAVA	Laurent Brochard
9:55 am - 10:05 am	BREAK	
10:05 am - 10:30 am	Assessing respiratory drive during mechanical ventilation	Irene Telias
10:35 am - 11:00 am	How I do it: assessing readiness for liberation	Laurent Brochard

PROGRAM

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11:05 am - 11:30 am	How I do it: assessing the difficult-to-liberate patient	Ewan Goligher
11:30 am - 12:30 pm	LUNCH	
12:30 pm - 4:45 pm	HANDS-ON SESSIONS (40 minutes per station, 10 minute intermission between stations)	
	Monitoring techniques (I): Measuring mechanics and lung recruitment	Lu Chen
	Monitoring techniques (II): Diaphragm ultrasound	Alberto Goffi
	Simulated cases (I): Monitoring inspiratory effort	Ewan Goligher
	Simulated cases (II): Diagnosing and managing patient-ventilator dyssynchrony	Laurent Brochard
	Practice: Troubleshooting non-invasive ventilation	Thomas Piraino

Thursday, June 14, 2018

Day 3: Diseases, Syndromes & Clinical Recommendations

7:30 am - 12:30 pm	REGISTRATION	
8:00 am - 8:30 am	LIGHT BREAKFAST	
8:30 am - 8:50 am	ARDS: Evidence-based management of ARDS	Niall Ferguson
9:00 am - 9:25 am	ARDS: Extracorporeal life support for ARDS patients	Eddy Fan
9:30 am - 9:50 am	Sedation for mechanical ventilation	Sangeeta Mehta
9:50 am - 10:05 am	BREAK	
10:05 am - 10:30 am	Sleep in the ICU	Elizabeth Wilcox
10:35 am - 10:55 am	Long-term outcomes after mechanical ventilation	Margaret Herridge
11:00 am - 11:20 am	Practical strategies to mobilize mechanically ventilated patients	Vincent Lo
11:20 am - 11:30 am	BREAK	
11:30 am - 11:55 am	Strategies to improve mechanical ventilation quality	Andre Amaral
12:00 pm - 12:30 pm	Enhancing quality of care for ventilated patients: challenges and solutions	Andre Amaral Vagia Campbell Eddy Fan Niall Ferguson Nava Maham Sangeeta Mehta
12:30 pm - 1:00 pm	LUNCH	
1:00 pm - 1:40 pm	Interactive case: ARDS	Eddy Fan Niall Ferguson
1:40 pm - 2:15 pm	Interactive case: COPD	Laurent Brochard Irene Telias
2:20 pm - 2:55 pm	Interactive case: Difficult weaning	Alberto Goffi Ewan Goligher
2:55 pm - 3:00 pm	Wrap Up	



This course is supported with unrestricted educational grants from the following:

Dräger

Fisher & Paykel
HEALTHCARE

Medtronic

GETINGE 

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medical inc.

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Value from Innovation

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