Intensive Care Med
https://doi.org/10.1007/s00134-025-08170-y

CORRESPONDENCE

When 'Early' isn't early: time to rethink the timing of mobilization in the ICU

Katarzyna Kotfis[1*], Łukasz Szarpak[2,3], Michał Pruc[4], Aleksandra Szylińska[5] and Wojciech Dąbrowski[6]

We read with great interest the editorial by De Jong and colleagues entitled *"Key principles and recent developments for ventilatory management of the surgical critically ill patient"* [1]. The authors provide a comprehensive overview of contemporary perioperative and postoperative respiratory strategies, highlighting advances from intraoperative lung-protective ventilation to postoperative weaning, extubation, and non-invasive support. Their summary of evidence from pivotal trials and discussion of transitions from the operating room to the intensive care unit (ICU) underscore the importance of individualized ventilatory management. We particularly appreciate the emphasis placed on the integration of enhanced recovery after surgery (ERAS) protocols and the recommendation for early mobilization as part of holistic postoperative care.

While we commend the authors for this timely synthesis, we believe that defining mobilization within ≤ 72 h as "early" may inadvertently reinforce an existing evidence-to-practice gap.

We believe the effective preventive window is considerably shorter. Muscle atrophy begins almost immediately after ICU admission—serial ultrasonography and biopsy demonstrate a 10% loss in rectus femoris cross-sectional area within the first week, accompanied by histological deterioration [2]. Even short periods of muscle inactivity may lead to disorders in metabolic homeostasis reflected in insulin resistance and lipid metabolism, with experimental and clinical studies consistently showing that activated skeletal muscle produces and secretes more than 630 peptides called myokines [3]. Myokines are secreted into the circulation, improving different organ function, reducing inflammatory-related cell damage, and possessing a strong beneficial effect in repair and regeneration processes [4]. Some of them, such as mitsugumin-53, can protect the lung, kidney, heart, and brain against inflammatory and ischemia–reperfusion damage, supporting cell membrane repair, reducing aging-related dementia, and the risk of memory dysfunction and delirium [5].

Equally important, optimal ventilatory outcomes begin well before surgery. Prehabilitation, encompassing targeted inspiratory muscle training, aerobic exercise, and structured pulmonary conditioning, has been consistently shown to enhance respiratory performance, improve functional capacity, and attenuate the inflammatory and metabolic stress of surgery. These interventions not only reduce the incidence of postoperative pulmonary complications but also shorten the duration of mechanical ventilation, facilitate earlier extubation, and accelerate recovery of mobility and independence. Recognizing that effective ventilatory management begins long before the first incision, both clinicians and patients should view prehabilitation as an integral component of perioperative respiratory care rather than an optional adjunct.

Therefore, we believe that ≤ 72 h should be viewed not as the definition of "early" mobilization, but rather as its upper boundary. According to ERAS principles, mobilization should commence as soon as physiologically feasible—ideally within 12–24 h and no later than 48 h. A structured, progressive approach, namely moving from in-bed to out-of-bed activities with clear safety criteria (hemodynamic stability, adequate oxygenation/PEEP, and decreasing vasopressor use), aligns clinical practice

*Correspondence: katarzyna.kotfis@pum.edu.pl
[1] Department of Anaesthesiology, Intensive Care and Pain Management, University Hospital No. 2, Pomeranian Medical University, Szczecin, Poland
Full author information is available at the end of the article

This comment refers to the article available online at https://doi.org/10.1007/s00134-025-08107-5.

with current evidence and mitigates unnecessary delays. Importantly, the foundation for optimal postoperative mobilization is laid before surgery through prehabilitation, which strengthens respiratory muscles, improves cardiorespiratory fitness, and enhances functional reserve.

Together, prehabilitation and early mobilization form a continuum of care that optimizes respiratory recovery, reduces complications, and restores independence more rapidly.

Author details
[1] Department of Anaesthesiology, Intensive Care and Pain Management, University Hospital No. 2, Pomeranian Medical University, Szczecin, Poland. [2] Transfer Technology Center, The John Paul II Catholic University of Lublin, Lublin, Poland. [3] Henry JN Taub Department of Emergency Medicine, Baylor College of Medicine, Houston, USA. [4] Department of Clinical Research and Development, LUXMED Group, Warsaw, Poland. [5] Department of Cardiac Surgery, Pomeranian Medical University, Szczecin, Poland. [6] Department of Anaesthesiology and Intensive Care, Medical University of Lublin, Lublin, Poland.

Data availability statement
None.

Declarations

Conflicts of interest
The authors declare that they have no conflict of interest.

Publisher's Note

Received: 7 October 2025 Accepted: 10 October 2025
Published online: 21 October 2025

References

1. De Jong A, Jaber S, Schaefer M (2025) Key principles and recent developments for ventilatory management of the surgical critically ill patient. Intensiv Care Med. https://doi.org/10.1007/s00134-025-08107-5
2. Puthucheary ZA, Rawal J, McPhail M et al (2013) Acute skeletal muscle wasting in critical illness. JAMA 310(15):1591–1600. https://doi.org/10.1001/jama.2013.278481
3. Pedersen BK, Fabbraio MA (2012) Muscles, exercise and obesity: skeletal muscle as a secretory organ. Nat Rev Endocrinol 8:457–465. https://doi.org/10.1038/nrendo.2012.49
4. Pourteymour S, Eckardt K, Holen T, Langleite T, Lee S, Jensen J, Birkeland KI, Drevon CA, Hjorth M (2017) Global mRNA sequencing of human skeletal muscle: search for novel exercise-regulated myokines. Mol Metab 6(4):352–356. https://doi.org/10.1016/j.molmet.2017.01.007
5. Whitson BA, Tan T, Gong N, Zhu H, Ma J (2021) Muscle multiorgan crosstalk with MG53 as a myokine for tissue repair and regeneration. Curr Opin Pharmacol 59:26–32. https://doi.org/10.1016/jcoph.2021.04.005