réanimation 2023
PARIS 14-16 JUIN
Palais des Congrès de Paris
Porte Maillot

# RAAC et réa, une contradiction?

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srlf
SOCIÉTÉ
DE RÉANIMATION
DE LANGUE FRANÇAISE

# Déclaration de liens

**Mon intervention ne présente aucun conflit d'intérêt**

# Récupération améliorée après chirurgie

Organisation spécifique des soins selon un «**chemin clinique**»

**Informer** le patient et le former à la démarche

**Anticiper l'organisation** des soins et la sortie du patient

**Réduire** les conséquences du **stress chirurgical**

**Contrôler la douleur** dans toutes les situations

Favoriser et stimuler **l'autonomie** des patients

# Récupération améliorée après chirurgie

## En réanimation ?

Organisation spécifique des soins selon un «**chemin clinique**»

**Informer** le p[illegible] et le f[illegible] à la démarche

**Anticiper l'org[illegible]** et la sortie du pati[illegible]

**Réduire** les co[illegible] **chirurgical**

**Contrôler la douleur** dans toutes les situations

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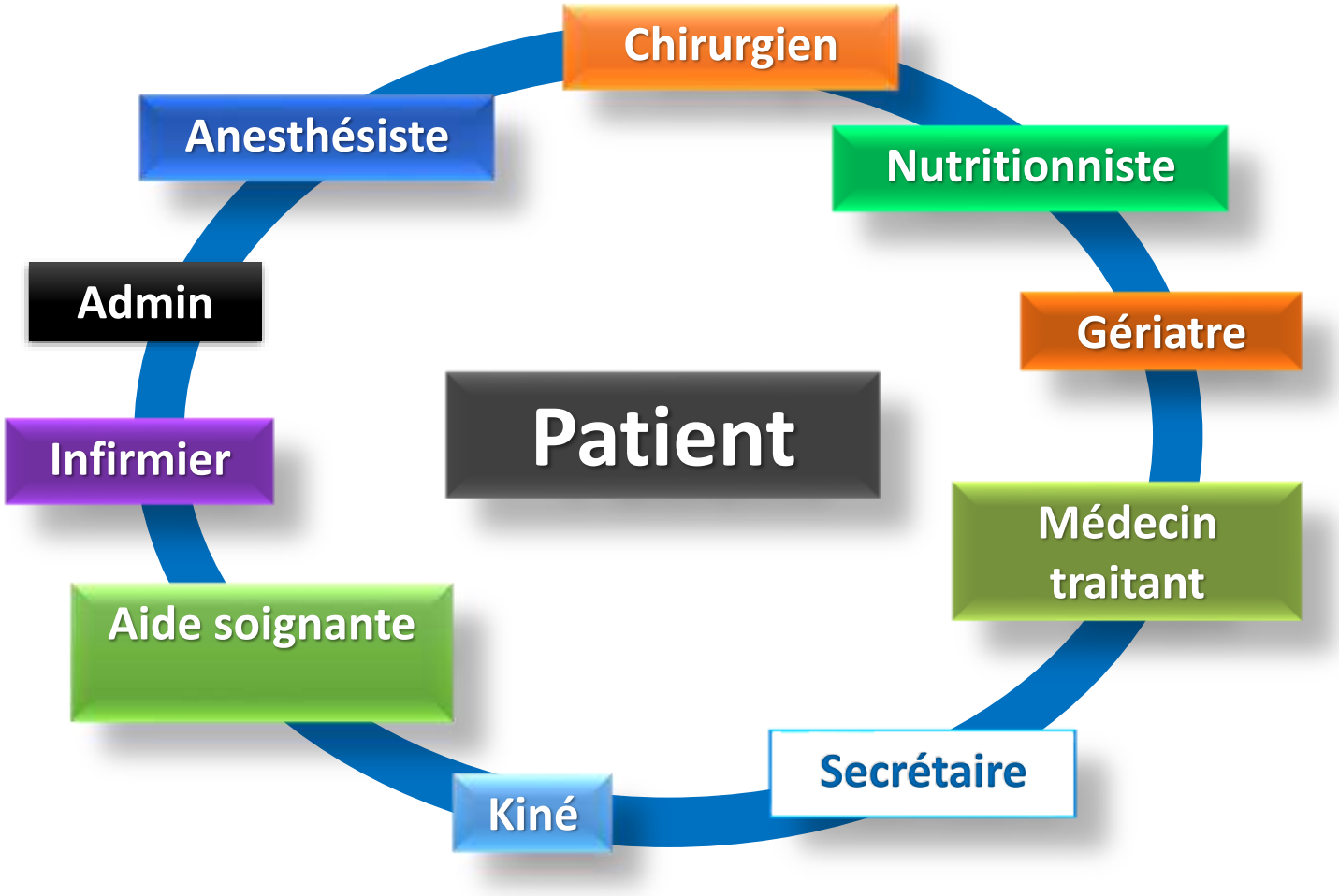
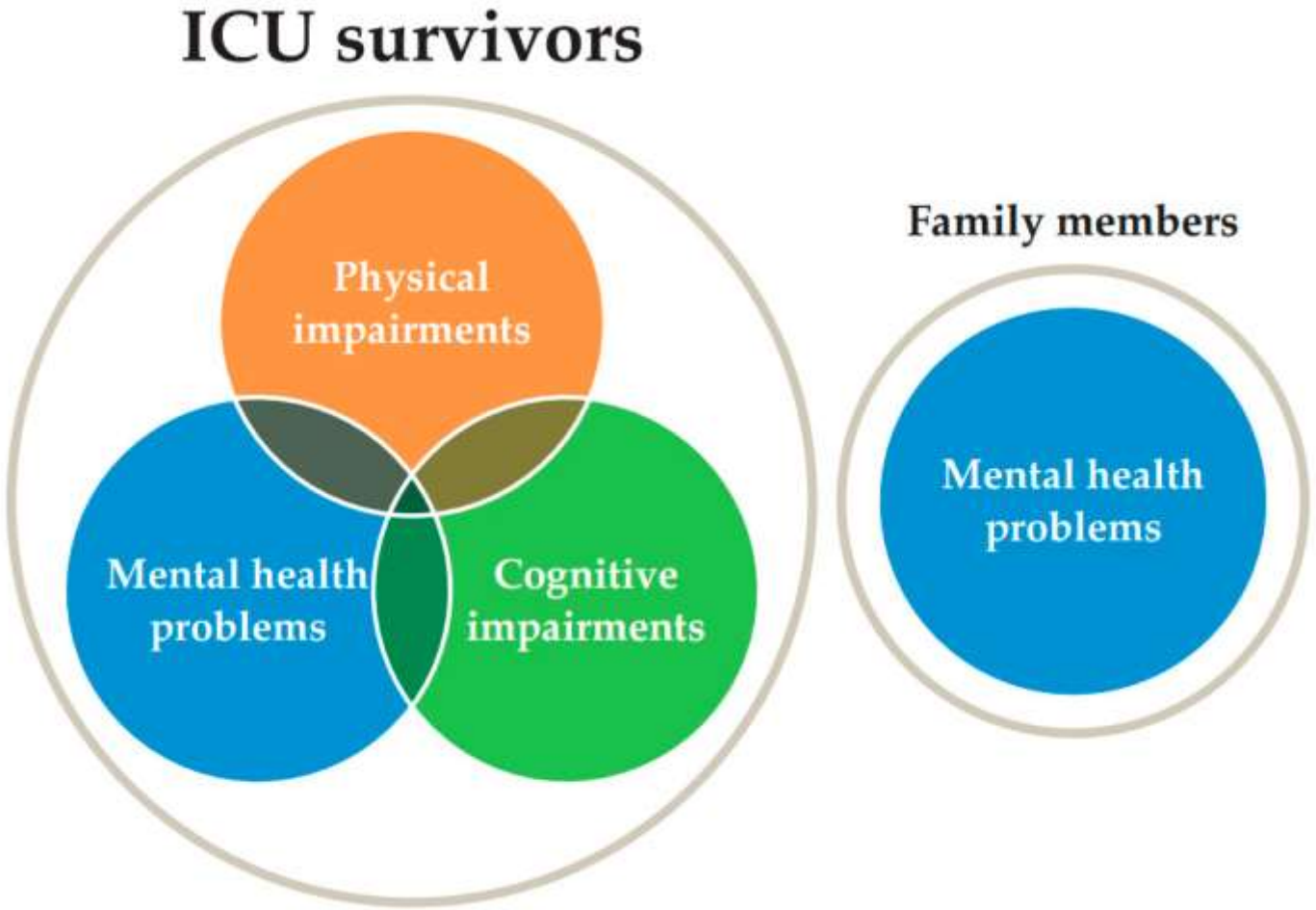
# Récupération améliorée après chirurgie




Approche **multidisciplinaire** de prise en charge **globale**

# Post Intensive Care Syndrome (PICS)

**« Apparition ou aggravation d'une ou de plusieurs déficiences physiques, cognitives et/ou mentales apparues après le séjour en réa et persistant après la sortie de l'hôpital »**

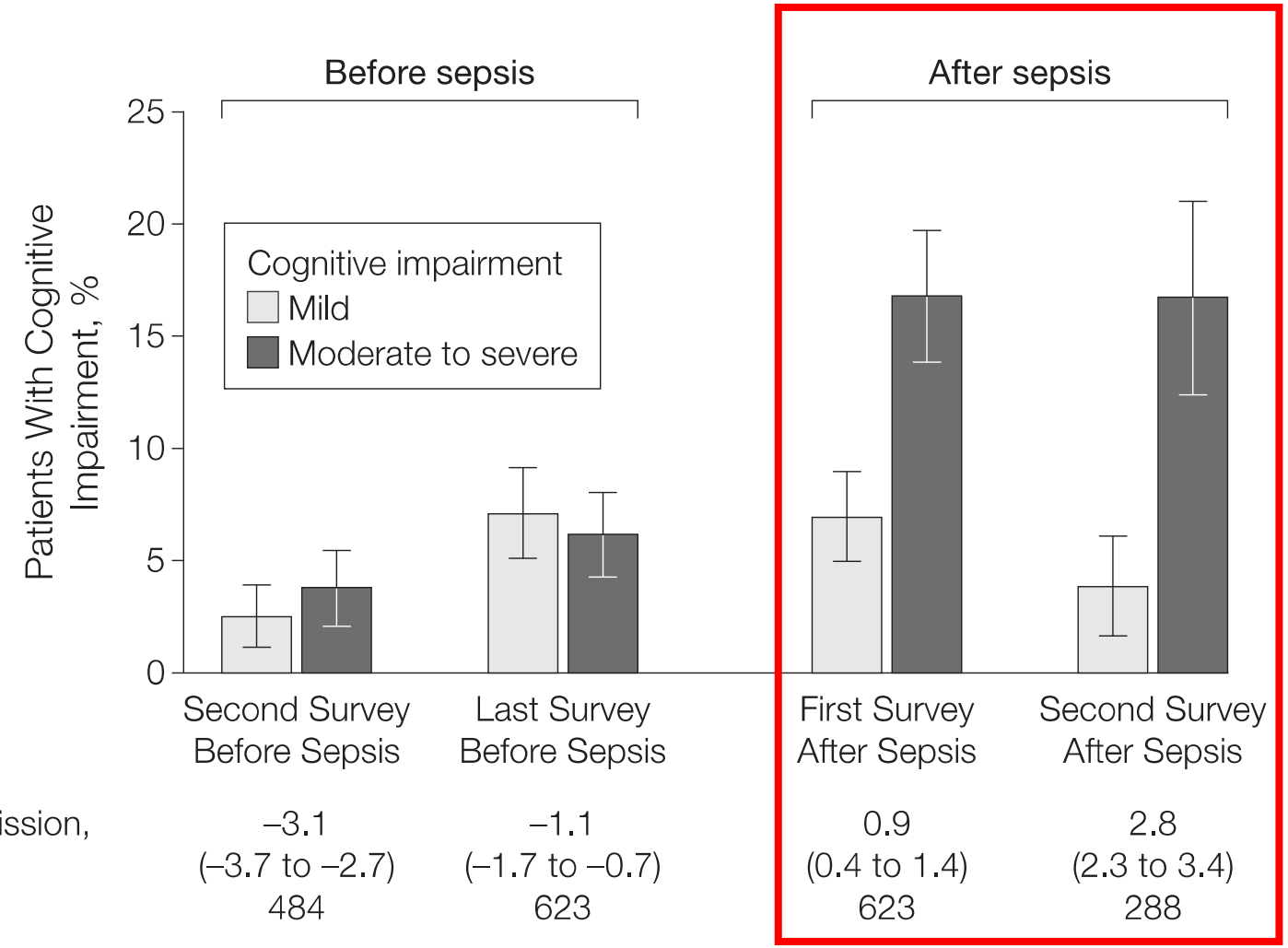



*J Clin Med. 2021 Aug 28;10(17):3870*

# Post Intensive Care Syndrome (PICS)

## Long-term Cognitive Impairment and Functional Disability Among Survivors of Severe Sepsis

**Dans une population âgée, le sepsis est associé à de nouvelles déficiences cognitives et incapacités fonctionnelles substantielles et persistantes chez les survivants**




