Réhabilitation précoce en réanimation : comment limiter les altérations fonctionnelles et le Handicap post-Réanimation

JM Constantin, M.D. Ph.D.
Pôle de Médecine PériOpératoirie
Réanimations et USC
CHU Clermont-Ferrand, France

JDP Clermont-Ferrand
18 Juin 2015

UdA
EA 72-81
R2D2

AZUREA GROUP

Liens d’intérêt

LFB
MSD
BAXTER
DRAGER
MAQUET
FRESENIUS-KABI
HOSPAL
GE
ASTELLAS
ABBOTT
VIASYS
ALERE
EDWARDS
PFIZER
PHILIPS
HAMILTON
MASSIMO
BBRAUN
BiRD-Corporation
ASTUTE Medical

Ministère de la santé
PHRC
ANR-DGOS

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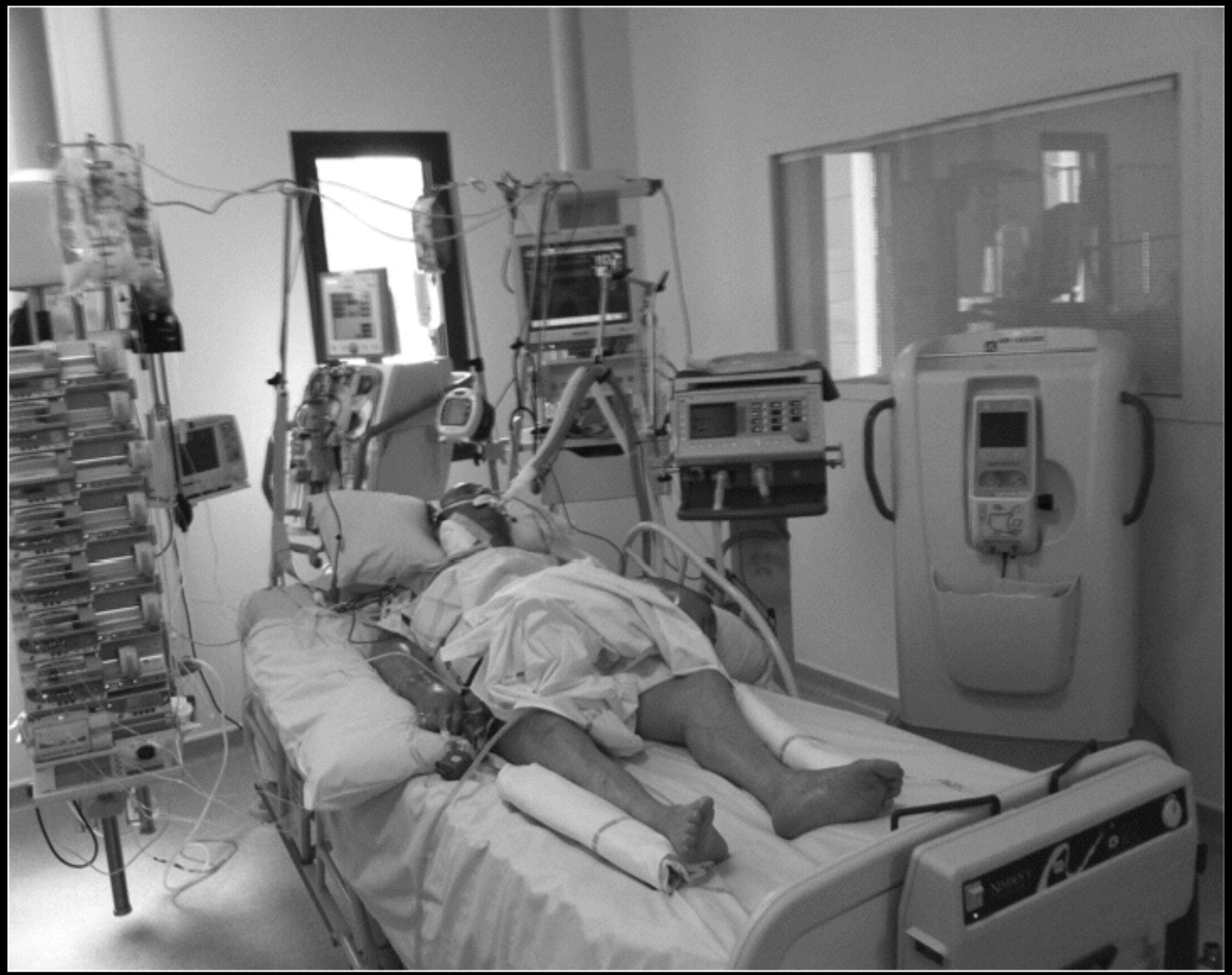
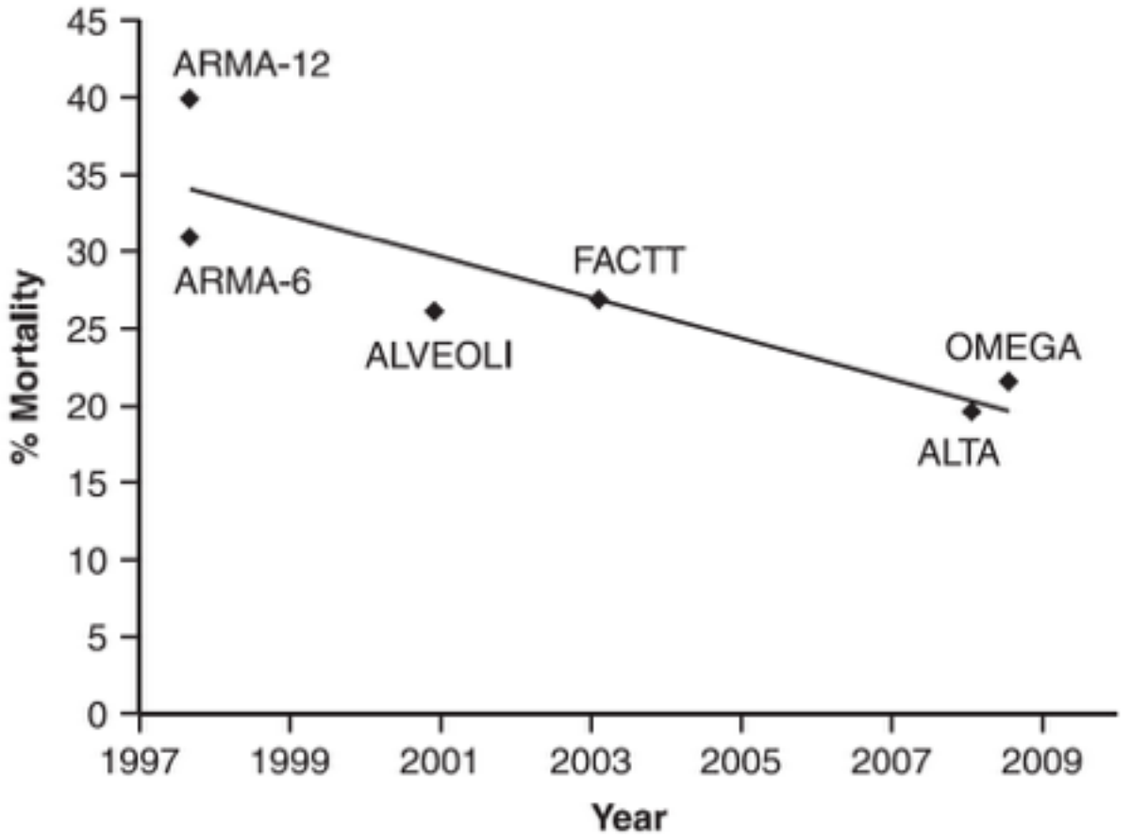
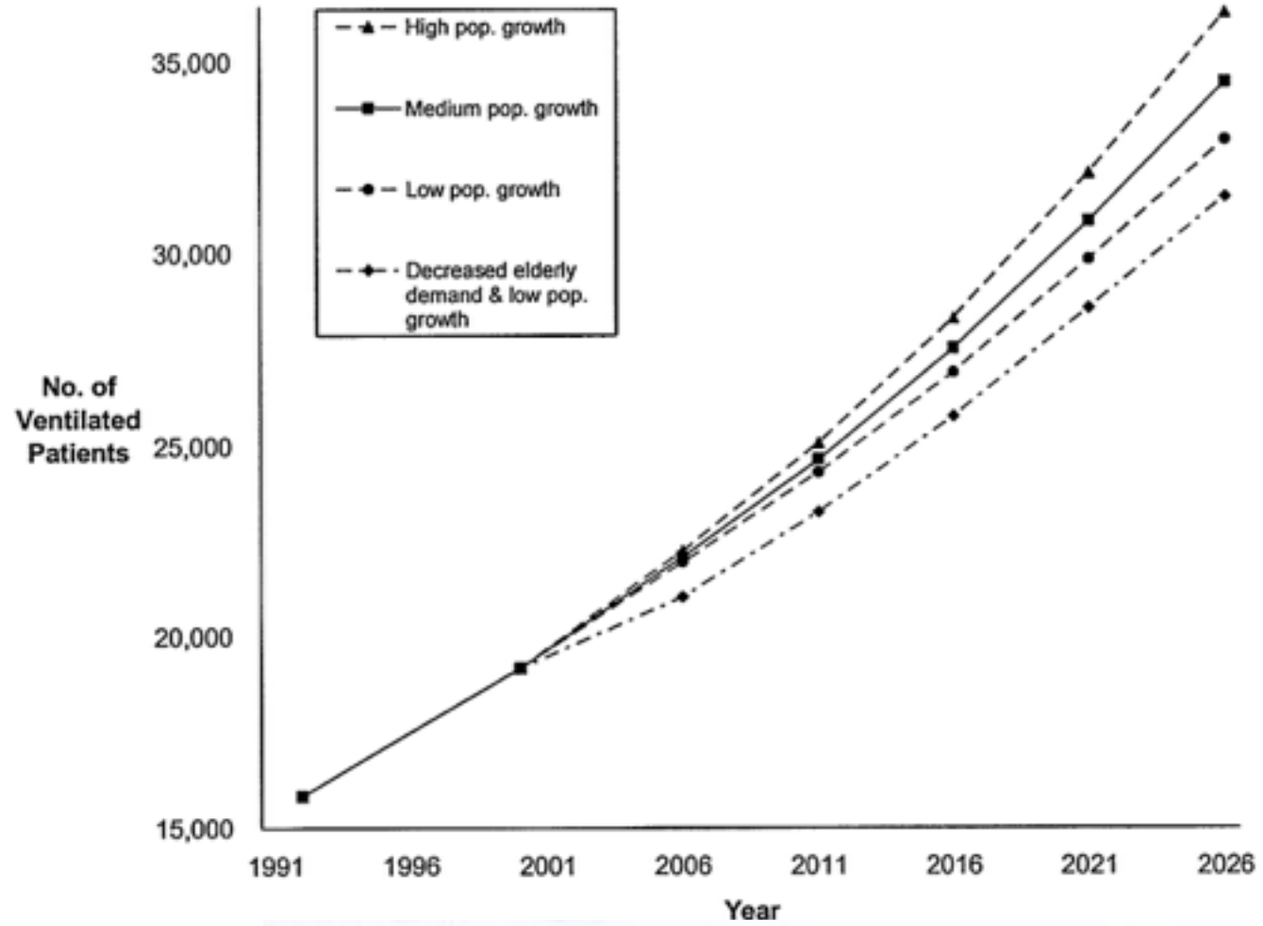
Réanimation

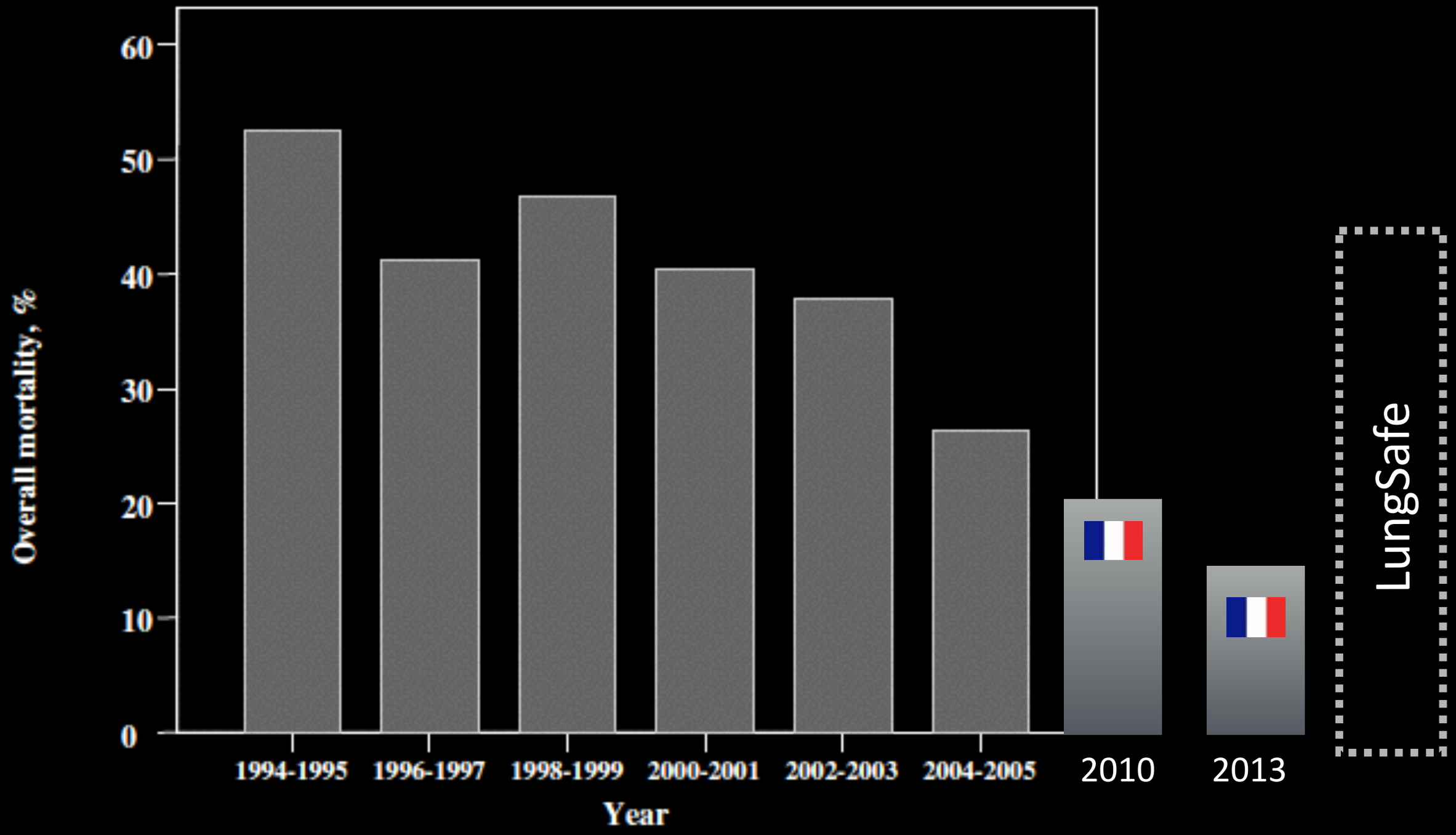


Admission en réa des baby boomers

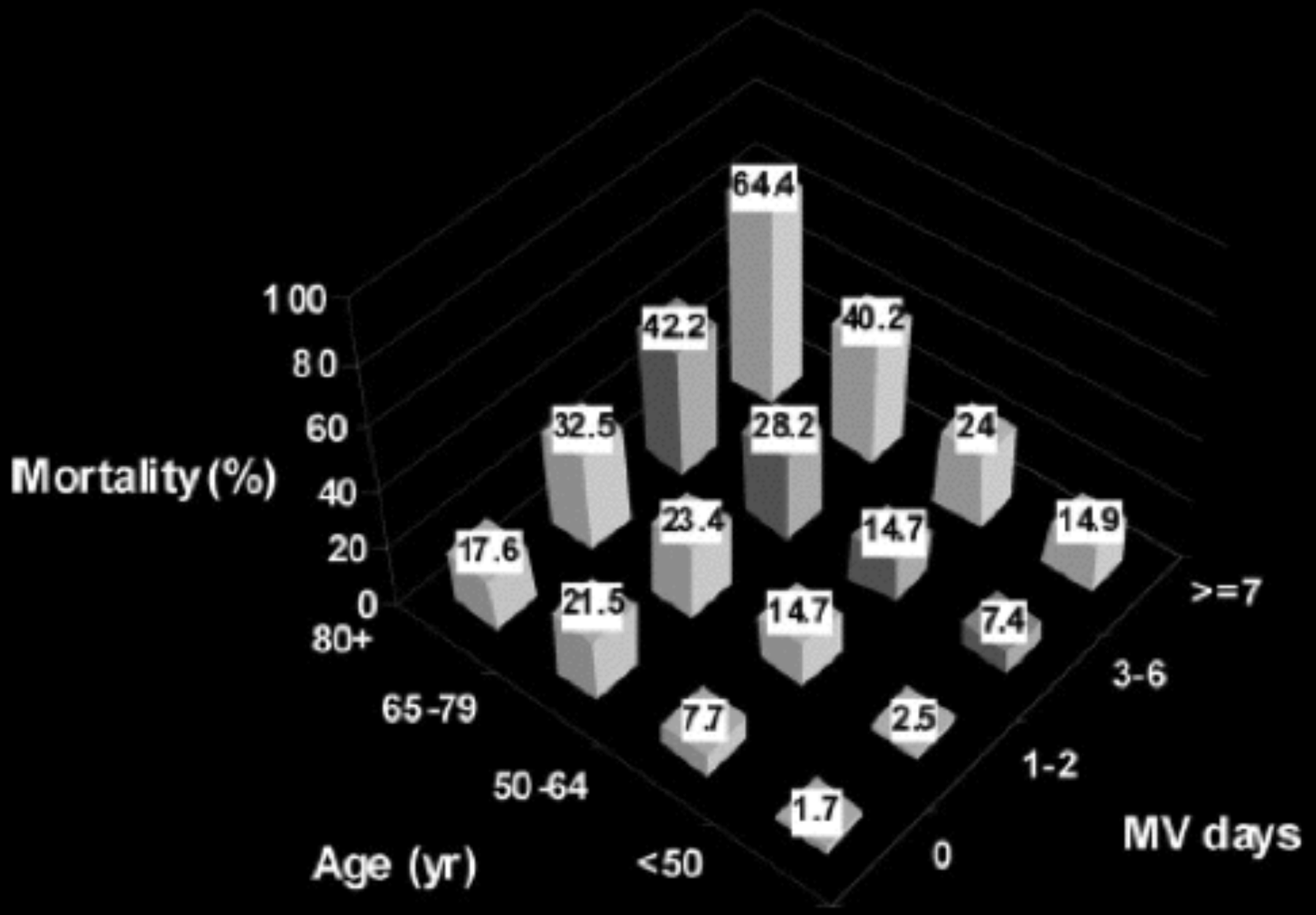




Spragg et al. AJRCCM 2010



Zambon, CHEST 2008


100
80
60
40
20
0
Mortality (%)
64.4
42.2
40.2
32.5
28.2
24
23.4
17.6
14.7
14.9
21.5
14.7
7.4
7.7
2.5
1.7
80+
65-79
50-64
<50
Age (yr)
0
1-2
3-6
>=7
MV days

Réanimation

+ de patients

+ suppléances d'organe

+ agés

+ comorbidités

+ cancer

Réanimation

+ de patients

+ suppléances d'organe

+ agés

+ comorbidités

+ cancer

- Sarcopénie
- Anorexie
- cachexie
- Dénutrition
- ...

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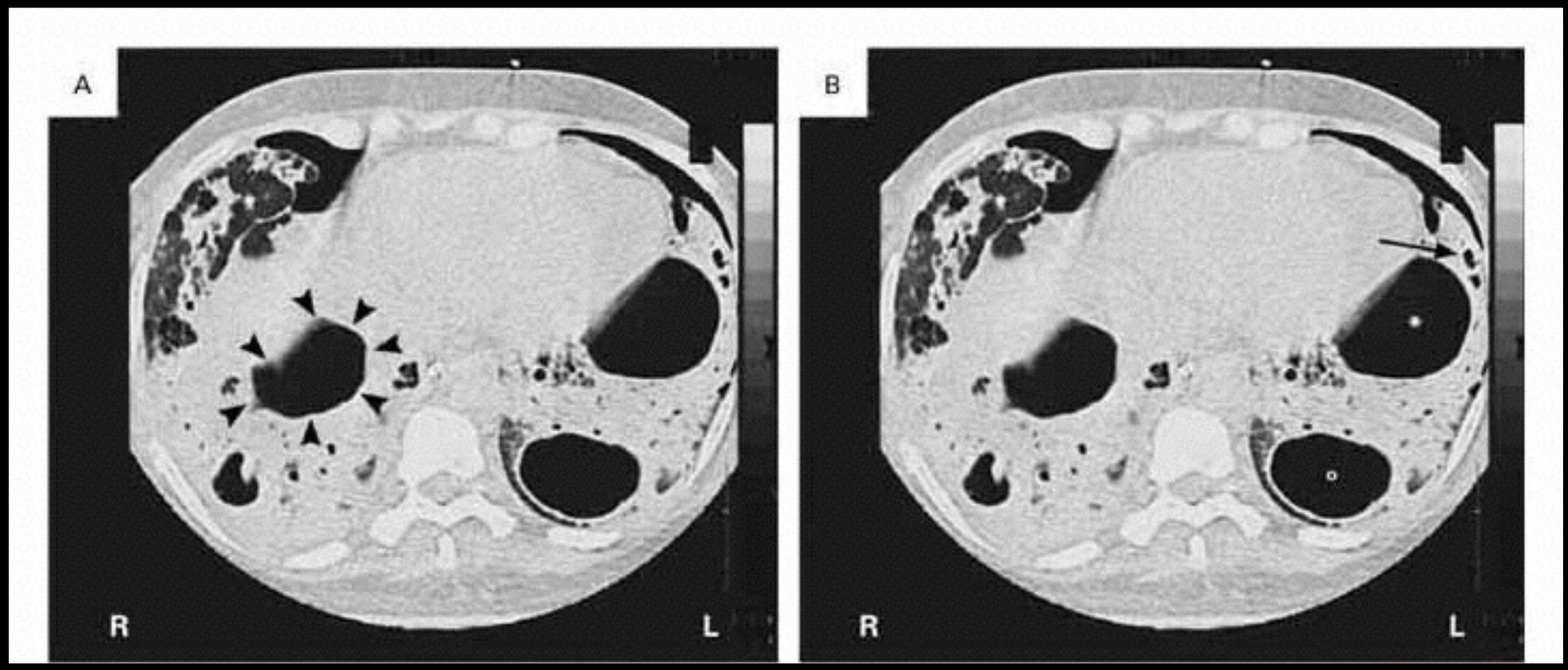
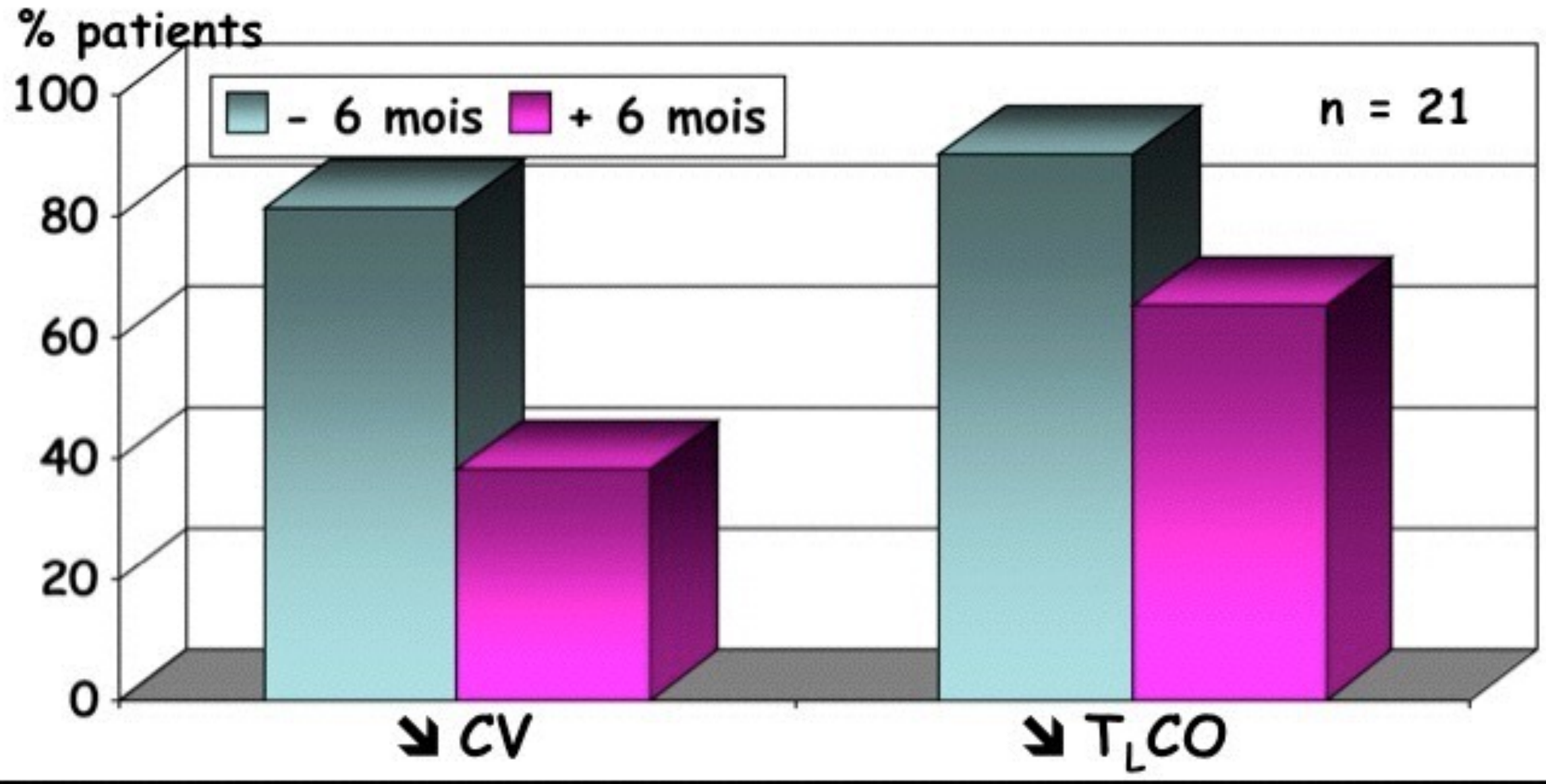
le Handicap

