

3rd

PLUG Physiology Symposium

Discussing research with a taste

*Scientific meeting on applied
respiratory physiology in the critically ill*

the PLVG

www.plugwgroup.org

Barcelona, Spain

Sept. 18-20 2025

Program

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Join us

for the third edition of the PLUG Physiology Symposium. We will meet in Barcelona for two and a half days to listen and discuss the latest research data on respiratory physiology presented by leading groups from across all continents. In addition, special lectures in Jordi Mancebo's memory will highlight the most recent advancements in the field and focused discussion will lead to methodological publications.

Keynote lecture in honour of Jordi Mancebo



Executive Committee

Laurent Brochard, Toronto (CA)

Leo Heunks, Nijmegen (NL)

Tommaso Mauri, Milan (IT)



Scientific Committee



Elias Baedorf Kassis, Boston (US)

Alexandre Demoule, Paris (FR)

Ewan Goligher, Toronto (CA)

Annemijn Jonkman, Rotterdam (NL)

Ling Liu, Nanjing (CN)

Mariangela Pellegrini, Uppsala (SE)

Marco Vito Ranieri, Bari (IT)

Oriol Roca, Sabadell (ES)

Elena Spinelli, Milan (IT)

Daniel Talmor, Boston (US)

Faculty



Guillermo Muñiz Albaiceta, Oviedo (ES)

Glasiele Alcalá, Boston (US)

Marcelo Amato, Sao Paulo (BR)

Elias Baedorf Kassis, Boston (US)

Thiago Bassi, Toronto (CA)

Giacomo Bellani, Trento (IT)

Lluís Blanch Torra, Sabadell (ES)

Laurent Brochard, Toronto (CA)

Mattia Docci, Toronto (CA)

Claudia Dos Santos, Toronto (CA)

Ewan Goligher, Toronto (CA)

Leo Heunks, Nijmegen (NL)

Samir Jaber, Montpellier (FR)

Annemijn Jonkman, Rotterdam (NL)

Robinder Khemani, Los Angeles (US)

Arantxa Mas, Barcelona (ES)

Tommaso Mauri, Milan (IT)

Idunn Morris, Toronto (CA)

Oscar Peñuelas, Madrid (ES)

Michel Slama, Amiens (FR)

Elena Spinelli, Milan (IT)

Irene Telias, Toronto (CA)



Program • Thursday, September 18 2025



8.00 am - 9.00 am	Opening registration
9.00 am - 9.15 am	Welcome Laurent Brochard, Leo Heunks, Tommaso Mauri
9.15 am - 9.45 am	Innovation in mechanical ventilation Lluís Blanch Torra
9.45 am - 11.05 am	Best abstracts GROUP 1
11.05 am - 11.30 am	Coffee break
11.30 am - 12.30 pm	Best abstracts GROUP 2
12.30 pm - 1.00 pm	Pressure support and effort Giacomo Bellani
1.00 pm - 2.00 pm	Lunch break
2.00 pm - 3.20 pm	Best abstracts GROUP 3
3.20 pm - 3.50 pm	Jordi Mancebo keynote lecture Translational research in lung injury Guillermo Muñoz Albaiceta
3.50 pm - 4.15 pm	Coffee break
4.15 pm - 6.30 pm	Posters viewing time
6.30 pm - 7.00 pm	Keynote Talk Rethinking diaphragm monitoring – DXT Launch. Reception and expert insights Trude Tingvoll, Alexandre Demoule <i>Respinor Booth, Exhibition area</i>
7.00 pm - 8.00 pm	Reception for all participants



Program • Friday, September 19 2025



7.30 am - 7.45 am	Morning refreshments
8.00 am - 9.00 am	Breakfast meeting Advanced ventilation monitoring moving from research to bedside <i>With the non-conditioning support of SENTEC</i> Chair: Leo Heunks - Introduction John Gamelin - EIT in the management of patients on assisted ventilation and during the weaning process Peter Somhorst - Discussion & Interaction with audience John Gamelin - Esophageal Pressure - from diagnostic tool to continuous monitoring Annemijn Jonkman - Discussion & Interaction with audience Rutger Flink
9.00 am - 9.15 am	Welcome Laurent Brochard, Leo Heunks, Tommaso Mauri
9.15 am - 9.45 am	The place for physiological papers in clinical journals Laurent Brochard, Samir Jaber, Tommaso Mauri
9.45 am - 11.05 am	Best abstracts GROUP 4
11.05 am - 11.30 am	Coffee break



11.30 am - 12.30 pm

Best abstracts GROUP 5



12.30 pm - 1.00 pm

Phrenic nerve stimulation

Idunn Morris

1.00 pm - 2.00 pm

Lunch break

2.00 pm - 2.30 pm

New insights on the effects of PEEP on hemodynamics

Michel Slama

2.30 pm - 3.50 pm

Best abstracts GROUP 6



3.50 pm - 4.10 pm

Coffee break

4.10 pm - 5.30 pm

Best abstracts GROUP 7



5.30 pm - 6.00 pm

Ventilator-associated brain injury

Thiago Bassi

6.00 pm - 6.30 pm

Association of respiratory drive and effort with mortality and time to discharge in mechanically ventilated patients. A longitudinal registry-based cohort study.

