Difficult Weaning from Mechanical Ventilation : What are the solutions?

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As respiratory failure and the need for mechanical ventilatory support

→ **stabilizes** and begins to **reverse**,

clinical attention shifts to the process of ventilator **withdrawal** or **discontinuation**.

In these patients, **ongoing ventilator dependency** is caused by the following **two fundamental problems**:

(1) disease- imposed factors, such as mechanical and/or gas exchange issues that continue to require positive pressure ventilation; and/or

(2) clinician-imposed factors, such as either clinician ***delay in recognizing the ability of a patient*** to have mechanical ventilation discontinued or ***inappropriate ventilator settings that overload (or underload) respiratory muscles***, Preventing recovery.

When Should Ventilator Discontinuation Be Considered?

- **underlying respiratory disease begins to stabilize and reverse**

A multi-society-sponsored, evidence based task force (hereafter referred to as the ***task force1*** *has* ***recommended*** *that a patient should be* considered a candidate for withdrawal of ventilation **if**

(1) the **lung injury** is **stable/resolving;**

(2) the **gas exchange** is **adequate** with low positive end-expiratory pressure (PEEP)/fraction of inspired oxygen (FiO_2) requirements (**eg,** *PEEP, 5 to 8 cm H_2O;* FiO_2, 0.4 to 0.5;)

(3) hemodynamic variables are stable (**eg,** *without significant needs* **for** *therapy* **with** pressors); and

(4) there is the **capability to initiate spontaneous breaths**.

This information is usually readily available, and the task force recommends that these issues be assessed daily as a "wean screen."

MacIntyre NR, Cook DJ, Ely EW, et al. Evidence based guidelines for weaning and discontinuing mechanical ventilation: a collective task force facilitated by the American College of Chest Physicians; the American Association for Respiratory Care; and the American College of Critical Care Medicine. Chest 2001; 120(suppl):375S–395S