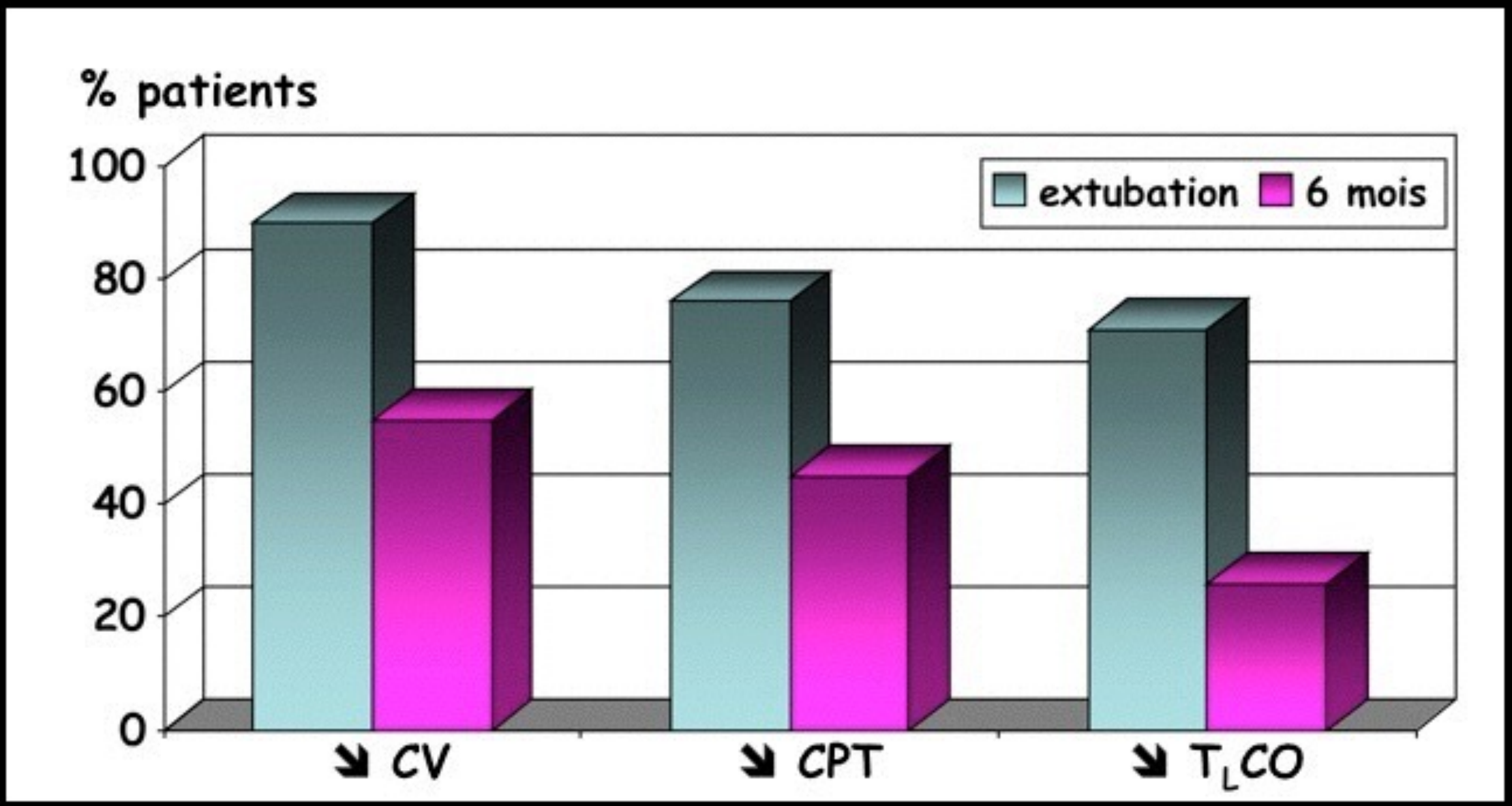

A
R
L
B
R
L

Right Lung

Left Lung



Peters et coll. ARRD 89



McHugh et coll. AJRCCM 94

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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

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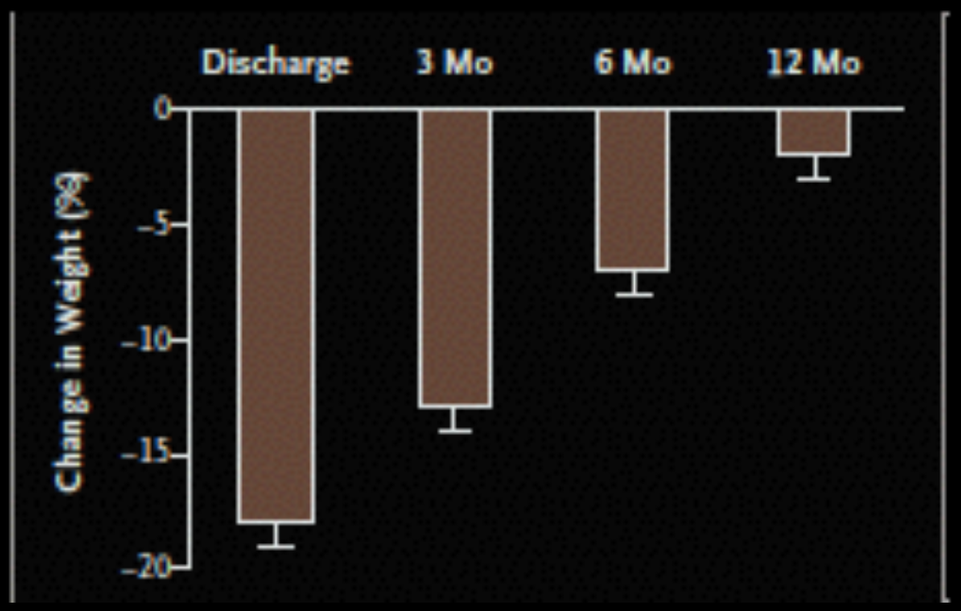

Variable	3 Mo (N=71)*	6 Mo (N=77)†	12 Mo (N=80)‡
	median (interquartile range)		
Forced vital capacity (% of predicted)	72 (57–86)	80 (68–94)	85 (71–98)
Forced expiratory volume in one second (% of predicted)	75 (58–92)	85 (69–98)	86 (74–100)
Total lung capacity (% of predicted)§	92 (77–97)	92 (83–101)	95 (81–103)
Residual volume (% of predicted)§	107 (87–121)	97 (82–117)	105 (90–116)
Carbon monoxide diffusion capacity (% of predicted)§¶	63 (54–77)	70 (58–82)	72 (61–86)

Etudes Anciennes

Vt > 10-12 ml/kg

Pas de contrôle de la Pplat

Pneumothorax

ViLi

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altérations fonctionnelles

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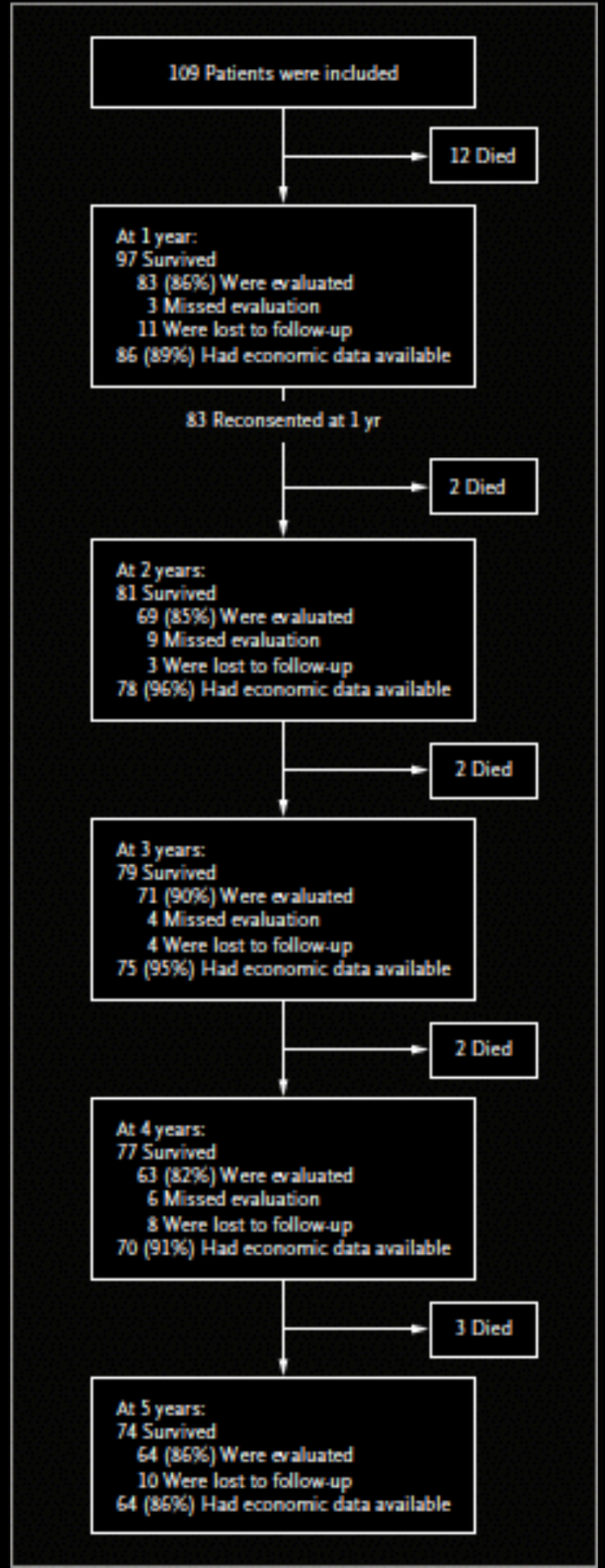

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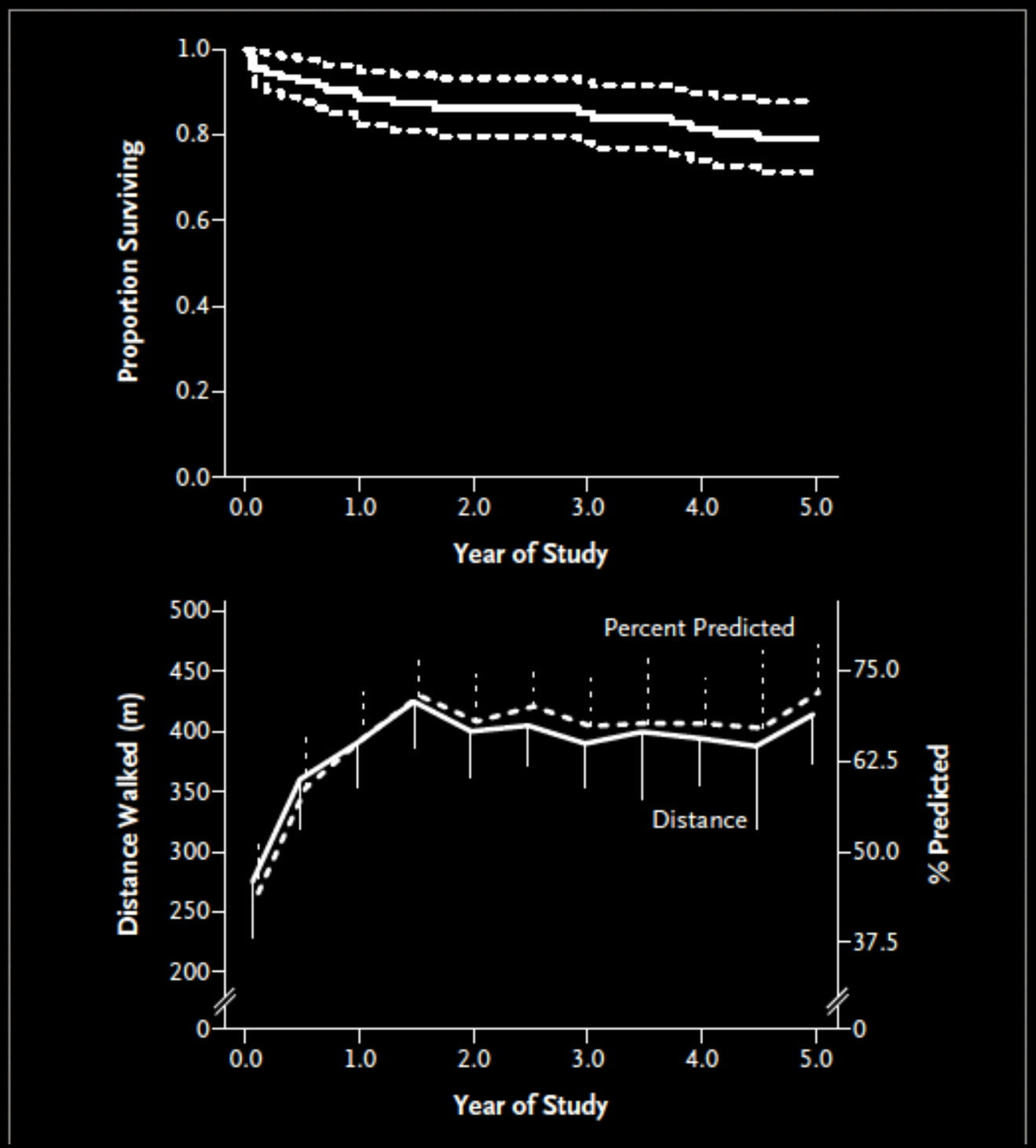

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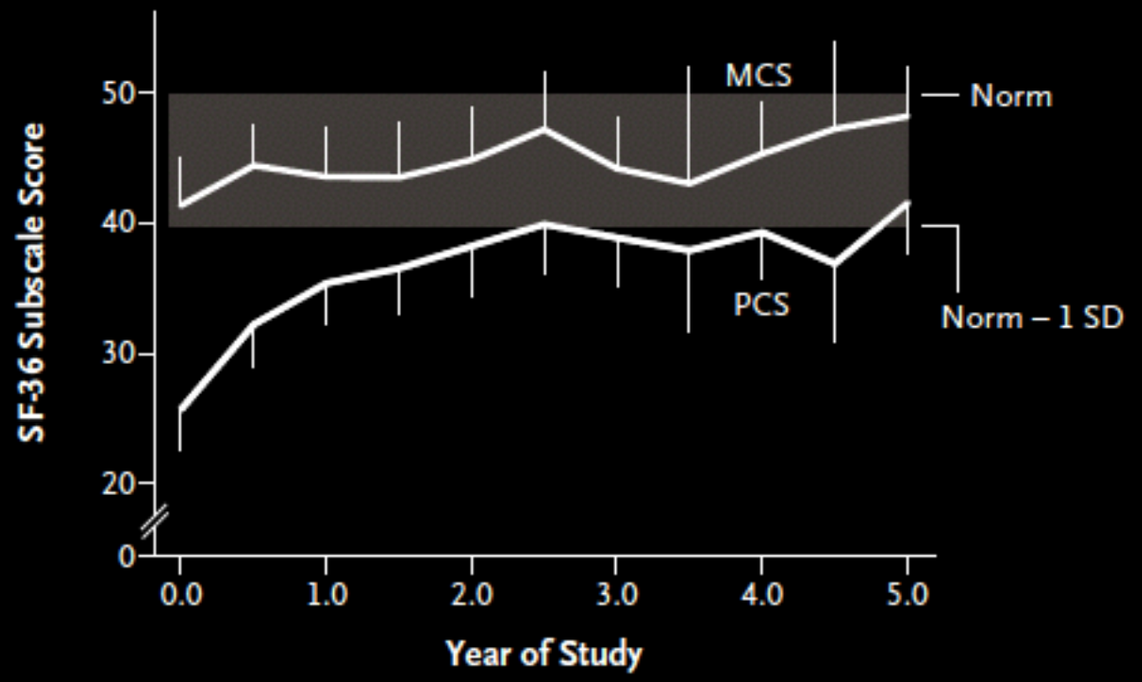


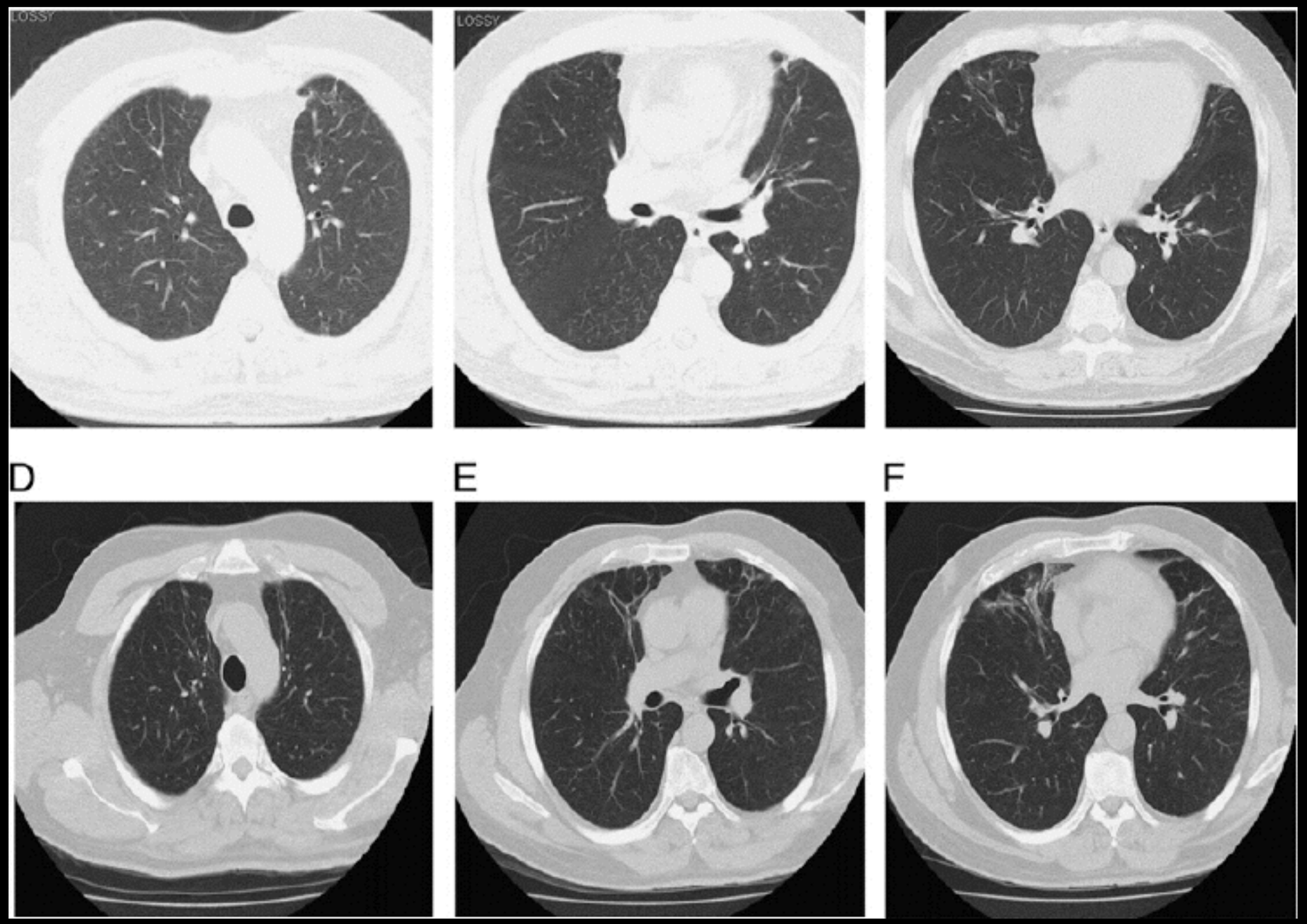
No. at Risk	109	92	86	79	77	74	69	64
No. for 6-Min Walk	80	78	81	60	64	64	57	54
No. for SF-36	67	74	74	56	57	57	49	50