Presentation of the recently published research in collaboration with The Lancet Respiratory Medicine

Chair: Laurent Brochard

Presenters: Jose Dianti, Ewan Goligher



7.30 am - 7.45 am

Morning refreshments

8.00 am - 9.00 am

Breakfast meeting

Nasal high flow - latest physiological insights

With the non-conditioning support of FISHER & PAYKEL

Chair: Oriol Roca

- **High Flow oxygen therapy: From physiology to comfort**
Rik Endeman, Nico Goedendorp
- **Nasal stimulation in orally intubated patients**
Martin Dres
- **Physiology of asymmetrical nasal high flow**
Lara Pisani

9.00 am - 9.15 am

Welcome

9.15 am - 10.00 am

Chair: Laurent Brochard

Presenters: Jose Dianti, Ewan Goligher

Plug journal club: the REDvent trial

Chairs: Tommaso Mauri, Laurent Brochard

Discussant: Elena Spinelli *Presenter: Robinder Khemani*

10.00 am - 11.30 am

Open discussion with all participants and industries: "Consensus on the definition of dyssynchronies"

Mattia Docci, Elias Baedorf Kassiss, Irene Telias

11.30 am - 11.50 am

Coffee break

11.50 am - 12.20 pm

Research agenda for the Plug group

Annemijn Jonkman, Ewan Goligher

12.20 pm - 12.50 pm

Proposal for a new protocol on transition from controlled to assisted ventilation

Leo Heunks, Oscar Peñuelas



GROUP 1

**Determinants and consequences of respiratory effort**

Chairs: Ewan Goligher, Mariangela Pellegrini

9.45 am **17** Dyspnea and cortical brain activation measured by functional near-infrared spectroscopy during a spontaneous breathing trial

Kemoun Gabriel, Jimenez David, Nierat Marie-Cécile, Wattiez Nicolas, Bachasson Damien, Mayaux Julien, Lecronier Marie, Bassi Thiago, Similowski Thomas, Demoule Alexandre, Dres Martin, Decavèle Maxens

10.05 am **66** Respiratory effort during high flow nasal cannula is modulated by lung overdistension in hypoxemic patients

Castelli Arianna, Spinelli Elena, Madotto Fabiana, Leali Marco, Cardu Alessandro, Ciniero Martina, Bonanno Marta, Bernasconi Giulia, Grieco Domenico Luca, Spadaro Savino, Grasselli Giacomo, Mauri Tommaso

10.25 am **53** Bedside assessment of inspiratory effort during acute respiratory failure: an expert appraisal of current techniques

Protti Alessandro, Tonelli Roberto, Spinelli Elena, Grieco Domenico Luca, Yoshida Takeshi, Jonkman Annemijn H, Akoumianaki Evangelia, Irene Telias, Docci Mattia, Antenor Rodrigues, Joaquin Perez, Lise Piquilloud, Beitler Jeremy, Liu Ling, Roca Oriol, Pisani Lara, Goligher

Ewan, Carteaux Guillaume, Bellani Giacomo, Cline Enrico, Zhou Jian-Xin, Grasselli Giacomo, Jaber Samir, Demoule Alexandre, Talmor Daniel, Heunks Leo, Brochard Laurent, Mauri Tommaso

10.45 am **27** Evaluation of noninvasive indices of effort and drive during pressure support ventilation

Akoumianaki Evangelia, Vaporidi Katerina, Soundoulounaki Stella, Bolaki Maria, Kondili Eumorfia, Georgopoulos Dimitris

GROUP 2

**Personalising mechanical ventilation**

Chairs: Annemijn Jonkman, Oriol Roca

11.30 am **36** Hyper- vs hypoinflammatory ARDS: implications for mechanical ventilation?

Pensier Joris, Fosset Maxime, Sharif Massoud, Paschold Béla-Simon, Von Wedel Dario, Braeuer Ben, Sahli Sebastian, Marcus Carsten, Chen Ganqing, Goodspeed Valerie, Talmor Daniel, Schaefer Maximilian, **Baedorf-Kassis Elias**

11.50 am **13** Personalized mechanical ventilation to reduce right ventricular loading in intensive care unit patients with the acute respiratory distress syndrome

Slobod Douglas, Leali Marco, Magder Sheldon

12.10 pm **62** Effect of body position on global and regional airway opening pressure in mechanically ventilated patients

Pavlovsky Bertrand, Lesimple Arnaud, Richard Jean-Christophe M., Chean Dara, Courtais Antonin, Leprovost Pierre, Mercat Alain, Beloncle François

GROUP 3

**Mechanisms of disease from experimental studies**

Chairs: A Guillermo M. Ibaiceta, Elena Spinelli

2.00 pm **81** Pathophysiological determinants of lung injury after unilateral pulmonary artery ligation

