



Functional limitations and impairments after COVID 19 ICU stay

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<https://www.hopkinsmedicine.org/coronavirus/pact/>

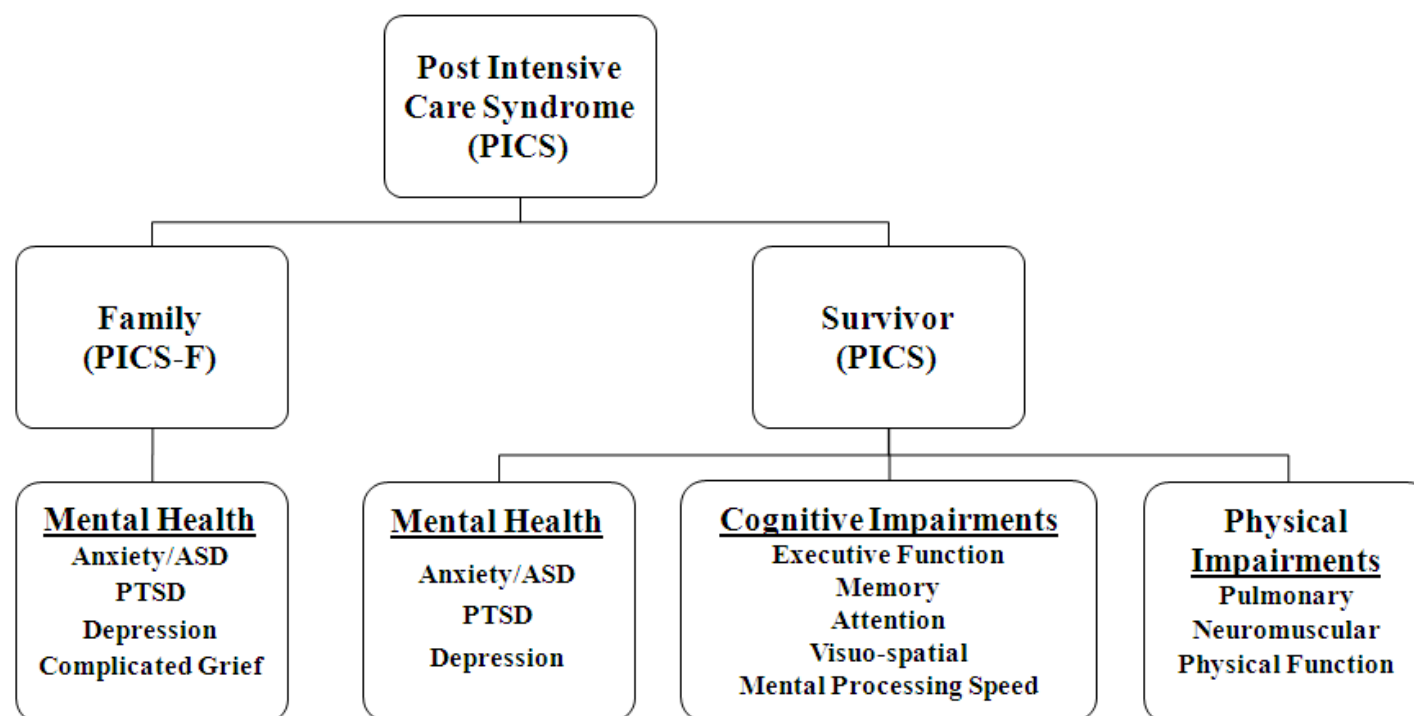
Disclosures

- None



Improving long-term outcomes after discharge from intensive care unit: Report from a stakeholders' conference*

