WINFOCUS WORLD CONGRESS 2025

COSTA RICA December the 5th 2025

INTRODUCTION AND PROGRAM - MONITORING VENTILATION LUNG, DIAPHRAGM, RESPIRATORY MUSCLES

Date: December 5, 2025
Time: 8:50 am to 1:00 pm
Duration: 40 minutes
5 Slots Available: (9:00–9:40) (9:50–10:30) (10:40–11:30) (11:30–12:10) (12:20–13:00)
Language: English

INTRODUCTION

Ultrasound assessment of the lung and diaphragm has become an essential tool in evaluating respiratory function and monitoring mechanical ventilation in both emergency and critical care settings. A comprehensive understanding of lung aeration, diaphragmatic motion, and respiratory muscle activity provides valuable information for individualized management of patients with respiratory distress.

This hands-on session illustrates an integrated approach to the evaluation of respiratory failure, focusing on the lung, diaphragm, and accessory muscles of respiration. Participants will gain practical experience in measuring diaphragmatic excursion and thickening fraction, identifying pathologic lung patterns, and recognizing compensatory muscle activity—all of which contribute to optimizing ventilatory strategies and selecting appropriate respiratory support modalities.

GENERAL OBJECTIVE:

To provide participants with a structured approach to ultrasound-based monitoring of ventilation, integrating lung and diaphragmatic assessment to guide diagnosis, treatment, and ventilatory management in critically ill patients.

SPECIFIC OBJECTIVES

1. Identify normal and pathological lung ultrasound patterns (A-lines, B-lines, consolidation, effusion, pneumothorax).
2. Recognize and measure diaphragmatic excursion and thickening fraction using M-mode and 2D techniques.
3. Locate and evaluate the apposition point of the diaphragm with pleura using a high-frequency linear probe.
4. Assess parasternal and accessory respiratory muscles to identify compensatory patterns in respiratory failure.
5. Integrate ultrasound findings for individualized ventilatory support decisions (invasive and non-invasive).

WORKSHOP PROGRAM MONITORING VENTILATION LUNG, DIAPHRAGM, RESPIRATORY MUSCLES

Timing	**Activity**	**Faculty**
5 minutes	Welcome and introduction of the faculty. Group allocation.	
30 minutes	- General protocol and normal lung findings with reference to pathological signs. - Simultaneous demonstration by participants, including: ● Choice of probe and scanning technique ● Identification of lung zones and pleural line ● Recognition and description of A-lines and B-lines ● Identification of consolidation, collapse, and pleural effusion patterns ● Recognition of pneumothorax findings	Dr. Stig Holm Ovesen Dr. Francesco Caronni Dr. Irene Ma

	• Localization of key areas for identifying pathological signs - Identification of the diaphragm and measurement of diaphragmatic excursion using M-mode during quiet breathing, full tidal breathing, and sniff maneuvers. - Localization of the apposition point of the diaphragm with pleura using a high-frequency linear probe. - Demonstration and measurement of diaphragm thickening with 2D caliper or M-mode. Understanding the concept of thickening fraction. - Evaluation of parasternal and accessory respiratory muscles in the neck.	
5 minutes	Ending remarks	

FACULTY TEAM

Dr. Stig Holm Ovesen
Dr. Francesco Caronni
Dr. Irene Ma