



# Sedation Vacation in Neurocritical Care: A Proposal Algorithm

Luis Rafael Moscote-Salazar<sup>1</sup> William A. Florez-Perdomo<sup>1</sup> Tariq Janjua<sup>2</sup>

<sup>1</sup> Department of Critical Care Medicine, Physician Regional Medical Center, Naples, Florida, United States

<sup>2</sup> Colombian Clinical Research Group in Neurocritical Care, Bogota, Colombia

Address for correspondence Luis Rafael Moscote-Salazar, MD, Colombian Clinical Research Group in Neurocritical Care, Bogota 250251, Colombia (e-mail: rafaelmoscote21@gmail.com).

Indian J Neurotrauma 2024;21:87–89.

## Abstract

### Keywords

- critical care
- neurocritical care
- neurosurgery
- neurotrauma
- sedation

Daily sedation interruption or sedation vacation is a strategy for neurological evaluation, respiratory mechanics, cardiac stability, and eventual weaning to extubation. However, its application has safety aspects such as pulmonary, cardiac, and neurological complications. A protocol-driven sedation vacation in the medical intensive care helps with the reduction in the intensive care length of stay and increase in ventilator-free days.<sup>1,2</sup> The same approach can be used in neurointensive care with alterations based upon the neurocritical care progression.

Daily sedation interruption or sedation vacation is a strategy for neurological evaluation, respiratory mechanics, cardiac stability, and eventual weaning to extubation. However, its application has safety aspects such as pulmonary, cardiac, and neurological complications.

A protocol-driven sedation vacation in the medical intensive care helps with the reduction in the intensive care length of stay and increase in ventilator-free days.<sup>1,2</sup> The same approach can be used in neurointensive care with alterations based upon the neurocritical care progression.

In the protocol published by Kress et al,<sup>3</sup> the daily dose of sedation was reduced under close clinical monitoring by 50%. This approach was for medical intensive care patients. It is important to mention that the progressive reduction in sedation allowed in these trials for close neurological status.<sup>4,5</sup> This approach can be translated to neurocritical care patients. The key aspect is to have neurological stability for the sedation vacation in these patients. Another aspect that requires attention is an acute brain injury and suspicion of new focal injury where sedation reduction or vacation can help with bedside neurological examination.

Sedation vacation for neurocritical care patients can be done when the original injury is stable and ventilator weaning is required. Another aspect as mentioned above is to look for any new focal deficit. The elements to consider before sedation vacation include cardiopulmonary stability, no urgent plan for any procedure or tests, and an underlying condition is improving. Gradual reduction in sedation is the best option, although cessation of a solitary infusion of sedative in a stable patient also will help. These agents are usually an infusion of propofol, dexmedetomidine, or fentanyl. A protocol-driven approach is better so all the team members can follow this protocol ➤ **Fig 1**. The team members for this purpose include intensivists, bedside staff, respiratory therapists, pharmacists, and others.

In conclusion, a sedation vacation approach is feasible and a protocol implementation in neurocritical care can help with the progression of care. Full team effort is needed to start and continue the process. Further research based on common diagnoses in neurocritical can elucidate the limitations and further refinements.