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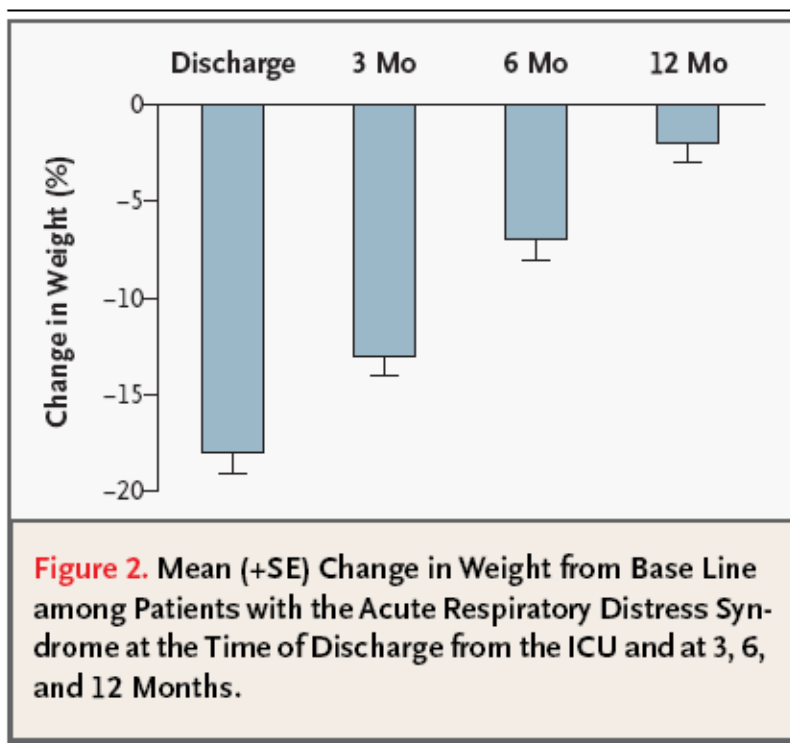
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One-Year Outcomes in Survivors of the Acute Respiratory Distress Syndrome

Margaret S. Herridge, M.D., M.P.H., Angela M. Cheung, M.D., Ph.D., Catherine M. Tansey, M.Sc.,
Andrea Matte-Martyn, B.Sc., Natalia Diaz-Granados, B.Sc., Fatma Al-Saidi, M.D., Andrew B. Cooper, M.D.,
Cameron B. Guest, M.D., C. David Mazer, M.D., Sangeeta Mehta, M.D., Thomas E. Stewart, M.D., Aiala Barr, Ph.D.,
Deborah Cook, M.D., and Arthur S. Slutsky, M.D., for the Canadian Critical Care Trials Group

