



## 1. Overview

- Mechanical Ventilation is a treatment option to support patient's respiration and ventilation addressing hypoxemic and/or hypercapnia respiratory failure. Mechanical Ventilation consists of either non-invasive or invasive ventilation using an endotracheal tube.

## 2. Goal of the Procedure

- The goal for mechanical ventilation in **critical care** is to optimize respiration and ventilation while managing reversible causes for acute respiratory failure.

## 3. Reference(s)

- Kollef, M (2018) The Washington manual of critical care. (3<sup>rd</sup> ed) Philadelphia. Wolters Kluwer

## 4. Required Reading / Review

- [Celli, B.R. \(2015\). Chapter 323. Mechanical Ventilatory Support. In D.L. Kasper, A.S. Fauci, S.L. Hauser, D.L., J. Jameson, & J. Loscalzo \(Eds\), Harrison's Principles of Internal Medicine, 18e.](#)
- [Esan, A., Khusid, F., & Raoof, S. \(2018\). Chapter 18: Ventilator Technology and Management. In: Oropello J.M., Pastores S.M., & Kvetan, V. eds. Critical Care New York, NY: McGraw-Hill;](#)
- [Schmidt G.A., & Hall J.B. \(2015\). Chapter 36. Management of the Ventilated Patient In Hall J.B., Schmidt G.A., Wood L.H. \(Eds\), Principles of Critical Care, 3e](#)

To access the Clinical Key webpages listed below use the [Direct Link Generator](#) and use the second box on the page (below the OR) to put in the following URLs (one at a time) then click "show URL" to generate a link to the video and information (if the page does not display click on the generated link again)

[https://www.clinicalkey.com/#!/content/medical\\_procedure/19-s2.0-mp\\_IM-007](https://www.clinicalkey.com/#!/content/medical_procedure/19-s2.0-mp_IM-007)

[https://www.clinicalkey.com/#!/content/medical\\_procedure/19-s2.0-mp\\_EM-013](https://www.clinicalkey.com/#!/content/medical_procedure/19-s2.0-mp_EM-013)

## Mandatory Video:

- [Ventilator 101](#)

This video will explain all the basics in a very straightforward manner. Not only easy to understand but points out all the bullet points you need to know as a study guide.

## Mandatory PowerPoint

- Donze, A. (2018) Mechanical Ventilation. PowerPoint

Excellent PowerPoint summarizing all the key points in the video above.

## 5. Required Competencies

- Discusses the criteria for NIPPV and invasive mechanical ventilation.
- Discusses acute lung injury and mechanical ventilation:
- Demonstrates CPAP and BiPap using a NIPPV mechanical ventilator.
- Discusses PIP and Plateau Pressures in relation to expected and abnormal values.
- Discusses the different ventilator settings and risks /benefits.
- Demonstrates various ventilator settings titrating for changes in patient oxygenation and ventilation.
- Discusses different ventilator alarms.