*JAMA . 2010 Oct 27;304(16):1787-94*

# Post Intensive Care Syndrome (PICS)

## Fatigue Symptoms During the First Year Following ARDS

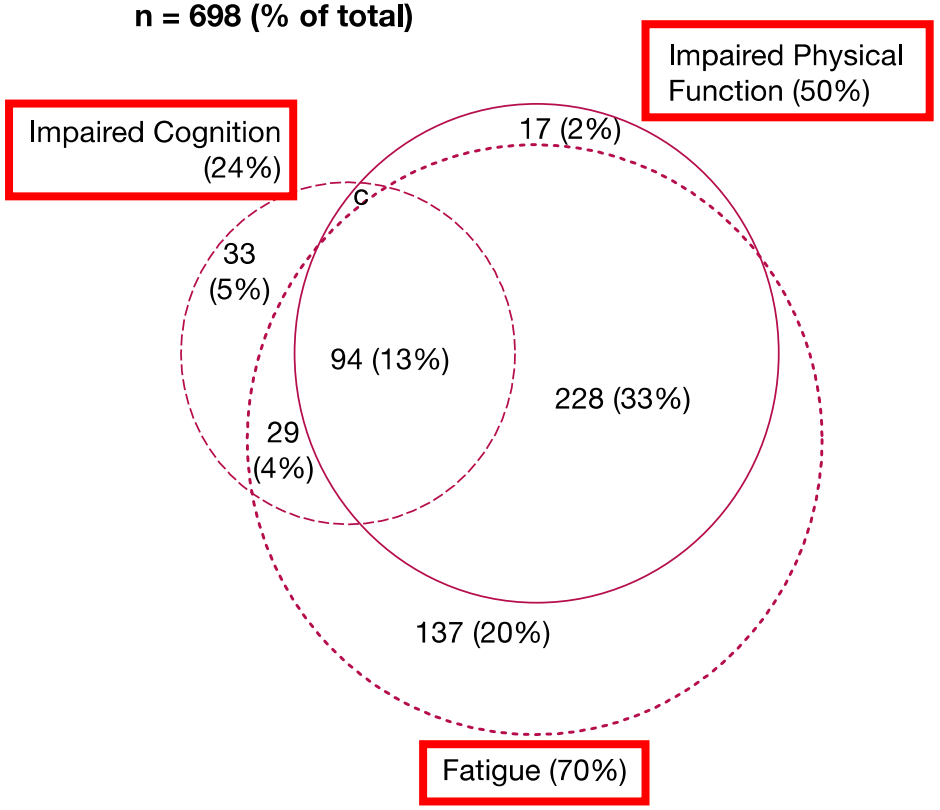
Check for updates

CHEST

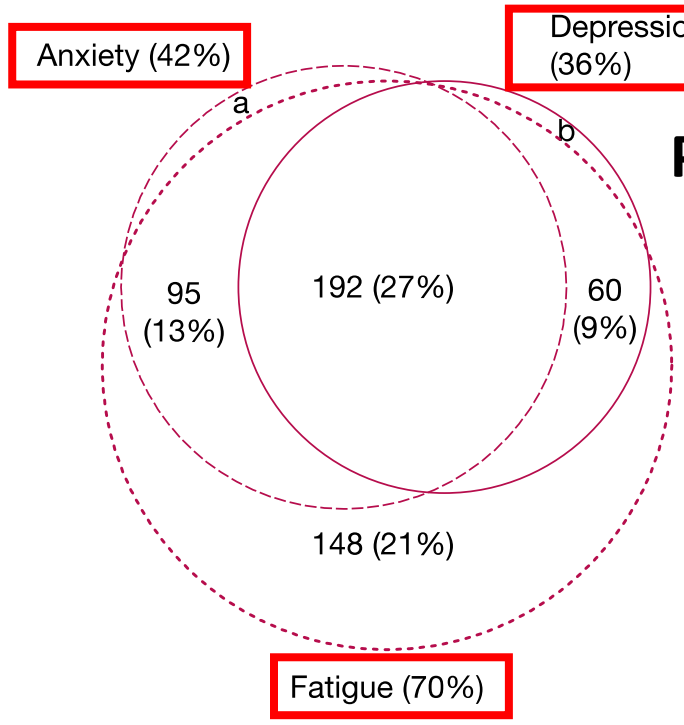
*Karin J. Neufeld, MD, MPH; Jeannie-Marie S. Leoutsakos, PhD, MHS; Haijuan Yan, PhD; Shihong Lin, MS; Jeffrey S. Zabinski, MD; Victor D. Dinglas, MPH; Megan M. Hosey, PhD; Ann M. Parker, MD; Ramona O. Hopkins, PhD; and Dale M. Needham, MD, PhD*

**Les déficiences physiques et mentales sont étroitement associées**

**n = 698 (% of total)**




**n = 705 (% of total)**




**PTSD**

*Chest. 2020 Sep;158(3):999-1007*

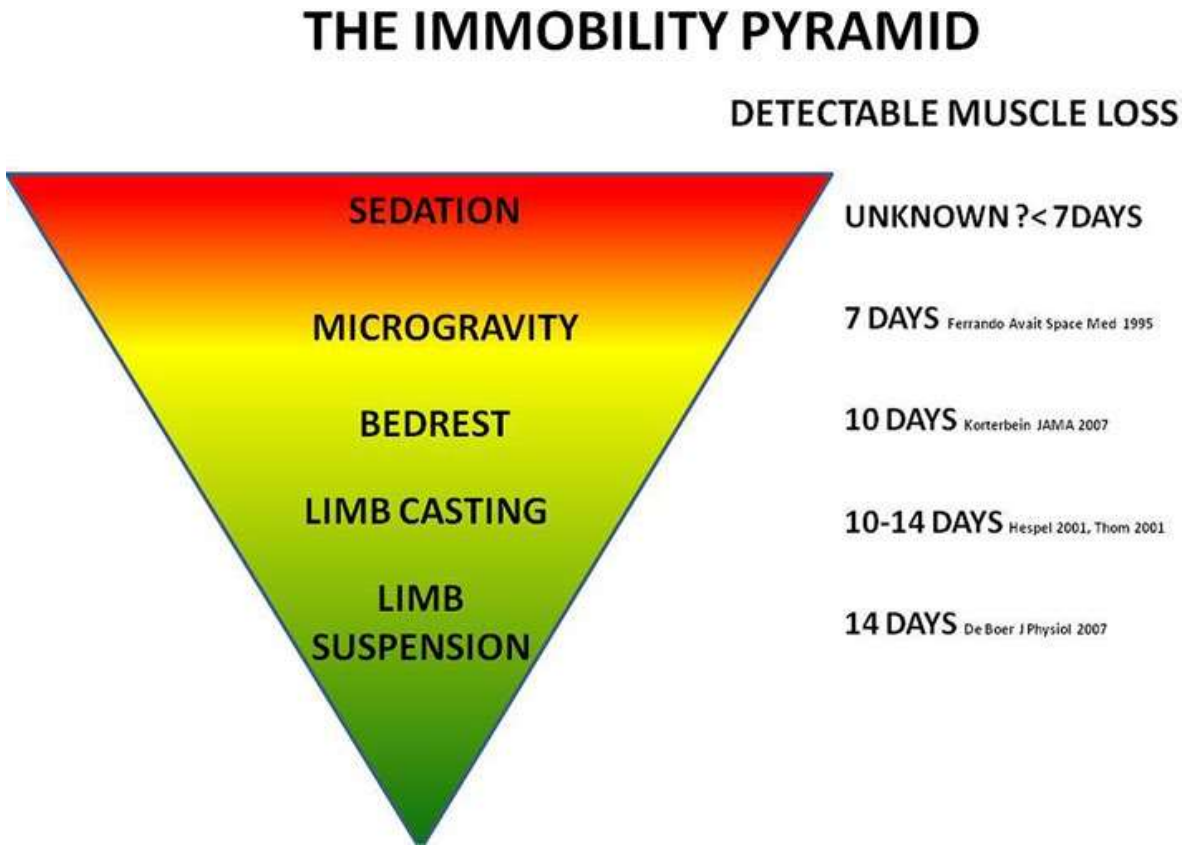
# Mobilisation précoce en réanimation

## The impact of extended bed rest on the musculoskeletal system in the critical care environment

Selina M. Parry[1*] and Zudin A. Puthucheary[2,3]

Extreme Physiology & Medicine

Réductions de la **masse musculaire et de la densité osseuse**, en parallèle, des altérations des autres systèmes du corps humain qui apparaissent **dès les premiers jours**




*Extrem Physiol Med. 2015 Oct 9;4:16*

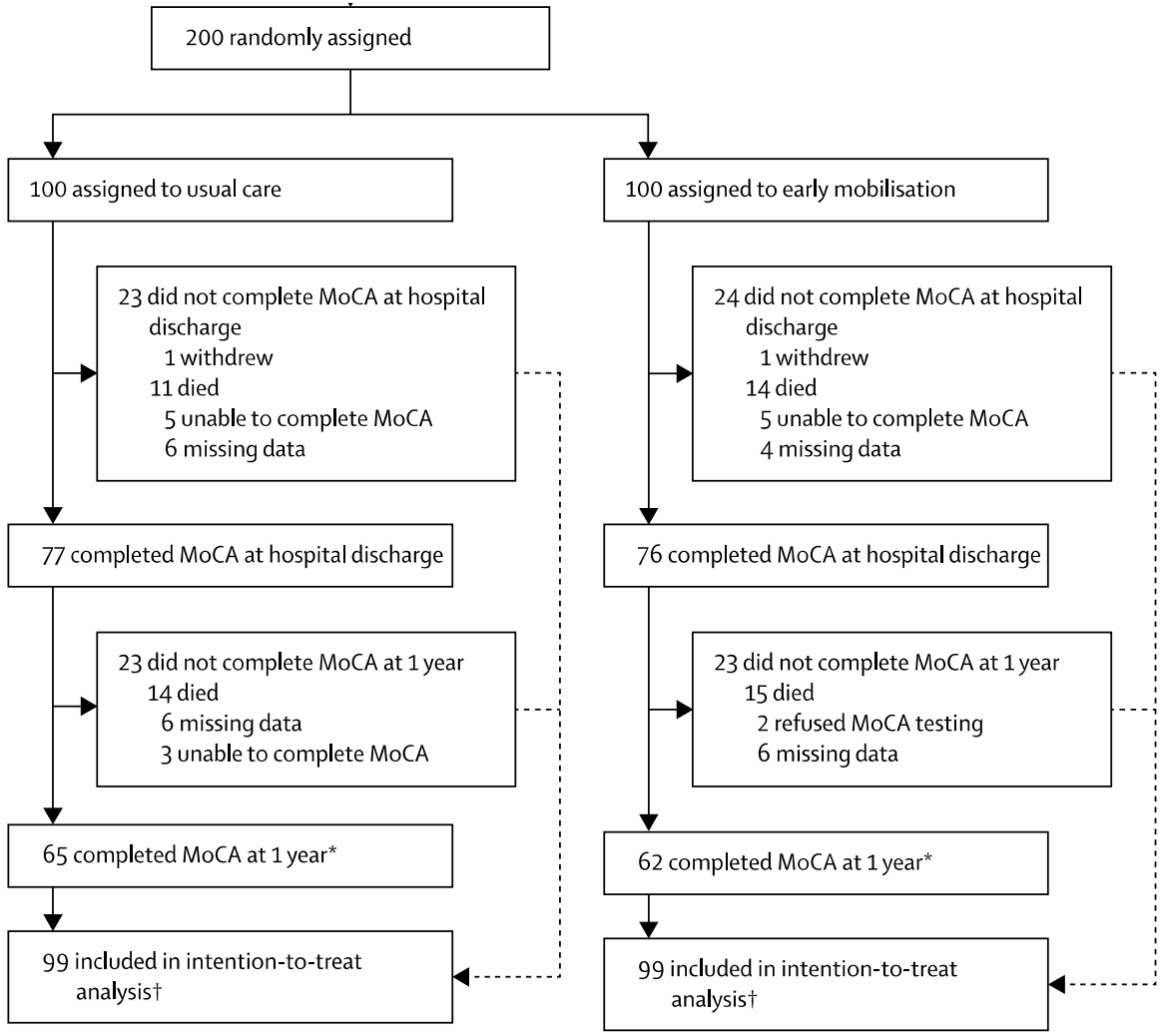
# Mobilisation précoce en réanimation

**Effect of early mobilisation on long-term cognitive impairment in critical illness in the USA: a randomised controlled trial**

*Bhakti K Patel, Krysta S Wolfe, Shruti B Patel, Karen C Dugan, Cheryl L Esbrook, Amy J Pawlik, Megan Stulberg, Crystal Kemple, Megan Teele, Erin Zeleny, Donald Hedeker, Anne S Pohlman, Vineet M Arora, Jesse B Hall, John P Kress*

Single-centre, parallel, randomised controlled trial

- **Au cours des 96 premières heures de ventilation mécanique**
- **Patients adultes (âgés de ≥18 ans) sans déficit fonctionnel et ventilés mécaniquement pour une durée > 24h**




*Lancet Respir Med . 2023 Jun;11(6):563-572*

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| | Usual care group (n=99) | Intervention group (n=99) |
|---|---|---|
| Age, years | 54·5 (41·9–64·7) | 57·9 (42·3–66·8) |
| Sex | | |
| Female | 44 (44%) | 41 (41%) |
| Male | 55 (56%) | 58 (59%) |
| Race | | |
| African American | 72 (73%) | 68 (69%) |
| White, non-Hispanic | 21 (21%) | 26 (26%) |
| White, Hispanic | 4 (4%) | 4 (4%) |
| Asian | 2 (2%) | 1 (1%) |
| Barthel Index Score | 100 (100–100) | 100 (100–100) |
| BMI, kg/m² | 29·8 (24·2–35·2) | 28·2 (23·7–33·1) |
| Level of education | | |
| High school education or higher | 91 (92%) | 91 (92%) |
| Less than high school education | 8 (7%) | 8 (7%) |
| APACHE II score | 23 (16–27) | 23 (18–29) |

| | Usual care group (n=99) | Intervention group (n=99) |
|---|---|---|
| Sepsis* | 56 (57%) | 63 (64%) |
| Diabetes | 26 (26%) | 23 (23%) |
| Primary diagnosis for ICU admission | | |
| Acute hypoxaemic respiratory failure | 35 (35%) | 44 (44%) |
| Acute ventilatory failure | 24 (24%) | 17 (17%) |
| Threatened airway | 21 (21%) | 19 (19%) |
| Sepsis* | 12 (12%) | 14 (14%) |
| Liver failure | 3 (3%) | 1 (1%) |
| Gastrointestinal haemorrhage | 1 (1%) | 2 (2%) |
| Other | 3 (3%) | 2 (2%) |