Global Assessment of Outcomes

Lost 18% of body weight in ICU



Loss of lean muscle

Weight replaced with fat



Functional Outcomes

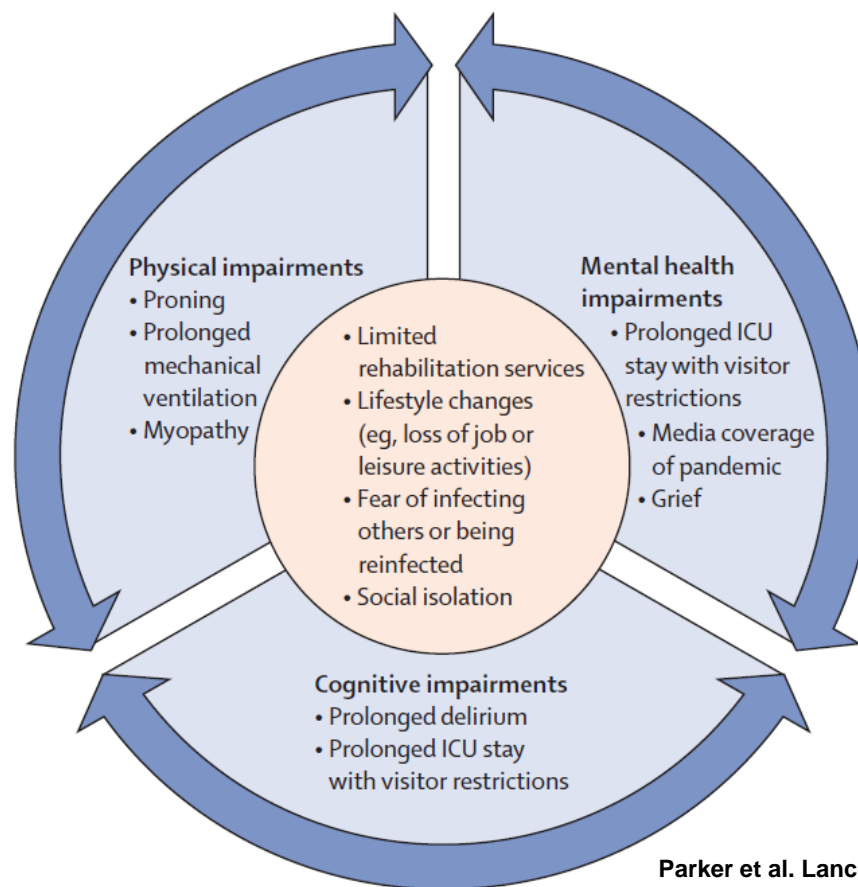
Table 3. Ability to Exercise and Return to Work and Health-Related Quality of Life among Patients with the Acute Respiratory Distress Syndrome during the First 12 Months after Discharge from the ICU.

Outcome	3 Months	6 Months	12 Months
Distance walked in 6 min			
No. evaluated	80*	78†	81‡
Median — m	281	396	422
Interquartile range — m	55–454	244–500	277–510
Percentage of predicted value§	49	64	66
Returned to work — no./total no. (%)¶	13/83 (16)	26/82 (32)	40/82 (49)‖
Returned to original work — no./total no. (%)	10/13 (77)	23/26 (88)	31/40 (78)

6MWD improved over 1 year, still 2/3 of expected for age

- **muscle wasting & weakness**, foot drop, joint immobility

Post Intensive Care Syndrome in the COVID 19 Pandemic



1-year outcomes in hospital survivors with COVID-19: a longitudinal cohort study

Lancet 2021; 398: 747-58

Lixue Huang*, Qun Yao*, Xiaoying Gu*, Qiongya Wang*, Lili Ren*, Yeming Wang*, Ping Hu*, Li Guo*, Min Liu, Jiuyang Xu, Xueyang Zhang, Yali Qu, Yanqing Fan, Xia Li, Caihong Li, Ting Yu, Jiaan Xia, Ming Wei, Li Chen, Yanping Li, Fan Xiao, Dan Liu, Jianwei Wang†, Xianguang Wang†, Bin Cao†

- **N=1276 – 1 year f/u** (54 admitted to ICU)
- **1265 (49%) ≥1 symptom**
 - most common fatigue (20%)
- **Mental Health:** Anxiety/depression (EQ5D) 26% (23% at 6m)
- **Physical function:** 6MWT – no change from 6m

Compared with matched controls, greater proportion of COVID-19 survivors had dyspnea, decreased mobility, pain, anxiety or depression