CHEST

Original Research

CRITICAL CARE

Radiologic Outcomes at 5 Years After Severe ARDS



Wilcox, CHEST 2013

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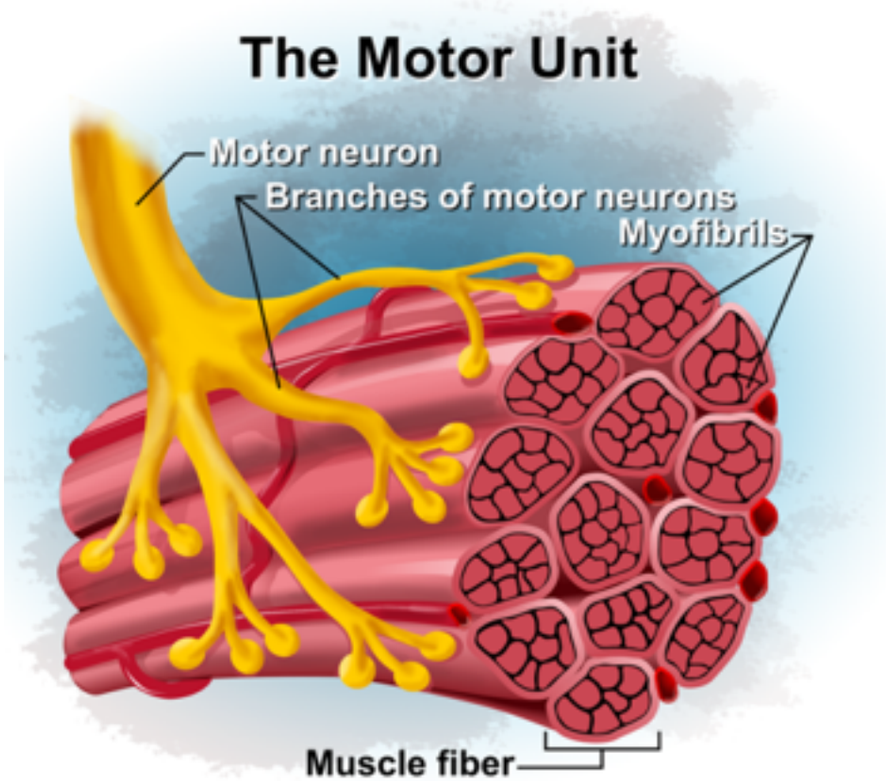
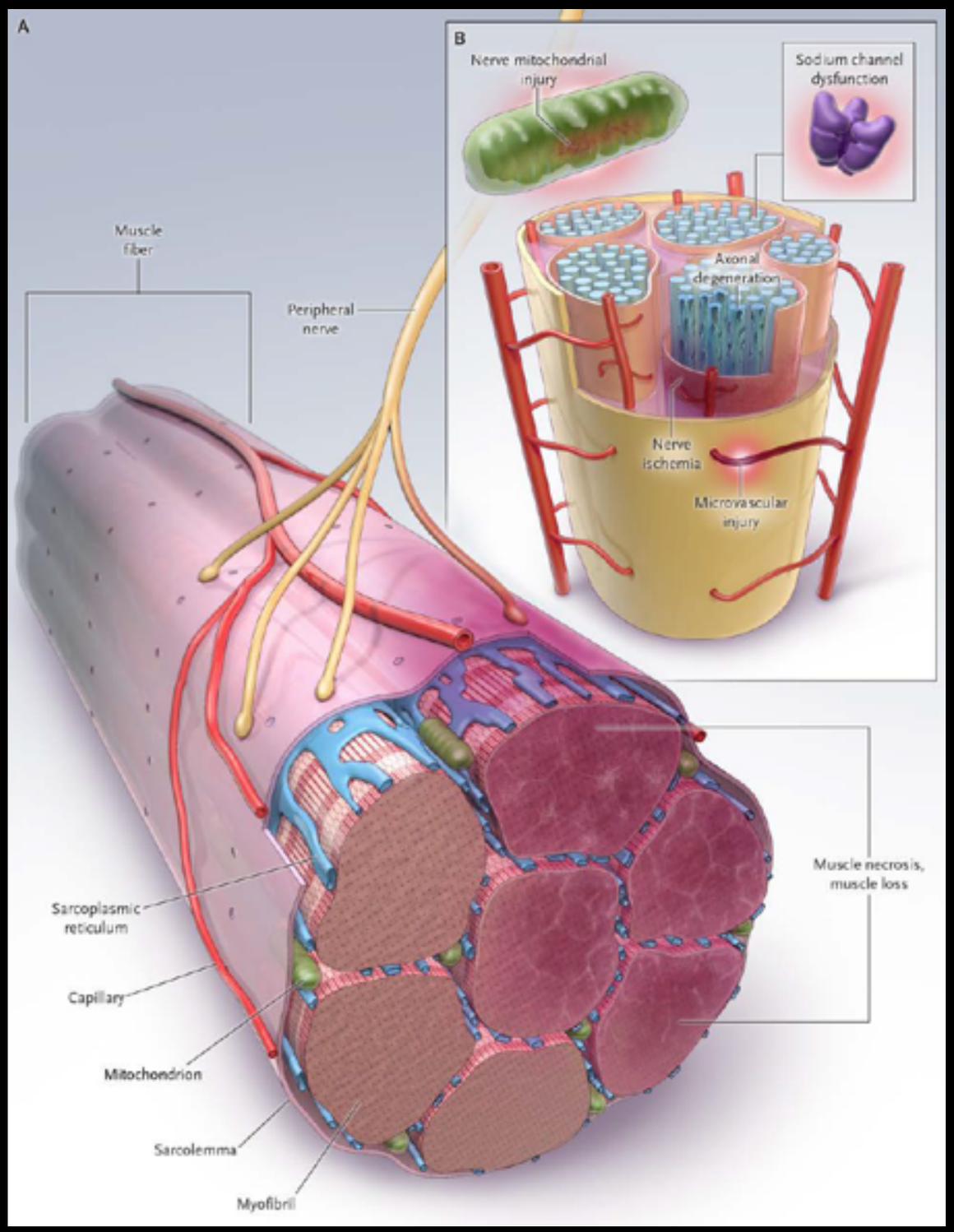
In summary, young, previously working patients with ARDS who have few coexisting illnesses may not recover completely and may have ongoing functional limitations after an episode of critical illness. This may be attributed to persistent ICU-acquired weakness, in addition to a variety of other physical and mental health impairments. Family members may also have psychological dysfunction, which may further compromise outcomes. The health burden of critical illness may be likened to that of chronic disease with similar health care utilization. Research priorities include a better understanding of the pathophysiology of ICU-acquired weakness and an evaluation of the effects of a customized, family-centered, rehabilitation program on long-term outcomes after a critical illness.

"ICU acquired weakness"



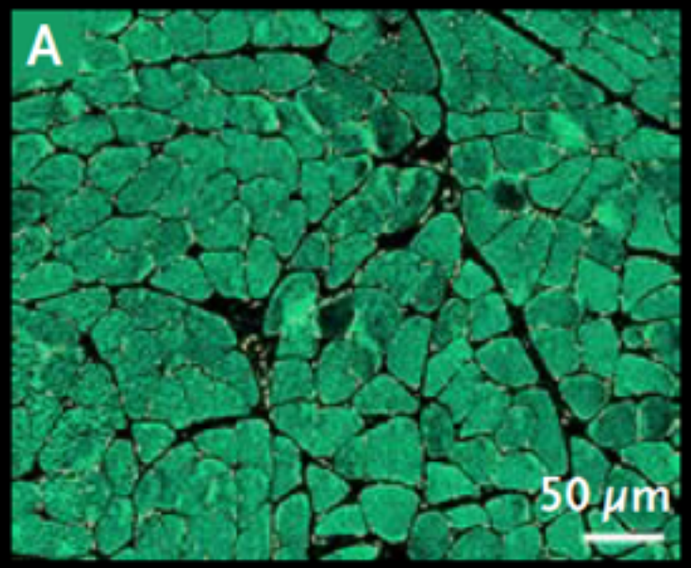
- **Myopathie**
  Atrophie fibres type II
- **Neuropathie**
  Dégénération axonale
- **Neuromyopathies**
- **Atrophie diffuse**

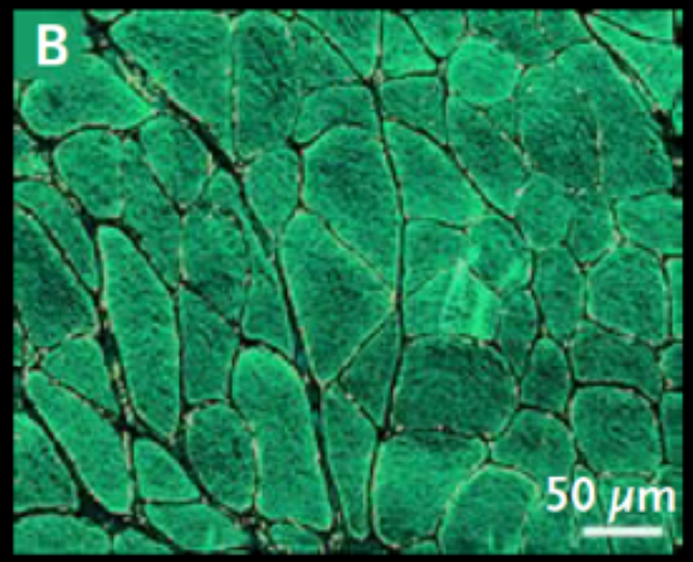

A
B
Nerve mitochondrial injury
Sodium channel dysfunction
Muscle fiber
Peripheral nerve
Axonal degeneration
Nerve ischemia
Microvascular injury
Muscle necrosis, muscle loss
Sarcoplasmic reticulum
Capillary
Mitochondrion
Sarcolemma
Myofibril

Case

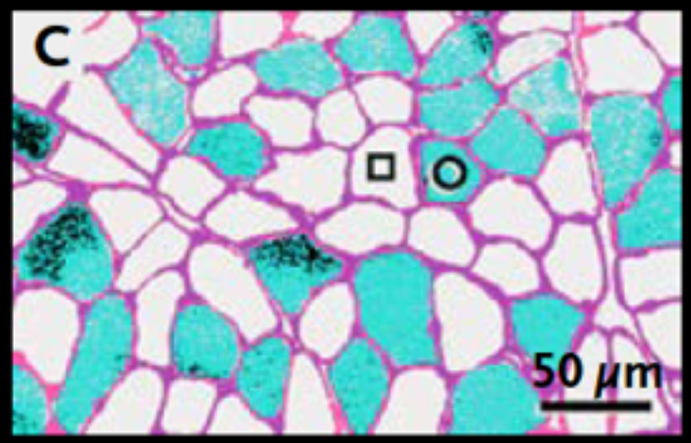
Control

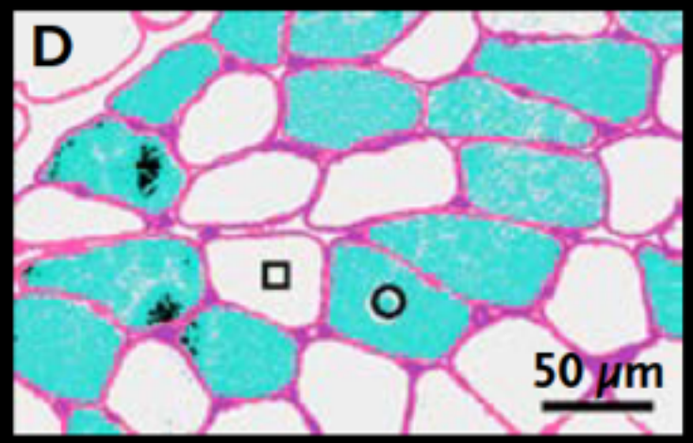
Fiber Size



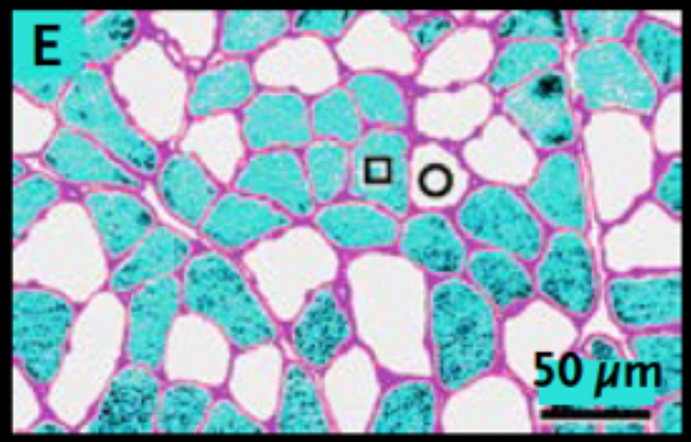


Slow Myosin Heavy Chain





Fast Myosin Heavy Chain



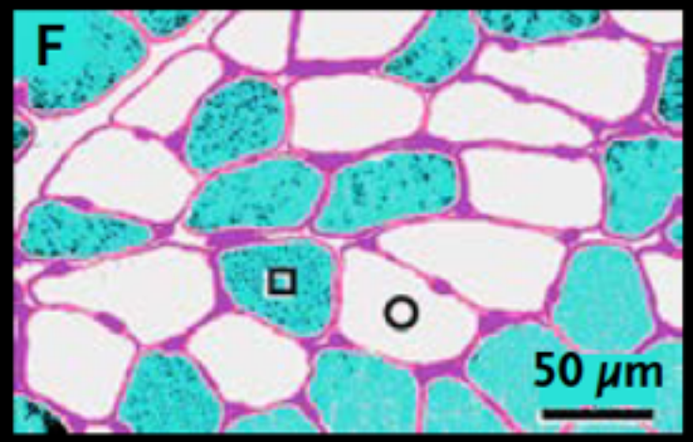


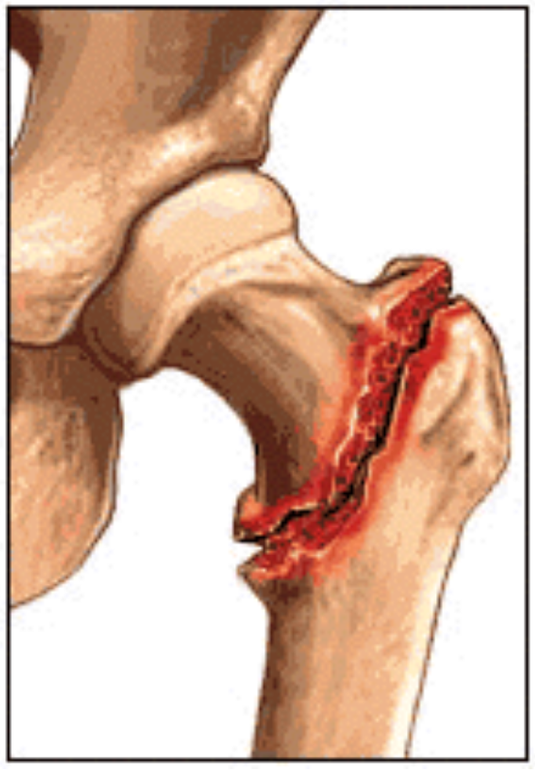
Table 3. Clinical Risk Factors and Pathophysiological Features of Critical Illness Polyneuropathy and Critical Illness Myopathy.

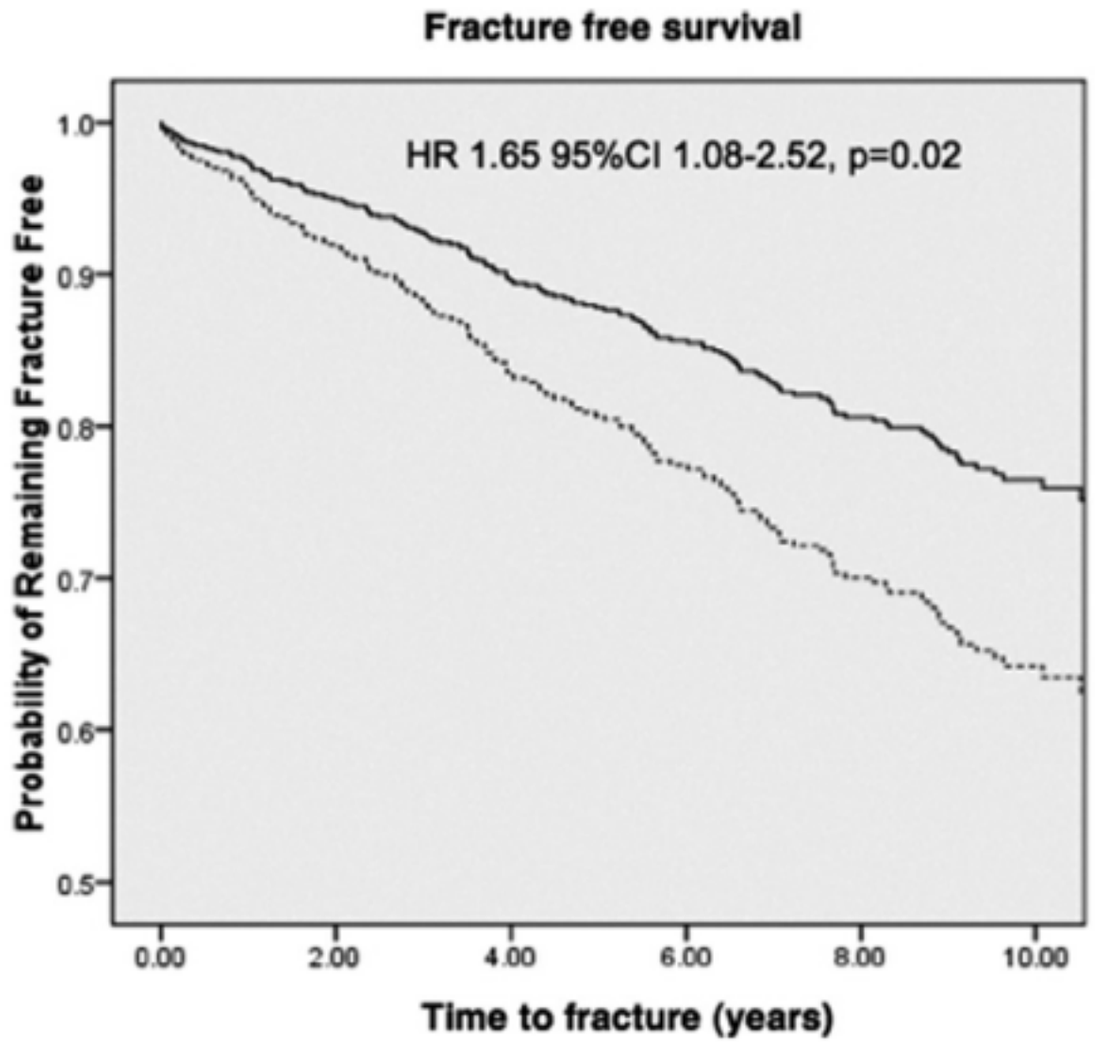
Variable	Reference
Clinical risk factors of both critical illness polyneuropathy and critical illness myopathy	
Female sex	De Jonghe et al.[11]
Sepsis	Garnacho-Montero et al.[28]
Catabolic state	Trojaborg et al.,[15] Garnacho-Montero et al.[28]
Multiorgan system failure	De Jonghe et al.[11]
Systemic inflammatory response syndrome	Jaber et al.,[33] Levine et al.[34]
Long duration of mechanical ventilation	De Jonghe et al.[11]
Immobility	Levine et al.,[32] Papazian et al.,[39] Iwashyna et al.[41]
Hyperglycemia	Van den Berghe et al.[13]
Glucocorticoids	De Jonghe et al.[11]
Neuromuscular blocking agents	MacFarlane and Rosenthal,[3] Leatherman et al.[12]
Pathophysiological processes	
Critical illness polyneuropathy	
Motor nerves affected more than sensory nerves	Bolton et al.[4]
Secondary denervation muscle injury (myopathy)	Bolton et al.[4]
Proposed mechanisms	
Nerve ischemia	Bolton[20]
Nerve microvascular injury	Bolton,[20] Fenzi et al.[21]
Nerve mitochondrial injury	Van den Berghe et al.[22]
Sodium channelopathy	Rich and Pinter[26]
Critical illness myopathy	
Primary myopathy — selective myosin loss, muscle necrosis (e.g., ubiquitin–proteasome proteolysis)	Derde et al.[8]
Mitochondrial dysfunction	Carré et al.[29]
Oxidative stress	Reid and Moylan[30]
Sodium channelopathy	Rich and Pinter[26]

Critical Care Medicine 2011

Skeletal morbidity among survivors of critical illness*

Neil R. Orford, MBBS, FCICM; Kym Saunders, MBBS, FCICM; Elizabeth Merriman, BSc(Hons); Margaret Henry, BSc(Hons); Julie Pasco, BSc(Hons); Peter Stow, MBBS, FCICM; Mark Kotowicz, MBBS, FRACP



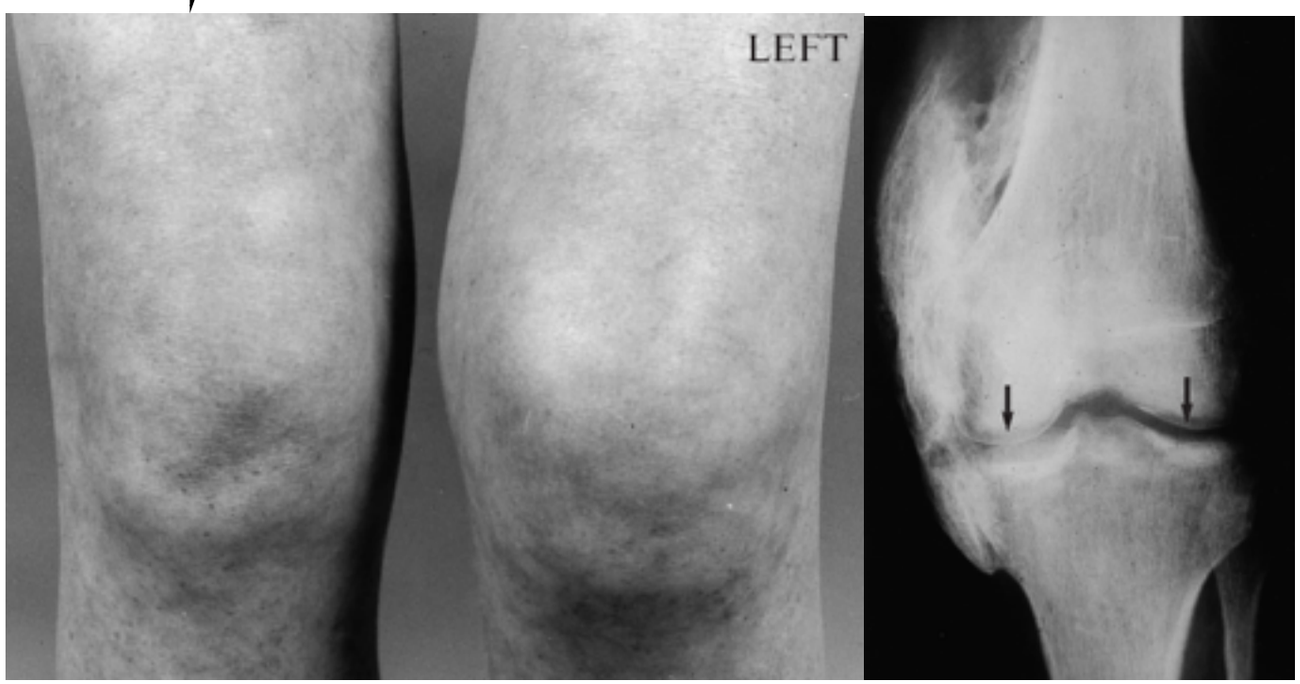


Post-Réa

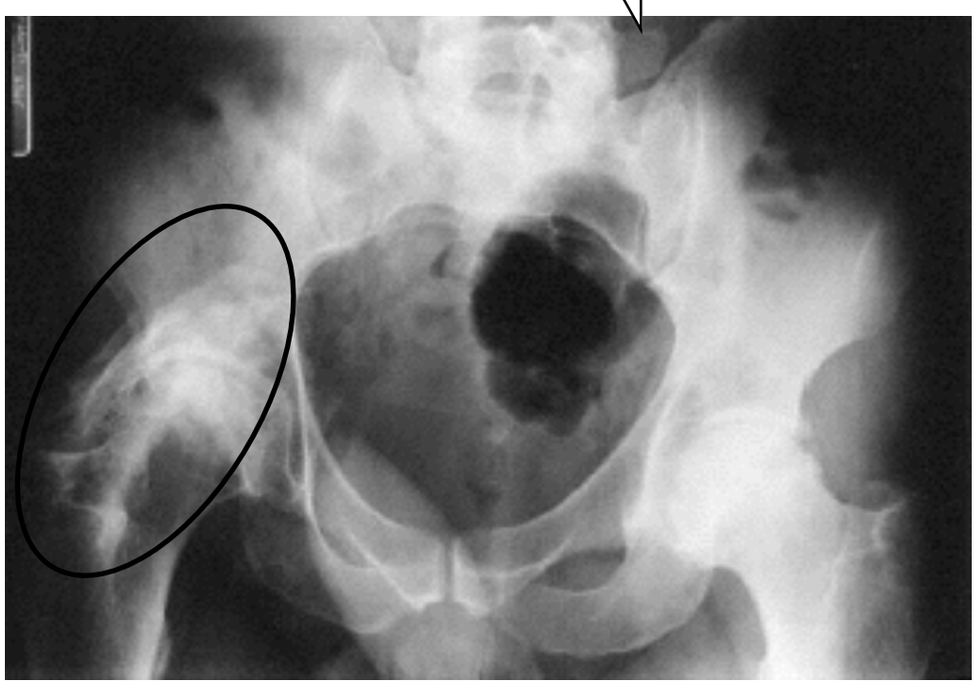
Ostéoporose

Ossifications hétérotopiques

- **Comas**
- **Lésions de la moelle épinière**
- **Pancréatites aiguës**
- **Immobilisation prolongée en réanimation**