Marongiu Ines, Spinelli Elena, Madotto Fabiana, De Filippo Maria Rosaria, Damarco Francesco, Leali Marco, Damia Anna, Fallarini Camilla, Maretti Alice, Lopez Gianluca, Zanella Alberto, Rosso Lorenzo, Banfi Cristina, Vaira Valentina, Grasselli Giacomo, Mauri Tommaso

2.20 pm **38** Effects of spontaneous breathing, positive airway pressure, and protective mechanical ventilation in a preclinical model of acute lung injury. The SPARC study

Menga Luca S., Raimondi Cominesi Davide, Samant Payal, Sousa Mayons L.A., Docci Mattia, Rodrigues

Antenor, Tay Anthony, Bouch Sheena, Bellissimo Catherine A., Brito Roberto, Batah Sabrina S., Fabro Alexandre T., Goligher Ewan C., Mcvey Marc, Post Martin, Brochard Laurent

2.40 pm **52** Role of plasma inflammatory proteomics in self-inflicted lung injury started by lobar LPS: an experimental study

Maretti Alice, Spinelli Elena, Marongiu Ines, Damia Anna, Leali Marco, Consalvo Leonardo, Damarco Francesco, Lopez Gianluca, Zanella Alberto, Rosso Lorenzo, Vaira Valentina, Grasselli Giacomo, Mauri Tommaso

3.00 pm **70** The effects of endothelial injury on pulmonary ventilation/perfusion mismatch in a swine model of acute respiratory distress syndrome

Larina Aleksandra, Blokin Ivan, Lipcsey Miklos, Perchiazzi Gaetano, Pellegrini Mariangela



Best abstracts • Friday, September 19 2025



GROUP 4

Respiratory monitoring by EITChairs: Grasiela Alcalá,
Claudia Dos Santos

- 9.45 am **1 Electrical impedance tomography-guided PEEP and mortality of patients with the acute respiratory distress syndrome. The EITVent randomized controlled trial**

Ling Liu Xueyan Yuan,
Mauri Tommaso, Haibo Qiu

- 10.05 am **74 Effects of different pathophysiological variables on the best flow rate selected by EIT in acute hypoxemic respiratory failure patients receiving HFNC**

Ziliani Camilla, Castelli Arianna,
Spinelli Elena, Madotto Fabiana,
Leali Marco, Cardu Alessandro,
Ciniero Marta, Bonanni Marta,
Bernasconi Giulia, Grieco Domenico
Luca, Spadaro Savino, Grasselli
Giacomo, Mauri Tommaso

- 10.25 am **2 Electrical impedance tomography-derived flow index: a novel non-invasive predictor of weaning outcome in mechanically ventilated patients – a diagnostic accuracy study**

Rui Zhang

- 10.45 am **34 Bedside physiological methods to personalize PEEP in spontaneously**

breathing patients with ARDS: a secondary analysis on candidate variablesChiavieri Valentina, Leali Marco,
Douglas Slobod, Madotto Fabiana,
Spinelli Elena, Scaramuzza Gaetano,
Spadaro Savino, Grieco Domenico
Luca, Antonelli Massimo, Grasselli
Giacomo, Mauri Tommaso

GROUP 5

Risks of spontaneous breathing

Chairs: Alexandre Demoule, Ling Liu

- 11.30 am **57 Impact of expiratory muscle activity on the physiological effects of PEEP in spontaneously breathing patients with hypoxemic respiratory failure**

Delle Cese Luca, Menga Luca
Salvatore, Rosà Tommaso, Cardu
Alessandro, Bello Giuseppe,
Giammatteo Valentina, Grieco
Domenico Luca, Bisanti Alessandra,
Bellani Giacomo, Roca Oriol,
Antonelli Massimo, Maggiore
Salvatore Maurizio, Bongiovanni
Filippo

- 11.50 am **26 Physiological determinants of tidal recruitment/derecruitment assessed by electrical impedance tomography in spontaneously breathing ARDS patients**

Perez Joaquin, Leali Marco, Spinelli
Elena, Chiavieri Valentina, Rosà

Best abstracts • Friday, September 19 2025

Tommaso, Ferrara Pierluigi,
Scaramuzza Gaetano, Antonelli
Massimo, Grasselli Giacomo, Grieco
Domenico Luca, Spadaro Savino,
Mauri Tommaso

- 12.10 pm **51 Trigger delay and asynchronous assistance in helmet vs. facemask noninvasive ventilation: a physiological study**

Cardu Alessandro, Damiani L.
Felipe, Sellás Armand, Rosà
Tommaso, Tempo Gaia, Menga
Luca S., Delle Cese Luca, Volpe
Nicoletta, Mastropietro Claudia,
Antonelli Massimo, Grieco
Domenico L.