*Lancet Respir Med . 2023 Jun;11(6):563-572.*

# Mobilisation précoce en réanimation

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| | Usual care group (n=99) | Intervention group (n=99) | p value |
|---|---|---|---|
| Time from intubation to first PT or OT session (days) | 4·7 (3·3–6·8) | 1·1 (0·8–2·0) | <0·0001 |
| Number of daily therapy sessions | | | |
| Mechanical ventilation | 0 (0–0) | 2 (1–3) | <0·0001 |
| ICU admission | 0 (0–1) | 4 (2–6) | <0·001 |
| During hospitalisation | 2 (1–4) | 5 (3–9) | <0·0001 |
| Delirium duration in ICU (days) | 1 (0–3) | 0 (0–2) | 0·0050 |
| Proportion of ICU days in delirium | 25% (0–55·6) | 0% (0–28·6) | 0·0011 |
| Coma duration in ICU (days) | 0 (0–1) | 0 (0–0) | 0·62 |
| Proportion of ICU days in coma | 0% (0–6·3) | 0% (0–0) | 0·67 |
| Sedation and analgesia | | | |
| Patients with propofol infusion | 71 (72%) | 69 (70%) | 0·75 |
| Propofol dose, mg/day | 1872·4 (915·2–2803·0) | 1259·9 (550·1–2615·0) | 0·093 |
| Patients with dexmedetomidine infusion | 48 (49%) | 48 (49%) | 1·00 |
| Dexmedetomidine dose, µg per day | 417·8 (99·9–1452·1) | 441·7 (221·9–1030·3) | 0·97 |
| Patients with benzodiazepine infusion | 9 (9%) | 12 (12%) | 0·49 |
| Benzodiazepine dose, mg per day | 21·6 (7·8–39·9) | 22·3 (8·1–38·1) | 1·00 |
| Patients with opiate infusion | 84 (85%) | 77 (78%) | 0·20 |
| Fentanyl dose, µg per day | 1647·2 (652·2–2448·2) | 1084·1 (531·1–2404·1) | 0·32 |
| Ventilator free days* | 24·6 (20·8–26·1) | 25·2 (22·9–26·4) | 0·18 |
| Duration of mechanical ventilation (days) | 3·4 (1·9–6·0) | 2·7 (1·6–4·5) | 0·11 |
| ICU length of stay (days) | 5·6 (2·9–9·8) | 4·7 (3·0–8·9) | 0·51 |
| Hospital length of stay (days) | 9·5 (6·0–17·3) | 9·7 (5·9–16·8) | 0·70 |
| Discharge destination | | | |
| Death | 11 (11%) | 14 (14%) | .. |
| Hospice | 2 (2%) | 2 (2%) | .. |
| Outside hospital | 4 (4%) | 1 (1%) | .. |
| Long-term acute care | 7 (7%) | 4 (4%) | .. |
| Subacute rehabilitation | 10 (10%) | 4 (4%) | .. |
| Acute rehabilitation | 12 (12%) | 12 (12) | .. |
| Home with outpatient therapy | 17 (17%) | 11 (11%) | .. |
| Home | 36 (36%) | 51 (52%) | 0·032† |

Data are median (IQR) or n (%), unless otherwise stated. ICU=intensive care unit. OT=occupational therapy. PT=physical therapy. *Days 1–28. †Home discharge without need for services versus all other discharge possibilities.

*Lancet Respir Med . 2023 Jun;11(6):563-572.*

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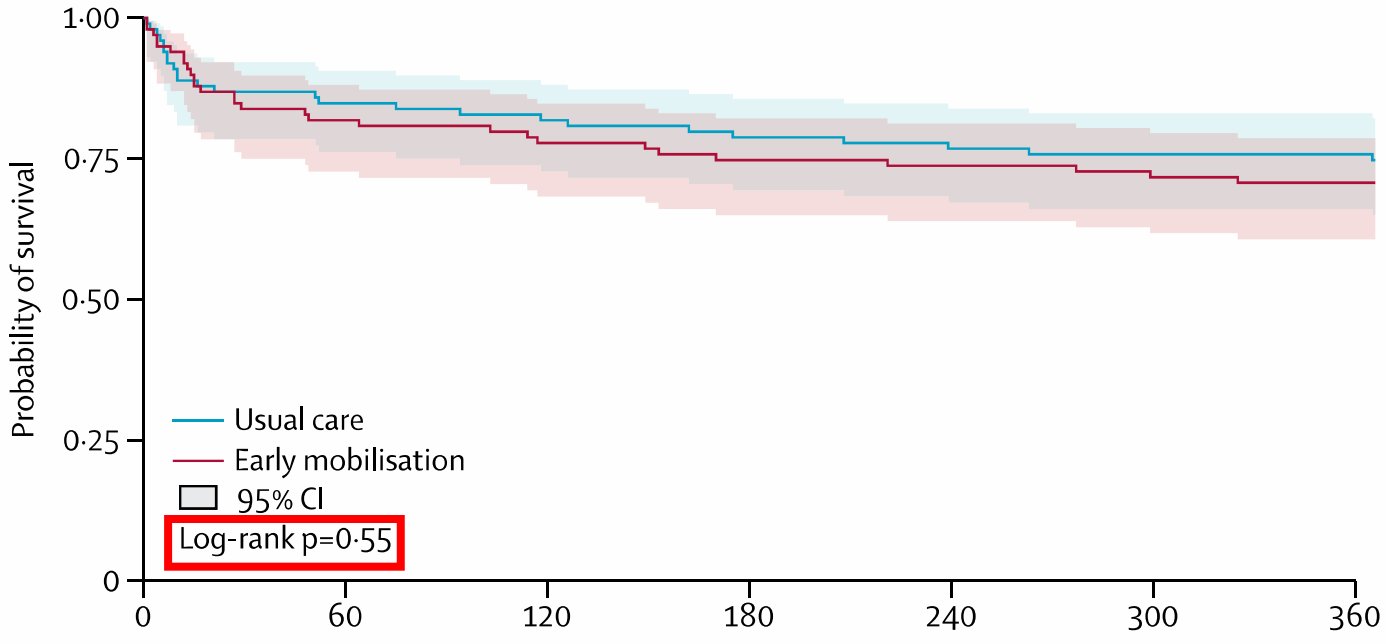


**Number at risk**

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Usual care | 99 | 84 | 81 | 78 | 76 | 75 | 74 |
| Early mobilisation | 99 | 81 | 77 | 74 | 73 | 71 | 70 |

*Lancet Respir Med . 2023 Jun;11(6):563-572*

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| | Usual care group (n=99) | Intervention group (n=99) | Absolute difference | p value |
|---|---|---|---|---|
| **Primary outcome** | | | | |
| Cognitive impairment at 1 year | 43 (43%) | 24 (24%) | –19·2%(–32·1 to –6.3) | 0·0043 |
| MoCA* score at 1 year | 23 (21–26) | 26 (24–28) | 3 (1 to 4) | 0·0001 |
| **Hospital discharge outcome** | | | | |
| Cognitive impairment | 68 (69%) | 53 (54%) | –15·2% (–28·6 to –1·7) | 0·029 |
| MoCA score | 20 (16–23) | 23 (19–27) | 3 (2 to 5) | 0·0004 |
| ICU-acquired weakness† | 38 (38%) | 21 (21%) | –17·1% (–29·7 to –4·7) | 0·0083 |
| Total MRC score | 49 (44–56) | 56 (48–60) | 7 (1 to 9) | 0·0017 |
| Functional independence | 46 (47%) | 66 (67%) | 20·2% (6·7 to 33·7) | 0·0041 |
| Quality of life | | | | |
| SF-36 physical component score | 39·6 (31·8–48·5) | 45·7 (29·7–55·6) | 4·1 (–0·53 to 8·4) | 0·081 |
| Impaired physical health‡ | 39 (39%) | 29 (29%) | –10·1% (–23·3 to 3·1) | 0·13 |
| SF-36 mental component score | 47·6 (38·3–55·3) | 53·3 (44·3–57·2) | 5·7 (–0·16 to 6·9) | 0·061 |
| Impaired mental health | 22 (22%) | 13 (13%) | –9·1% (–19·6% to 1·5) | 0·094 |

| | Usual care group (n=99) | Intervention group (n=99) | Absolute difference | p value |
|---|---|---|---|---|
| **1-year follow-up** | | | | |
| ICU-acquired weakness | 14 (14%) | 0 | –14·1% (–21·0 to –7·3) | 0·0001 |
| Total MRC score | 56 (49–60) | 58 (56–60) | 2 (0 to 4) | 0·0073 |
| Functional independence | 61 (62%) | 64 (65%) | 3·0% (–10·4 to 16·5) | 0·66 |
| Quality of life | | | | |
| SF-36 physical component score | 41·1 (31·8–49·4) | 52·4 (45·3–56·8) | 11·3 (6·3 to 13·8) | <0·0001 |
| Impaired physical health | 30 (30%) | 8 (8%) | –22·2% (–32·7 to –11·7) | 0·0001 |
| SF-36 mental component score | 55·2 (49·5–59·7) | 55·9 (50·2–58·9) | 0·7 (–2·7 to 2·3) | 0·98 |
| Impaired mental health | 9 (9%) | 7 (7%) | –2·0% (–9·6 to 5·6) | 0·60 |
| Institution-free days | 335 (121–356) | 338 (111–355) | 3 (–8 to 5) | 0·88 |

Data are n (%) or median (IQR), unless otherwise specified. ICU=intensive care unit. MoCA=Montreal Cognitive Assessment. MRC=Medical Research Council. SF-36=Medical Outcomes Study Short Form-36 *MoCA score of less than 26 defined cognitive impairment. †ICU-acquired weakness defined as a combined MRC score of less than 48. ‡At least 1SD below population norms (ie, <40).

*Lancet Respir Med . 2023 Jun;11(6):563-572*

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| | Usual care group (n=99) | Intervention group (n=99) | p value |
|---|---|---|---|
| At least one AE due to mobilisation | 0 (0%) | 6 (6%) | 0·029 |
| Type of AE | | | |
| Tachycardia | 0 (0%) | 2 (2%) | 1·00 |
| Hypotension | 0 (0%) | 1 (1%) | 1·00 |
| Tachypnoea | 0 (0%) | 1 (1%) | 1·00 |
| Oxygen desaturation | 0 (0%) | 1 (1%) | 1·00 |
| Arterial catheter removal | 0 (0%) | 1 (1%) | 1·00 |
| Rectal tube removal | 0 (0%) | 1 (1%) | 1·00 |

Data are n (%). More than one adverse event (AE) occurs in one patient.

*Lancet Respir Med . 2023 Jun;11(6):563-572*

# Mobilisation précoce en réanimation

ORIGINAL ARTICLE

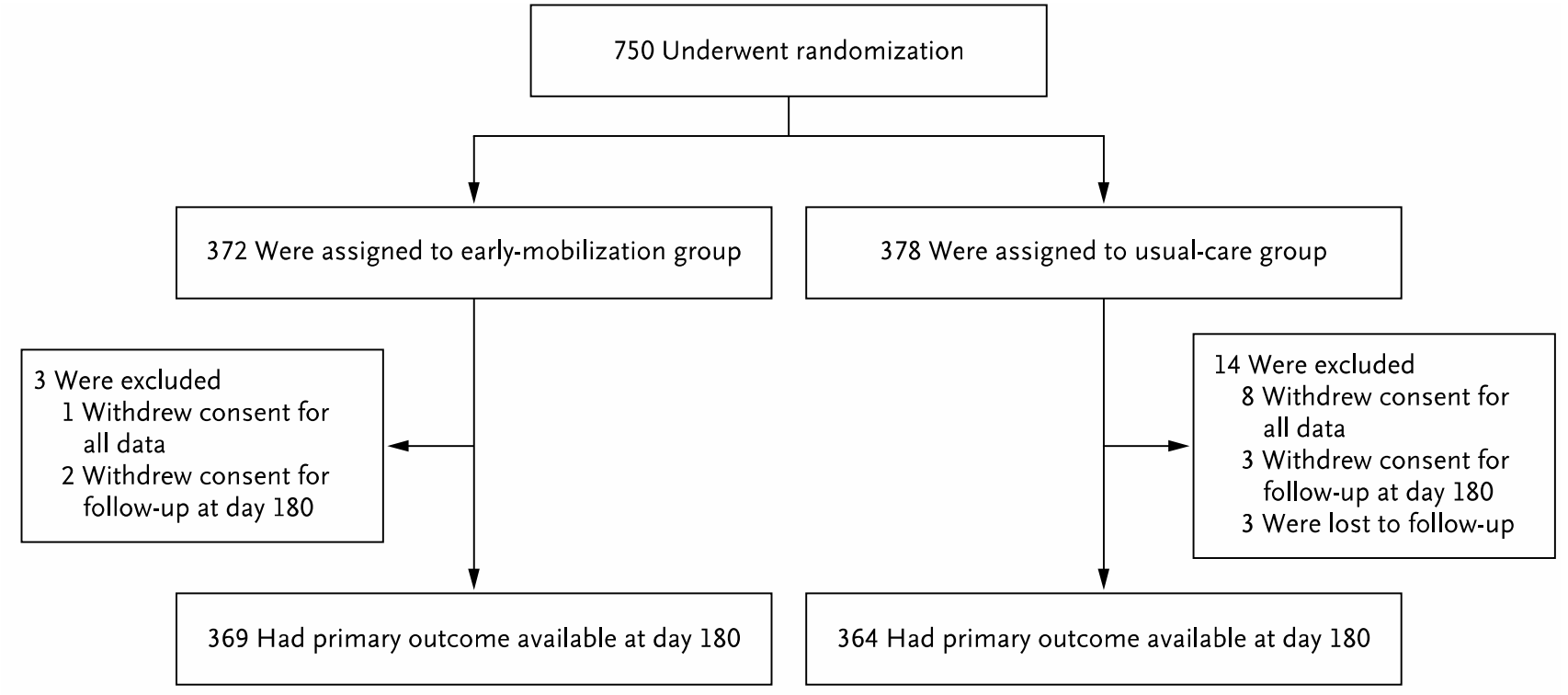
## Early Active Mobilization during Mechanical Ventilation in the ICU

The TEAM Study Investigators and the ANZICS Clinical Trials Group*

**TEAM trial**

**Patients adultes sous ventilation mécanique >24h après randomisation et avec un état suffisamment stable pour rendre la mobilisation potentiellement possible.**

