

Open Lung Tool Flowchart

– Adult

This protocol describes the use of stepwise recruitment maneuvers using the Open Lung Tool trends in Servo-u.

Description of Open Lung Tool trends

- OLT trends displays values breath by breath.
 - EIP: End Inspiratory Pressure
 - Pdrive: Driving pressure
 - VTCO₂: Tidal elimination of CO₂
 - SI: Stress Index > 1.05 suggests overdistension (calculated in VC mode based on 8 last breaths)
 - Cdyn: Dynamic Compliance
- Cursor to be used to find the highest compliance value.
- Save function. Possibility to review previous recruitments.
- Time interval.
- Breath Count resets after change in PEEP, PC above PEEP or VT.

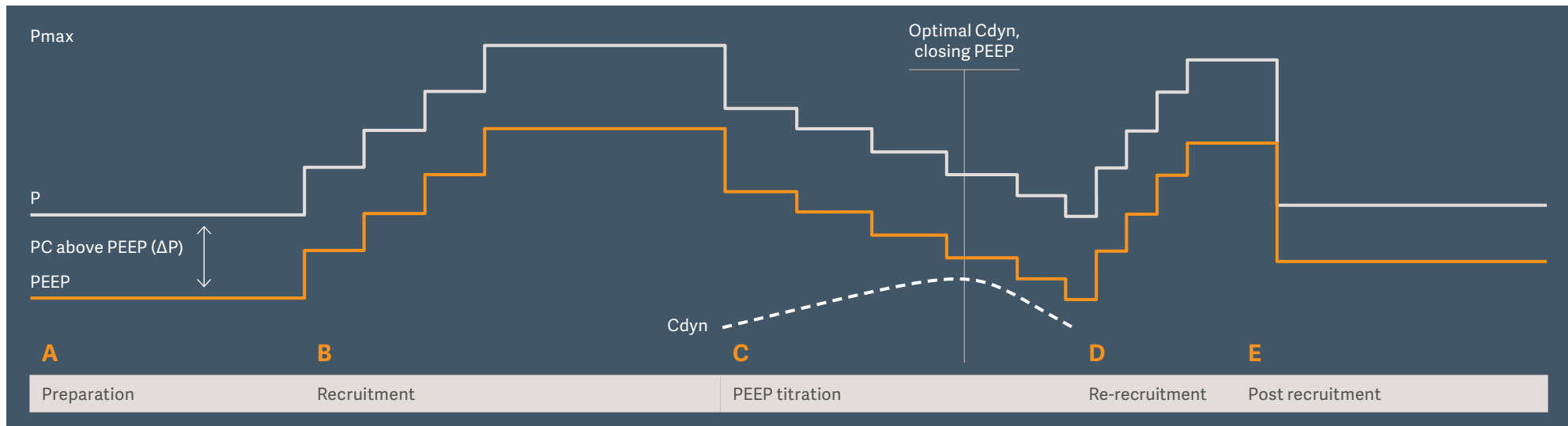


Important

- Suggestions are related to adult patients without severe lung disease. The settings should only be regarded as an example of the typical values.
 - The responsible physician shall always base actual selected values on the clinical judgement of the individual patient's physiology and expected recruitability.
 - Patient with sick lungs may require higher pressure values and longer time on each PEEP increment/decrement.
 - Patient needs to be sedated and have no spontaneous breathing.
 - Always observe the blood pressures/hemodynamics during the lung recruitment.
 - If no compliance change/drop the lung recruitment was not successful.
- Possible reasons:
- Patient is not recruitable
 - PEEP max too low
 - PEEP titration start too low
- Consider to stop or redo the recruitment maneuver.

Refer to the Servo-u User's manual for operation of the ventilator.
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This document is intended to provide information to an international audience outside of the US.
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A. Preparation

1. Choose PC mode.
2. I:E 1:1.
3. Confirm that the PBW is set.
4. Adjust the upper alarm limits for PEEP and Ppeak.

B. Recruitment

1. Open the OLT trends.
2. Decide the maximum pressure (Pmax) to be used.
3. Set the PC above PEEP (ΔP) to 10–20 cmH₂O.
4. Start with PEEP 10–15 and then increase in steps of 5 cmH₂O.
5. Stay 5–8 breaths on each step (time depends on the RR).
6. Stay at the Pmax for 8–12 breaths (40–60 seconds approximately).

C. PEEP Titration

1. Choose VC or PC.
2. If PC is used, observe the volumes and decrease the PC above PEEP (ΔP) if needed.
3. Start titration by decreasing PEEP to 18–22.
4. Continue decreasing PEEP in steps of 2 cmH₂O (example 20,18,16...).
5. Stay at each PEEP-decrement for at least 6–8 breaths and check the Cdyn trend curve.
6. Identify the Closing PEEP, i.e.: the point where the Cdyn has passed its maximum and a decreasing trend has been identified.

D. Re-Recruitment

1. Redo recruitment as in B.
2. Stay 3–4 breaths on each step.
3. Stay at the Pmax for 4–6 breaths for (20–30 seconds).

E. Post recruitment

1. Select open-lung PEEP, i.e. 2 cmH₂O above the PEEP which shows the highest Cdyn.
2. Change to mode of choice e.g. PRVC, PC, VC.
3. Lower the PC above PEEP (ΔP) or the tidal volume to achieve the optimal VT/PBW (ml/kg).
4. Readjust the alarm limits for PEEP and Ppeak.