Advanced Application of Thoracic Ultrasound

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Educational background

2016-2019	Ph.D., Institute of Clinical Research, University of Southern Denmark
2016	Consultant, Internal Medicine: Respiratory Medicine
2004	First Lieutenant, Danish Armed Forces
2003	M.D., University of Southern Denmark, Odense, Denmark

Professional experience

2022-Present	Lead Consultant, Head of Research and Ultrasound Director at the Department of Respiratory Medicine, Odense University Hospital, Odense, Denmark
2020-Present	Clinical Professor in Respiratory Medicine at the Institute of Clinical Research, University of Southern Denmark, Odense, Denmark
2018-Present	Head of Research, Department of Respiratory Medicine, Odense University Hospital, Odense, Denmark
2016-2022	Consultant in Respiratory Medicine and Ultrasound Director at the Department of Respiratory Medicine, Odense University Hospital, Odense, Denmark
2016-2020	Clinical Associate Professor, Institute of Clinical Research, University of Southern Denmark, Odense, Denmark

Thoracic ultrasound (TUS) has evolved from a niche bedside tool to a cornerstone of modern respiratory medicine. This presentation explores advanced applications of thoracic ultrasound that extend beyond basic assessment of pleural effusions and pneumothorax. Emphasis will be placed on the integration of TUS and TUS guided procedures into complex diagnostic pathways.

Apart from conventional ultrasound modalities (e.g. 2D, M-mode, colour Doppler) several advanced ultrasound techniques (e.g. elastography, contrast enhanced ultrasound) are being increasingly studied within the field of thoracic ultrasound. The presentation will include an overview of the rationale for using these techniques in respiratory medicine, practical use, and potential clinical impact with regard to diagnostic accuracy and for procedure guidance.

Through illustrative cases and live image interpretation, this session will demonstrate how advanced thoracic ultrasound can improve diagnostic accuracy, reduce reliance on radiographic imaging, and enhance patient safety. The presentation will also address challenges such as operator dependency, standardization of scoring systems, and integration of thoracic ultrasound findings into multidisciplinary clinical decision-making.

Ultimately, advanced thoracic ultrasound represents not just a diagnostic technique, but a paradigm shift toward dynamic, bedside-guided respiratory care. Participants will gain a deeper understanding of how to apply and interpret thoracic ultrasound in complex pulmonary conditions, leveraging its full potential to improve patient outcomes.