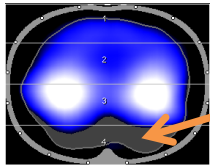


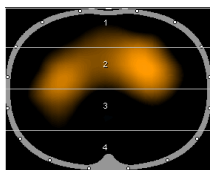
**Principle:** Compare lowest PEEP level with higher PEEP levels. Use the *End-inspiratory Trend View* to analyse the loss of ventilation due to an increase in PEEP.

**Assumption:** No overdistension at the lowest PEEP

**Step 1:** Perform decremental PEEP trial  
According to hospital standards



Contour of ventilated area identifies lung areas that can be ventilated. Grey areas represent areas that are not ventilated at the current cursor position but were ventilated at other points of time during the displayed period.

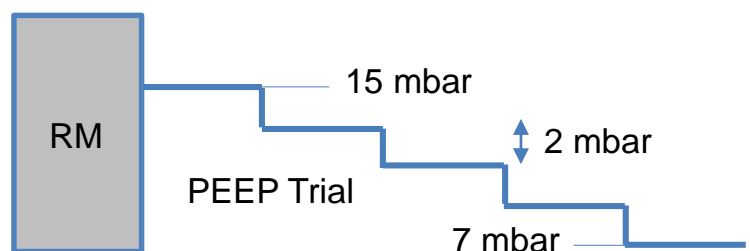


Differential image in *End-inspiratory Trend View*  
Orange colour = ventilation loss  
Blue colour = ventilation win

### Example:

#### Decremental PEEP trial

- Initial recruitment maneuver
- PEEP steps of 2 mbar



### Definition of overdistension:



The term overdistension describes an excessive expansion of the alveoli, which is very often caused by either high tidal volumes and/or high end-expiratory lung volumes resulting from high PEEP levels.

In Electric Impedance Tomography, overdistension can be expected whenever a major loss of ventilation is observed in the non-dependent lung areas towards higher airway pressures. During pressure controlled ventilation this loss of ventilation can also be interpreted as reduction of regional compliance.

### Step 2: Assess loss of ventilation in supine patients

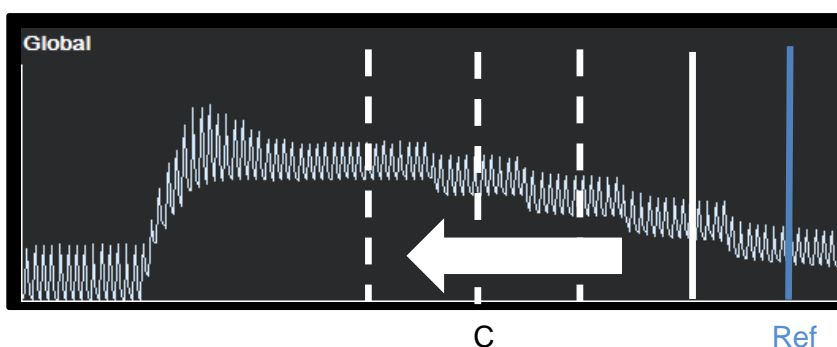
**1) Before the Recruitment Maneuver is started:**

Set the Regions of Interest (ROIs) to “layers”

(adjust their height if required: e.g. in obese patients, adjust the height of the ROIs, so that ROI 1 properly represents ventral ventilation)

**2) After the PEEP trial: Open the *End-inspiratory Trend View***

Compare stepwise the lowest PEEP (Cursor *Ref*) with higher PEEP levels (Cursor *C*)  
Reference (*Ref*) remains at lowest PEEP, *C* positioned at higher PEEP steps



**3) Identify loss of ventilation (in ventral region):**

Differential Image: Orange color indicates reduced ventilation

Tidal Image: Contour of ventilated area helps identify areas with complete lack of ventilation

Tidal variations: Loss of ventilation in ventral ROI 1&2 (apart from redistribution caused by potentially reopened additional lung regions in dorsal parts of the lung)

### What to look for in the *End-inspiratory Trend View*

<i>Examples</i>	Tidal Image Ref	Tidal Image C	Differential Image	TV ROI 1 + 2 [%]									
PEEP 7 vs. PEEP 11				<table border="1"> <thead> <tr> <th></th> <th>Ref</th> <th>C</th> </tr> </thead> <tbody> <tr> <td>ROI 1</td> <td>10</td> <td>9</td> </tr> <tr> <td>ROI 2</td> <td>43</td> <td>38</td> </tr> </tbody> </table>		Ref	C	ROI 1	10	9	ROI 2	43	38
	Ref	C											
ROI 1	10	9											
ROI 2	43	38											
PEEP 7 vs. PEEP 13				<table border="1"> <thead> <tr> <th></th> <th>Ref</th> <th>C</th> </tr> </thead> <tbody> <tr> <td>ROI 1</td> <td>10</td> <td>9</td> </tr> <tr> <td>ROI 2</td> <td>43</td> <td>37</td> </tr> </tbody> </table>		Ref	C	ROI 1	10	9	ROI 2	43	37
	Ref	C											
ROI 1	10	9											
ROI 2	43	37											
PEEP 7 vs. PEEP 15				<table border="1"> <thead> <tr> <th></th> <th>Ref</th> <th>C</th> </tr> </thead> <tbody> <tr> <td>ROI 1</td> <td>10</td> <td>8</td> </tr> <tr> <td>ROI 2</td> <td>43</td> <td>36</td> </tr> </tbody> </table>		Ref	C	ROI 1	10	8	ROI 2	43	36
	Ref	C											
ROI 1	10	8											
ROI 2	43	36											