

# P/V Tool<sup>®</sup> Pro Quick Reference Card

Assessing lung recruitability and performing recruitment maneuvers in adult patients

## BASIC PROTOCOL


Step 1: Diagnostic P/V curve to assess recruitability

**Settings:**

<b>Pstart:</b> 0 cmH2O	<b>Ramp speed:</b> 2 cmH2O/s
<b>Ptop:</b> 40 cmH2O	<b>Tpause:</b> 0 s
<b>End PEEP:</b> 0 cmH2O	<b>Cuff pressure:</b> >Ptop

**NOTE:** When prompted whether to change the PEEP setting after the maneuver, touch **No**.

► Start the maneuver

The shape of the inspiratory limb is convex   
**AND/OR**  
Volume difference at a pressure of 20 cmH2O is > 500 ml

No

No recruitment 

Yes

Patient shows potential for recruitment 

Consider:

- PEEP < 10 cmH2O
- Prone positioning
- Persistent hypoxemia  
→ consider ECMO

Step 2a: Recruitment maneuver (first)

Consider decreasing FIO2 before the recruitment maneuver to reach an SpO2 value of 92%

**Settings:**

<b>Pstart:</b> Current PEEP	<b>Ramp speed:</b> 5 cmH2O/s
<b>Ptop:</b> 40 cmH2O	<b>Tpause:</b> 10 s
<b>End PEEP:</b> 15 cmH2O*	<b>Cuff pressure:</b> >Ptop

**NOTE:** When prompted whether to change the PEEP setting after the maneuver, touch **Yes**.

\* or current PEEP if current PEEP is > 15 cmH2O

► Start the maneuver

Volume increase at Ptop > 2 ml/kg IBW (or > 200 ml)  
**AND**  
SpO2 is > 97% within 5 minutes after the maneuver

No

Ineffective recruitment 

Yes

Effective recruitment 

ADVANCED protocol  
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**ONLY use this protocol if the first recruitment maneuver (BASIC protocol) was well tolerated hemodynamically.**

## ADVANCED PROTOCOL

### Step 2b: Recruitment maneuver (second)

Consider decreasing FiO<sub>2</sub> before the recruitment maneuver to reach an SpO<sub>2</sub> value of 92%

#### Settings:

<b>Pstart:</b>	Current PEEP	<b>Ramp speed:</b>	5 cmH <sub>2</sub> O/s
<b>Ptop:</b>	50 cmH <sub>2</sub> O	<b>Tpause:</b>	10 s
<b>End PEEP:</b>	20–25 cmH <sub>2</sub> O	<b>Cuff pressure:</b>	>Ptop

**NOTE:** When prompted whether to change the PEEP setting after the maneuver, touch **Yes**.

► Start the maneuver

Volume increase at Ptop > 2 ml/kg IBW (or > 200 ml)  
**AND**  
SpO<sub>2</sub> is > 97% within 5 minutes after the maneuver

No

Ineffective recruitment

Yes

Effective recruitment

Consider esophageal manometry.  
For details, see the *PiV Tool User Guide* and *Esophageal Balloon Catheter Reference Card*.

### Decremental PEEP titration

Consider decreasing FiO<sub>2</sub> before the decremental PEEP titration to reach an SpO<sub>2</sub> value of 92%

► Decrease PEEP by 2 cmH<sub>2</sub>O every 3 minutes

► Monitor SpO<sub>2</sub> to determine optimal PEEP:

When SpO<sub>2</sub> decreases by 2%, revert to previous PEEP value (optimal PEEP)

### Recruitment maneuver (third)

#### Settings:

<b>Pstart:</b>	Optimal PEEP	<b>Ramp speed:</b>	5 cmH <sub>2</sub> O/s
<b>Ptop:</b>	50 cmH <sub>2</sub> O	<b>Tpause:</b>	10 s
<b>End PEEP:</b>	Optimal PEEP	<b>Cuff pressure:</b>	>Ptop

**NOTE:** When prompted whether to change the PEEP setting after the maneuver, touch **No**.

► Start the maneuver