GROUP 6

Novel perspectives in respiratory research

Chair: Idunn Morris

- 2.30 pm **31 Watershed functional lung space: a pendelluft-aware definition**

Somhorst Peter, Francovich Juliette,
Jonkman Annemijn

- 2.50 pm **9 Machine learning-based estimation of inspiratory muscle pressure and detection of patient-ventilator dyssynchrony during assisted ventilation**

Plens Glaucio, Morais Caio, Gregol
Thaís, Colpani Paula, Alcalá Glasiele,
Pacheco Éder, Wang Yu Hao,Malbouisson Luiz Marcelo, Kassís
Elias, Goligher Ewan, Carvalho
Carlos, Amato Marcelo, Costa
Eduardo

- 3.10 pm **43 Diaphragm neurostimulation increases heart rate variability in mechanically ventilated patients: a secondary analysis of the STIMULUS trial**

Reid Matthew, Bassi Thiago,
Seely Andrew, Goligher Ewan,
Morris Idunn

- 3.30 pm **24 Invasive mechanical ventilation disrupts hippocampal theta oscillations and brain-respiratory coupling in humans**

Zhonghua Shi, Qi Xiang, Tianzuo Xin,
Xiaoyu Ou, Zhiyang Feng, Jing
Wang, Pengfei Teng, Youfang Lin,
Jian Zhou, Baoguo Wang, Leo
Heunks, Jing Wang, Jonne Doorduyn



Best abstracts • Friday, September 19 2025



GROUP 7

**Clinical strategies from transition to weaning**

Chairs: Elias Baedorf Kassiss, Irene Telias

4.10 pm **35 Unassisted spontaneous breathing trials overestimate postextubation respiratory effort in high-risk patients extubated to HFNC or NIV**

Damiani L. Felipe, Basoalto Roque, Oviedo Vanessa, Bachmann M. Consuelo, Amthauer Macarena, Garcia Patricio, Yorschua Jalil, Orlando Diaz, Bugedo Guillermo, Retamal Jaime, Bruhn Alejandro

4.30 pm **42 Venovenous extracorporeal membrane oxygenation weaning trial approaches: a pilot randomised crossover trial**

Collins Patrick, Giosa Lorenzo, Pugliese Francesca, Lubian Marta, Camarda Valentina, Vasques Francesco, Patel Brijesh, Rose Louise, Camporota Luigi

4.50 pm **60 Clinical determinants and outcomes associated with distinct breathing patterns adopted during the transition from assist-control to pressure-support ventilation**

Perez Joaquin, Accoce Matias, Dorado Javier, Rodriguez Pablo Oscar, Telias Irene

5.10 pm

46 Sedation strategies and respiratory drive during niv: a secondary analysis of a randomized crossover trial

Balzani Eleonora, Lassola Sergio, Polla Chiara, Casarotti Marco, De Rosa Silvia, Bellani Giacomo



E-poster board session • Thursday, September 18 2025



Moderated presentations: 4.00 - 5.15 pm

Free viewing: 5.15 - 6.30 pm

Screen 1

Chairs: L. Brochard, Grasiela Alcala

80 **Impact of derecruitment and preservation of hypoxic pulmonary vasoconstriction on V/Q mismatch in hypoxemic lung injury: a comparison between ECMO and ECCO₂R**

Li Zhe, Gattarello Simone, Zhao Zhanqi, Hahn Guenter, Martina Caronna, Busana Mattia, Chiumiento Carlo, Donati Beatrice, Grava Ilaria, Gazzè Gaetano, Rollo Emanuele, Gallese Walter, Saager Leif, Meissner Konrad, Romitti Federica, Gattinoni Luciano, Quintel Michael, Moerer Onnen

50 **Impact of catheter positioning on Pes measurements in mechanically ventilated ICU patients**

Goedendorp Nico, Flink Rutger, Van Oosten Julien, Somhorst Peter, Heunks Leo, Jonkman Annemijn

71 **EIT pulsatility in severe acute ARDS patients undergoing ECMO support**

Leali Marco, Spinelli Elena, Giani Marco, Pavlovsky Bertrand, Di Pierro Michela, Crotti Stefania, Lissoni Alfredo, Foti Giuseppe, Crasselli Giacomo, Slobod Douglas, Mauri Tommaso

23 **Effect of low bicarbonate substitution solution on CO₂ removal rate in the combined system of extracorporeal CO₂ removal and continuous renal replacement therapy**

Zhicheng Qian, Songqiao Liu, Ling Liu

Screen 2

Chairs: T. Mauri, I. Morris

29 **Optimal PEEP in contused lungs: electrical Impedance tomography versus driving pressure-based approach**

Bertoni Michele, Michela Rausedo, Marta Capoferri, Stefano Renzetti, Stefano Giovanazzi, Simone Piva, Savino Spadaro, Gaetano Scaramuzzo

37 **A novel bed-side tool to detect the need for higher PEEP in critically ill patients undergoing pressure support ventilation: the sigh to tidal respiratory system compliance ratio**