Physical Impairments in COVID ICU survivors

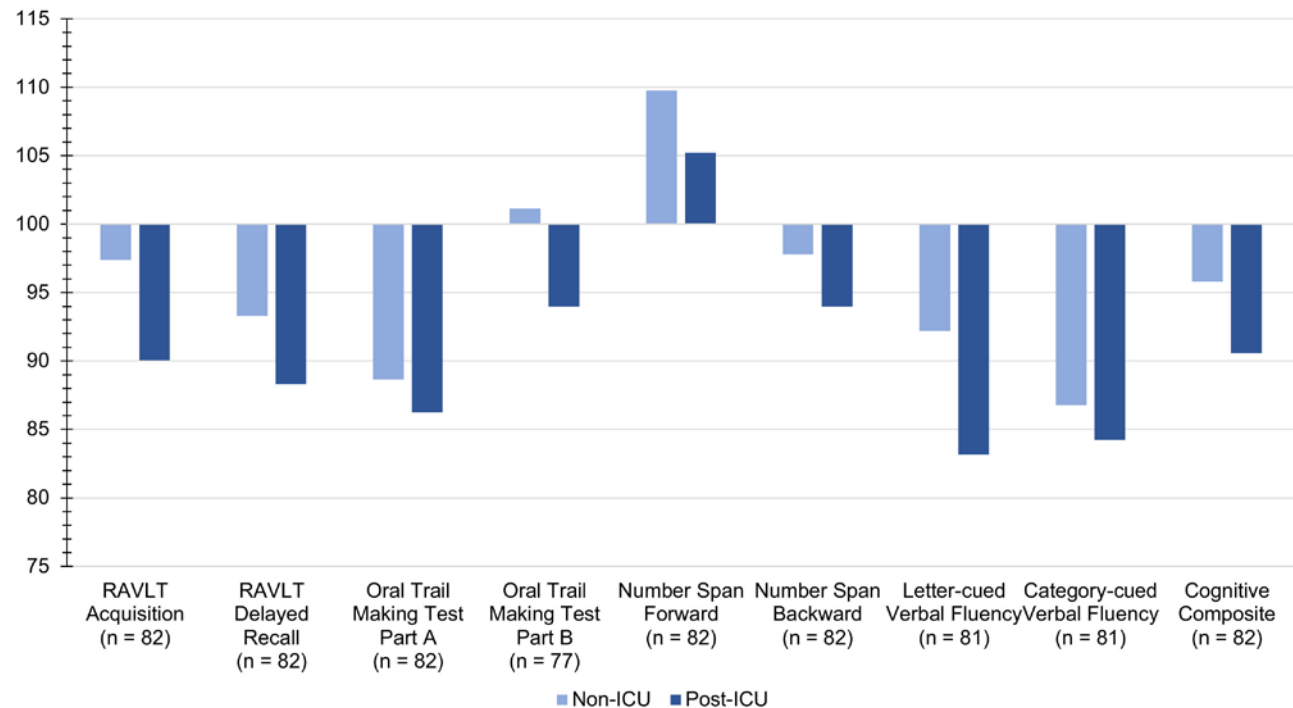
- Neuromuscular Function
 - Risk : Prolonged mechanical ventilation, paralysis and proning
 - Shoulder subluxation
 - Brachial plexus injury
 - Peripheral nerve Injury
 - Joint contractures
 - At ACIR admission (Wietz et al)
 - 72% weakness (<80% expected)
 - 13% Drop Foot
 - 23% contracture

Physical Impairments in COVID ICU survivors

- Dysphagia
 - Risk : Prolonged intubation
 - >40% of post COVID ICU patients w feeding tube or adapted consistency
 - >6 month recovery
- Pulmonary Function
 - 72% require supplemental oxygen

Cognitive Impairments

- Cognitive deficits in 69% at 4 months
 - Oral processing speed
 - Verbal fluency
 - Learning and Memory
 - Executive functioning
 - Working memory



Mental Health Impairments

- 81% had Mildly elevated score across measures of psychiatric distress and functional decline
- Mildly elevated PHQ-9 or GAD-7 were reported by 70%
 - 27% reporting moderate to severe elevations
 - 69% of patients reported mild cognitive functional declines
 - 13% reporting moderate functional declines
- 25% symptomatic levels of trauma-related distress on the Impact of Events Scale-6 (PTSD)

Summary

- Post ICU Syndrome (PICS) is associated with physical, cognitive and mental health impairments.
- Functional impairments may lead to long term disability, with more than half the patients unable to return to work at the 12 month mark.
- Post ICU Long COVID patients have additional factors that may increase the risk of impairments, activity limitation and participation restrictions, concerning for higher risk of long term disability.

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