**Minimisation de la sédation et kiné quotidienne**




*N Engl J Med. 2022 Nov 10;387(19):1747-1758.*

# Mobilisation précoce en réanimation

| Characteristic | Early Mobilization (N = 371) | Usual Care (N = 370) |
|---|---|---|
| Age — yr | 60.5±14.8 | 59.5±15.2 |
| Female sex — no. (%) | 128 (34.5) | 146 (39.5) |
| Body-mass index† | 29.9±7.9 | 30.4±7.8 |
| Frailty and function | | |
| Median score on Clinical Frailty Scale (IQR)‡ | 3 (2 to 4) | 3 (2 to 4) |
| Median score on Functional Comorbidity Index (IQR)§ | 2 (1 to 3) | 2 (1 to 3) |
| Median score on WHODAS 2.0 (IQR)¶ | 10.4 (2.1 to 25.0) | 8.7 (2.1 to 22.7) |
| Highest score on the ICU Mobility Scale in wk before ICU admission‖ | 9.9±0.6 | 9.8±0.7 |
| Median interval from hospital admission to randomization (IQR) — hr | 88.3 (50.5 to 137.0) | 81.6 (48.2 to 147.0) |
| Median interval from ICU admission to randomization (IQR) — hr | 60.1 (35 to 92.3) | 61.3 (33.8 to 96.1) |
| ICU admission type — no. (%) | | |
| Planned ICU admission after elective surgery | 68 (18.3) | 58 (15.7) |
| Unplanned ICU admission | 303 (81.7) | 312 (84.3) |
| Median RASS score at randomization (IQR)** | −3 (−4 to −2) | −3 (−4 to −2) |
| Measurements and interventions at randomization†† | | |
| Positive end-expiratory pressure — cm of water | 8.9±3.0 | 8.8±3.1 |
| $Pao_2$:$FIo_2$ | 226±79.1 | 230±85.2 |
| Receipt of vasopressors by infusion — no. (%) | 228 (61.5) | 231 (62.4) |
| Receipt of renal-replacement therapy — no. (%) | 82 (22.1) | 79 (21.4) |
| APACHE II score‡‡ | 18.2±6.8 | 18±6.9 |
| Diagnosis subgroup — no. (%)§§ | | |
| Sepsis¶¶ | 246 (66.3) | 245 (66.2) |
| Trauma | 15 (4.0) | 14 (3.8) |
| Covid-19 | 7 (1.9) | 10 (2.7) |

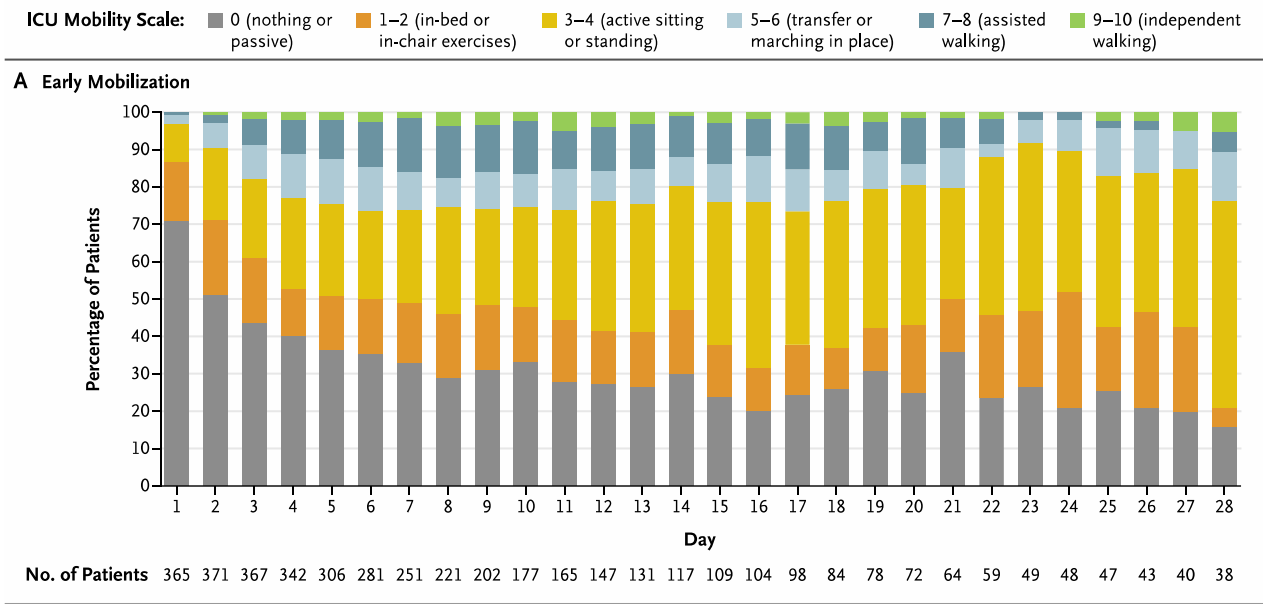
*N Engl J Med. 2022 Nov 10;387(19):1747-1758.*

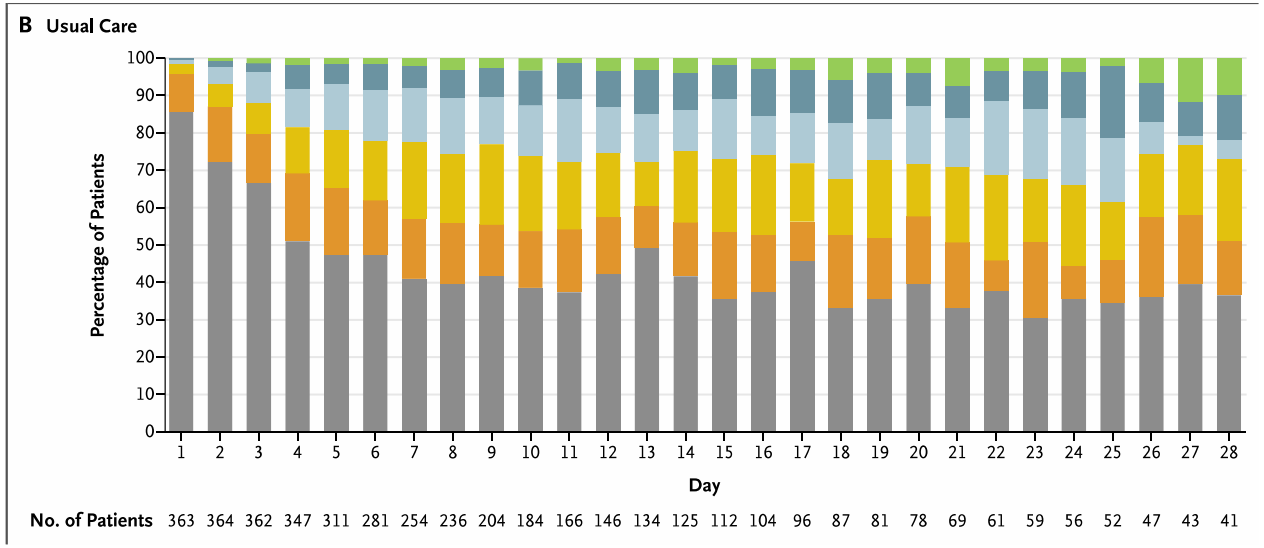
# Mobilisation précoce en réanimation

| Characteristic | Early Mobilization (N = 371) | Usual Care (N = 370) | Between-Group Difference (95% CI)† |
|---|---|---|---|
| Patients who were assessed by a physiotherapist on day of randomization — no./total no. (%) | 320/370 (86.5) | 265/363 (73.0) | 13.5 (6.7 to 20.3) |
| No. of days per patient when physiotherapy assessment occurred | 0.94±0.11 | 0.81±0.24 | 0.14 (0.12 to 0.16) |
| No. of minutes of active mobilization per day | 20.8±14.6 | 8.8±9.0 | 12.0 (10.4 to 13.6) |
| Mobilization milestones‡ | | | |
| IMS 3 or higher | | | |
| Patients — no. (%) | 331 (89.2) | 330 (89.2) | 0 (–4.3 to 4.3) |
| Median no. of days since randomization (IQR) | 3 (1 to 6) | 4 (2 to 7) | –1 (–2.2 to –0.2) |
| IMS 4 or higher | | | |
| Patients — no. (%) | 287 (77.4) | 286 (77.3) | 0.1 (–6.0 to 6.1) |
| Median no. of days since randomization (IQR) | 3 (2 to 7) | 5 (3 to 8) | –2 (–3.4 to –0.6) |
| IMS 7 or higher | | | |
| Patients — no. (%) | 176 (47.4) | 150 (40.5) | 6.9 (–0.2 to 14.0) |
| Median no. of days since randomization (IQR) | 5 (3 to 8) | 7 (4 to 13) | –2 (–3.4 to –0.7) |
| Median peak IMS (IQR) | 6 (4 to 8) | 6 (4 to 8) | 0 (–1 to 1) |

*N Engl J Med. 2022 Nov 10;387(19):1747-1758.*

# Mobilisation précoce en réanimation




**Au total, 77 % des patients des deux groupes étaient capables de se tenir debout après un intervalle médian de 3 jours vs 5 jours, respectivement (différence, -2 jours ; IC à 95 %, -3,4 à -0,6).**

*N Engl J Med. 2022 Nov 10;387(19):1747-1758.*

# Mobilisation précoce en réanimation

| Outcome | Early Mobilization (N = 371) | Usual Care (N = 370) | Difference or Odds Ratio (95% CI)† | P Value |
|---|---|---|---|---|
| **Primary outcome** | | | | |
| Days alive and out of hospital at day 180‡ | | | | |
| Median no. (IQR) | 143 (21 to 161) | 145 (51 to 164) | −2.0 (−10 to 6) | 0.62 |
| **Key secondary outcomes** | | | | |
| Death at day 180 | | | | |
| Patients — no. (%) | 83/369 (22.5) | 71/364 (19.5) | 1.15 (0.81–1.65)§ | |
| Median no. of days since randomization (IQR) | 17 (9 to 41) | 19 (12 to 50) | −2.0 (−12.0 to 8.0) | |
| Median no. of ventilator-free days at day 28 (IQR) | 21 (8 to 25) | 21 (11 to 25) | 0.0 (−1.4 to 1.4) | |
| Median no. of ICU-free days at day 28 (IQR) | 16 (0 to 21) | 17 (3 to 22) | −1.0 (−3.1 to 1.1) | |
| Functional outcomes in survivors at day 180¶ | | | | |
| Score on EQ-5D-5L utility score‖ | 0.7±0.3 | 0.7±0.3 | 0.0 (−0.0 to 0.1) | |
| Score on EQ Visual Analogue Scale** | 70.2±19.7 | 69.0±20.1 | 2.0 (−5.7 to 9.7) | |
| Median score on Barthel Index of ADL (IQR)†† | 100 (100 to 100) | 100 (95 to 100) | 0 | |
| Median score on IADL (IQR)‡‡ | 8.0 (7.0 to 8.0) | 8.0 (6.0 to 8.0) | 0.2 (−0.9 to 1.3) | |
| Median score on WHODAS 2.0 (IQR)§§ | 12.5 (2.1 to 33.3) | 14.6 (4.2 to 38.9) | −1.8 (−6.9 to 3.4) | |

*N Engl J Med. 2022 Nov 10;387(19):1747-1758.*

# Mobilisation précoce en réanimation

| | | | | |
|---|---|---|---|---|
| **Adverse events — no. (%) ¶¶** | | | | |
| Patients with ≥1 adverse event potentially due to mobilization — no. (%) | 34 (9.2) | 15 (4.1) | 2.55 (1.33–4.89)§ | 0.005 |
| Adverse events per patient — no. (%) | | | | 0.02 |
| 0 | 337 (90.8) | 355 (95.9) | | |
| 1 | 19 (5.1) | 11 (3.0) | | |
| 2 | 4 (1.1) | 2 (0.5) | | |
| ≥3 | 11 (3.0) | 2 (0.5) | | |
| Type of adverse events — no. (%)‖‖ | | | | |
| Altered blood pressure | 13 (3.5) | 8 (2.2) | | 0.27 |
| Cardiac arrhythmia | 13 (3.5) | 4 (1.1) | | 0.03 |
| Oxygen desaturation | 8 (2.2) | 1 (0.3) | | 0.02 |
| Pain or agitation | 4 (1.1) | 1 (0.3) | | 0.37 |
| Removal of invasive line | 2 (0.5) | 2 (0.5) | | 1.00 |
| Gastrointestinal | 2 (0.5) | 1 (0.3) | | 1.00 |
| Tachypnea | 3 (0.8) | 0 | | 0.25 |
| Altered neurologic state | 1 (0.3) | 1 (0.3) | | 1.00 |
| Other | 4 (1.1) | 0 | | 0.12 |