Bastia Luca, Garberi Roberta, Amendolagine Liliana, Campanale Flavia, Vergallito Davide, Russo Emanuele, Mauri Tommaso, Foti Giuseppe, Agnoletti Vanni, Rezoagli Emanuele



Moderated presentations: 4.00 - 5.15 pm

Free viewing: 5.15 - 6.30 pm

- 40 Ventilatory distribution based on attenuation during lung protective ventilation at single PEEP assessed by four-dimensional computed tomography**

Nakayama Ryuichi, Katayama Shinshu, Tonai Ken, Shono Atsuko, Imahase Hisashi, Sanui Masamitsu

- 41 Near apnoea ventilation during veno-venous extracorporeal membrane oxygenation for the Acute respiratory distress syndrome: a pilot randomised trial with multimodal physiological monitoring**

Collins Patrick, Giosa Lorenzo, Pugliese Francesca, Lubian Marta, Camarda Valentina, Vasques Francesco, Patel Brijesh, Rose Louise, Camporota Luigi

- 59 Should the target of expiratory transpulmonary pressure be personalized in ARDS patients?**

Adrião Diana, Pozzi Marco, Mongodi Silvia, Mojoli Francesco

Screen 3



Chairs: L. Heunks, I. Telias

- 63 Reverse triggering and synchronous ventilation with low breathing effort may preserve diaphragm function in a porcine model of acute lung injury**

García-Valdés Patricio, Camos Ana María, Marambio-Coloma Consuelo, Oviedo Vanessa, Amtahuer Macarena, Goic Mariela, Ségeur Alonso, Leal Francisco, Bruhn Alejandro, Brochard Laurent, Damiani L. Felipe

- 64 Effects of a permissive reverse triggering strategy on diaphragm function and structure in patients with acute hypoxemic respiratory failure**

Marambio Consuelo, Moya-Gallardo Eduardo, Arqueros Lorena, Aquevedo Andres, García-Valdés Patricio, Ruiz Carolina, Bugedo Guillermo, Bruhn Alejandro, Brochard Laurent, Damiani L. Felipe

- 78 Feasibility and validity of pressure-volume loop guided PEEP titration: a prospective physiological study**

Schaefer Maximilian, Wichelhaus Lisa-Marie, Paschold Béla-Simon, Bräuer Ben, Santer Peter, Kaiser Lars, Redaelli Simone, Madorno Matias, Amato Marcelo, Baedorf-Kassis Elias, Talmor Daniel



Moderated presentations: 4.00 - 5.15 pm

Free viewing: 5.15 - 6.30 pm

- 72 The P1-P2 decay and the risk of ventilator-induced lung injury: a multicenter prospective observational study**

Pettenuzzo Tommaso, Mara Bassi, Longhini Federico, Sitta Agnese, Zheng Xin, Biuzzi Cesare, Marafioti Elena, Scoti Beatrice, Rausero Michela, Verdina Federico, Pasetto Marco, Garone Andrea, Pistidda Laura, Fara Letizia, Terragni Pier Paolo, Götting Leonardo, Vaschetto Rosanna, Cinnella Gilda, Scolletta Sabino, Ming Zhong, Spadaro Savino, Navalesi Paolo

- 3 Airway closure heterogeneity assessed by electrical impedance tomography: a feasible study**

Xueyan Yuan, Haibo Qiu, Ling Liu

Screen 4



Chairs: C. Dos Santos, A. Jonkman

- 16 Physiological consequences of varying pressure support within the isovolume range in mechanically ventilated patients**

Tuffet Samuel, Perier François, Labedade Pascale, Boujelben Mohamed, Vivier Emmanuel, Mekontso-Dessap Armand, Carreaux Guillaume

- 19 Prediction of noninvasive ventilation failure using pressure-adjusted oxygenation index**

He Runze, Mao Xiaoxiao, Zhu Jintao, Xu Yiqing, Pan Qing, Ge Huiqing

- 22 Circulatory impact of tidal volume and positive end expiratory pressure during cardiopulmonary resuscitation: an animal study**

Lesimple Arnaud, Richard Jean-Christophe, Lidouren Fanny, Watanabe Naoto, Polard Laura, Fauchoux Lilith, Bruneval Patrick, Mercat Alain, Brochard Laurent, Hutin Alice, Tissier Renaud

- 28 Flow-controlled ventilation results in ventral overdistension in moderate to severe ARDS patients**

Van Oosten Julien, Francovich Juliette, Weller Dolf, Rietdijk Wim, Goedendorp Nico, Somhorst Peter, Den Uil Corstiaan, Gommers Diederik, Jonkman Annemijn, Endeman Rik

- 45 Detecting pendelluft during reverse triggering using regional peak time discrepancies on eit**

Wang Shengyuan, Wei Shenghuan, Chen Changwen



E-poster board session • Thursday, September 18 2025



Moderated presentations: 4.00 - 5.15 pm

Free viewing: 5.15 - 6.30 pm

Screen 5

Chairs: E. Spinelli, E. Baedorf Kassis

- 49** **Impact of baydur ratio correction on the reliability of esophageal pressure measurement**