Jacobs et al, Rheumatology 99



Sebastiani et al, Clin Rheumatol 02

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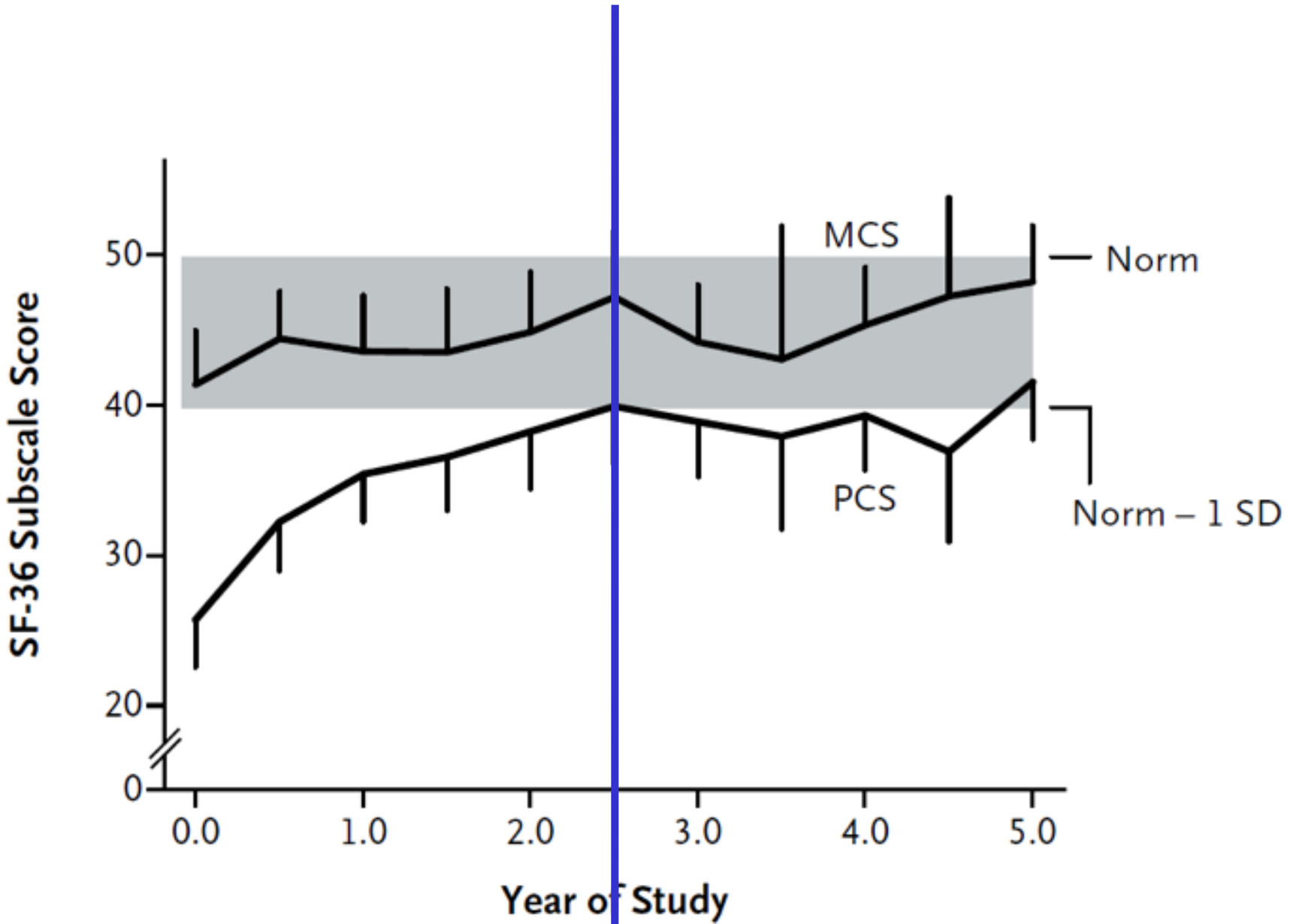
Score Global de santé Mental

Score Global de santé Physique



2½ ans

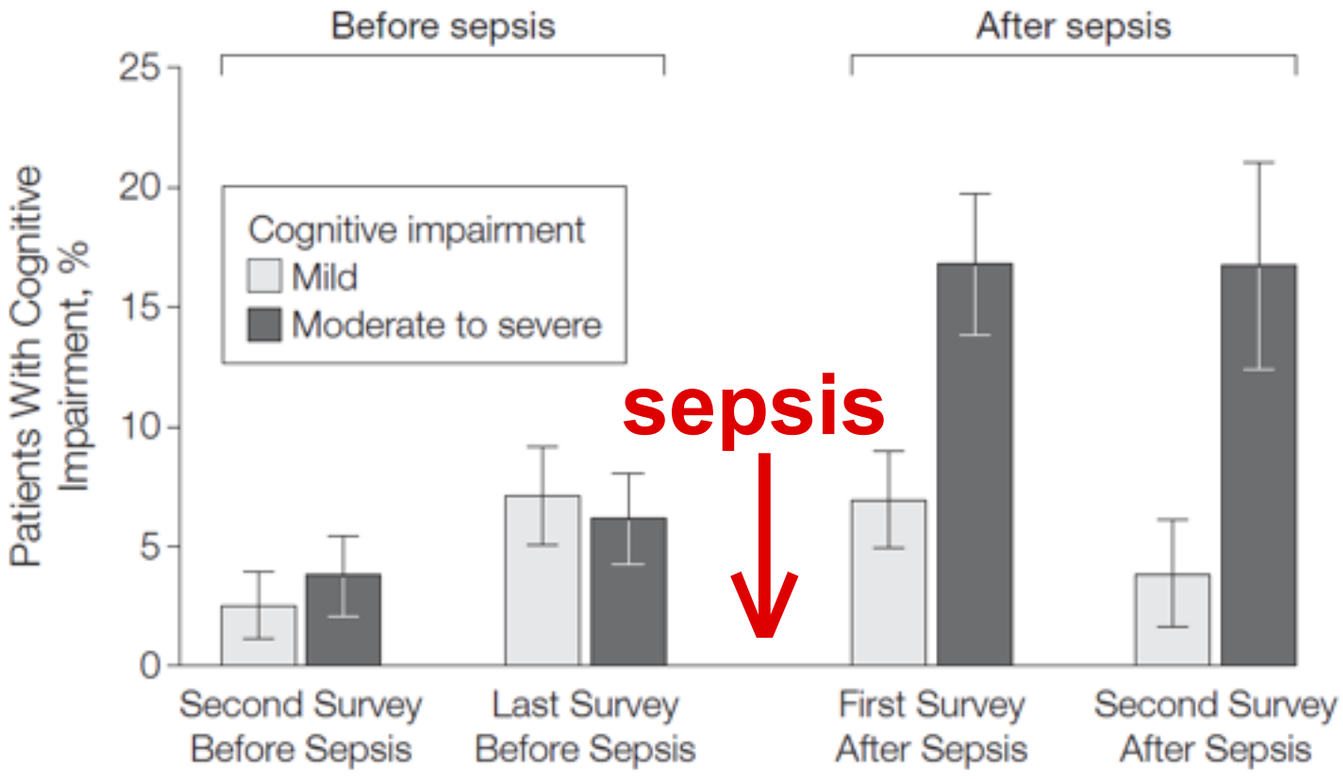
JAMA®

CARING FOR THE CRITICALLY ILL PATIENT

2010

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

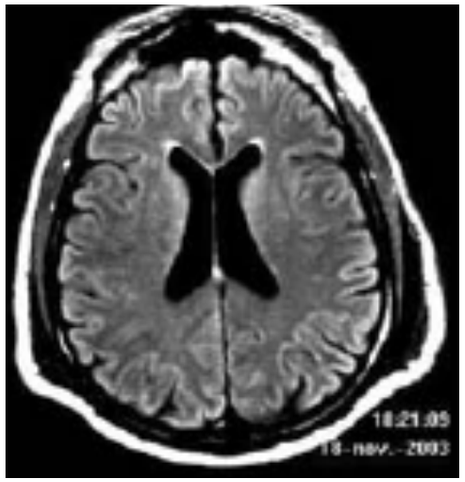
Theodore J. Iwashyna, MD, PhD
E. Wesley Ely, MD, MPH
Dylan M. Smith, PhD
Kenneth M. Langa, MD, PhD

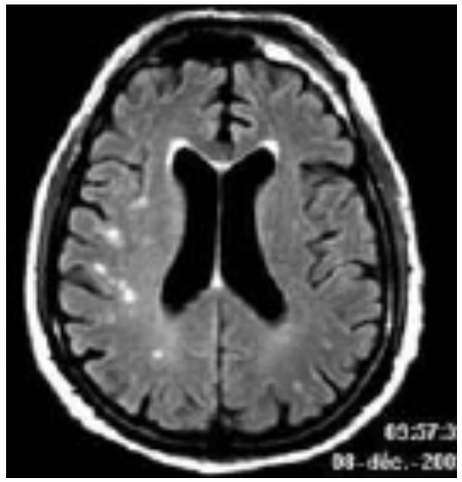


LEUCO-ENCEPHALOPATHIE SEPTIQUE

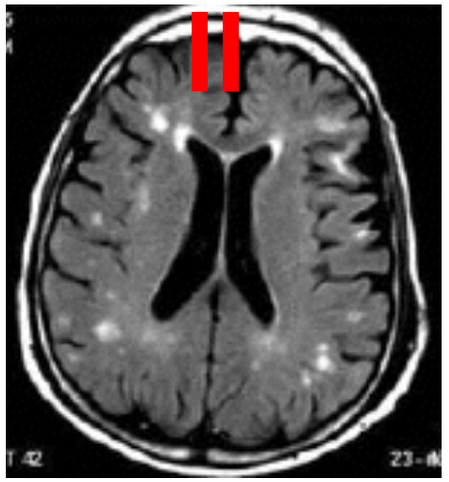
Sharshar et al, Intensive Care Med 2007

Grade I

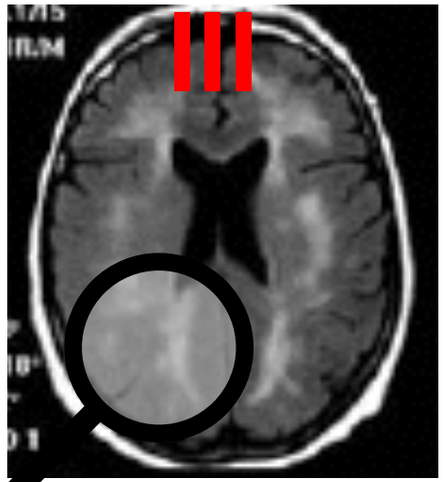


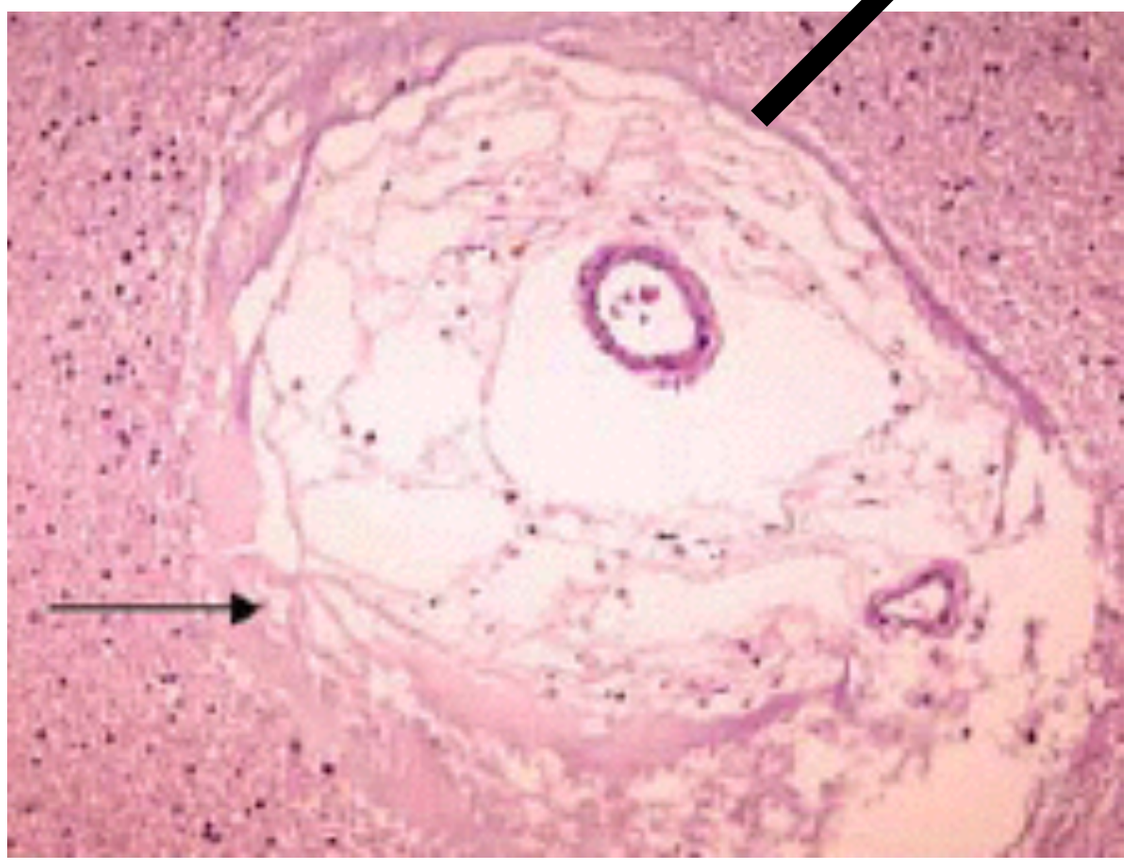


Grade II



Grade III





le Handicap

Syndrome de stress post traumatique (PTSD)

SSPT : trouble anxieux sévère qui se manifeste à la suite d'une expérience vécue comme traumatisante (attentats, viol, guerre...).

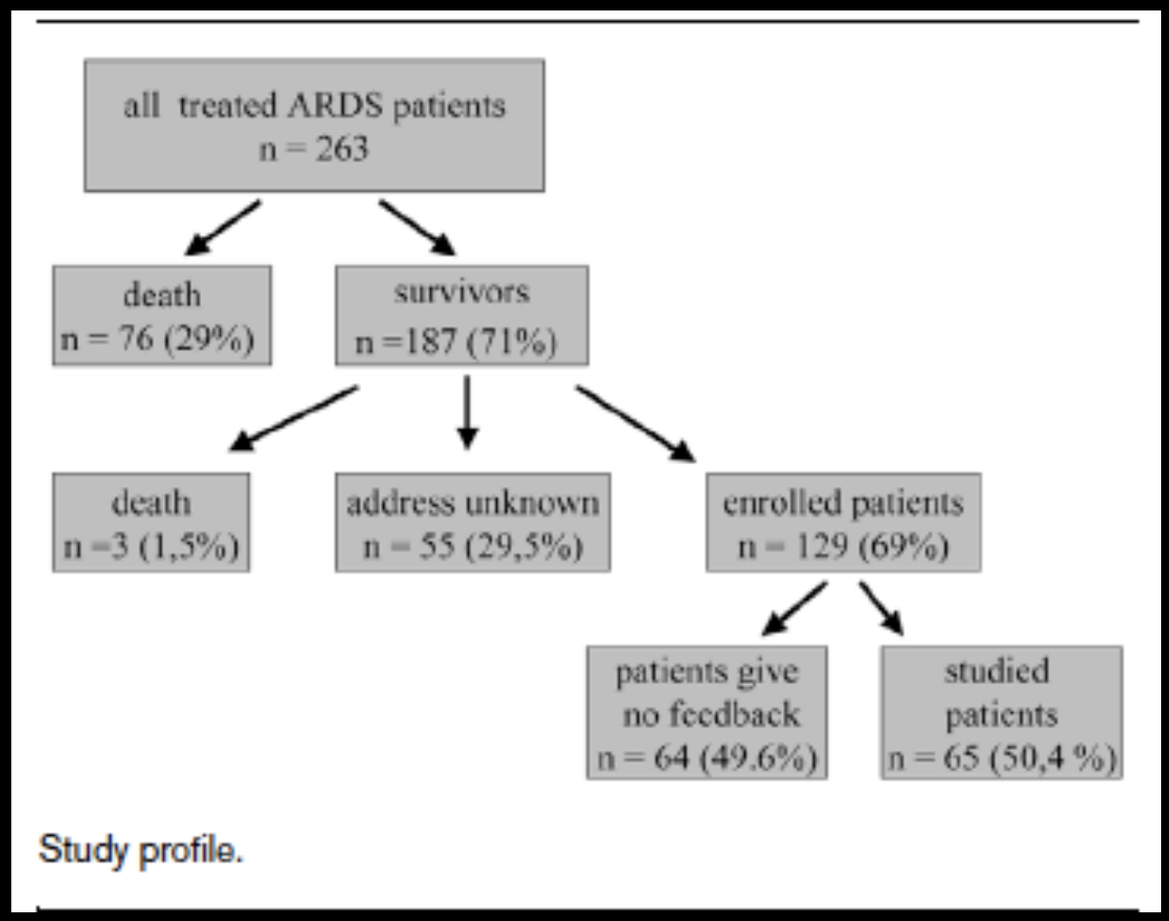
Syndrome de stress post traumatique (PTSD)

Research

Open Access

Social support during intensive care unit stay might improve mental impairment and consequently health-related quality of life in survivors of severe acute respiratory distress syndrome

Maria Deja*, Claudia Denke*, Steffen Weber-Carstens, Jürgen Schröder, Christian E Pille, Frank Hokema, Konrad J Falke and Udo Kaisers



Study profile.

57±32 mois
PTSS-10
SF-36

Deja, Crit Care 2006

Research

Open Access

Social support during intensive care unit stay might improve mental impairment and consequently health-related quality of life in survivors of severe acute respiratory distress syndrome

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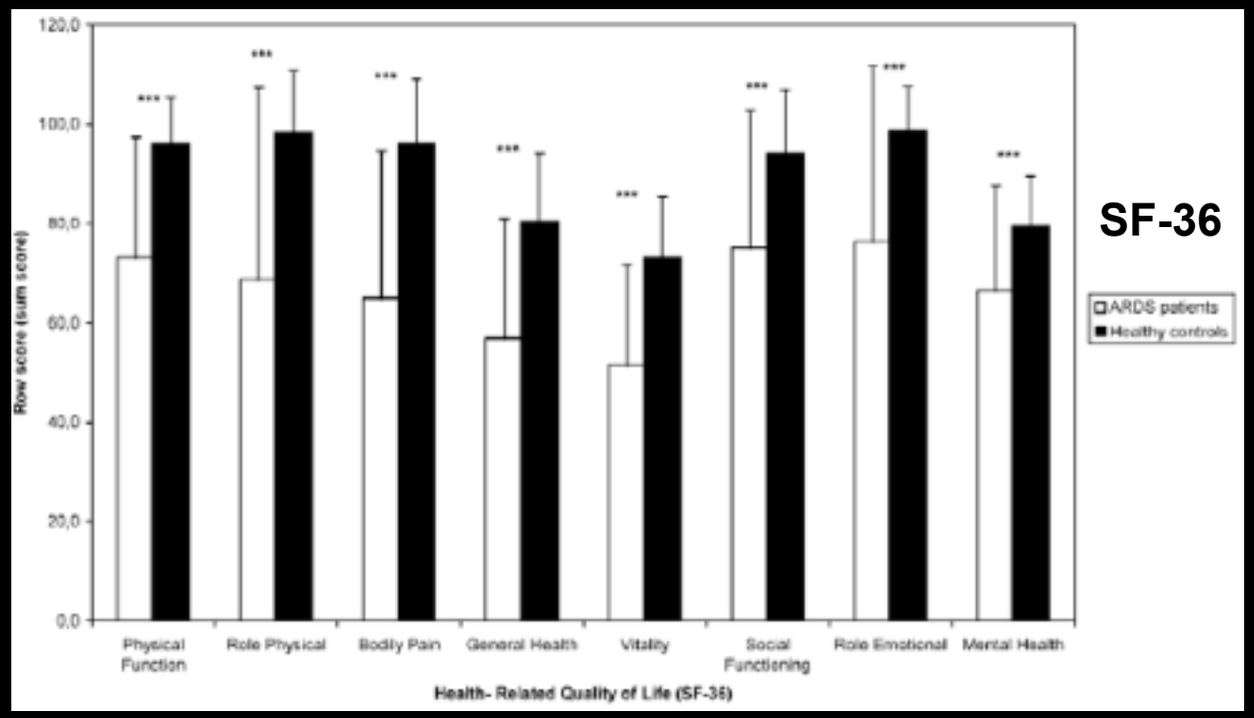
PTSD : 30% des patients



Deja, Crit Care 2006

The NEW ENGLAND JOURNAL of MEDICINE

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., Andrea B. Cooper, M.D., Cameron B. Guest, M.D., C. David Mazer, M.D., Sangeeta Mehta, M.D., Thomas E. Stewart, M.D., Alain Barr, Ph.D., Deborah Cook, M.D., and Arthur S. Slutsky, M.D., for the Canadian Critical Care Trials Group

Variable	3 Mo (N=71)*	6 Mo (N=77)†	12 Mo (N=80)‡
	median (interquartile range)		
Forced vital capacity (% of predicted)	72 (57–86)	80 (68–94)	85 (71–98)
Forced expiratory volume in one second (% of predicted)	75 (58–92)	85 (69–98)	86 (74–100)
Total lung capacity (% of predicted)§	92 (77–97)	92 (83–101)	95 (81–103)
Residual volume (% of predicted)§	107 (87–121)	97 (82–117)	105 (90–116)
Carbon monoxide diffusion capacity (% of predicted)§¶	63 (54–77)	70 (58–82)	72 (61–86)

RECOMMANDATIONS FORMALISÉES D'EXPERTS

Nutrition artificielle en réanimation
Guidelines for nutrition support in critically ill patient

J.-Y. Lefrant [a,*], D. Hurel [b], N.J. Cano [c,d,e], C. Ichai [f], J.-C. Preiser [g], F. Tamion [h]

[a] *Services des réanimations, division anesthésie réanimation douleur urgence, CHU de Nîmes, place du Pr-Robert-Debré, 30029 Nîmes cedex 9, France*
[b] *Service de réanimation médico-chirurgicale, centre hospitalier François-Quesnay, 2, boulevard Sully, 78201 Mantes-la-Jolie cedex, France*
[c] *Service de nutrition, CHU de Clermont-Ferrand, 63003 Clermont-Ferrand cedex, France*
[d] *Unité de nutrition humaine, Clermont université, université d'Auvergne, BP 10448, 63000 Clermont-Ferrand, France*
[e] *Inra, UMR 1019, UNH, CRNH Auvergne, 63000 Clermont-Ferrand, France*
[f] *Service de réanimation médico-chirurgicale, hôpital Saint-Roch, CHU de Nice, 5, rue Pierre-Dévoluy, 06006 Nice cedex 1, France*
[g] *Service des soins intensifs, hôpital universitaire Erasme, 808, route de Lennik, 1070 Bruxelles, Belgique*
[h] *Service de réanimation médicale, hôpital Charles-Nicolle, CHU de Rouen, 1, rue de Germont, 76081 Rouen cedex, France*

SFAR
Société Française d'Anesthésie et de Réanimation

Réanimation

+ de patients

+ suppléances d'organe

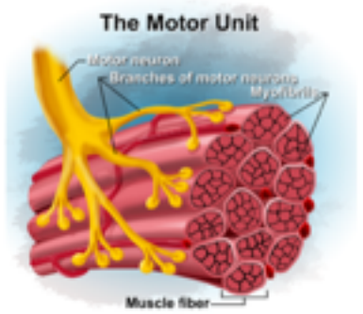
+ agés

+ comorbidités

+ cancer

- Sarcopénie
- Anorexie
- cachexie
- Dénutrition
- ...

"ICU acquired weakness"



- ❑ **Myopathie**
  Atrophie fibres type II
- ❑ **Neuropathie**
  Dégénération axonale
- ❑ **Neuromyopathies**
- ❑ **Atrophie diffuse**

CARING FOR THE CRITICALLY ILL PATIENT

ONLINE FIRST

Initial Trophic vs Full Enteral Feeding in Patients With Acute Lung Injury

The EDEN Randomized Trial

The National Heart, Lung, and Blood Institute Acute Respiratory Distress Syndrome (ARDS) Clinical Trials Network*

The NEW ENGLAND JOURNAL of MEDICINE

ORIGINAL ARTICLE

Permissive Underfeeding or Standard Enteral Feeding in Critically Ill Adults

Yaseen M. Arabi, M.D., Abdulaziz S. Aldawood, M.D., Samir H. Haddad, M.D., Hasan M. Al-Dorzi, M.D., Hani M. Tamim, M.P.H., Ph.D., Gwynne Jones, M.D., Sangeeta Mehta, M.D., Lauralyn McIntyre, M.D., Othman Solaiman, M.D., Maram H. Sakkijha, R.D., Musharaf Sadat, M.B., B.S., and Lara Afesh, M.S.N., for the PermiT Trial Group*

ABSTRACT

BACKGROUND

The appropriate caloric goal for critically ill adults is unclear. We evaluated the effect of restriction of nonprotein calories (permissive underfeeding), as compared with standard enteral feeding, on 90-day mortality among critically ill adults, with maintenance of the full recommended amount of protein in both groups.

METHODS

At seven centers, we randomly assigned 894 critically ill adults with a medical, surgical, or trauma admission category to permissive underfeeding (40 to 60% of calculated caloric requirements) or standard enteral feeding (70 to 100%) for up to 14 days while maintaining a similar protein intake in the two groups. The primary outcome was 90-day mortality.