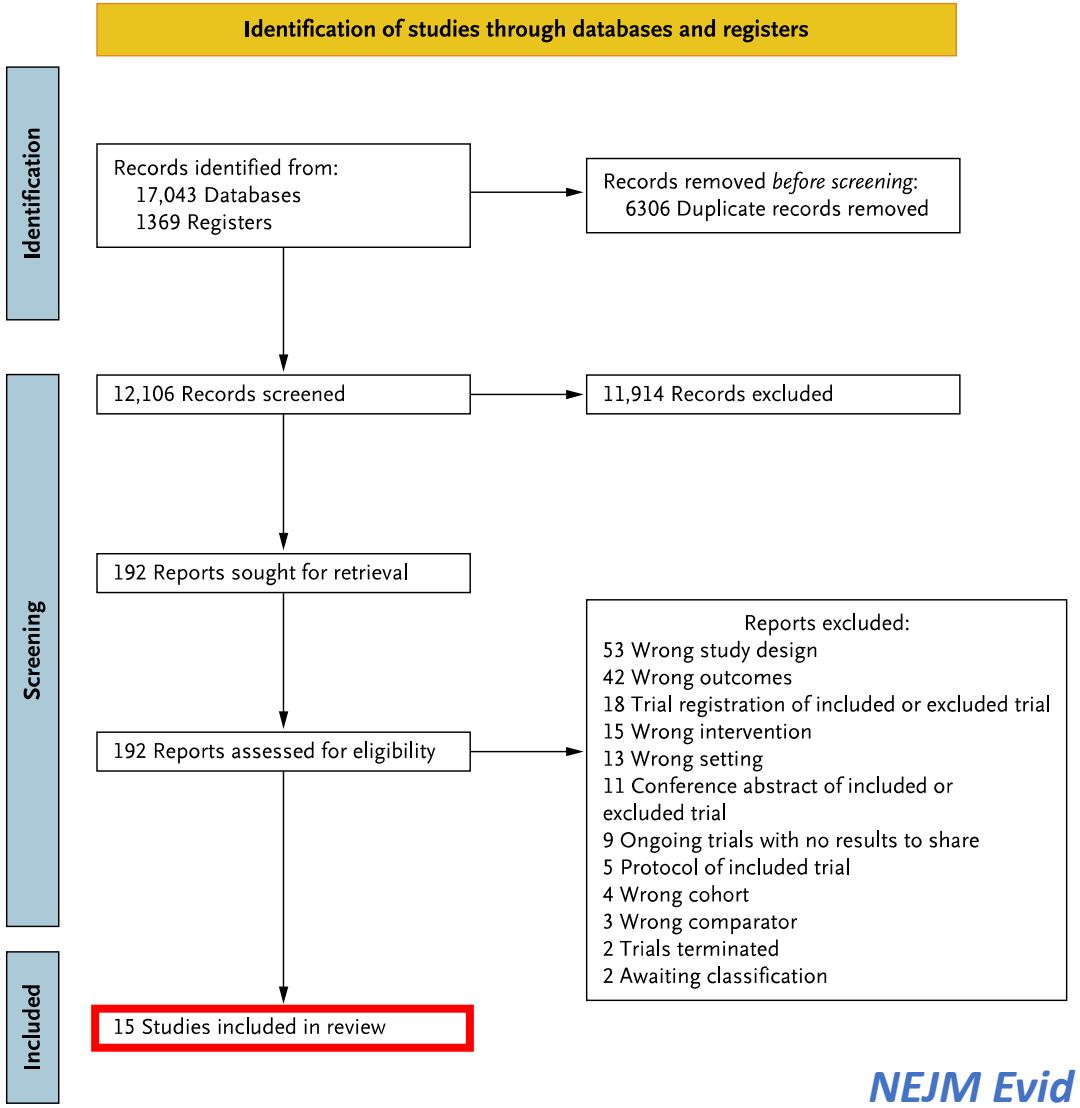
*N Engl J Med. 2022 Nov 10;387(19):1747-1758.*

# Mobilisation précoce en réanimation

## The Effect of Mobilization at 6 Months after Critical Illness — Meta-Analysis

Michelle Paton, M.Phty.,[1,2] Sarah Chan, D.Phty.,[2] Claire J. Tipping, Ph.D.,[3] Anne Stratton, B.Phty.,[3] Ary Serpa Neto, Ph.D.,[1] Rebecca Lane, Ph.D.,[4] Paul J. Young, Ph.D.,[1,5,6,7] Lorena Romero, M.B.I.T.,[8] Carol L. Hodgson, Ph.D.[1,3,7,9]

NEJM Evidence

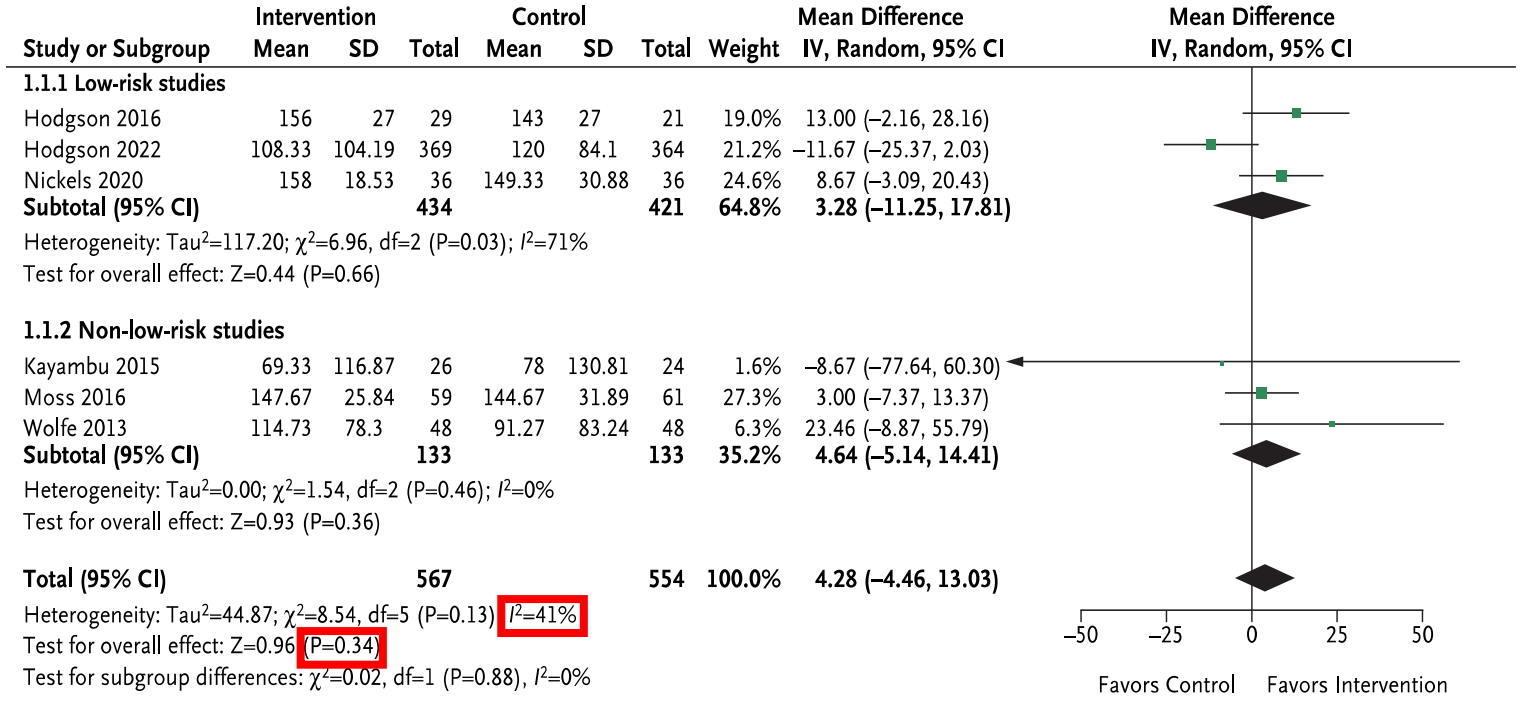



*NEJM Evid 2023;2(2) DOI: 10.1056/EVIDoa22002*

# Mobilisation précoce en réanimation

NEJM Evidence

## Forest Plot Comparison of Days Alive and Out of Hospital to Day 180.




**En utilisant des analyses bayésiennes, la probabilité que l'intervention ait augmenté le nombre de jours en vie et hors de l'hôpital était de 75,1 %.**

*NEJM Evid 2023;2(2) DOI: 10.1056/EVIDoa22002*

# Mobilisation précoce en réanimation

NEJM Evidence

**Table 1. Outcomes Including Sensitivity Analyses.***

| Outcome | Studies | Patients/Events | P | $I^2$ | Effect Measure | | 95% CI |
|---|---|---|---|---|---|---|---|
| Days alive and out of hospital | 6 | 1121 | 0.34 | 41 | MD | 4.28 | −4.46 to 13.03 |
| Low-risk studies only | 3 | 855 | 0.66 | 71 | MD | 3.28 | −11.25 to 17.81 |
| Mortality | 15 | 2703 | 0.47 | 0 | Risk ratio | 1.05 | 0.92 to 1.19 |
| Low-risk studies only | 8 | 1499 | 0.24 | 0 | Risk ratio | 1.11 | 0.93 to 1.34 |
| Adverse events | 5 | 17,618 | 0.83 | 97 | Risk ratio | 1.13 | 0.37 to 3.43 |
| Low-risk studies only | 4 | 12,269 | 0.06 | 85 | Risk ratio | 1.94 | 0.98 to 3.86 |
| PF measured with PROM | 7 | 1109 | 0.0007 | 0 | SMD | 0.2 | 0.09 to 0.32 |
| Low-risk studies only | 4 | 636 | 0.3 | 33 | SMD | 0.14 | −0.12 to 0.4 |
| PF measured in person | 6 | 454 | 0.11 | 0 | SMD | 0.15 | −0.03 to 0.34 |
| Low-risk studies only | 3 | 182 | 0.32 | 0 | SMD | 0.15 | −0.14 to 0.44 |
| Strength | 5 | 390 | 0.41 | 0 | SMD | 0.08 | −0.12 to 0.28 |
| Low-risk studies only | 3 | 164 | 0.52 | 0 | SMD | −0.1 | −0.41 to 0.21 |
| HRQoL | | | | | | | |
| SF-36 PCS | 8 | 783 | 0.38 | 38 | MD | 1.11 | −1.38 to 3.6 |
| SF-36 MCS | 8 | 783 | 0.57 | 42 | MD | 0.77 | −1.86 to 3.4 |
| Utility scores | 4 | 772 | 0.84 | 0 | SMD | −0.01 | −0.16 to 0.13 |

- **Probabilité de 95,1 % que l'intervention améliore la fonction physique à 6 mois (différence moyenne standardisée, 0,2 ; intervalle de confiance à 95 %, 0,09 à 0,32 ; $I^2$50 %)**

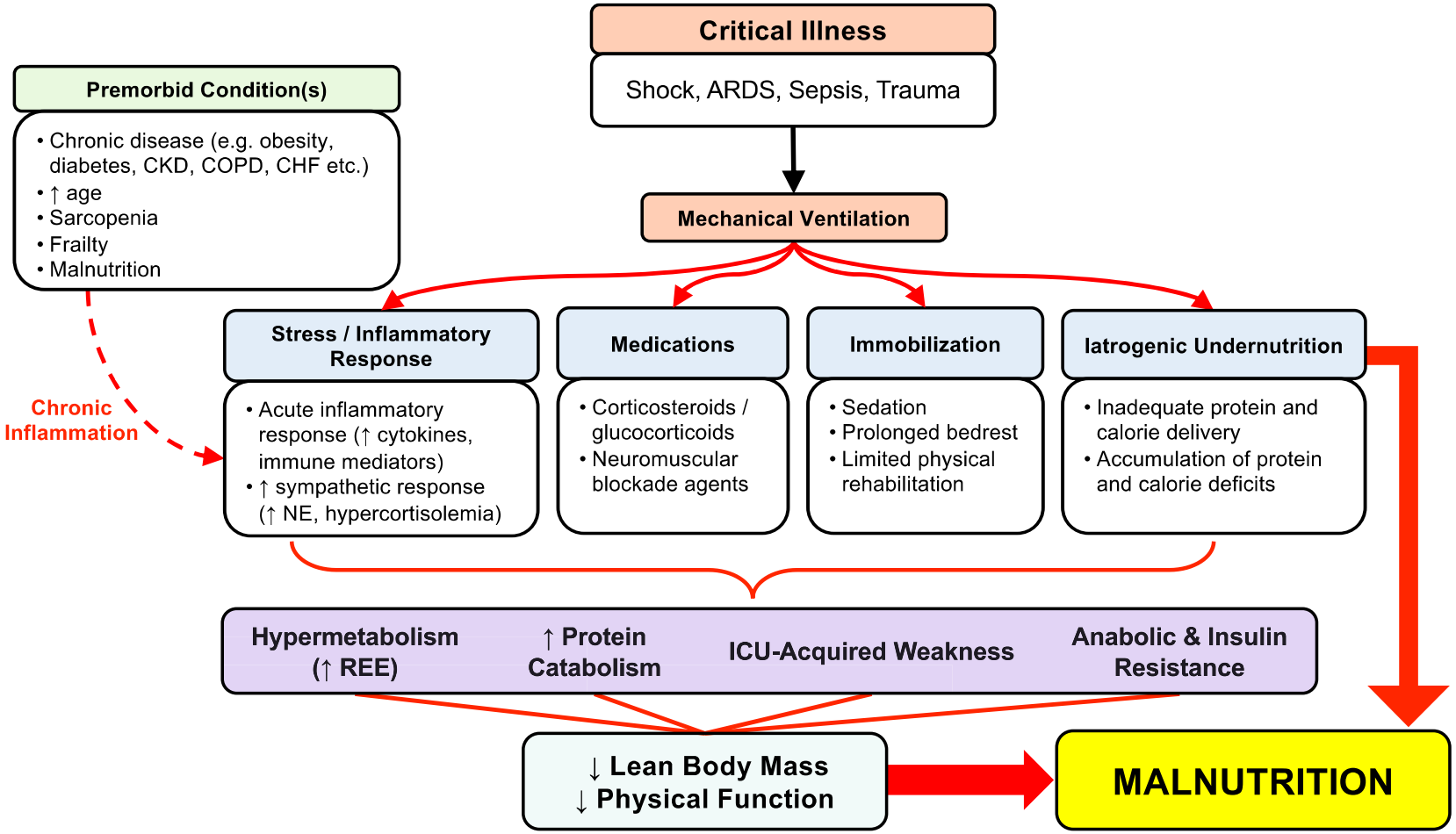
- **Possibilité de 66,4 % d'augmentation des événements indésirables avec la mise en œuvre de la mobilisation active précoce et une probabilité de 72,2 % d'augmentation de la mortalité à 6 mois**