Restivo Andrea, Victor Marcus, Xin Yi, Alcalá Glasiele, Gaulton Timothy, Khalid Rehab Naeem, Gupta Raj, Cereda Maurizio

- 58** **Quantification of pendelluft using electrical impedance tomography: a comparison of prevalence across methods**

Jonkman Annemijn Kuiper Lotte, Somhorst Peter, Francovich Juliette, Bonnani Marta, Spadaro Savino, Scaramuzza Gaetano,

- 76** **PressUre-Muscle-index to avoid over-Assistance during pressure support ventilation. The PUMA study**

Docci Mattia, Phophiboon Vorakamol, Ko Matthew, Rodrigues Antenor, Sandhu Gyan, Menga Luca Salvatore, Raimondi Cominesi Davide, Rezoagli Emanuele, Bellani Giacomo

- 83** **Predic've modeling of Con'nous diaphragm monitoring in ICU ven'la'on weaning: clinical outcomes and resources implica'ons**

Mellemseter Marit

- 20** **High-flow nasal cannula flow settings guided by diaphragmatic speckle tracking: a study of feasibility and efficacy**

He Runze, Xu Yiqing, Mao Xiaoxiao, Qian Xiaoli, Shen Weimin, Xu Lei, Ge Huiqing

Screen 6

Chairs: L. Liu, G.M. Albaiceta

- 48** **Comparing dynamic and static peak expiratory flow to estimate driving alveolar pressure during mechanical ventilation: a pilot physiological study**

Santini Alessandro, Pugliese Luca, Protti Alessandro

- 56** **Personalized PEEP settings in COVID-19 ARDS: a retrospective analysis using electrical impedance tomography and oesophageal pressure**

Weller Dolf, Somhorst Peter, Den Uil Corstiaan, Gommers Diederik, Annemijn Jonkman



E-poster board session • Thursday, September 18 2025



Moderated presentations: 4.00 - 5.15 pm

Free viewing: 5.15 - 6.30 pm

Screen 7

Chairs: A. Demoule, O. Penuelas

- 7** **Breathing pattern variability as a predictor of unfavorable outcome in pneumonia-induced respiratory failure**

Mas Serra Arantxa, Lujan Torné Manuel, Rodríguez Farré Nùria, Popoviciu Koborzan Melinda R., Flores Orella Matias, Arenós Sambró Roser, Giraldo Giraldo Beatriz F., Solà Soler Jordi, Martín-Baranera Montserrat

- 68** **Rethinking PEEP titration in obesity: BMI as a threshold, not a predictor. Preliminary considerations**

Alcalá Glasiele, Rodríguez Florencia, Fumagalli Jacopo, Pirrone Massimiliano, Mietto Cristina, De Santis Santiago Roberta, Tucci Mauro, Costa Eduardo, Amato Marcelo, Berra Lorenzo

- 69** **PressUre-muscle-index might account for intrinsic PEEP**

Docci Mattia, Vieira Fernando, Bellani Giacomo, Brochard Laurent

- 77** **A Randomized trial investigating the impact of high versus lower oxygen fraction during emergence from anesthesia on postoperative pulmonary atelectasis**

Paschold Béla-Simon, Santer Peter, Braeuer Ben Lp, Wichelhaus Lisa-Marie, Alcalá Glasiele, Robitaille Mark, Woloszynek Steven, Pincirolì Riccardo, Sahli Sebastian, Pensier Joris, Amato Marcelo Bp, Talmor Daniel S, Schaefer Maximilian S

- 14** **Digital twins to investigate the potential for extracorporeal carbon dioxide removal to reduce ventilator-induced lung injury**

Joy William, Nikulina Kateryna, Schuppert Andreas, Marx Gernot, Hardman Jonathan G., Boyle Andrew J., Mcauley Daniel F., Camporota Luigi, Bates Declan G., Saffran Sina

- 18** **Proportional assisted ventilation (PAV+) improves dorsal lung ventilation in patients with difficult or delayed weaning: preliminary results from a randomized controlled trial**

Zhang Siyu, Chen Weifeng, Duan Kailiang, He Runze, Xu Yiqing, Fang Wenyaoy, Ge Huiqing



Moderated presentations: 4.00 - 5.15 pm

Free viewing: 5.15 - 6.30 pm

30 **Perioperative individualized flow-controlled ventilation versus conventional pressure-controlled ventilation in on-pump cardiac surgery (flowventin heartsurg): a randomized controlled trial**

Becker Simon, Kurz Christian T., Geppert Johannes, Pöpping Jonas, Wichelhaus Lisa-Marie, Rembecki Martin, Denz Robin, Timmesfeld Nina, Zahn Peter K.