RESULTS

Baseline characteristics were similar in the two groups; 96.8% of the patients were receiving mechanical ventilation. During the intervention period, the permissive-underfeeding group received fewer mean (±SD) calories than did the standard-feeding group (835±297 kcal per day vs. 1299±467 kcal per day, P<0.001; 46±14% vs. 71±22% of caloric requirements, P<0.001). Protein intake was similar in the two groups (57±24 g per day and 59±25 g per day, respectively; P=0.29). The 90-day mortality was similar: 121 of 445 patients (27.2%) in the permissive-underfeeding group and 127 of 440 patients (28.9%) in the standard-feeding group died (relative risk with permissive underfeeding, 0.94; 95% confidence interval [CI], 0.76 to 1.16; P=0.58). No serious adverse events were reported; there were no significant between-group differences with respect to feeding intolerance, diarrhea, infections acquired in the intensive care unit (ICU), or ICU or hospital length of stay.

CONCLUSIONS

Enteral feeding to deliver a moderate amount of nonprotein calories to critically ill adults was not associated with lower mortality than that associated with planned delivery of a full amount of nonprotein calories. (Funded by the King Abdullah International Medical Research Center; PermiT Current Controlled Trials number, ISRCTN68144998.)

The NEW ENGLAND JOURNAL of MEDICINE

ORIGINAL ARTICLE

Early versus On-Demand Nasoenteric Tube Feeding in Acute Pancreatitis

O.J. Bakker, S. van Brunschot, H.C. van Santvoort, M.G. Besselink, T.L. Bollen, M.A. Boermeester, C.H. Dejong, H. van Goor, K. Bosscha, U. Ahmed Ali, S. Bouwense, W.M. van Grevenstein, J. Heisterkamp, A.P. Houdijk, J.M. Jansen, T.M. Karsten, E.R. Manusama, V.B. Nieuwenhuijs, A.F. Schaapherder, G.P. van der Schelling, M.P. Schwartz, B.W.M. Spanier, A. Tan, J. Vecht, B.L. Weusten, B.J. Witteman, L.M. Akkermans, M.J. Bruno, M.G. Dijkgraaf, B. van Ramshorst, and H.G. Gooszen, for the Dutch Pancreatitis Study Group

ABSTRACT

The NEW ENGLAND JOURNAL of MEDICINE

ORIGINAL ARTICLE

Permissive Underfeeding or Standard Enteral Feeding in Critically Ill Adults

The NEW ENGLAND JOURNAL of MEDICINE

ORIGINAL ARTICLE

Trial of the Route of Early Nutritional Support in Critically Ill Adults

Sheila E. Harvey, Ph.D., Francesca Parrott, M.Sci., David A. Harrison, Ph.D., Danielle E. Bear, M.Res., Ella Segaran, M.Sc., Richard Beale, M.B., B.S., Geoff Bellingan, M.D., Richard Leonard, M.B., B.Chir., Michael G. Mythen, M.D., and Kathryn M. Rowan, Ph.D., for the CALORIES Trial Investigators*

ABSTRACT

BACKGROUND

Uncertainty exists about the most effective route for delivery of early nutritional support in critically ill adults. We hypothesized that delivery through the parenteral route is superior to that through the enteral route.

METHODS

We conducted a pragmatic, randomized trial involving adults with an unplanned admission to one of 33 English intensive care units. We randomly assigned patients who could be fed through either the parenteral or the enteral route to a delivery route, with nutritional support initiated within 36 hours after admission and continued for up to 5 days. The primary outcome was all-cause mortality at 30 days.

RESULTS

We enrolled 2400 patients; 2388 (99.5%) were included in the analysis (1191 in the parenteral group and 1197 in the enteral group). By 30 days, 393 of 1188 patients (33.1%) in the parenteral group and 409 of 1195 patients (34.2%) in the enteral group had died (relative risk in parenteral group, 0.97; 95% confidence interval, 0.86 to 1.08; P=0.57). There were significant reductions in the parenteral group, as compared with the enteral group, in rates of hypoglycemia (44 patients [3.7%] vs. 74 patients [6.2%]; P=0.006) and vomiting (100 patients [8.4%] vs. 194 patients [16.2%]; P<0.001). There were no significant differences between the parenteral group and the enteral group in the mean number of treated infectious complications (0.22 vs. 0.21; P=0.72), 90-day mortality (442 of 1184 patients [37.3%] vs. 464 of 1183 patients [39.2%], P=0.40), in rates of 14 other secondary outcomes, or in rates of adverse events. Caloric intake was similar in the two groups, with the target intake not achieved in most patients.

CONCLUSIONS

We found no significant difference in 30-day mortality associated with the route of delivery of early nutritional support in critically ill adults. (Funded by the United Kingdom National Institute for Health Research; CALORIES Current Controlled Trials number, ISRCTN17386141.)

CARING FOR THE CRITICALLY ILL PATIENT

ONLINE FIRST

Early Parenteral Nutrition in Critically Ill Patients With Short-term Relative Contraindications to Early Enteral Nutrition

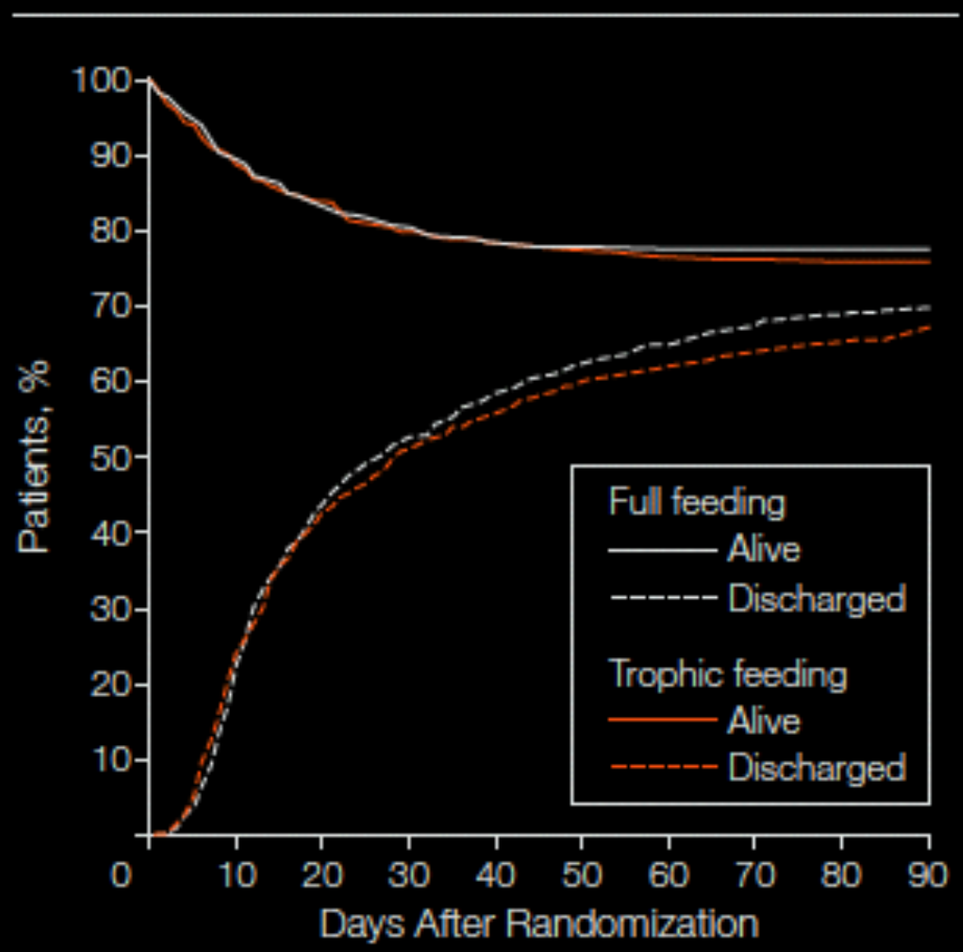
A Randomized Controlled Trial

ONLINE FIRST

Initial Trophic vs Full Enteral Feeding in Patients With Acute Lung Injury

The EDEN Randomized Trial

JAMA, February 22/29

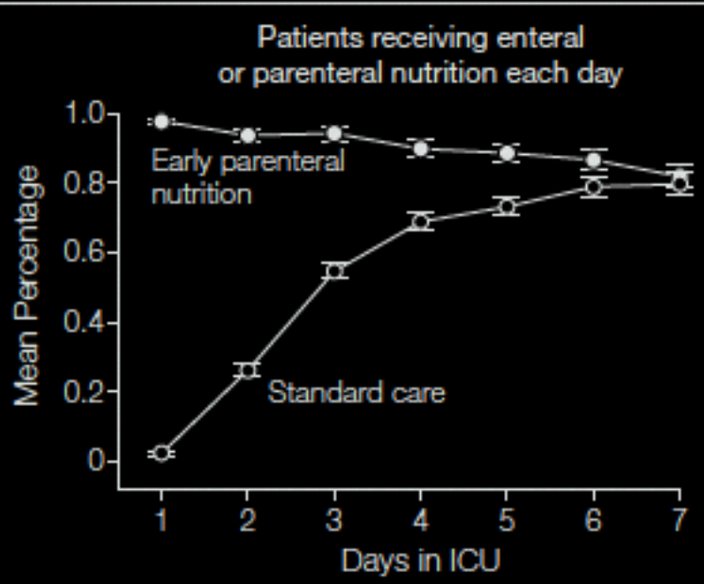


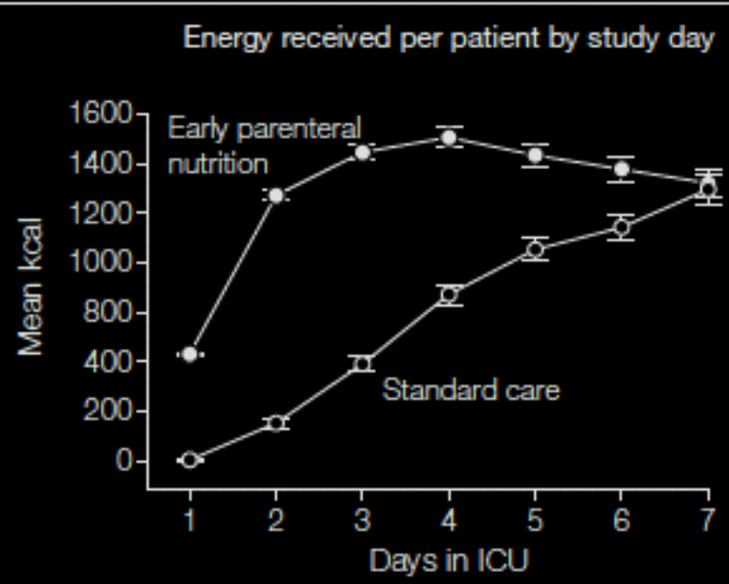
ONLINE FIRST

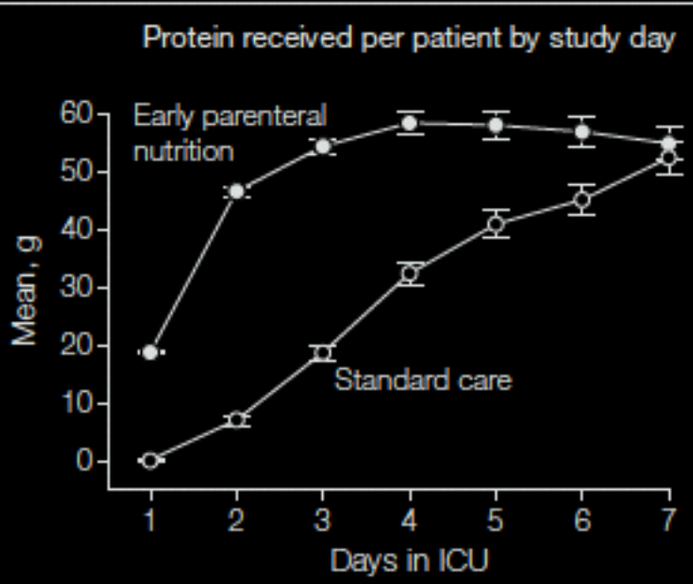
Early Parenteral Nutrition in Critically Ill Patients With Short-term Relative Contraindications to Early Enteral Nutrition

A Randomized Controlled Trial

May 20, 2013







ONLINE FIRST

Early Parenteral Nutrition in Critically Ill Patients With Short-term Relative Contraindications to Early Enteral Nutrition

A Randomized Controlled Trial

May 20, 2013

Table 2. Mortality, Quality of Life, and Length of Stay

	Standard Care (n = 680)[a]	Early PN (n = 678)[a]	Risk Difference, % (95% CI)	Odds Ratio (95% CI)	*P* Value
Deaths before study day 60, No. (%)	155 (22.8)	146 (21.5)	−1.26 (−6.6 to 4.1)	0.93 (0.71 to 1.21)	.60
Covariate-adjusted deaths before study day 60[b]			0.04 (−4.2 to 4.3)	1.00 (0.76 to 1.31)	>.99
Quality of life and physical function, mean (SD)[c]	**(n = 525)**	**(n = 532)**	**Difference (95% CI)**		
RAND-36 general health status[d]	45.5 (26.8) (n = 516)	49.8 (27.6) (n = 525)	4.3 (0.95 to 7.58)		.01
ECOG performance status[e]	1.53 (1.1) (n = 516)	1.51 (1.1) (n = 525)	−0.02 (−0.15 to 0.11)		.70
RAND-36 physical function[f]	40.7 (29.6) (n = 513)	42.5 (30.8) (n = 524)	1.8 (−1.85 to 5.52)		.33
Discharge status and length of stay	**(n = 682)**	**(n = 681)**	**Difference (95% CI)**		
ICU stay, mean (95% CI), d	9.3 (8.9 to 9.7)	8.6 (8.2 to 9.0)	−0.75 (−1.47 to 0.04)		.06
Deaths before ICU discharge, No. (%)	100 (14.66)	81 (11.89)	−2.77% (−8.08% to 2.52%)		.15
Hospital stay, mean (95% CI), d	24.7 (23.7 to 25.8)	25.4 (24.4 to 26.6)	0.7 (−1.4 to 3.1)		.50
Deaths before hospital discharge, No. (%)	151 (22.1)	140 (20.6)	−1.58% (−6.91% to 3.69%)		.51

ORIGINAL ARTICLE

Early versus On-Demand Nasoenteric Tube Feeding in Acute Pancreatitis

Table 2. Primary and Secondary End Points, According to the Intention-to-Treat Analysis.*

Outcome	Early Tube Feeding (N=101)	On-Demand Tube Feeding (N=104)	Risk Ratio (95% CI)	P Value
Primary composite end point: infection or death — no. (%)	30 (30)	28 (27)	1.07 (0.79–1.44)	0.76
Secondary end points				
Infection — no. (%)†	25 (25)	27 (26)	0.97 (0.70–1.34)	0.87
Infected pancreatic necrosis	9 (9)	15 (14)	0.74 (0.43–1.26)	0.28
Bacteremia	17 (17)	18 (17)	0.98 (0.68–1.43)	1.00
Pneumonia	12 (12)	13 (12)	0.97 (0.63–1.50)	1.00
Death — no. (%)	11 (11)	7 (7)	1.27 (0.85–1.89)	0.33
Necrotizing pancreatitis — no. (%)‡	64 (63)	65 (62)	1.06 (0.77–1.47)	0.76
CT severity index§	4±2	4±3	—	0.29
ICU admission after randomization — no. (%)	18 (18)	20 (19)	0.95 (0.66–1.38)	0.86
Mechanical ventilation — no. (%)	12 (12)	14 (13)	0.93 (0.60–1.44)	0.84
New-onset organ failure — no./total no. at risk (%)¶				
Single organ failure	26/67 (39)	31/73 (42)	0.92 (0.65–1.32)	0.73
Persistent single organ failure	10/67 (15)	10/73 (14)	1.05 (0.65–1.70)	1.00
Multiple organ failure	7/67 (10)	6/73 (8)	1.14 (0.67–1.95)	0.77
Persistent multiple organ failure	4/67 (6)	4/73 (5)	1.05 (0.51–2.14)	1.00

Trial of the Route of Early Nutritional Support in Critically Ill Adults

Table 3. Primary and Secondary Outcomes.*

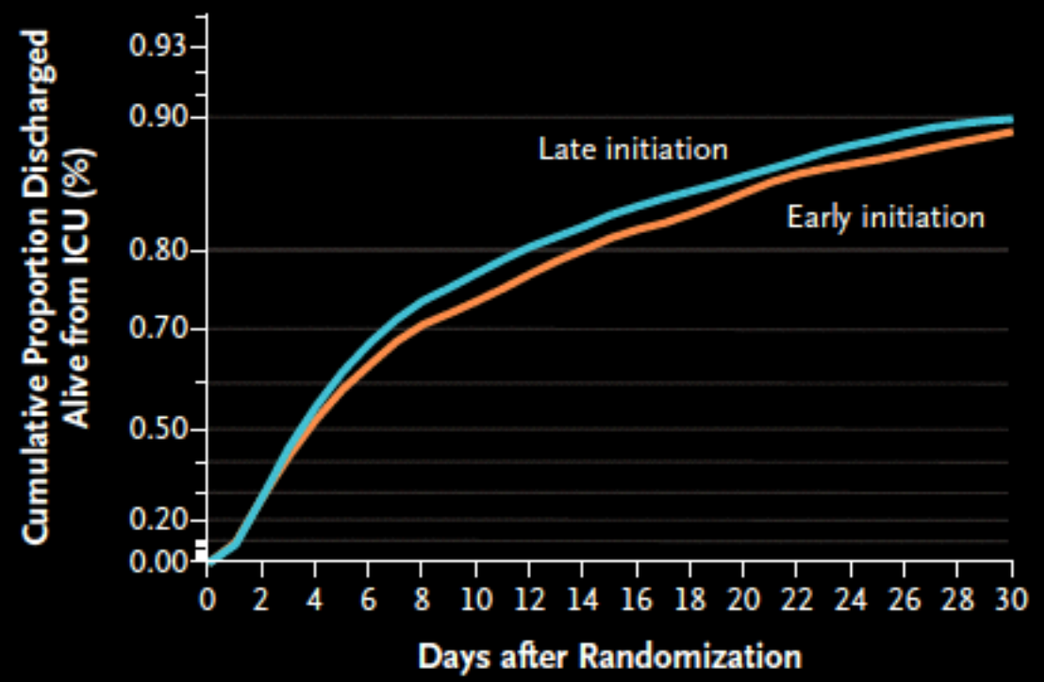
Outcome	Parenteral Group (N=1191)	Enteral Group (N=1197)	Absolute Difference between Groups (95% CI)	Relative Risk (95% CI)	P Value
Primary outcome: death within 30 days — no./total no. (%)	393/1188 (33.1)	409/1195 (34.2)	1.15 (−2.65 to 4.94)†	0.97 (0.86 to 1.08)‡	0.57§
Secondary outcomes					
No. of days alive and free of specified organ support up to 30 days¶					
Free of advanced respiratory support	14.3±12.1	14.3±12.2	0.04 (−0.94 to 1.01)		0.94
Free of advanced cardiovascular support	18.9±13.5	18.5±13.6	0.41 (−0.63 to 1.53)		0.44
Free of renal support	19.1±13.9	18.8±14.0	0.26 (−0.85 to 1.47)		0.66
Free of neurologic support	19.2±13.8	18.9±14.0	0.34 (−0.81 to 1.36)		0.57
Free of gastrointestinal support	13.0±11.7	13.2±11.8	−0.12 (−1.05 to 0.80)		0.81
No. of treated infectious complications per patient‖	0.22±0.60	0.21±0.56	0.01 (−0.04 to 0.06)		0.72
Noninfectious complications — no./total no. (%)					
Episodes of hypoglycemia	44/1191 (3.7)**	74/1197 (6.2)††	2.49 (0.75 to 4.22)†		0.006§
Elevated liver enzymes	212/1191 (17.8)	179/1197 (15.0)	−2.85 (−5.81 to 0.12)†		0.07§
Nausea requiring treatment	44/1191 (3.7)	53/1197 (4.4)	0.73 (−0.85 to 2.32)†		0.41§
Abdominal distention	78/1191 (6.5)	99/1197 (8.3)	1.72 (−0.38 to 3.82)†		0.12§
Vomiting	100/1191 (8.4)	194/1197 (16.2)	7.81 (5.20 to 10.43)†		<0.001§
New or substantially worsened pressure ulcers	181/1190 (15.2)	179/1195 (15.0)	−0.23 (−3.10 to 2.64)†		0.91§
Median no. of days in the ICU (IQR)‡‡	8.1 (4.0–15.8)	7.3 (3.9–14.3)			0.15
Median no. of days in acute care hospital (IQR)§§	17 (8–34)	16 (8–33)			0.32
Death — no./total no. (%)¶¶					
In the ICU	317/1190 (26.6)	352/1197 (29.4)		0.91 (0.80 to 1.03)	0.13§
In acute care hospital	431/1185 (36.4)	450/1186 (37.9)		0.96 (0.86 to 1.06)	0.44§
By 90 days	442/1184 (37.3)	464/1188 (39.1)		0.96 (0.86 to 1.06)	0.40§

ORIGINAL ARTICLE

Early versus Late Parenteral Nutrition in Critically Ill Adults

Michael P. Casaer, M.D., Dieter Mesotten, M.D., Ph.D., Greet Hermans, M.D., Ph.D., Pieter J. Wouters, R.N., M.Sc., Miet Schetz, M.D., Ph.D., Geert Meyfroidt, M.D., Ph.D., Sophie Van Cromphaut, M.D., Ph.D., Catherine Ingels, M.D., Philippe Meersseman, M.D., Jan Muller, M.D., Dirk Vlasselaers, M.D., Ph.D., Yves Debaveye, M.D., Ph.D., Lars Desmet, M.D., Jasperina Dubois, M.D., Aime Van Assche, M.D., Simon Vanderheyden, B.Sc., Alexander Wilmer, M.D., Ph.D., and Greet Van den Berghe, M.D., Ph.D.