*NEJM Evid 2023;2(2) DOI: 10.1056/EVIDoa22002*

# Nutrition en réanimation

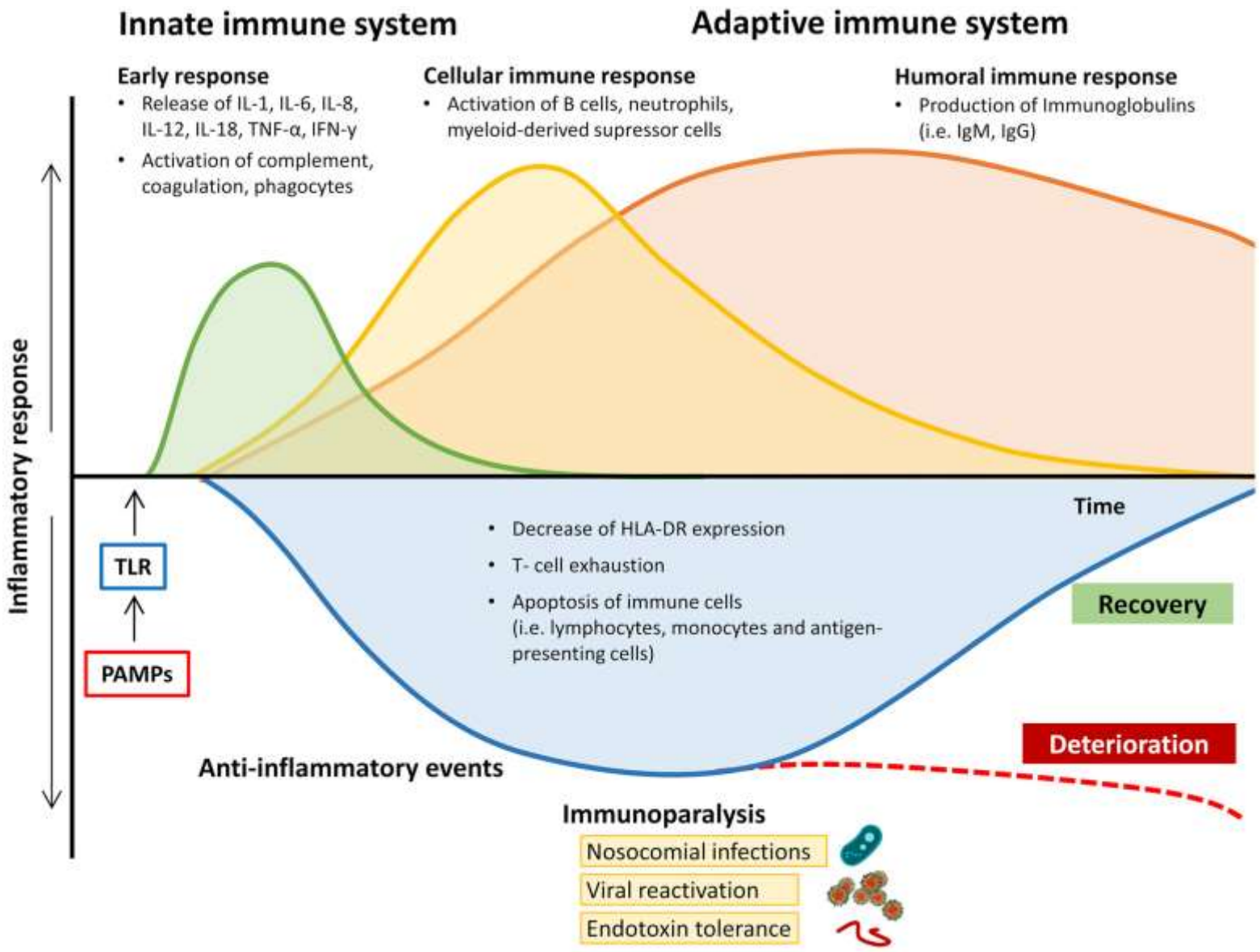
## The role of nutrition rehabilitation in the recovery of survivors of critical illness: underrecognized and underappreciated

Lesley L. Moisey[1*], Judith L. Merriweather[2] and John W. Drover[3]




*Moisey et al. Critical Care (2022) 26:270*

# Sepsis et immunoparésie




*Front. Med. 8:628302. doi: 10.3389/fmed.2021.628302*

# Levée de sédation précoce en réanimation

## Randomized trial of light versus deep sedation on mental health after critical illness*

Miriam M. Treggiari, MD, PhD, MPH; Jacques-André Romand, MD, FCCM; N. David Yanez, PhD; Steven A. Deem, MD; Jack Goldberg, PhD; Leonard Hudson, MD; Claudia-Paula Heidegger, MD; Noel S. Weiss, MD, DrPH

**Randomized, open-label, controlled trial**

| Outcome | ICU Discharge | | | 4 Wks After ICU Discharge | | |
|---|---|---|---|---|---|---|
| | Ramsay 1–2 n = 57 | Ramsay 3–4 n = 52 | *p* | Ramsay 1–2 n = 52 | Ramsay 3–4 n = 50 | *p* |
| PTSD score,[b] ranks | 52 ± 33 | 57 ± 30 | .39 | 46 ± 29 | 56 ± 29 | .07 |
| PTSD symptom clusters[c] | | | | | | |
| Intrusive recollection | 19 (41) | 13 (36) | .62 | 9 (20) | 9 (23) | .73 |
| Avoidant/numbing | 11 (24) | 7 (19) | .62 | 6 (13) | 6 (15) | .79 |
| Hyperarousal | 19 (41) | 16 (44) | .78 | 5 (11) | 10 (26) | .08 |
| Hospital Anxiety and Depression Scale | | | | | | |
| Anxiety score | 6.4 ± 4.0 | 7.1 ± 4.6 | .37 | 5.3 ± 4.2 | 5.0 ± 4.2 | .64 |
| Anxiety cases, n (%) | 8 (14) | 13 (25) | .15 | 6 (12) | 6 (12) | .94 |
| Depression score | 5.3 ± 3.4 | 6.5 ± 4.7 | .13 | 3.4 ± 3.7 | 3.1 ± 3.7 | .72 |
| Depression cases, n (%) | 3 (5) | 10 (19) | .02 | 4 (8) | 2 (4) | .43 |

*Crit Care Med. 2009 Sep;37(9):2527-34.*

# Levée de sédation précoce en réanimation

## Randomized trial of light versus deep sedation on mental health after critical illness*

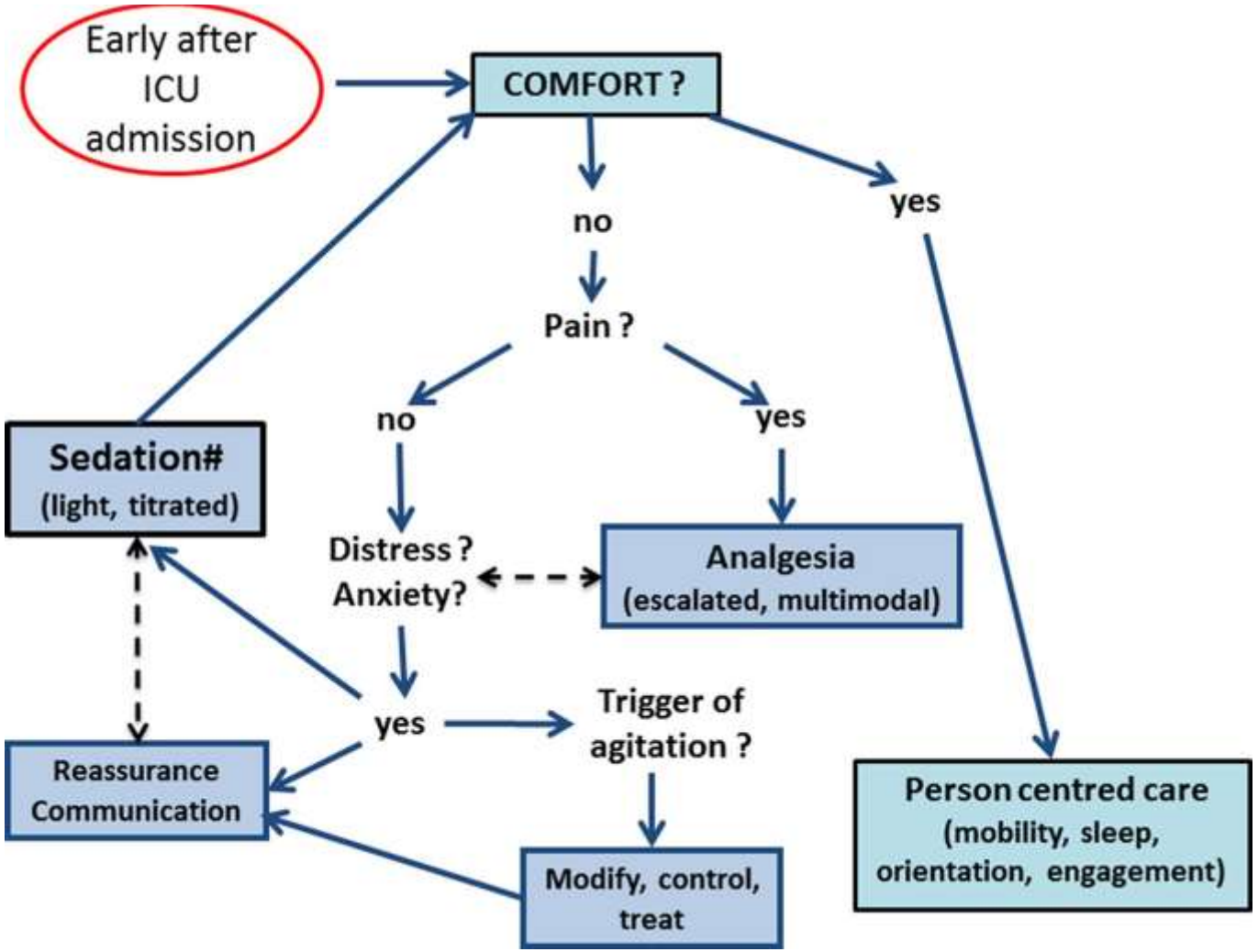
Miriam M. Treggiari, MD, PhD, MPH; Jacques-André Romand, MD, FCCM; N. David Yanez, PhD; Steven A. Deem, MD; Jack Goldberg, PhD; Leonard Hudson, MD; Claudia-Paula Heidegger, MD; Noel S. Weiss, MD, DrPH

| Outcome | Sedation Group: Ramsay 1–2 n = 65 | Sedation Group: Ramsay 3–4 n = 64 | $p^a$ |
|---|---|---|---|
| ICU mortality, n (%) | 9 (14) | 9 (14) | >.99 |
| Hospital mortality, n (%) | 12 (18) | 11 (17)[c] | .65 |
| Days of mechanical ventilation[b] | | | |
| Mean days | 2.9 ± 5.0 | 5.5 ± 10.8 | .02 |
| Ventilator-free days | | | |
| Days 1–7 | 6.6 | 5.7 | .02 |
| Days 1–28 | 27.6 | 26.6 | .03 |
| ICU length of stay[d] | 4.0 (1–129) | 5.5 (2–99) | .03 |
| ICU-free Days | | | |
| Days 1–7 | 4 | 1 | .03 |
| Days 1–28 | 24 | 22 | .03 |
| Organ failure to day 7[e] | | | |
| Cardiovascular failure, n (%) | 34 (52) | 35 (55) | .79 |
| CNS failure, n (%) | 16 (25) | 20 (31) | .40 |
| Renal failure, n (%) | 10 (15) | 11 (17) | .78 |
| Hepatic failure, n (%) | 9 (14) | 4 (6) | .15 |
| Coagulation abnormalities, n (%) | 15 (23) | 14 (22) | .87 |
| Any organ failure, n (%) | 42 (65) | 45 (70) | .49 |
| Hospital length of stay[d] | 16 (12.5–32.5) | 20 (13–38) | .47 |
| Hospital-free days, days 1–28 | 8.5 | 6.0 | .42 |