61 **Insufficient PEEP is associated with a rapid increase in mechanical energy in ARDS patients**

Pozzi Marco, Adrião Diana, Mongodi Silvia, Mojoli Francesco

Screen 8



Chairs: E. Goligher, TBD

75 **Assessment of negative elastic work as an indicator of eccentric muscular activity**

Núñez Silveira Juan Martin, Jonkman Annemijn H., Castro Sayat Mauro, Bramardi Santiago, Flink Rutger

39 **Noninvasive, real-time respiratory muscle pressure waveform: a bench study with an active servo breathing simulator**

Do Amaral Beraldo Marcelo, Nawa Ricardo Kenji, Li Yufeng, Du Hong-Lin, Forti Junior Germano

67 **Effects of PEEP titration on EIT-derived pulsatility values in a swine model of ARDS**

Victor Marcus, Restivo Andrea, Alcalá Glasiele, Nova Alice, Xin Yi, Gaulton Timothy, Cereda Maurizio

82 **Photoacoustic and ultrasound for acute lung injury**

Christopher Faeth, Rajiv Sanwal, Callum Frazer, Katie Leung, Heath Couture, Hikaru Kurosawa, Francesca Medici, Paola Zanon, Alberto Goffi, Warren Lee, Eno Hysi

5 **Monitoring of ventilatory effort through pressure-time product measurement using airway occlusion pressure. "The PTPPOCC study"**

Emilio Steinberg, Emiliano Gogniat, Gustavo Plotnikow, Roque Moracci, Sebastian Fredes, Norberto Tiribelli, Javier Dorado, Sergio Giannasi, Mariano Setten, José Dianti, Matias Madorno, Pablo Rodriguez



Moderated presentations: 4.00 - 5.15 pm

Free viewing: 5.15 - 6.30 pm

Screen 9



Chairs: M.V. Ranieri, R. Khemani

8 **Transpulmonary pressures estimation: do the direct and elastance-derived method agree?**

Balzani Eleonora, Grava Ilaria, Giovanazzi Stefano, Brazzi Luca, Bellani Giacomo, Collino Francesca

10 **CPAP therapy through a helmet with high flow system versus cpap therapy through full face mask with icu ventilator in elderly patients with acute hypoxemic respiratory failure: a comparative, randomized, cross-over, open-label, physiological study**

Yaroshetskiy Andrey, Savelenok Maxim, Zakharchenko Igor, Avdeev Sergey

12 **Delta Pes: a simplified bedside marker for assessing respiratory effort in mechanically ventilated ICU patients**

Smits Florence, Rietveld Petra, Snoep Willem, Van Der Velde Franciska, De Jonge Evert, Schoe Abraham,

65 **Neuromechanical delay and evolution of asynchrony in ards patients over the course of ventilation**

Carbon Niklas M., Lerg Tjorben Graßhoff Jan, Stiehler Lara, Francis Roland C. E., Rostalski Philipp, Weber-Carstens Steffen,

4 **Non-invasive respiratory pattern monitoring using temperature signals in a venturi mask**

Mas Serra Arantxa, Solà Soler Jordi, Giraldo Giraldo Beatriz F., Popoviciu Koborzan Melinda R., Rodríguez Farré Núria, Arenós Sambró Roser, Martín-Baranera Montserrat, Lujan Torné Manel

6 **Non-invasive monitoring of respiratory effort during weaning: correlation of delta Pocc, P0.1, and pressure muscle index with the rapid shallow breathing index**

Lopez Diego, Rosales Cristian, Castillo Juan


Moderated presentations: 4.00 - 5.15 pm

Free viewing: 5.15 - 6.30 pm

Screen 10


Chairs: M. Pellegrini, G. Bellani

25 Hemodynamic impact of prone positioning in acute respiratory distress syndrome: a systematic review and meta-analysis

Lu Kun Chen, Marco Leali, Gowtham Thangathurai, Douglas Slobod

15 Effect of variable pressure support and SIGH breathing on lung recruitability: preliminary results from the RESONANT study

Nova Alice, Tonetti Davide, Delle Vergini Michele, Gian Marco, Rona Roberto, Foti Giuseppe, Rezoagli Emanuele

33 Acquisition setups for respiratory surface electromyography: a systematic literature review focussing on setup motivation, reporting quality and differentiation between medical domains

Francovich Juliette, Warnaar Rob, Van Baaren Luca, Jonkman Annemijn, Oppersma Eline

55 Validation of a fully automated patient-ventilator asynchrony detection algorithm

Rietveld Thijs, Rietveld Petra, Balakirev Anton, Van Der Ster Björn, Damiani Felipe, Smits Florence, Van Der Velde-Quist Franciska, Endeman Henrik, Snoep Jacob, Van Gent Jeroen, Van Oosten Julien, Francovich Juliette, Goedendorp Nico, Schoe Abraham, Jonkman Annemijn

21 Dual-lung protective ventilation via a single ventilator: a feasibility study in human cadavers

Raimondi Cominesi Davide, Docci Mattia, Menga Luca Salvatore, Lesimple Arnaud, Segond Nicolas, Debaty Guillaume, Richard Jean-Christophe, Brochard Laurent