B **Discharge Alive from ICU**



No. at Risk

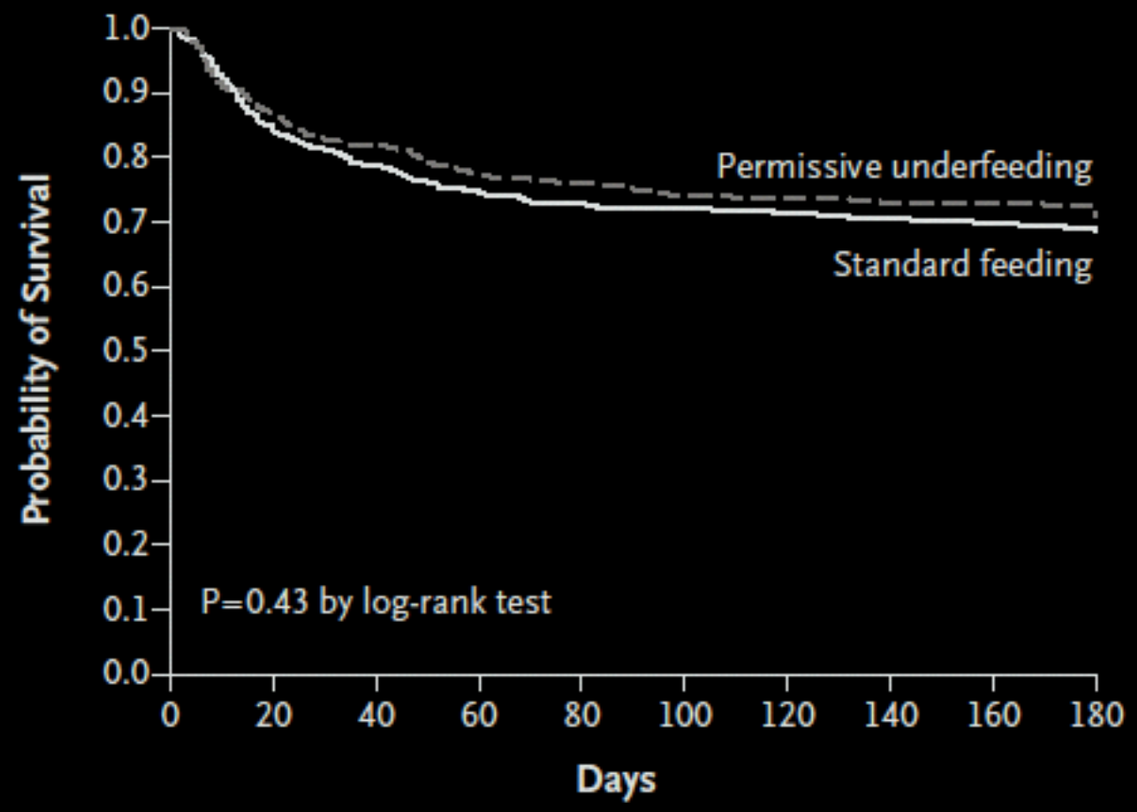
Late initiation	2328	623	376	236
Early initiation	2312	694	418	253

The NEW ENGLAND JOURNAL of MEDICINE

ORIGINAL ARTICLE JUNE 18, 2015

Permissive Underfeeding or Standard Enteral Feeding in Critically Ill Adults

Yaseen M. Arabi, M.D., Abdulaziz S. Aldawood, M.D., Samir H. Haddad, M.D., Hasan M. Al-Dorzi, M.D., Hani M. Tamim, M.P.H., Ph.D., Gwynne Jones, M.D., Sangeeta Mehta, M.D., Lauralyn McIntyre, M.D., Othman Solaiman, M.D., Maram H. Sakkijha, R.D., Musharaf Sadat, M.B., B.S., and Lara Afesh, M.S.N., for the PermiT Trial Group*



No. at Risk

Standard feeding	446	380	352	334	325	322	319	315	312	308
Permissive underfeeding	448	390	368	346	340	331	330	326	326	324

Permissive underfeeding — Standard feeding

A
Caloric Intake (% of requirement)
P<0.001 for change over time
P<0.001 for between-group difference
Study Day

B
Protein Intake (% of requirement)
P<0.001 for change over time
P=0.93 for between-group difference
Study Day

C
Blood Glucose (mmol/liter)
P<0.001 for change over time
P=0.46 for between-group difference
Study Day

D
Total Insulin Dose (units)
P<0.001 for change over time
P=0.99 for between-group difference
Study Day

E
Fluid Balance (ml)
P<0.001 for change over time
P=0.82 for between-group difference
Study Day

F
Total SOFA Score
P<0.001 for change over time
P=0.61 for between-group difference
Study Day

G
C-Reactive Protein (mg/liter)
P<0.001 for change over time
P=0.39 for between-group difference
Study Day

H
Prealbumin (g/liter)
P<0.001 for change over time
P=0.28 for between-group difference
Study Day

I
Nitrogen Balance (g)
P<0.001 for change over time
P=0.04 for between-group difference
Study Day

REVIEW ARTICLE

CRITICAL CARE MEDICINE

Nutrition in the Acute Phase of Critical Illness

Michael P. Casaer, M.D., Ph.D., and Greet Van den Berghe, M.D., Ph.D.

Recommendations for clinical practice

Allow hypocaloric enteral feeding in the acute phase of critical illness for up to 7 days in previously well-nourished patients.

Note that current evidence does not support glutamine supplementation early in critical illness.

Supply micronutrients to prevent refeeding syndrome.*

Réhabilitation Précoce en Réanimation

ERAS

Audit

Information
Conselling

No bowel
preparation

Carbohydrate loading
No medication for sedation

Thrombo and
antimicrobial
prophylaxis

Anaesthetic protocol
Epidural analgesia

Preventing PONV

laparoscopy or
minimal length
incisions

No routine
nasogastric tube

Preventing intraop
hypothermia

Periop fluid
restriction

No routine
abdominal
drainage

Urinary drainage

Preventing
postoperative ileus

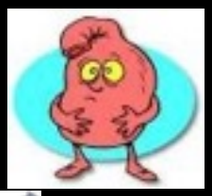
Postoperative epidural
analgesia

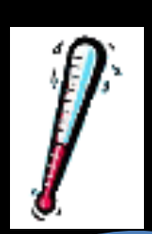
Early postoperative oral
diet

Early mobilization

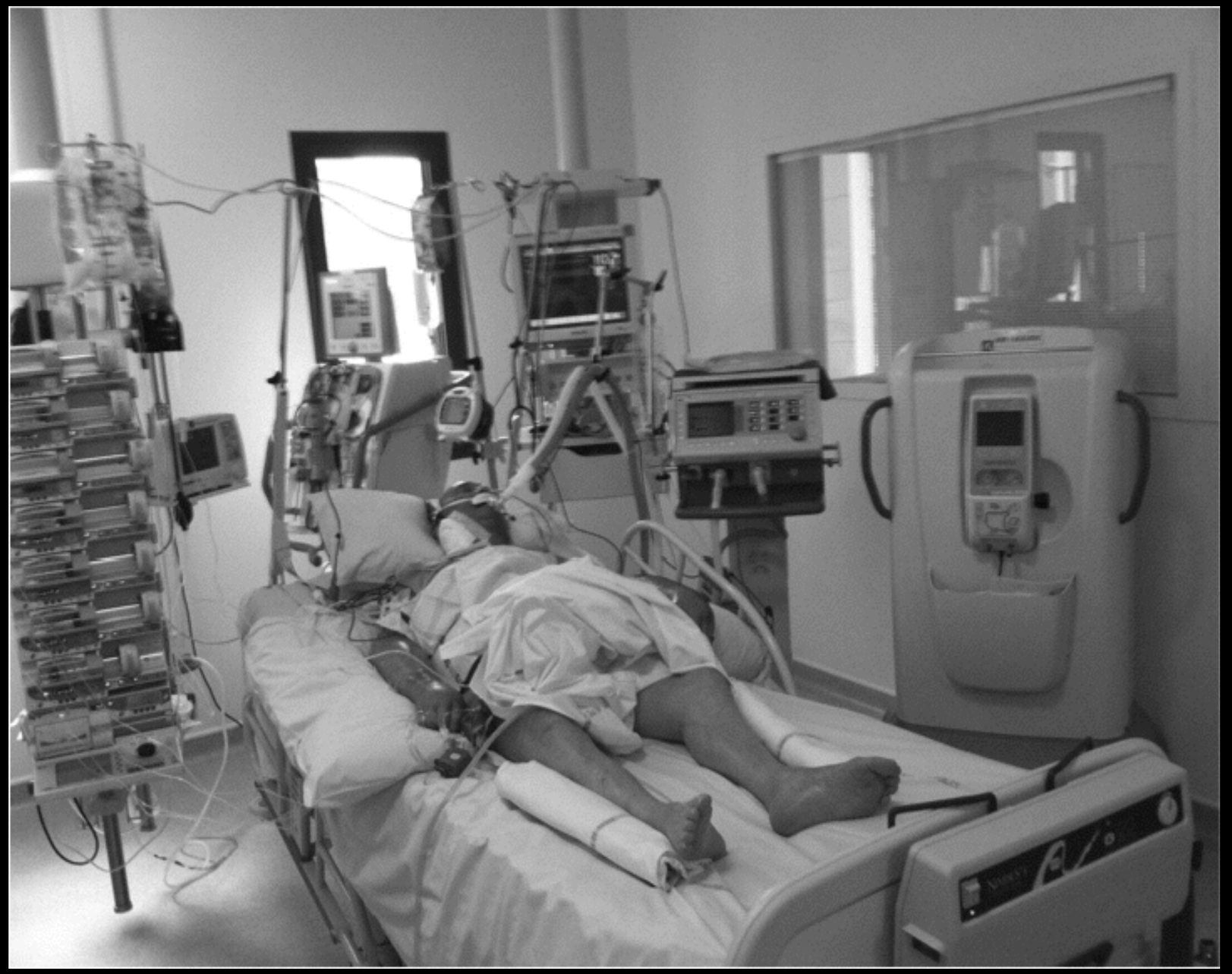






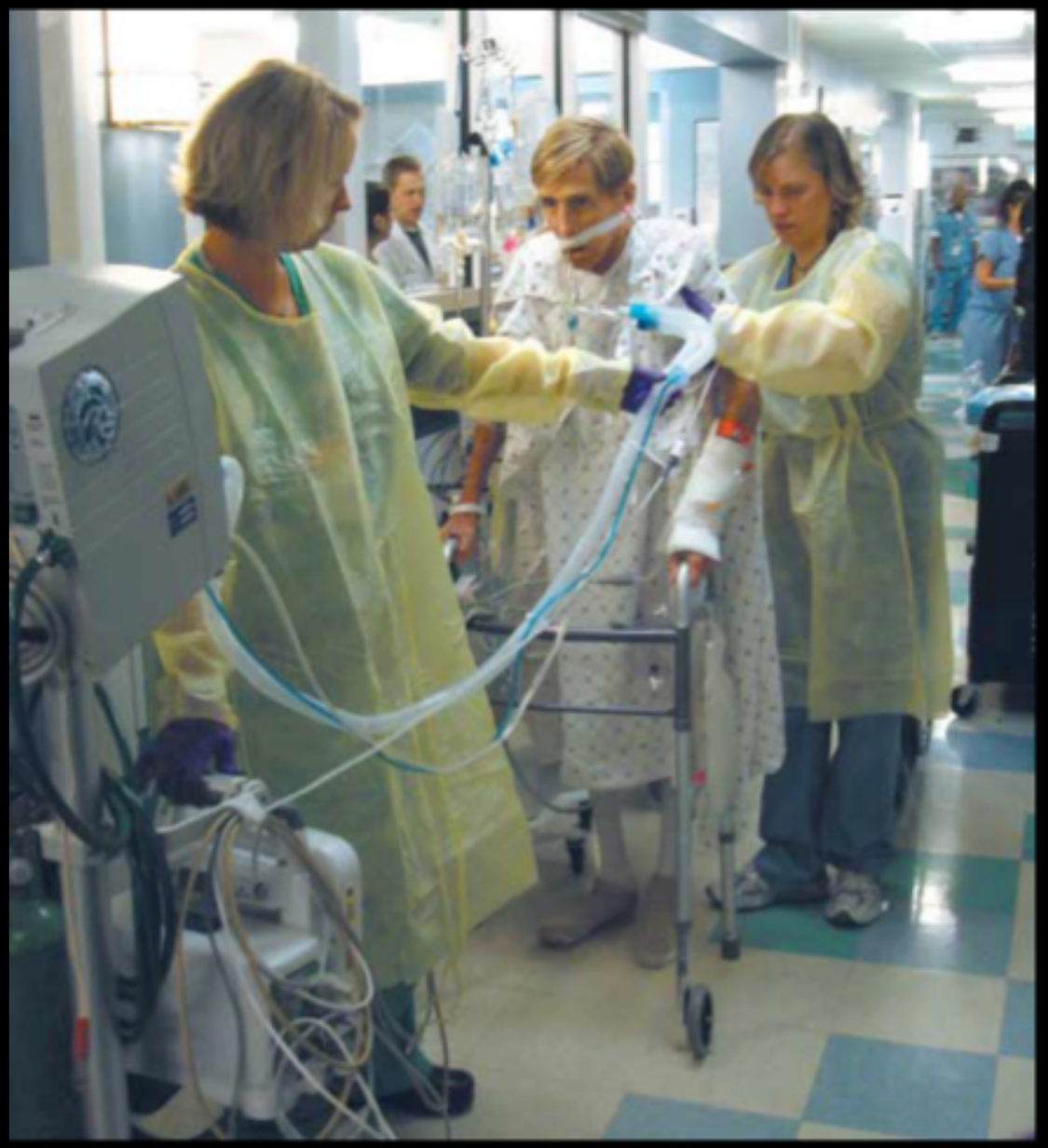



En dehors du SDRA à la phase initiale et du cérébrolésé avec HTIC,

Pas de sédation profonde !

Gérald Chanques, Montpellier, France

- AWAKE
- BREATHE
- CHOICE OF DRUGS
- DELIRIUM
- EARLY MOBILIZATION



"All the News That's Fit to Print"

The New York Times

Washington Edition

Today, a mix of sun and clou highs in low 40s. Tonight, pa cloudy, lows around 30. Tomorr thickening clouds, colder late, hi in low 40s. Weather map, Page

L. CLVIII .... No. 54,553 MONDAY, JANUARY 12, 2009 $1.

New Idea to Cut I.C.U. Trauma: Get Patients Up, Tubes and All

By GINA KOLATA

For years, doctors thought they had done their jobs if patients came out of an intensive care unit alive.

Now, though, researchers say they are alarmed by what they are finding as they track patients for months or years after an I.C.U. stay. Patients, even young ones, can be weak for years. Some have difficulty thinking and concentrating or have post-traumatic stress disorder and terrible memories of nightmares they had while heavily sedated.

While patients may be suffering lingering effects from illnesses that brought them to the I.C.U., researchers are increasingly convinced that spending days, weeks or months on life support in the units can elicit unexpected, long-lasting effects.

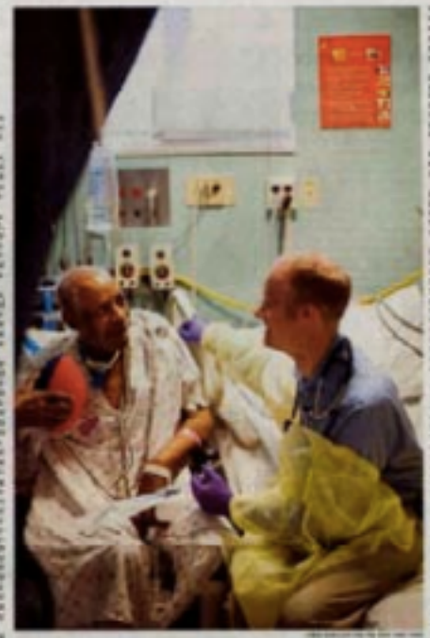
So now some I.C.U.'s are trying what seems like a radical solution: reducing sedation levels and getting patients up and walking even though they are gravely ill, complete with feeding tubes, intravenous lines and tethers to ventilators.

Even a few days in an I.C.U. can be physically devastating immediately afterward, said Dr. Naeem Ali of Ohio State Universi-

Continued on Page A11

New Approach to Cut Trauma From I.C.U.: Get Patients Walking

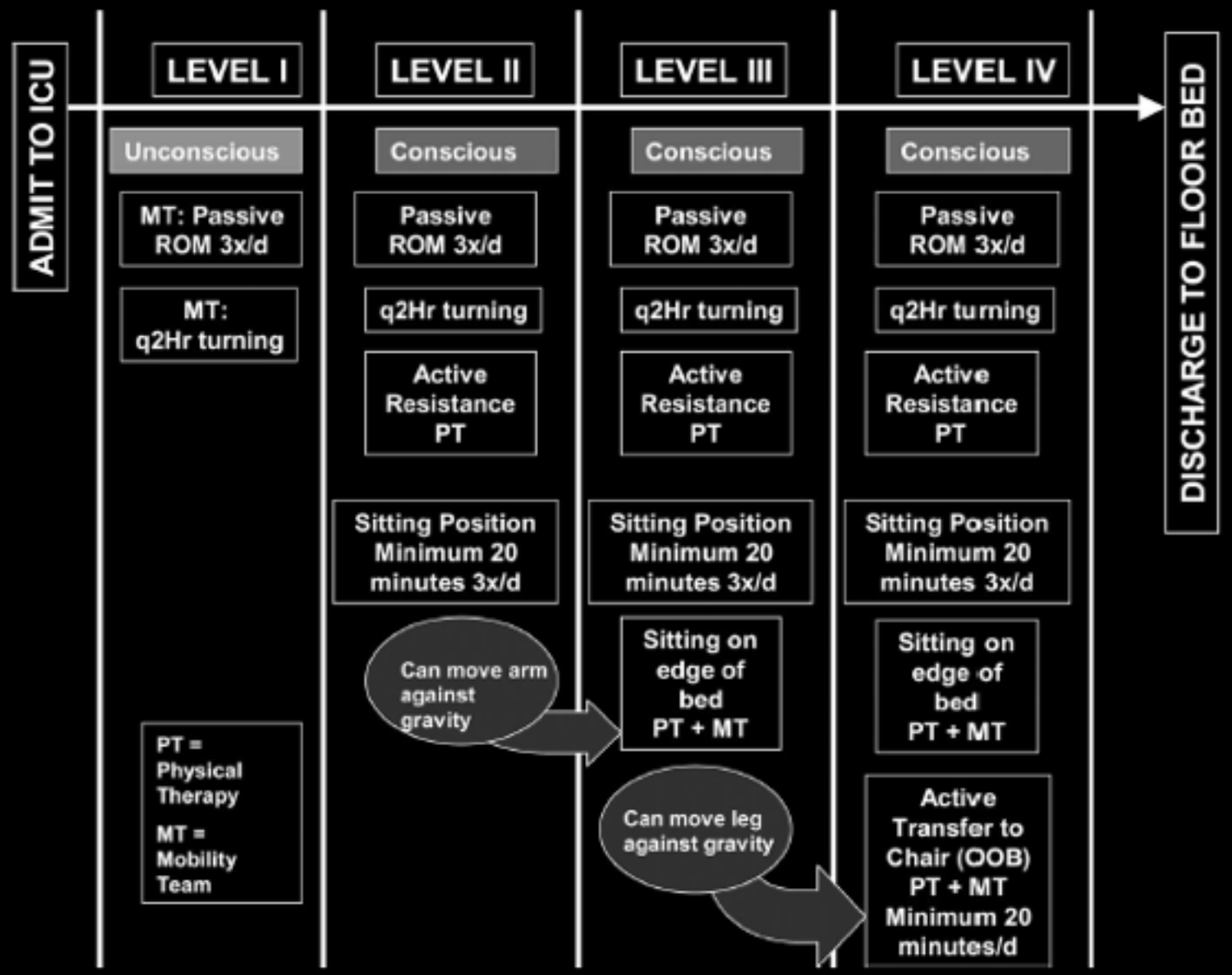
Alarming findings in the tracking of patients for years.



Envisager
dés l’admission

Early intensive care unit mobility therapy in the treatment of acute respiratory failure*

Peter E. Morris, MD; Amanda Goad, RN; Clifton Thompson, RN; Karen Taylor, MPT; Bethany Harry, MPT; Leah Passmore, MS; Amelia Ross, RN, MSN; Laura Anderson; Shirley Baker; Mary Sanchez; Lauretta Penley; April Howard, RN; Luz Dixon, RN; Susan Leach, RN; Ronald Small, MBA; R. Duncan Hite, MD; Edward Haponik, MD



Morris CCM 2008

Early intensive care unit mobility therapy in the treatment of acute respiratory failure*

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	Usual Care (n = 135)	Protocol (n = 145)	*p*
Days to first out of bed	13.7 (11.7–15.7)	8.5 (6.6–10.5)	<.001
Days to first out of bed (adjusted[a])	11.3 (9.6–13.4)	5.0 (4.3–5.9)	<.001
Ventilator days	9.0 (7.5–10.4)	7.9 (6.4–9.3)	.298
Ventilator days (adjusted[a])	10.2 (8.7–11.7)	8.8 (7.4–10.3)	.163
ICU LOS days	8.1 (7.0–9.3)	7.6 (6.3–8.8)	.084
ICU LOS days (adjusted[a])	6.9 (5.9–8.0)	5.5 (4.7–6.3)	.025
Hospital LOS days	17.2 (14.2–20.2)	14.9 (12.6–17.1)	.048
Hospital LOS days (adjusted[a])	14.5 (12.7–16.7)	11.2 (9.7–12.8)	.006

Morris CCM 2008

Encore plus actif ?

Encore plus tôt ?

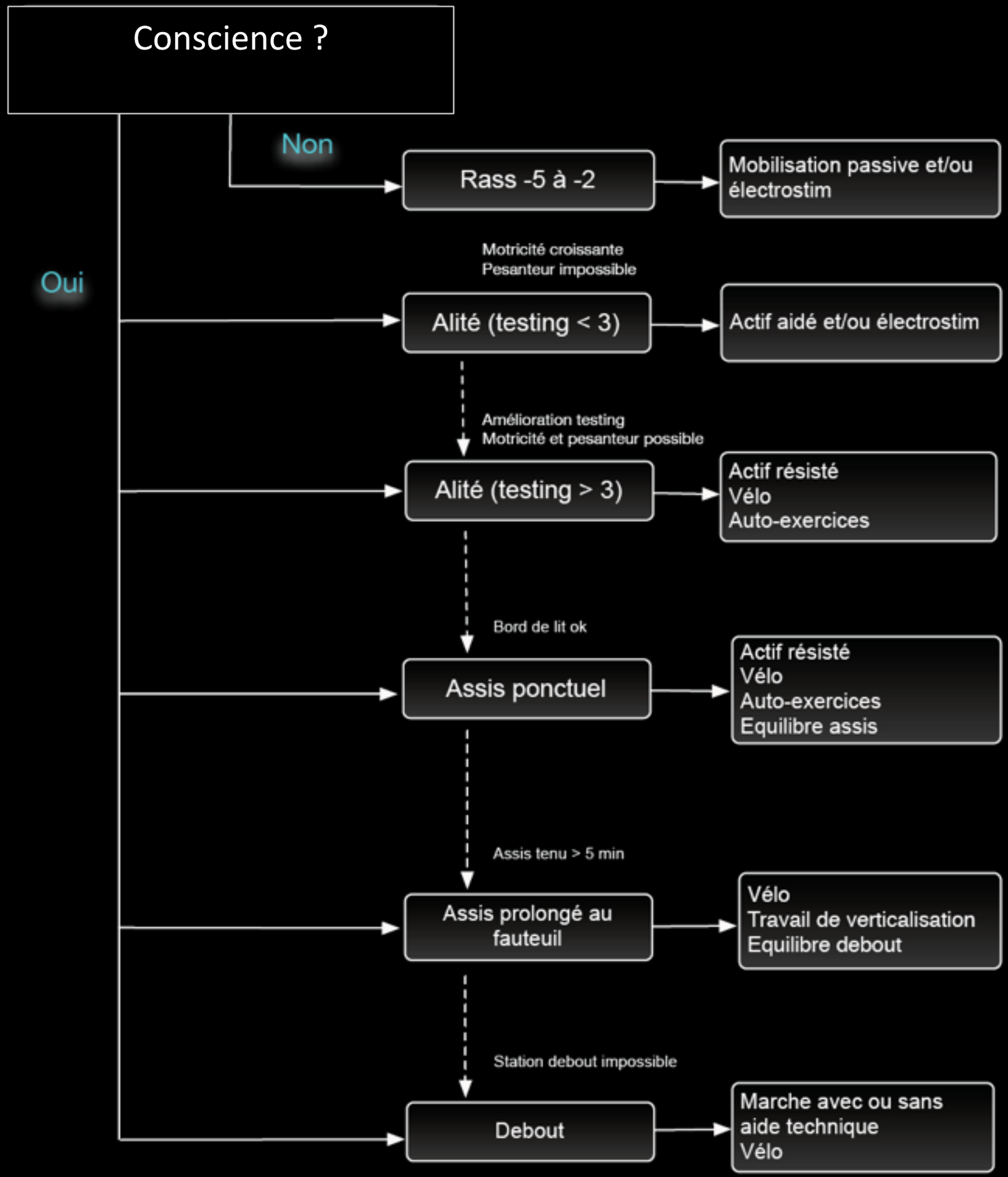
Disponible 24h/24 ?