*Crit Care Med. 2009 Sep;37(9):2527-34.*

# Analgésie en réanimation

## Comfort and patient-centred care without excessive sedation: the eCASH concept

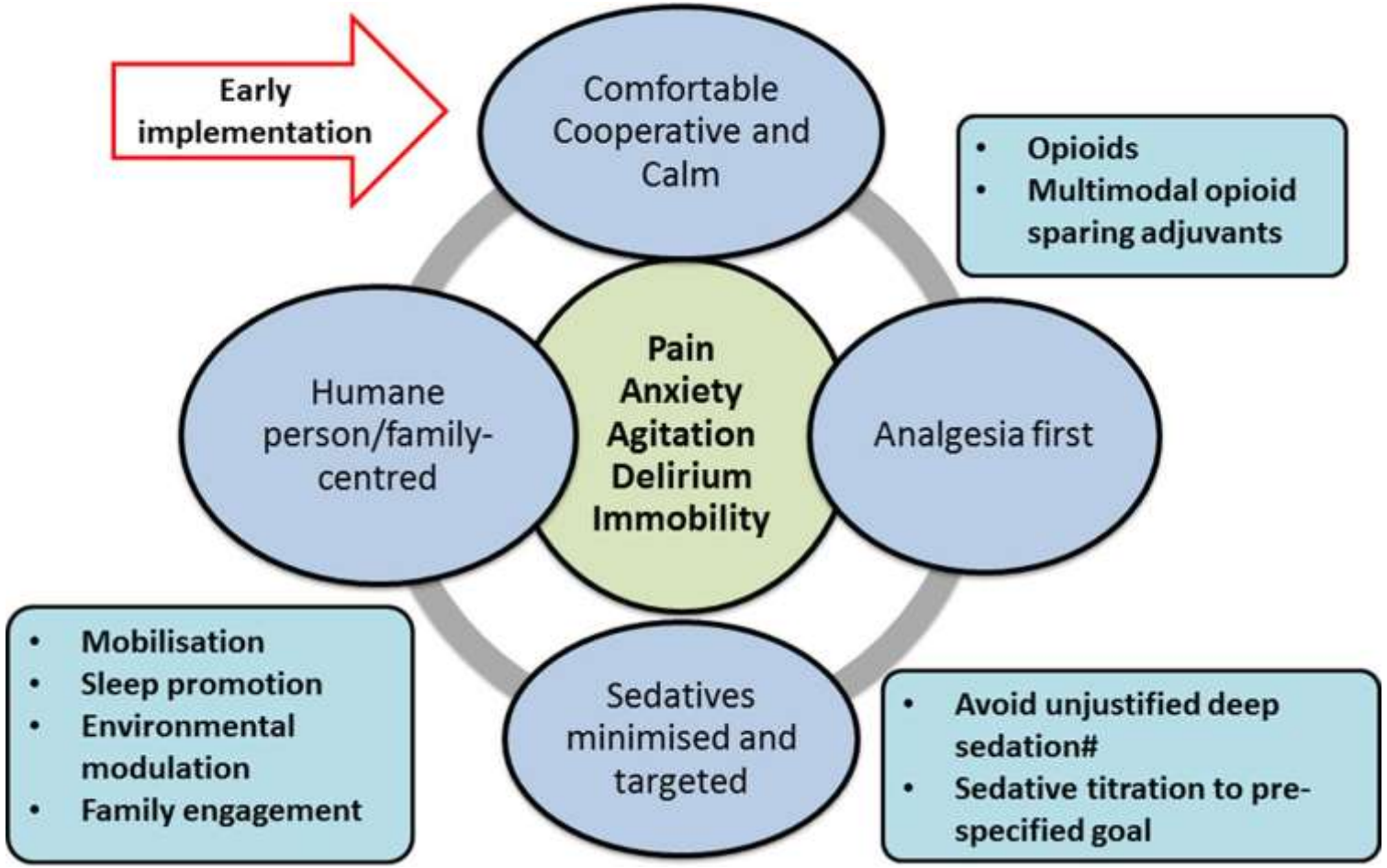



*Intensive Care Med (2016) 42:962–971*

# Analgésie en réanimation

Comfort and patient-centred care without excessive sedation: the eCASH concept

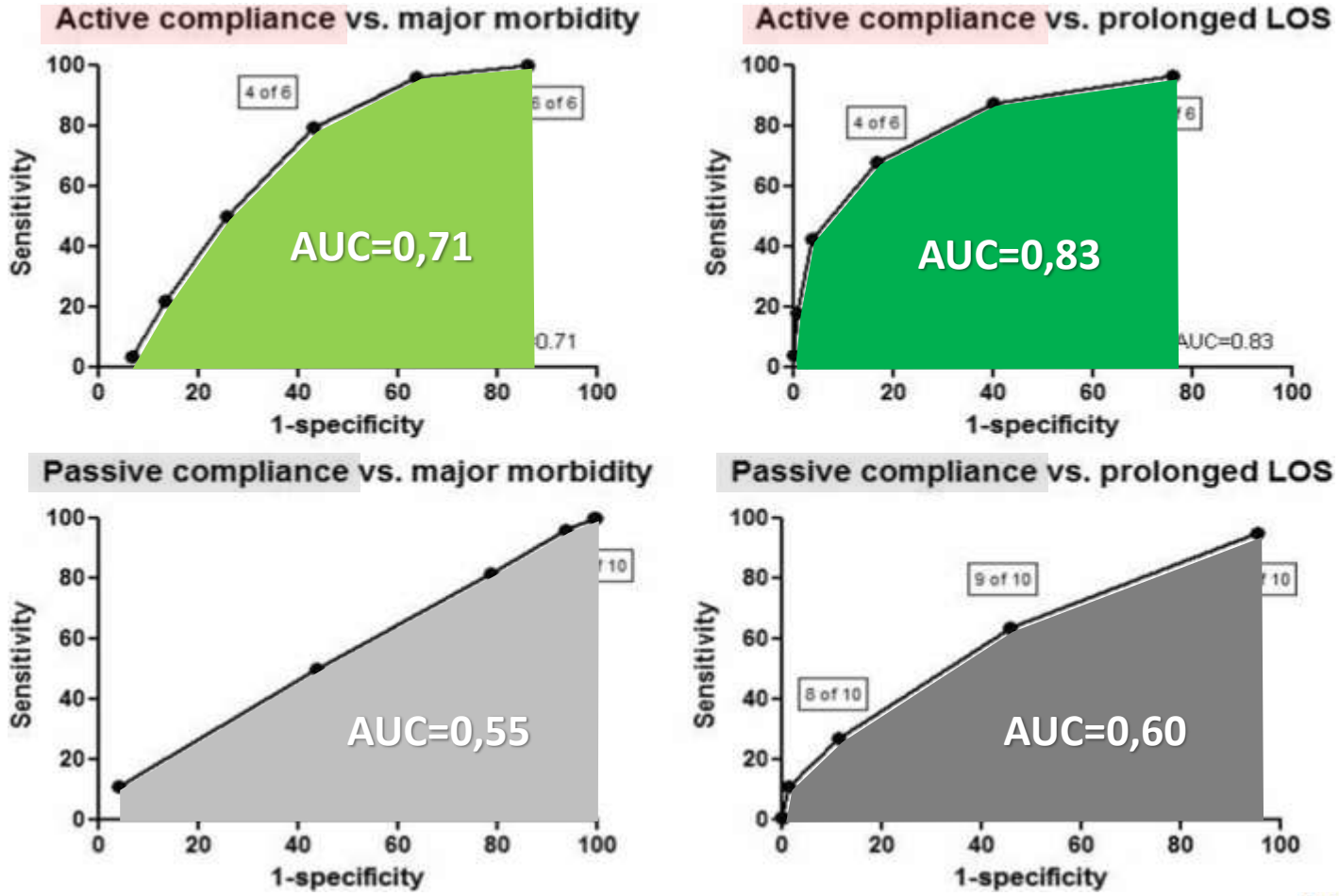
Approche **multidisciplinaire** de prise en charge **globale centré sur le patient**




*Intensive Care Med (2016) 42:962–971*

# Adhérence au traitement

## Active and passive compliance in an enhanced recovery programme




Int J Colorectal Dis (2016) 31:1329–1339

Christopher C. Thorn[1] · Ian White[1] · Jennie Burch[1] · George Malietzis[1] · Robin Kennedy[1] · John T. Jenkins[1]

# Programme ERAS en réanimation ?

# Programme ERAS en réanimation ?

## ERAS® Benefits

$$$

### FOR THE HOSPITAL

- Optimization of a complex care chain
- Increased staff satisfaction
- Reduced nursing workload
- Fewer re-admissions
- Great savings
- Recoup resources

### FOR THE PATIENT

- Structured information & participation in the care process
- Patient empowerment
- Fewer serious complications
- Shorter length of stay
- Enhanced recovery
- Improved survival

The ERAS® Interactive Audit System (EIAS)

Read more

The ERAS® Implementation Program (EIP)

Read more

# Programme ERAS en réanimation ?

# Implémentation de « bundles » en réanimation ?

**Staff education, regular sedation and analgesia quality feedback, and a sedation monitoring technology for improving sedation and analgesia quality for critically ill, mechanically ventilated patients: a cluster randomised trial**

**De nombreux cliniciens ont trouvé le suivi utile, mais il n'a souvent pas été utilisé pour la prise de décision. La formation a été appréciée et jugée utile par le personnel.**

**En revanche, le retour d'information sur la qualité de la sédation et de l'analgésie a été mal compris et jugé peu pertinent pour la pratique infirmière au chevet du patient.**

Cluster randomised trial in eight ICUs

| | Education | Process feedback | Responsiveness monitoring |
|---|---|---|---|
| **Patient-level sedation–analgesia quality outcomes (RR)** | | | |
| Optimal sedation | 1·02 (0·92–1·13) | 0·90 (0·80–1·01) | 1·17 (1·04–1·31)* |
| Free from excessive sedation | 1·02 (0·96–1·08) | 0·90 (0·84–0·97)* | 1·09 (1·01–1·17)* |
| Free from agitation | 1·02 (0·96–1·08) | 1·02 (0·95–1·09) | 0·98 (0·91–1·05) |
| Free from poor relaxation | 0·98 (0·92–1·04) | 0·98 (0·91–1·05) | 1·05 (0·98–1·13) |
| Free from poor synchronisation | 1·00 (0·95–1·07) | 0·99 (0·92–1·06) | 1·04 (0·97–1·11) |
| **Sedative and analgesic drug use** | | | |
| Propofol equivalents used (RoGM) | 1·09 (0·85–1·40) | 1·01 (0·77–1·34) | 1·01 (0·76–1·34) |
| Alfentanil equivalents used (RoGM) | 1·06 (0·83–1·35) | 1·05 (0·80–1·38) | 1·18 (0·90–1·55) |
| Days on which patient received ≥4000 mg propofol (or equivalents) administered (OR) | 0·43 (0·22–0·86)* | 2·45 (1·11–5·42)* | 1·11 (0·52–2·38) |
| Patient received haloperidol (OR) | 1·18 (0·74–1·89) | 0·95 (0·56–1·63) | 1·14 (0·68–1·91) |
| **Mortality (OR)** | | | |
| ICU | 1·19 (0·73–1·93) | 1·33 (0·77–2·29) | 0·78 (0·46–1·35) |
| Hospital | 1·08 (0·68–1·72) | 1·08 (0·65–1·81) | 0·82 (0·50–1·37) |
| **Time-to-event outcomes (HR)** | | | |
| Cessation of mechanical ventilation | 0·92 (0·76–1·12) | 1·00 (0·80–1·24) | 0·87 (0·70–1·08) |
| Discharge from ICU | 0·89 (0·71–1·11) | 0·98 (0·77–1·26) | 0·92 (0·71–1·17) |
| Discharge from hospital | 0·88 (0·70–1·11) | 1·15 (0·89–1·48) | 1·03 (0·79–1·33) |

*Lancet Respir Med* 2016; 4: 807–17

# Implémentation de « bundles » en réanimation ?

## Effect of ICU care bundles on long-term patient-relevant outcomes: a scoping review

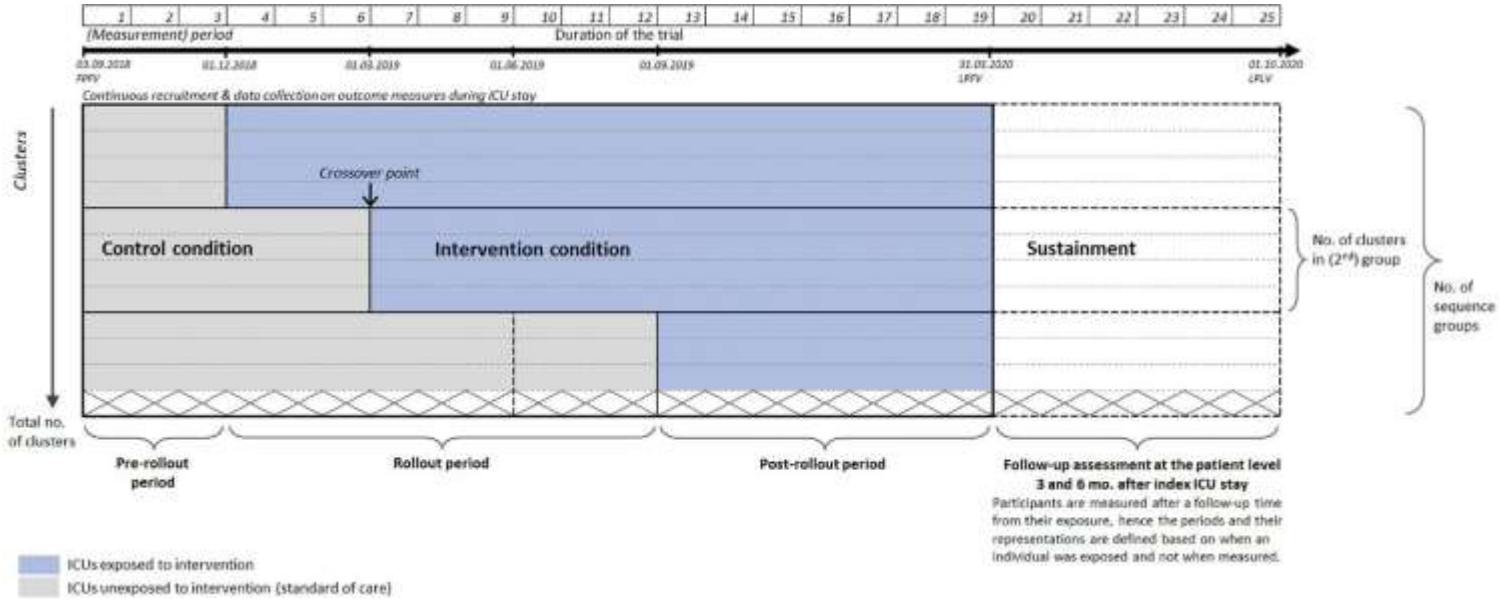
**Effets à long terme sur la qualité de vie, la qualité de vie des patients et « PICS » indéterminés**

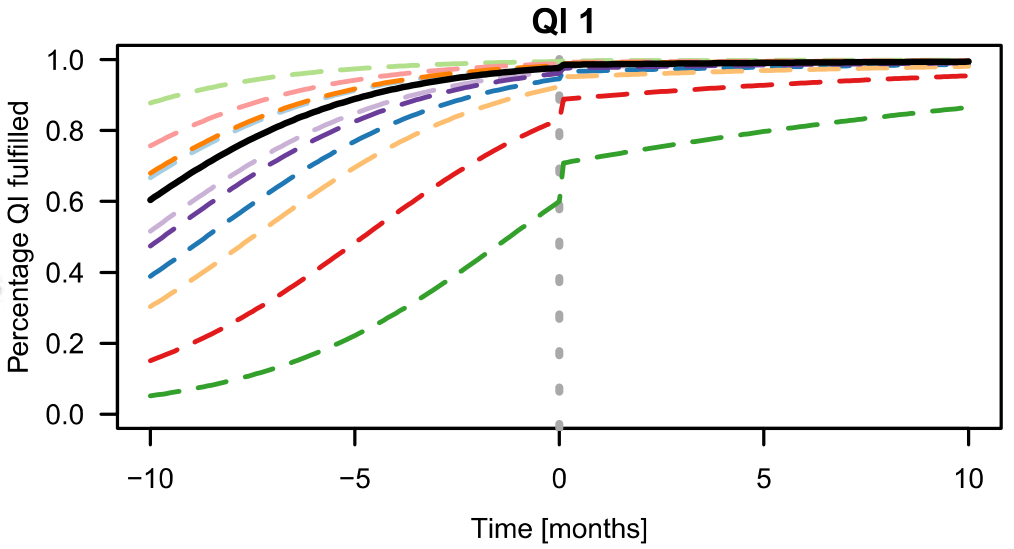
| Bundle category | Outcome | Effect | | |
|---|---|---|---|---|
| | | Positive | Possibly positive | None |
| All (n=38) | Survival | 13[44 45 54 55 59 64–67 70 71 74 76] | 2[60 61] | 9[39 46 48 56 57 63 68 69 75] |
| | Care-related outcomes * | 12[39 42 49–51 53 55 57–59 70 75] | 4[43 47 61 62] | 5[41 48 69 73 74] |
| | Health-related quality of life | 2[59 73] | 2[42 62] | 1[52] |
| | PICS—physical health | 3[56 61 69] | | 2[52 68] |
| | PICS—cognition | 1[56] | | 3[40 52 68] |
| | PICS—mental health | 2[72 73] | | 1[61] |
| | Adverse events | | | 1[69] |
| | Social health | | | 1[73] |
| Communication (n=4) | Survival | | | 1[39] |
| | Care-related outcomes* | 2[39 51] | 1[47] | |
| | PICS—mental health | 1[72] | | |
| Early rehabilitation (n=3) | Survival | | | 3[56 68 69] |
| | Care-related outcomes* | | | 1[69] |
| | PICS—physical health | 2[56 69] | | 1[68] |
| | PICS—cognition | 1[56] | | 1[68] |
| | Adverse events | | | 1[69] |
| Neurocognitive (n=6) | Survival | 2[59 70] | | 1[75] |
| | Care-related outcomes* | 3[59 70 75] | | 1[73] |
| | Health-related quality of life | 2[59 73] | | 1[52] |
| | PICS—physical health | | | 1[52] |
| | PICS—cognition | | | 2[40 52] |
| | PICS—mental health | 1[73] | | |
| | Social health | | | 1[73] |
| Pharmacological discontinuation (n=3) | Survival | | | 1[48] |
| | Care-related outcomes* | 2[49 58] | | 1[48] |
| Sepsis (n=11) | Survival | 10[44 45 54 64–67 71 74 76] | | 1[63] |
| | Care-related outcomes* | | | 1[74] |
| Ventilation (n=2) | Survival | 1[55] | | 1[57] |
| | Care-related outcomes* | 2[55 57] | | |

