

AUGUST NEWSLETTER

Saskatchewan Respiratory Therapy Education Committee Inc.



Pressures in the Lungs

- Pplat and ΔP can help identify excessive lung stress during controlled mechanical ventilation. Measurements may be unreliable in the presence of spontaneous effort and underestimate stress generated within the lungs. Both reflect the elastic pressure of the resp system (lungs and chest wall). Elevated values don't necessarily indicate excessive lung stress when chest-wall elastance is increased. Thus, transpulmonary pressure may provide a more accurate assessment of the pressure distending the lungs.
- Resp muscle pressure is generated by the inspiratory muscles. Estimates can be provided through esophageal manometry, diaphragm electrical activity, and ultrasound. These require specialized equipment, expertise, and time, which can make them difficult to incorporate into routine monitoring. In clinical practice, airway-occlusion measurements such as P0.1 and airway occlusion pressure (Pocc) may be more accessible.
- P0.1 is a measure of resp drive. It represents the decrease in airway pressure in the first 100 milliseconds of inspiratory effort against an occluded airway. Main advantage is ease of use: requiring brief end-expiratory occlusion and is automatically measured. P0.1 has limitations as severe abnormalities in resp mechanics may underestimate the relationship between P0.1, resp drive, and resulting inspiratory effort.
- Pocc is measured at end-expiratory airway occlusion. Representing the maximum decrease in airway pressure generated by inspiratory effort against an occluded airway. This pressure deflection correlates with the pressure generated by the resp muscles to expand the lungs and chest wall. Pocc can be a bedside method to detect excessive inspiratory effort and estimate dynamic transpulmonary ΔP . Inspiratory effort during an occluded breath is generally greater than a tidal breath.

**WHAT IS A RESPIRATORY
THERAPIST'S FAVOURITE TYPE
OF MATH?**

LUNG DIVISION.

**SOCIAL MEDIA HIGHLIGHT:
[@HAMILTONMEDICAL](#)**

ESTIMATED PMUS = $-0.75 \times \text{POCC}$

**ESTIMATED DYNAMIC
TRANSPULMONARY DRIVING
PRESSURE = DYNAMIC AIRWAY
DRIVING PRESSURE - $(0.66 \times \text{POCC})$**

Educational Resources

PRESSURES IN THE LUNGS

ARTICLE RESOURCES

- [A novel non-invasive method to detect excessively high respiratory effort and dynamic transpulmonary driving pressure during mechanical ventilation](#)
- [Airway Occlusion Pressure and P0.1 to Estimate Inspiratory Effort and Respiratory Drive in Ventilated Children](#)
- [Airway Occlusion Pressure As an Estimate of Respiratory Drive and Inspiratory Effort during Assisted Ventilation](#)
- [Monitoring patient-ventilator interaction by an end-expiratory occlusion maneuver](#)

If you're having difficulty accessing the articles SHA Library Services is a great resource available to all SHA employees. Feel free to contact them to setup a library card number to obtain off site access.

WEBINARS

- [Monitoring and Understanding Respiratory Drive and Effort by Dr. Irene Telias](#)
- [The Value of P0.1 in Estimating Respiratory Drive](#)
- [Measuring Pocc \(Expiratory Occlusion Pressure\)](#)

VIDEO RESOURCES

- [Hamilton Medical - Ventilation Quiz](#)
- [Hamilton Medical - How To Video: Esophageal Ballon Catheter](#)
- [ICMJournal - Driving Pressure and Transpulmonary Pressure: Understanding the Difference](#)

PODCASTS

- [The Gas Exchange Podcast - Bedside Education with Troy Whitacre](#)
- [The Gas Exchange Podcast - Driving Pressure with Dr. Giacomo Bellani](#)
- [The Peak Inspiration Podcast - Autotrigger and Airway Occlusion Pressure](#)
- [Episode 142: Driving Pressure and Transpulmonary Pressure with Marcos Vidal Melo](#)

SUMMARIES & GUIDELINES

- [Dräger - Did you know? P.01 info sheet](#)
- [Life in the Fast Lane - Driving Pressure](#)



September's newsletter will focus on COPD. Please provide feedback on what area of COPD you would be interested in learning more about [here](#). Remember each suggestion will get you entered into the annual giveaway.

Stay tuned for info our next webinar sponsored by AstraZeneca in September.

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