Algorithme mobilisation précoce pour les IDE

Personal data

Evaluation première
par
Kinésithérapeute

Personal data



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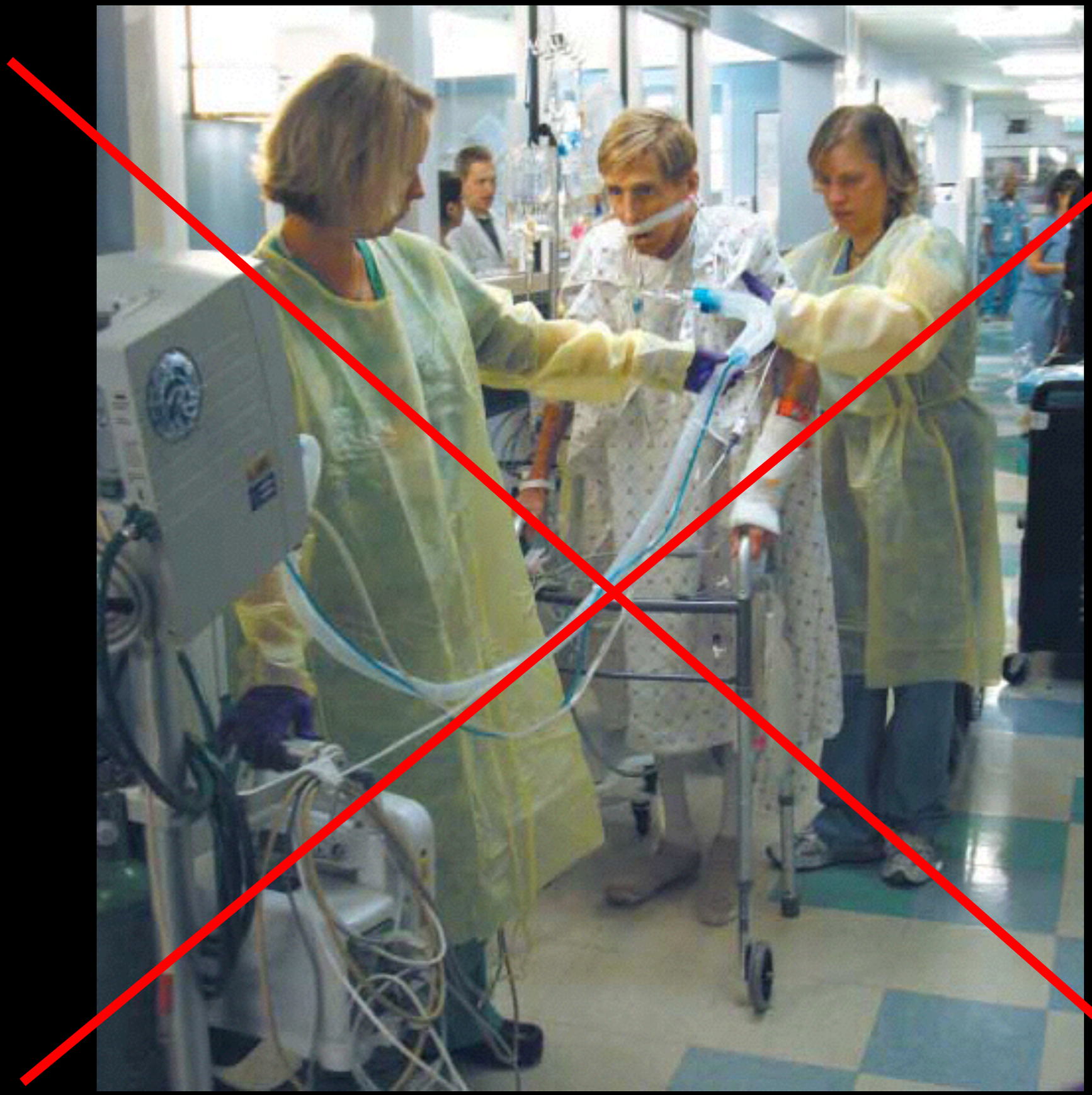

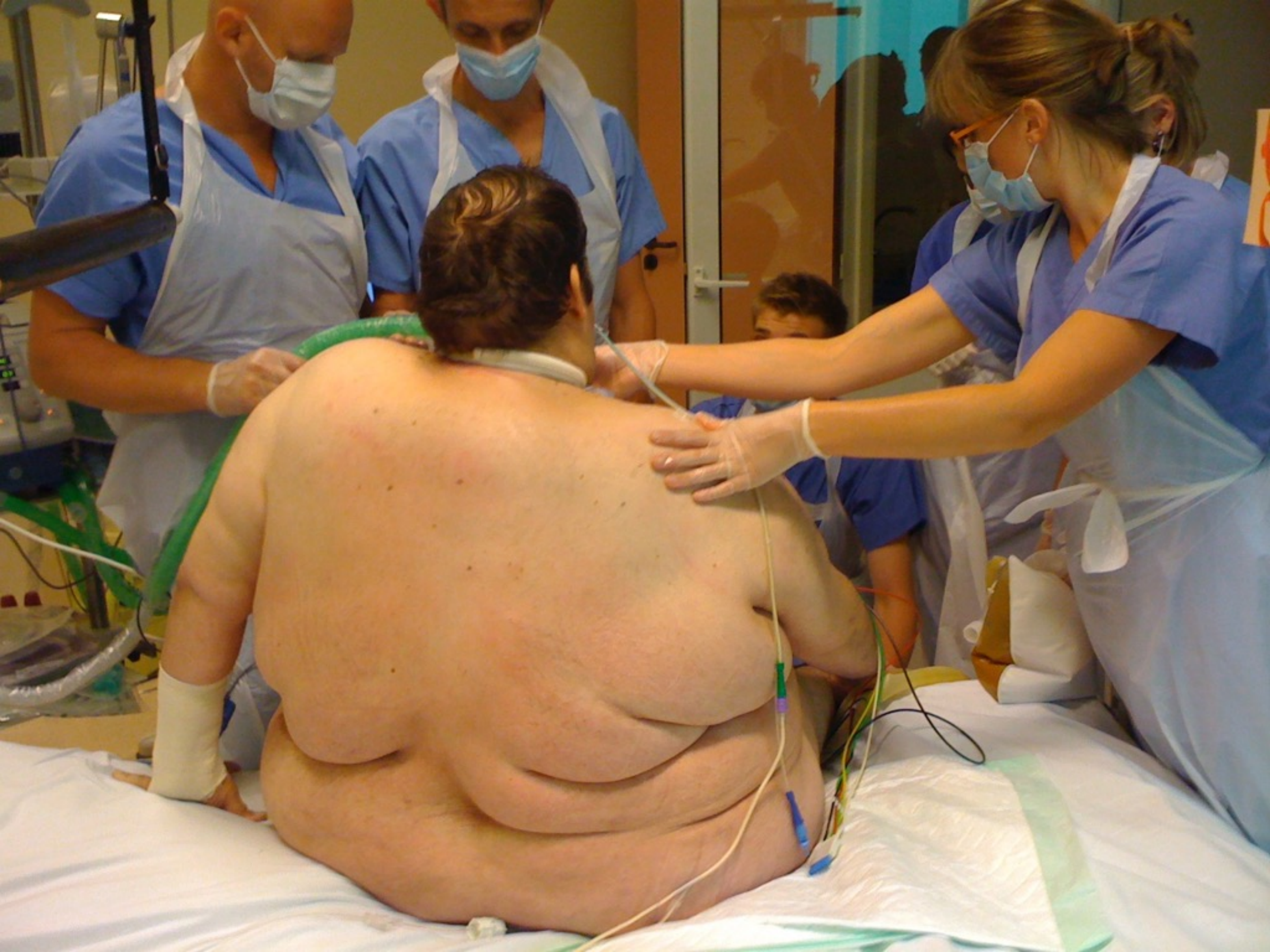

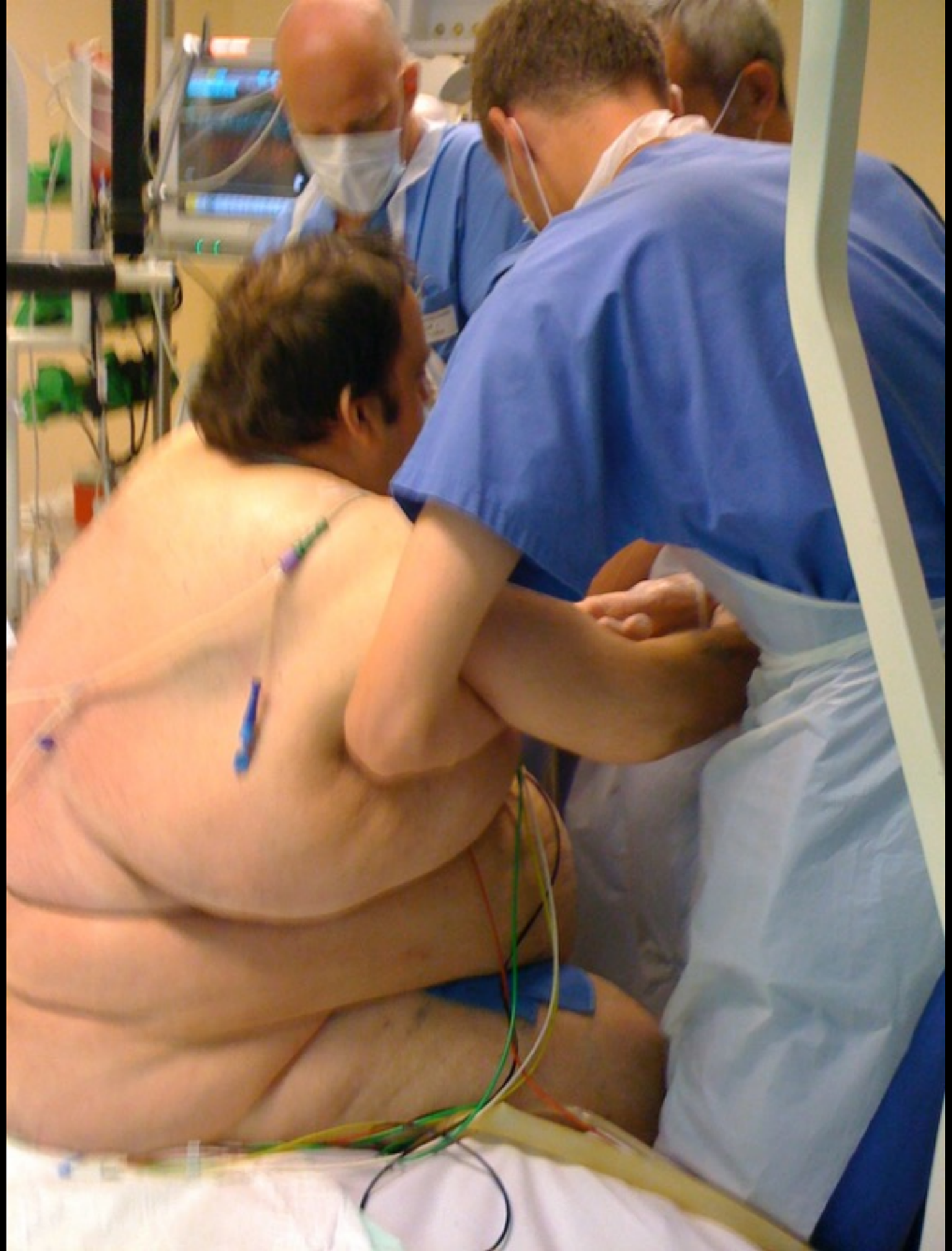

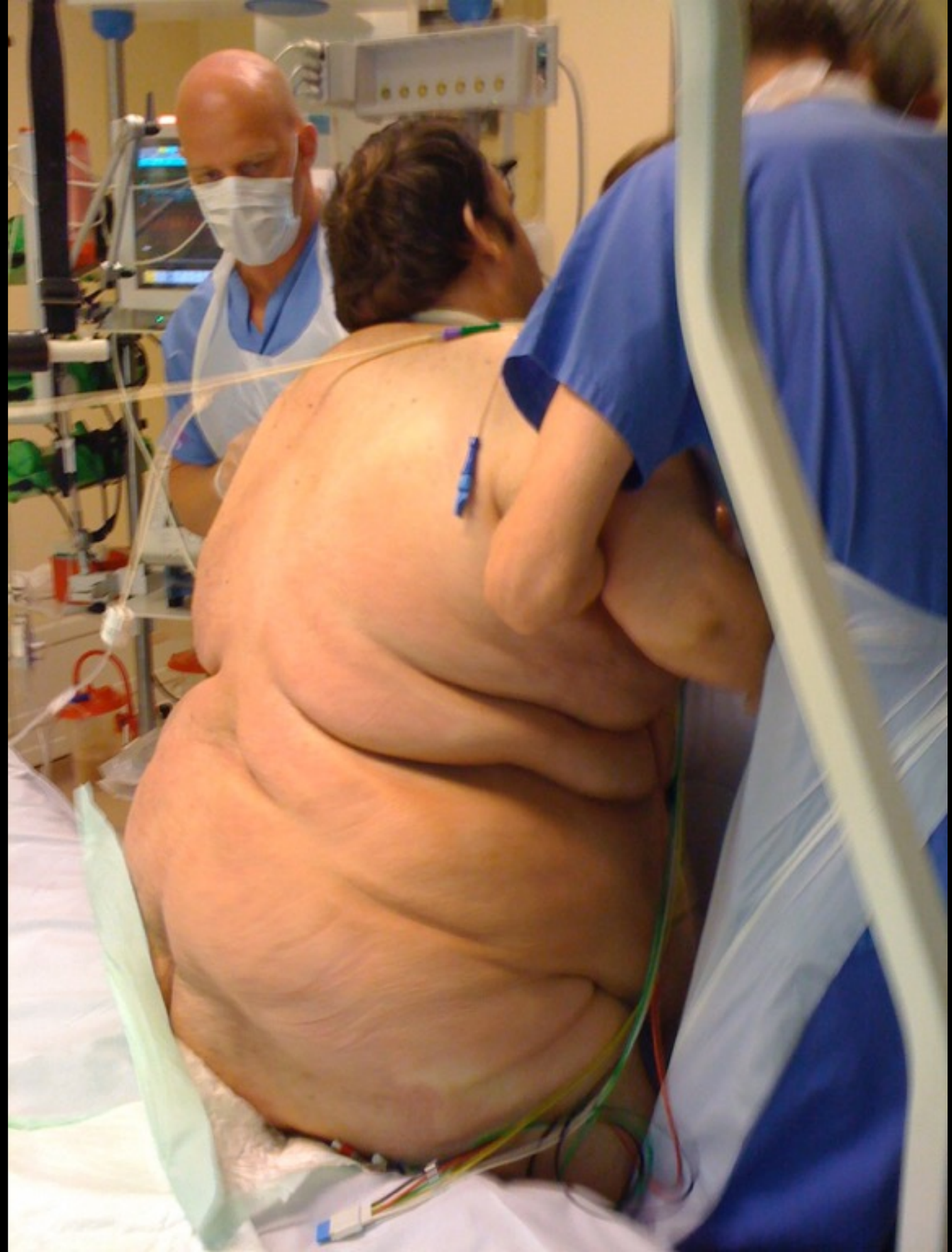

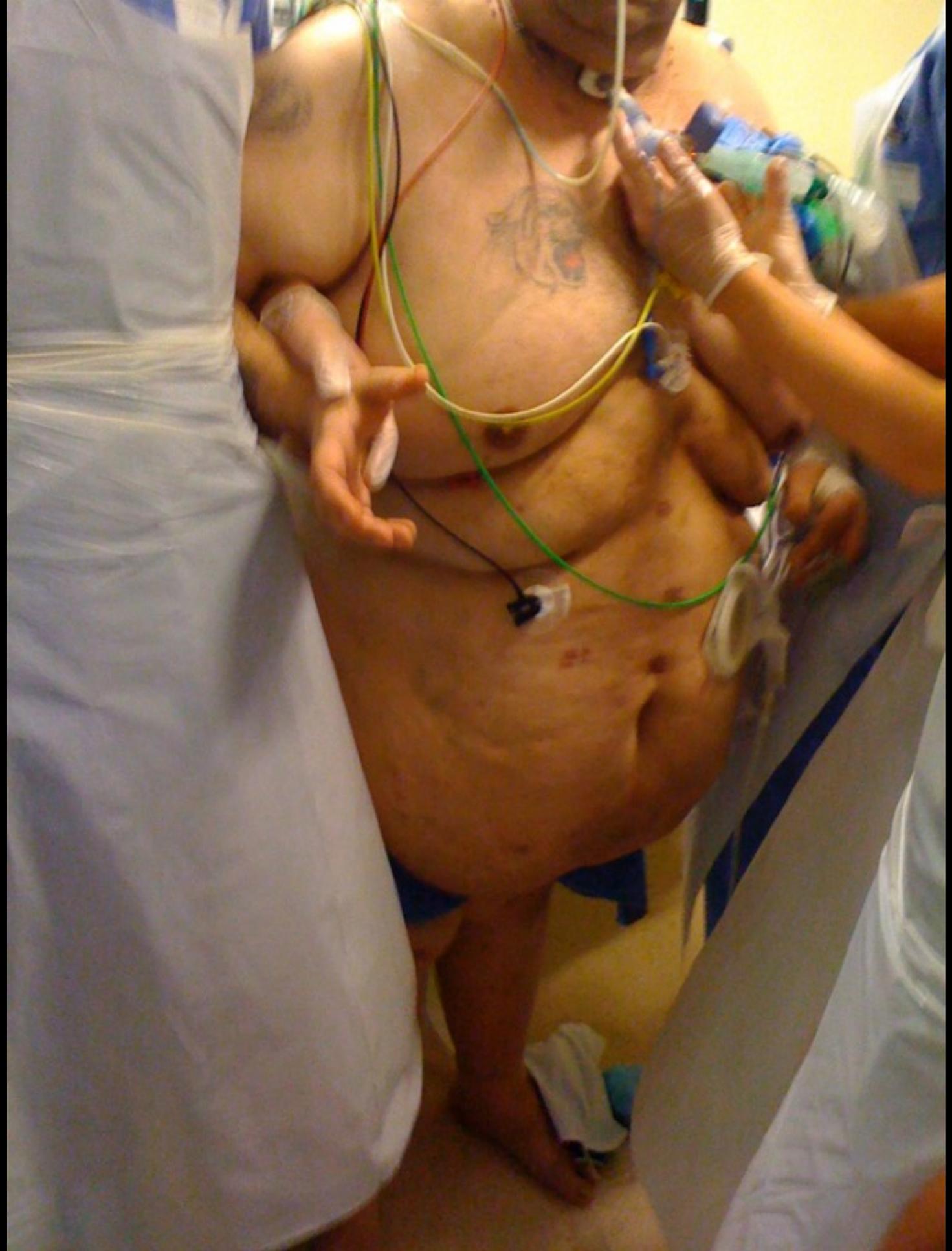

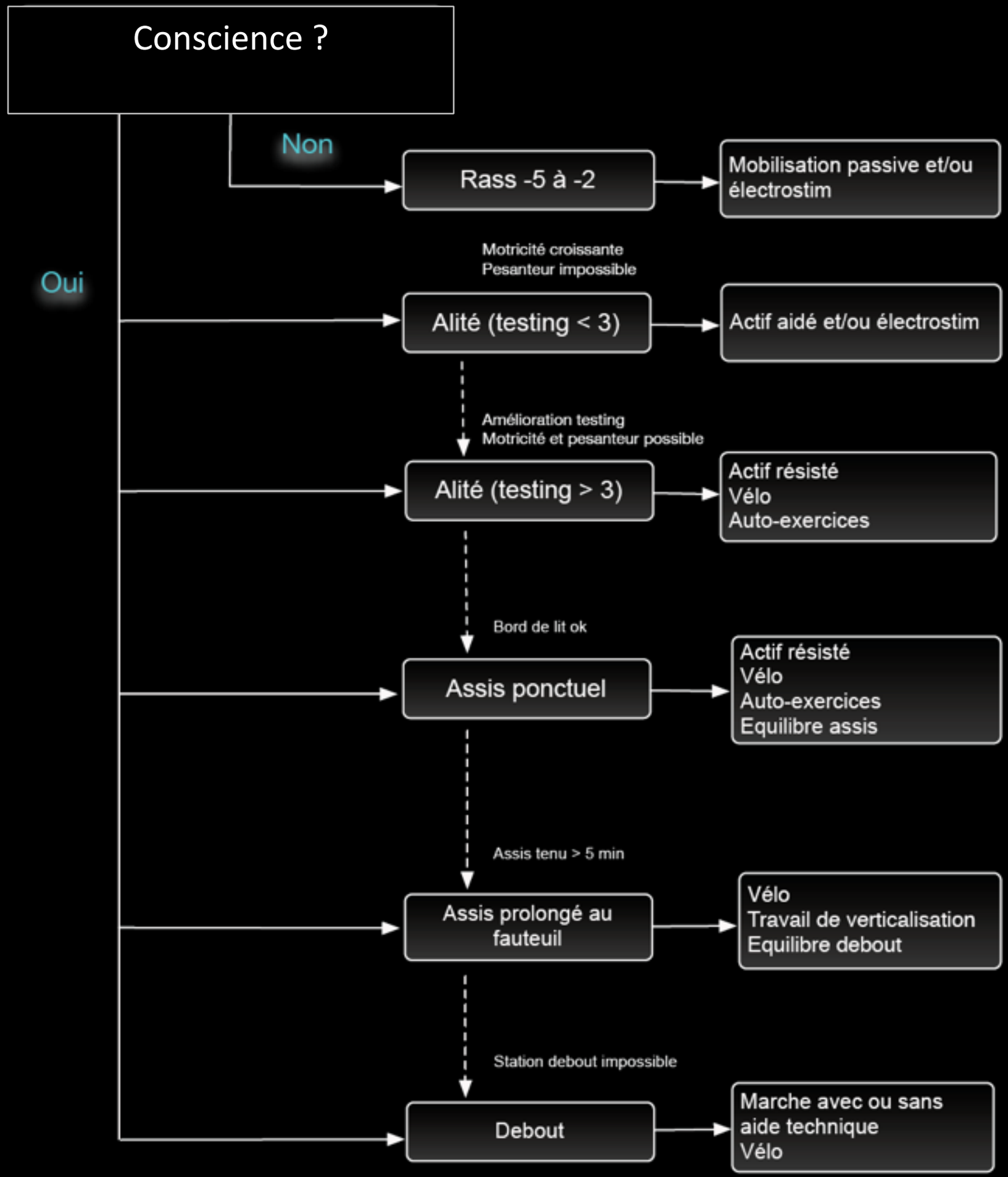

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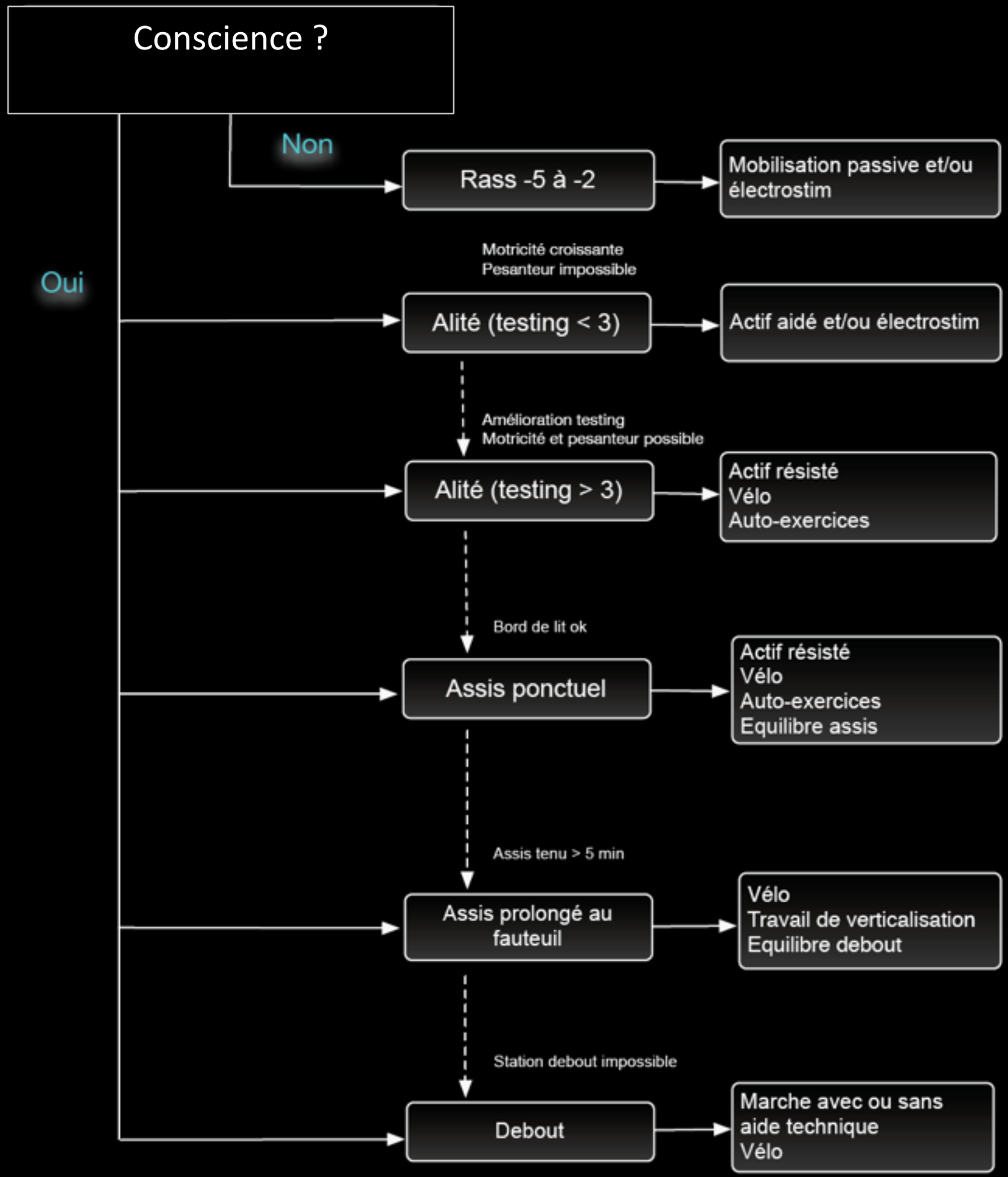