32 Quantification of pendelluft using electrical Impedance tomography: comparison of methodology

Somhorst Peter, Kuiper Lotte, Francovich Juliette, Scaramuzzo Gaetano, Jonkman Annemijn



General information



Meeting venue

Hospital de la Santa Creu i Sant Pau

Carrer de Sant Quintí, 89
Barcelona (Horta-Guinardó)

Organizing secretariat

Start Promotion Srl

Via Soperga, 10 - 20127 Milano (IT)
Phone: + 39 02 67071383
E-mail: info@startpromotion.it

On-site secretariat

The 3rd PLUG Meeting secretariat will be available on-site (Level 3 of the Hospital de la Santa Creu - I Sant Pau Barcelona). From 7.30 a.m. of Thursday September 18th to the closing scientific session, according to the following opening hours:

Thursday September 18th
8.00 a.m. - 8.00 p.m.

Friday September 19th
7.00 a.m. - 6.00 p.m.

Saturday September 20th
7.00 a.m. - 2.00 p.m.

Level 3

- **Pre-registered participants**
 - Physician
 - Trainee, Nurse, AHP, Low, middle income countries
 - Executive committee
 - Scientific committee
 - Faculty
 - Sponsor exhibitor employee
 - Non sponsor companies employee
- **New registrations**
- **Scientific session**
 - September 18th posters viewing time
 - Main entrance of the scientific session (exit in a different level)

Level 2

- **Scientific session**
- **Exhibition area**
- **Catering area**



General information



Scientific session

Access to the scientific hall is from the 3rd floor, while the exit is located on the 2nd floor.

E-poster format

Posters will be displayed as e-posters on monitors located on the **3rd floor**.

Official languages

MEETING
English, no simultaneous translation.

POSTER SESSION
English, no simultaneous translation.

Exhibition area

A wide exhibition area is available to participants on the **2nd floor**. Exhibitors will be glad to introduce you to the latest medical technologies. We encourage you to visit this interesting and engaging area.

Catering area

Catering area is located in the exhibition area **2nd floor**.

Registration information

Admission to the symposium is limited with mandatory pre-registration.

Online registration

Registrations should be done online at: **www.startpromotion.it**.

Please read the instructions carefully before starting your registration.



General information



Registration fees

	BEFORE April 30 th	UNTIL Sept 1 st	ONSITE
Physician	€ 250.00	€ 350.00	€ 450.00
Trainee, Nurse, AHP	€ 100.00	€ 100.00	€ 100.00
Low, middle income countries *	€ 100.00	€ 100.00	€ 100.00
Sponsor exhibitor employee	€ 450.00	€ 450.00	€ 450.00
Non sponsor companies employee	€ 700.00	€ 700.00	€ 700.00

In person meeting only, no online connection provided.

Legal VAT included

* Please check your country COL (cost of living)

Afghanistan, Angola, Bangladesh, Benin, Bhutan, Bolivia, Burkina Faso, Burundi, Cabo Verde, Cambodia, Cameroon, Central African Republic, Chad, Comoros, Congo, Dem. Rep Congo, Rep. Côte d'Ivoire, Djibouti, Egypt, Arab Rep., Eritrea, Eswatini, Ethiopia, Gambia, The Ghana, Guinea, Guinea-Bissau, Haiti, Honduras, India, Jordan, Kenya, Kiribati, Korea, Dem. People's Rep, Kyrgyz Republic, Lao PDR, Lebanon, Lesotho, Liberia, Madagascar, Malawi, Mali, Mauritania, Micronesia, Fed. Sts. Morocco, Mozambique, Myanmar, Nepal, Nicaragua, Niger, Nigeria, Pakistan, Papua New Guinea, Philippines, Rwanda, Samoa, São Tomé and Príncipe, Senegal, Sierra Leone, Solomon Islands, Somalia, South Sudan, Sri Lanka, Sudan, Syrian Arab Republic, Tajikistan, Tanzania, Timor-Leste, Togo, Tunisia, Uganda, Uzbekistan, Vanuatu, Vietnam, West Bank and Gaza, Yemen, Rep., Zambia, Zimbabwe.

[more info click here](#)

Registration fees will include:

- Access to the Scientific Sessions and the exhibition area
- Attendance certificate
- Catering services included in the program
- Name badge
- Welcome reception

Instructions for payment:

Payment of the registration fees can be made as follows:

- Credit Card
(Visa, Mastercard, Maestro, Moneta)



General information



Suggested hotel



- Hotel Arcelon ******
C/ Mallorca 661
08027 Barcelona (ES)
Tel: +34 93 04 60 910
www.arcelonhotel.com

3rd

PLUG Physiology Symposium



Acknowledgements



We are grateful to the following Companies for their contribution to the success of the 3rd PLUG Meeting



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4th

PLUG Physiology Symposium

Boston

September
24-25-26
2026



The background of the page is a solid dark purple. At the top and bottom, there are decorative elements consisting of multiple thin, wavy, parallel lines in a lighter shade of purple, creating a sense of motion and depth.

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