



# Ventilatory Weaning Protocol



April 2019

## Abbreviations

PEEP: Positive End Expiratory Pressure

FiO<sub>2</sub>: Inspired fraction of oxygen concentration (%)

RR: Respiratory Rate

VT: Tidal Volume

MV: Minute Ventilation

PS: Pressure Support

MAP: Mean Arterial Pressure

HR: Heart Rate

SPO<sub>2</sub>: Arterial Oxygen Saturation

IBW: Ideal Body Weight

## Definitions

Full day is 8:00 till 22:00 or total of 14 hours

Ideal Body Weight (IBW):

- Men =  $50 + [(height (cm) - 154) \times 0.9]$
- Women =  $45.5 + [(height (cm) - 154) \times 0.9]$

A

## Weaning Criteria

Hemodynamic stability: MAP  $\geq$  65 mm Hg without escalating pressor use and HR  $\leq$  100

Temperature < 101 degrees Fahrenheit

Acceptable acid-base balance

PEEP  $\leq$  8 & FiO<sub>2</sub>  $\leq$  40%

MV <15 Liters

Eligible for sedation vacation: no paralytic agents, no increased ICP

Resolution of underlying condition

B

## CPAP Trial

Use previous PEEP level for CPAP setting

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Apply CPAP level for 1 hour

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Frequency: twice daily

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Observe for intolerance criteria

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**C**

Intolerance Criteria

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RR >35 for more than 5 minutes

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SPO<sub>2</sub> <90% for ≥30 seconds

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20% change in Heart Rate or SBP

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Excessive anxiety, restlessness or agitation

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Diaphoresis or distress

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Use of accessory muscles

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**D**

T-piece Trials (Level 1)

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Place the patient on T-piece

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Trial duration: 2 hours

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Trial frequency: twice daily

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May apply speaking valve as tolerated

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Extend 2 hours daily as tolerated

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Rest between trials and at night

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Maximum 4 hours twice daily

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**E**

T-piece Trials (level 2)

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Start when level 1 is passed and patient tolerates T-piece trials 4 hours twice daily

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T-piece for 6 hours daily

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Extend 2 hours daily until 24 hours completed

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**F**

Rest Settings

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Controlled mode of ventilation with rate and tidal volume set as ordered

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Duration: at least 4 hours

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Application: between trials and at night starting 10:00 PM until 8:00 AM

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**G**

PS Trials (level 1)

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Set PS level to achieve VT 6-8 mL/kg of IBW and respiratory rate <25 breaths per minute

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Trial duration: 2 hours

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Trial frequency: twice daily

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Extend 1 hour daily as tolerated

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Rest between trials and at night

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Maximum trial duration and frequency: 4 hours twice daily

H

PS Trials (level 2)

Start when level 1 is passed and patient tolerates PS trials 4 hours twice daily

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Use same pressure support level set in PS trials

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One pressure support trial per day

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Extend by 2 hours daily until full day is achieved

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Rest at night

I

PS Weaning

Decrease PS by 2 cm H<sub>2</sub>O daily as tolerated

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Continue decreasing PS till patient can tolerate 6 cm H<sub>2</sub>O

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Ventilator Weaning Protocol Ordered

Daily Assessment Weaning Criteria (A)

Evaluate cause of weaning failure and Document in chart

Pass

Fail

CPAP Trial (B)

PS Trial (1) (G)

Rest (F)

Not Tolerated

Tolerated

Not Tolerated (C)

Tolerated

PS Trial (2) (H)

Not Tolerated (C)

Tolerated

T-piece Trial (1) (D)

Not Tolerated (C)

Tolerated

PS Weaning (I)

Not Tolerated (C)

Tolerated

T-piece Trial (2) (E)

Remove Ventilator 24 hours after ventilator being off.