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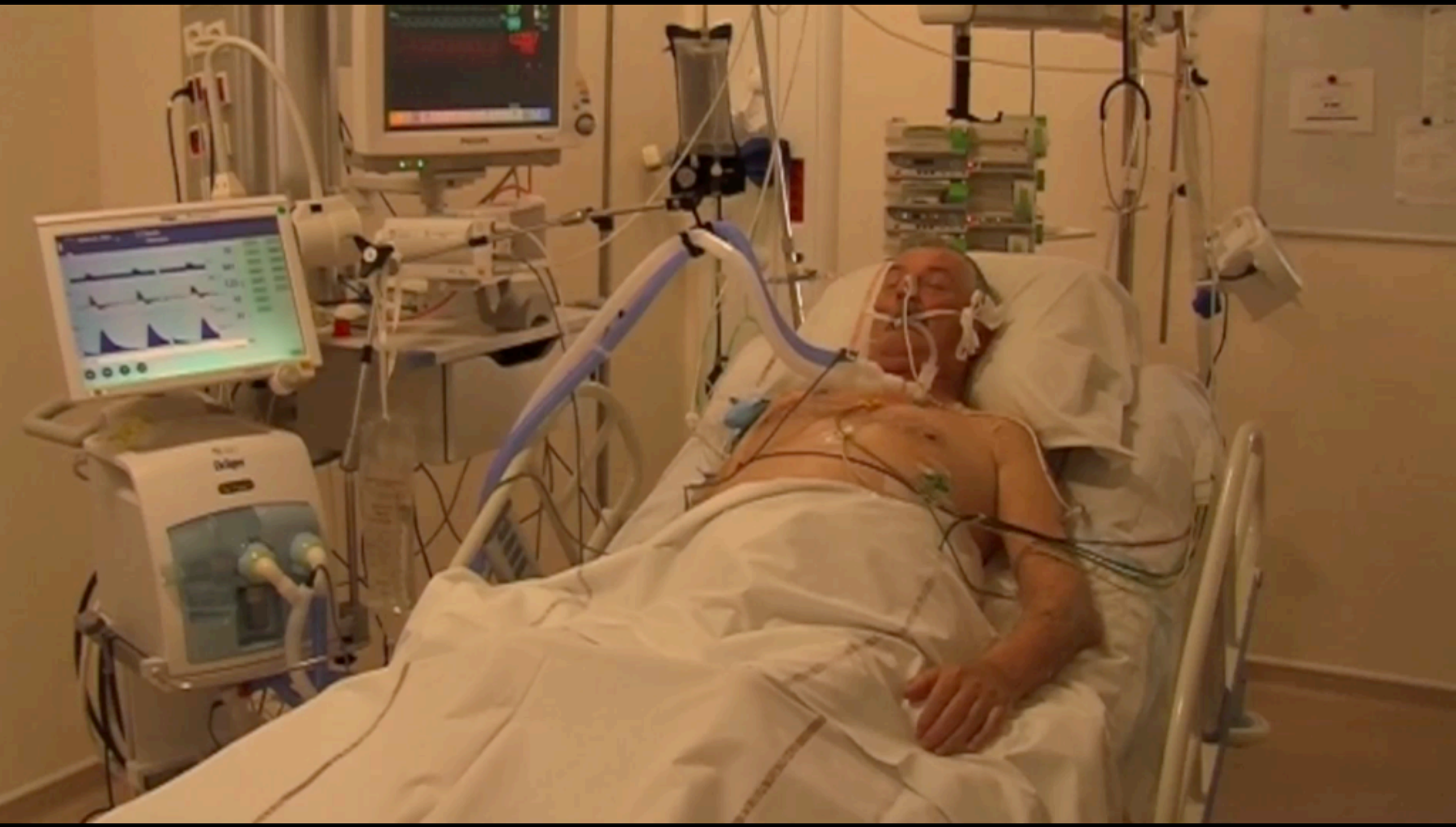
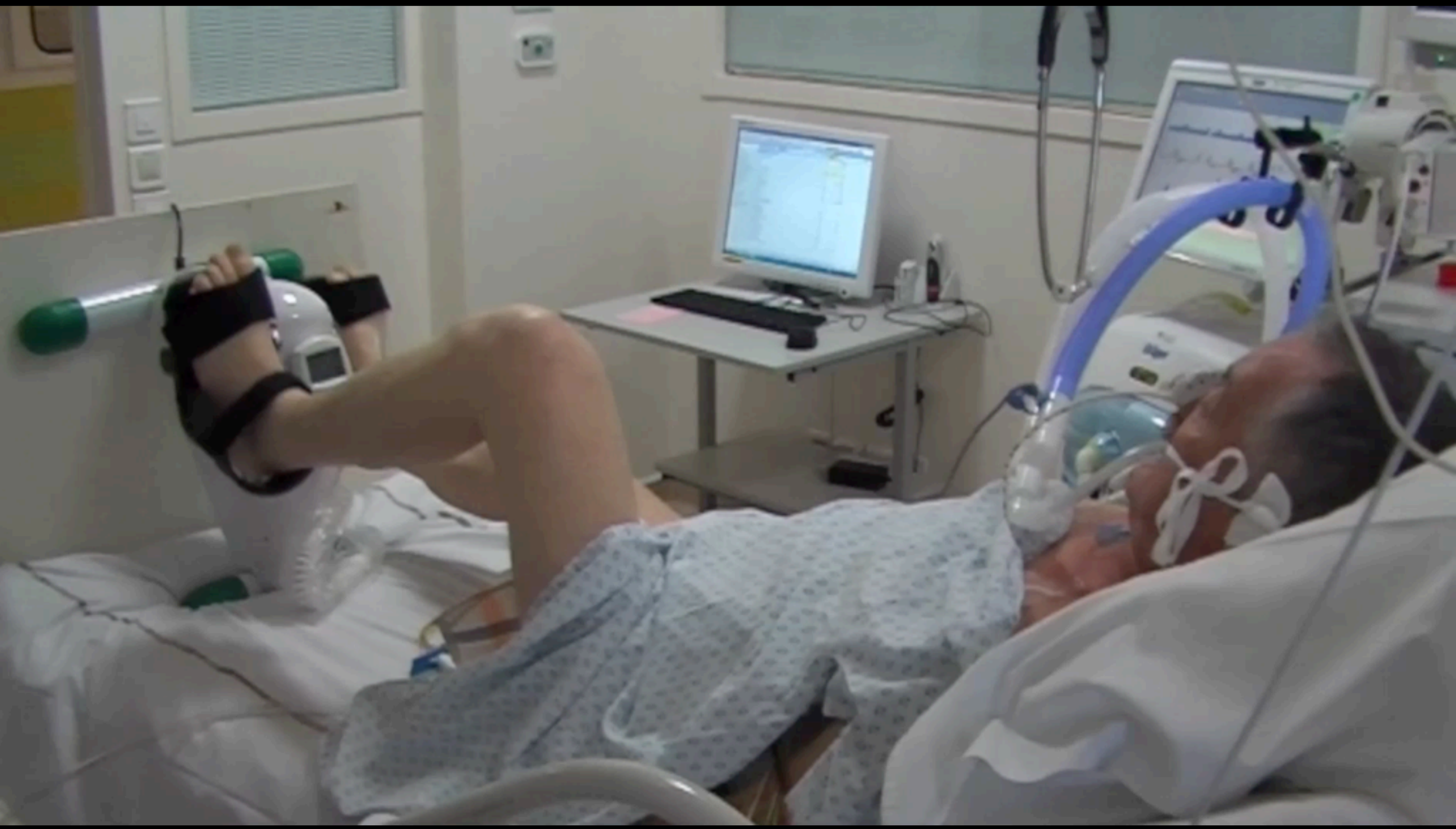
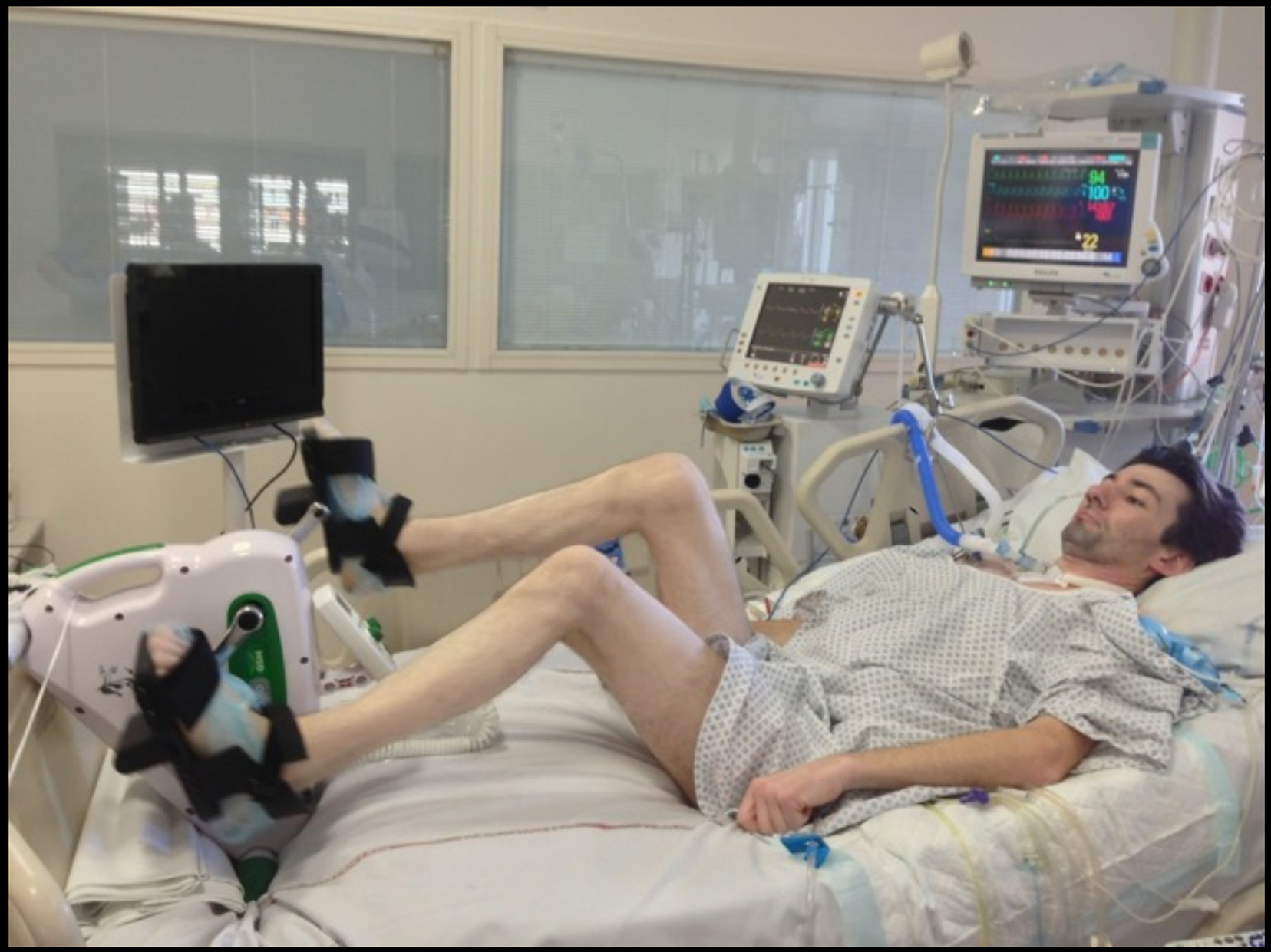
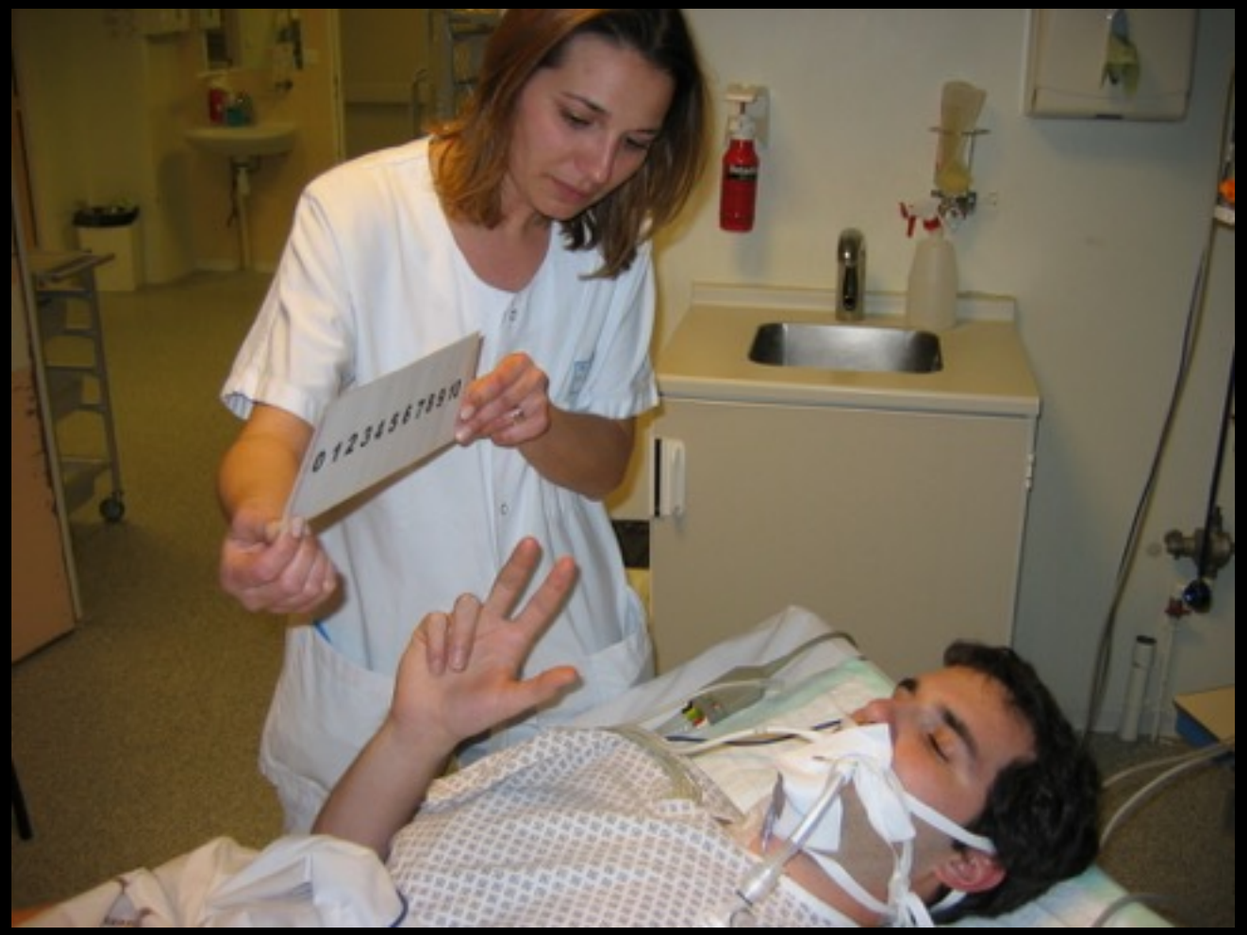


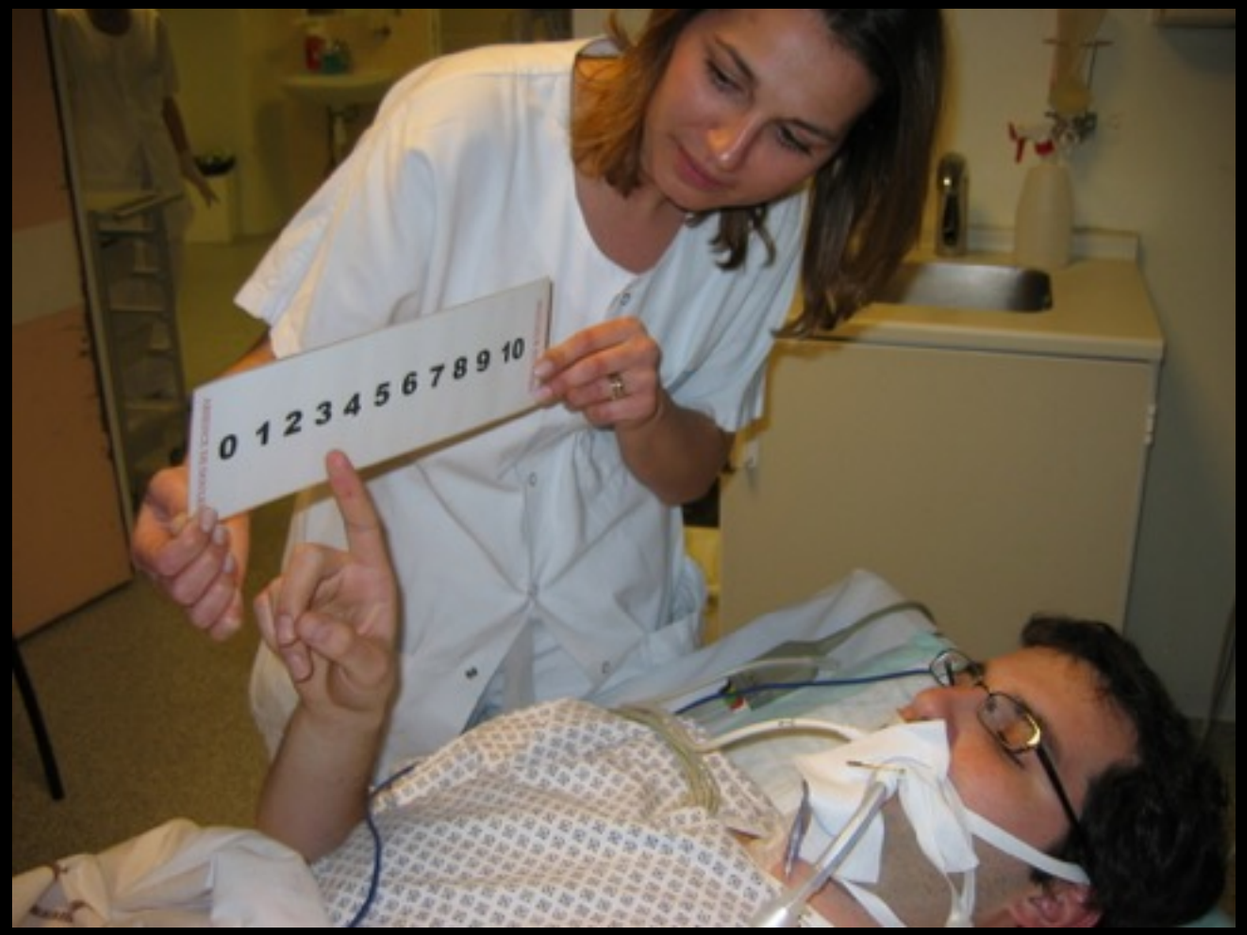


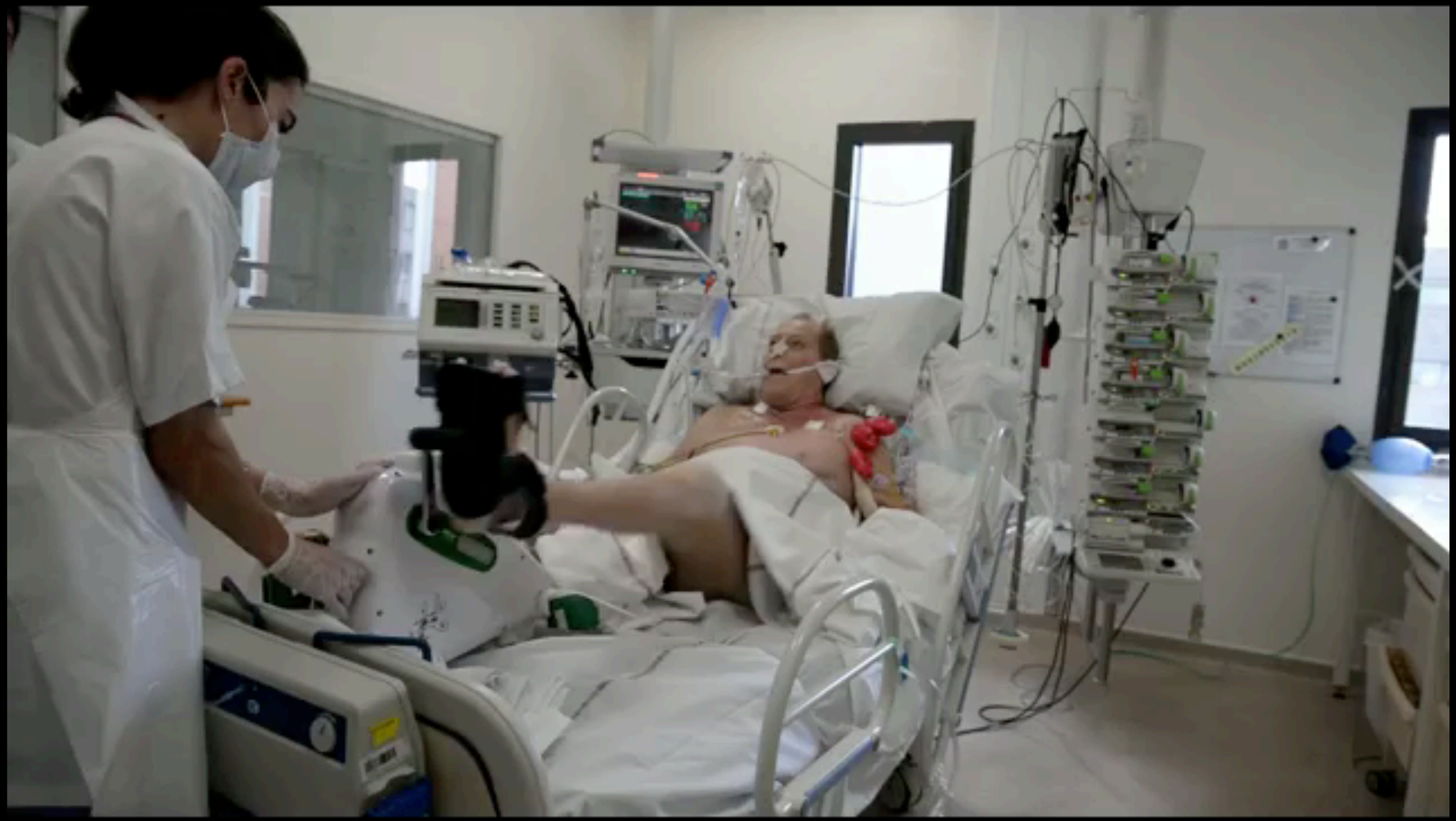

94
100
22

Chez tous les patients ?

Evaluation de la douleur chez un patient communiquant







Conclusion

Réhabilitation Précoce en Réanimation

Possible

Recommandé

Special Article

Clinical Practice Guidelines for the Management of Pain, Agitation, and Delirium in Adult Patients in the Intensive Care Unit

Assess and Treat	Statements and Recommendations
DELIRIUM	• Delirium assessment should be routinely performed in all ICU patients (1B). • The CAM-ICU and ICDSC delirium monitoring tools are the most valid and reliable scales to assess delirium in ICU patients (A). • Mobilize ICU patients early when feasible to reduce the incidence and duration of delirium, and to improve functional outcomes (1B). • Promote sleep in ICU patients by controlling light and noise, clustering patient care activities, and decreasing stimuli at night (1C). • Avoid using rivastigmine to reduce the duration of delirium in ICU patients (1B). • Suggest avoiding the use of antipsychotics in patients who are at risk for torsades de pointes (2B). • Suggest not using benzodiazepines in ICU patients with delirium unrelated to ETOH/benzodiazepine withdrawal (2B).

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Sédation

Ventilation

Réhabilitation précoce en Réa

Hypotension

Oedemes

Dénutrition

Confusion

CHEST

Editorials

CHEST | Volume 144 | Number 1 | July 2013

Surviving the ICU Does Not Mean That the War Is Over

young man was a veteran, a survivor of an imaginary war he had fought over weeks and months.

The symptoms he described were clearly those of posttraumatic stress disorder (PTSD), a common

Merci de votre attention ...