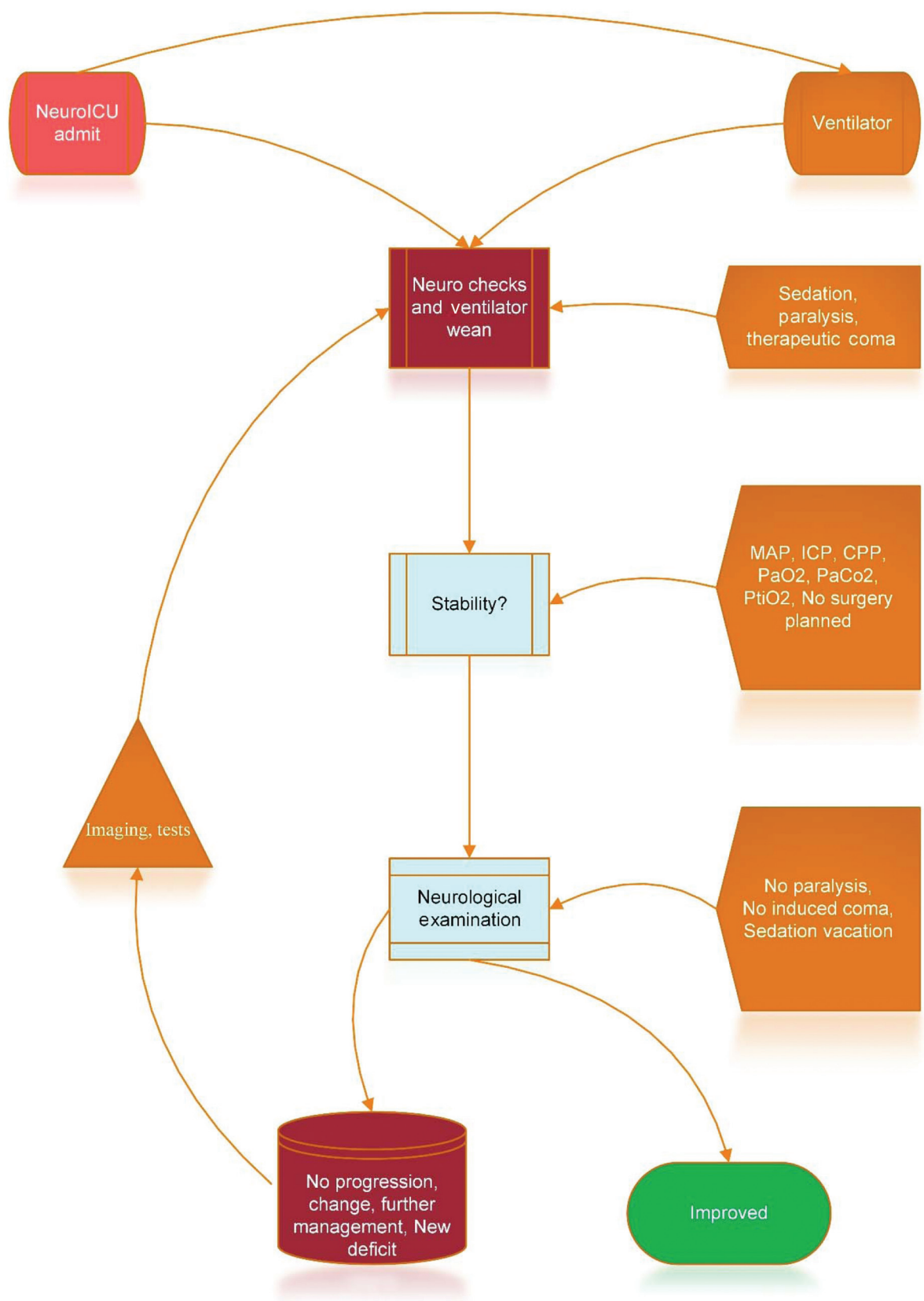
article published online  
March 1, 2023

DOI <https://doi.org/10.1055/s-0043-1762599>.  
ISSN 0973-0508.

© 2023. The Author(s).

This is an open access article published by Thieme under the terms of the Creative Commons Attribution License, permitting unrestricted use, distribution, and reproduction so long as the original work is properly cited. (<https://creativecommons.org/licenses/by/4.0/>)

Thieme Medical and Scientific Publishers Pvt. Ltd., A-12, 2nd Floor, Sector 2, Noida-201301 UP, India



**Fig. 1** Sedation vacation pathway in neurocritical care. CPP, cerebral perfusion pressure; MAP, mean arterial pressure; PaO2, arterial oxygen tension; PaCO2, arterial carbon dioxide tension; PtiO2, brain tissue oxygen.

**Conflict of Interest**

None declared.

**References**

- 1 Girard TD, Kress JP, Fuchs BD, et al. Efficacy and safety of a paired sedation and ventilator weaning protocol for mechanically ventilated patients in intensive care (Awakening and Breathing Controlled trial): a randomised controlled trial. *Lancet* 2008;371(9607):126–134
- 2 Strøm T, Martinussen T, Toft P. A protocol of no sedation for critically ill patients receiving mechanical ventilation: a randomised trial. *Lancet* 2010;375(9713):475–480
- 3 Kress JP, Pohlman AS, O'Connor MF, Hall JB. Daily interruption of sedative infusions in critically ill patients undergoing mechanical ventilation. *N Engl J Med* 2000;342(20):1471–1477
- 4 Mehta S, Burry L, Cook D, et al; SLEAP Investigators Canadian Critical Care Trials Group. Daily sedation interruption in mechanically ventilated critically ill patients cared for with a sedation protocol: a randomized controlled trial. *JAMA* 2012;308(19):1985–1992
- 5 Burry L, Cook D, Herridge M, et al; SLEAP Investigators Canadian Critical Care Trials Group. Recall of ICU stay in patients managed with a sedation protocol or a sedation protocol with daily interruption. *Crit Care Med* 2015;43(10):2180–2190