*Paul N, et al. BMJ Open 2023;13:e070962*

# Implémentation de « bundles » en réanimation ?

Effectiveness of an intensive care telehealth programme to improve process quality (ERIC): a multicentre stepped wedge cluster randomised controlled trial

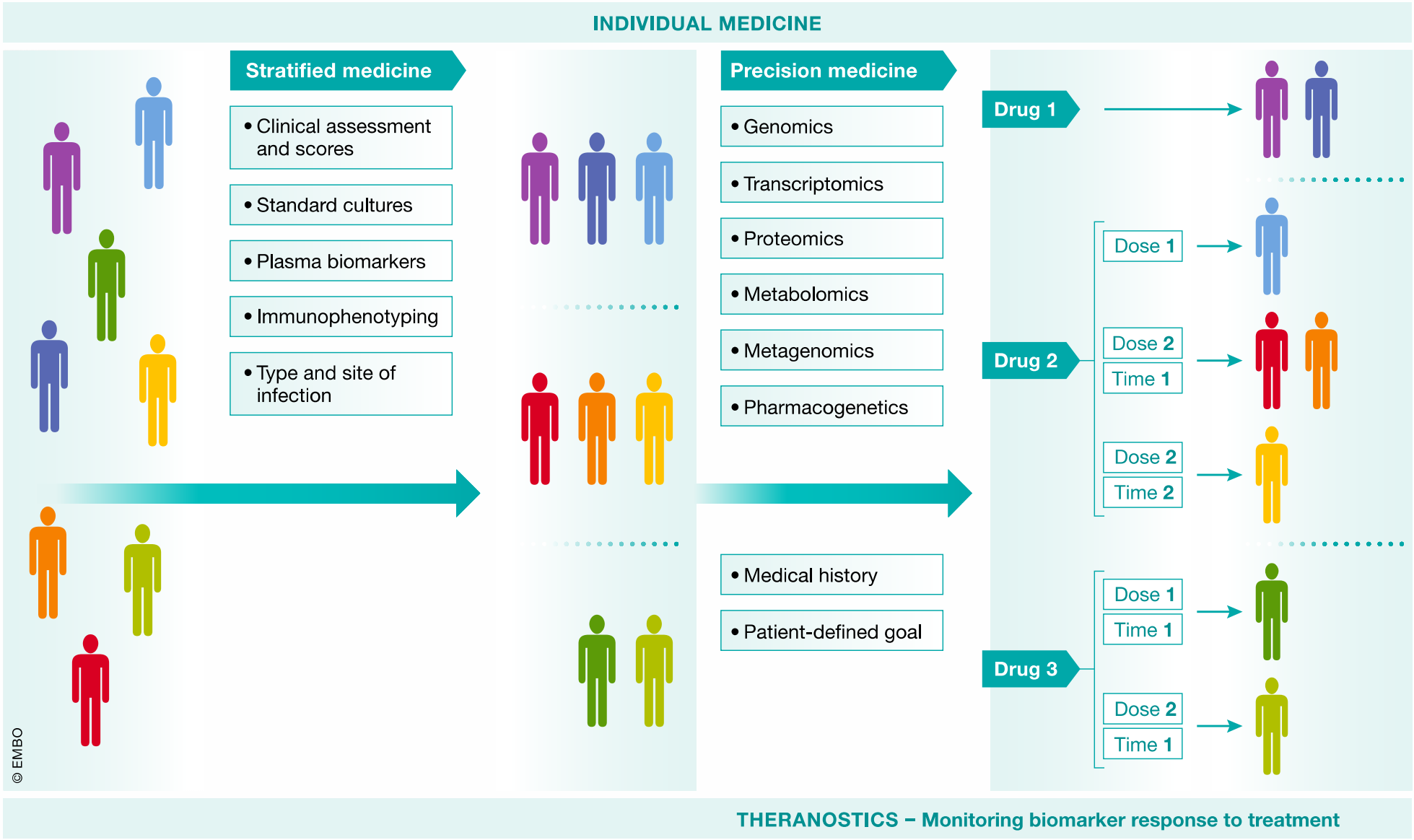



**Un programme télémédical d'amélioration de la qualité a permis d'améliorer l'adhésion à sept indicateurs de performance allemands en réanimation**

*Paul N, et al. BMJ Open 2023;13:e070962.*

# Médecine personnalisée




*EMBO Molecular Medicine 12: e10128 | 2020*

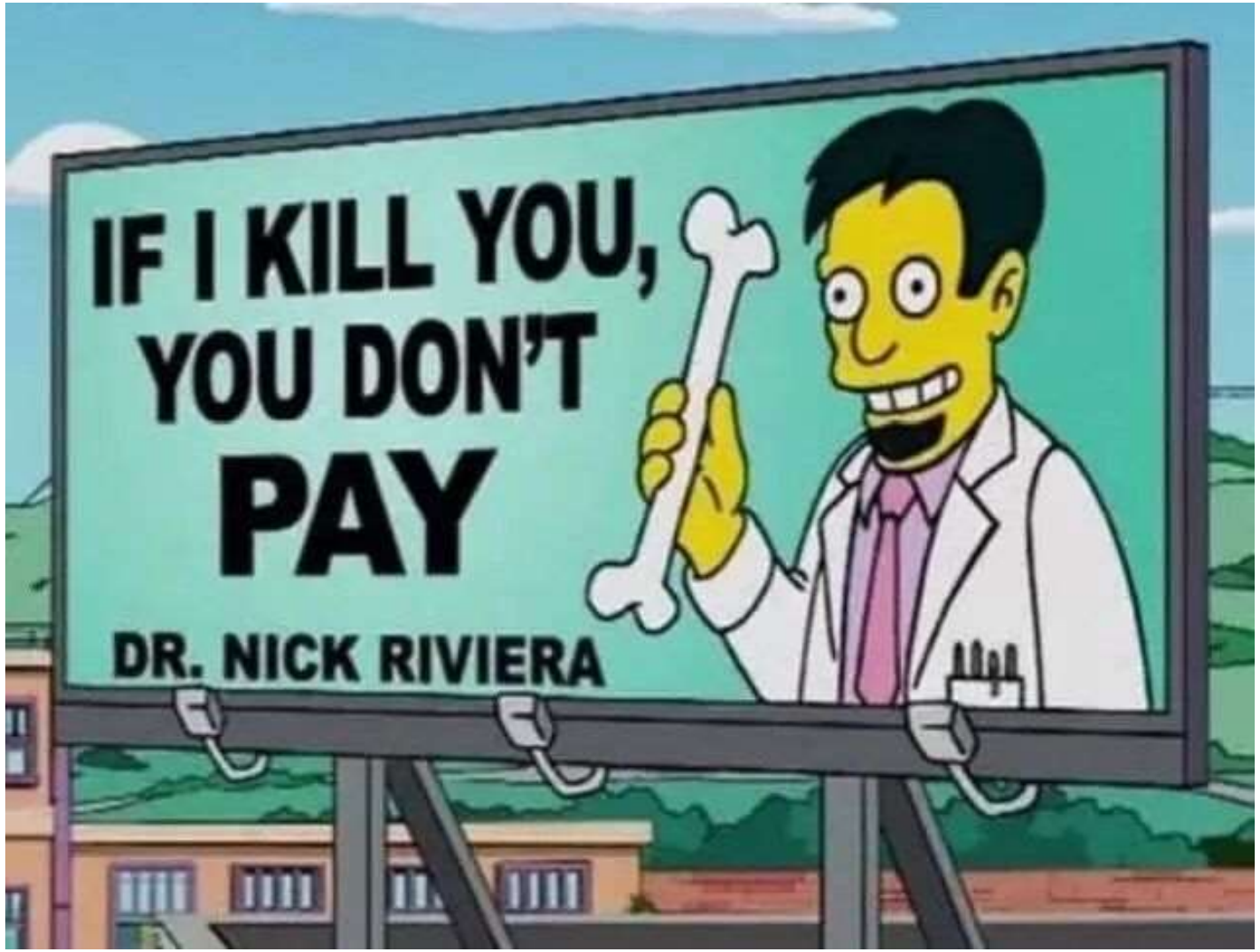
# Médecine personnalisée

**Bénéfice thérapeutique**

**Iatrogénie**

Ensemble des conséquences néfastes sur l'état de santé individuel ou collectif de tout acte ou mesure pratiqué ou prescrit par un professionnel de santé habilité et qui vise à préserver, améliorer ou rétablir la santé.

# Médecine personnalisée

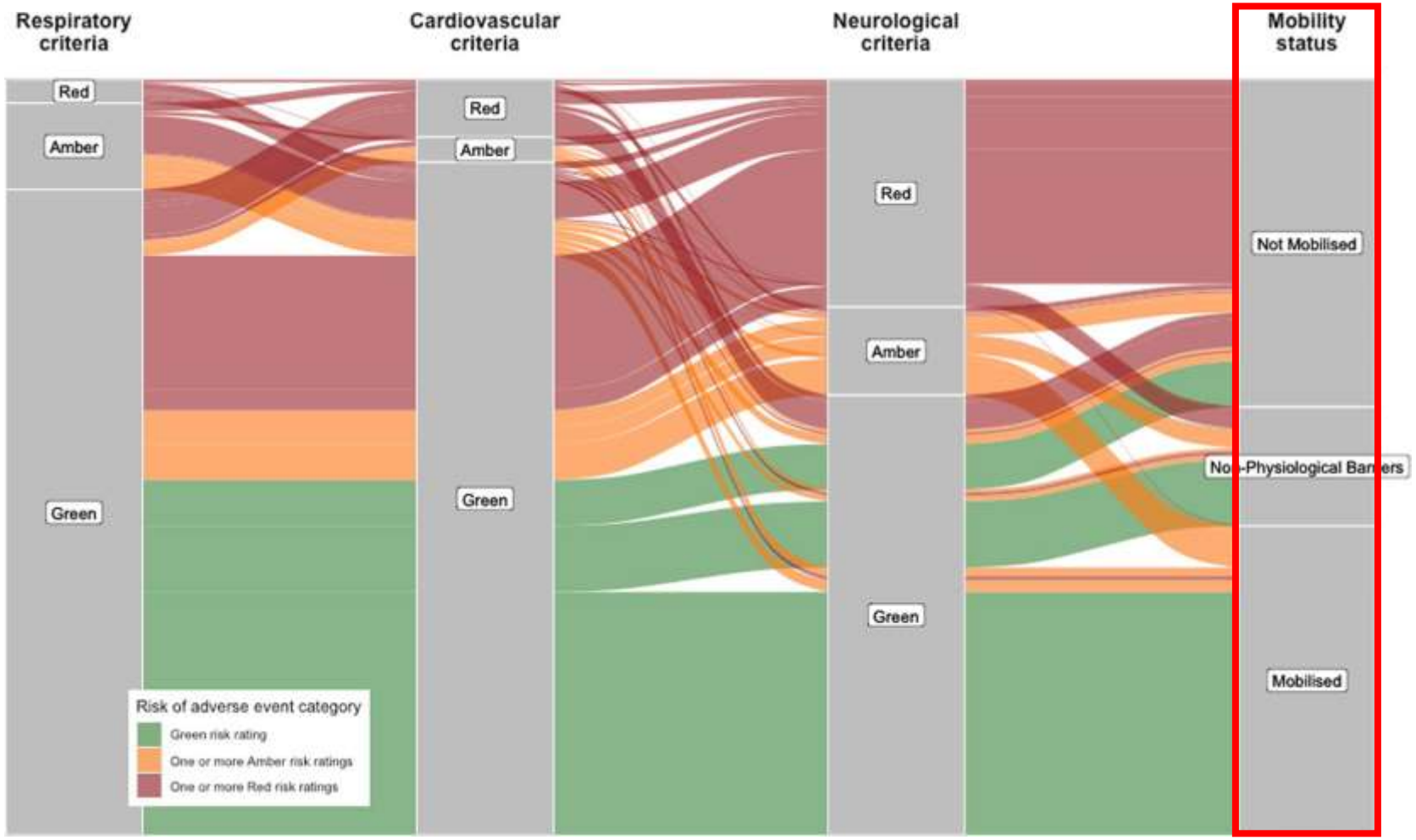


# Médecine personnalisée

## Feasibility of mobilisation in ICU: a multi-centre point prevalence study of mobility practices in the UK

Proportion de patients mobilisés dans les 48-72 heures, selon leur état physiologique

**Risque calculé pour chaque défaillance d'organe et l'état de la mobilité**




*Black et al. Critical Care (2023) 27:217*

# Merci de votre attention