Réhabilitation Précoce
Possible en Réa ?

JM Constantin, M.D. Ph.D.

Département de Médecine Périopératoire
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GRED
CNRS 6293
INSERM U1103

AZUREA GROUP

Liens d’intérêt

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

Ministère de la santé
PHRC
ANR-DGOS

UNIVERSITÉ Clermont Auvergne
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CNRS 6293
INSERM U1103

AZUREA GROUP

Réhabilitation Précoce

Possible en Réa ?

Souhaitable ?

New Trends in ICU ?

Less is more

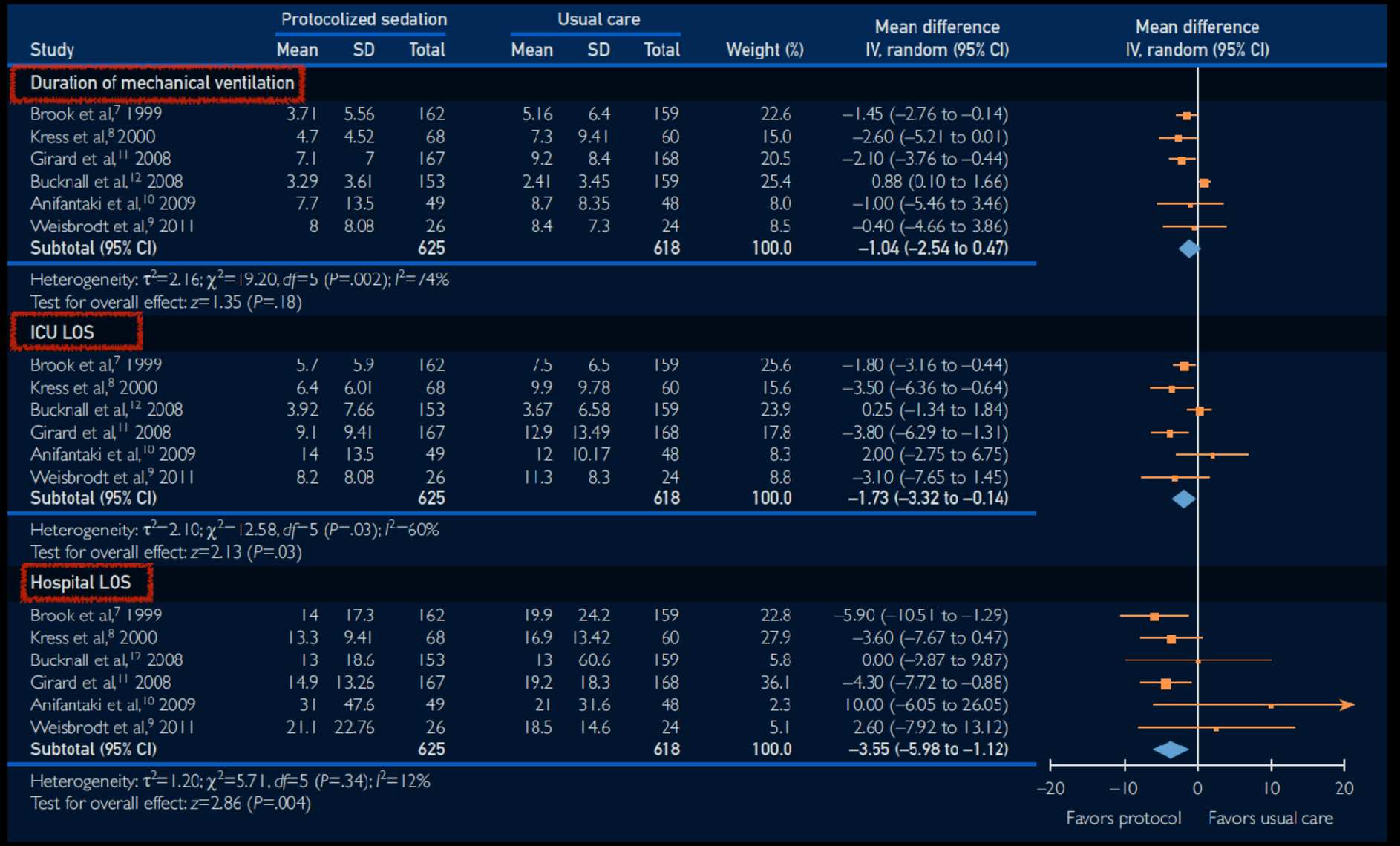
Moins ventiler

Moins Remplir

Moins Sédater

Effect of Protocolized Sedation on Clinical Outcomes in Mechanically Ventilated Intensive Care Unit Patients. A MetaAnalysis.

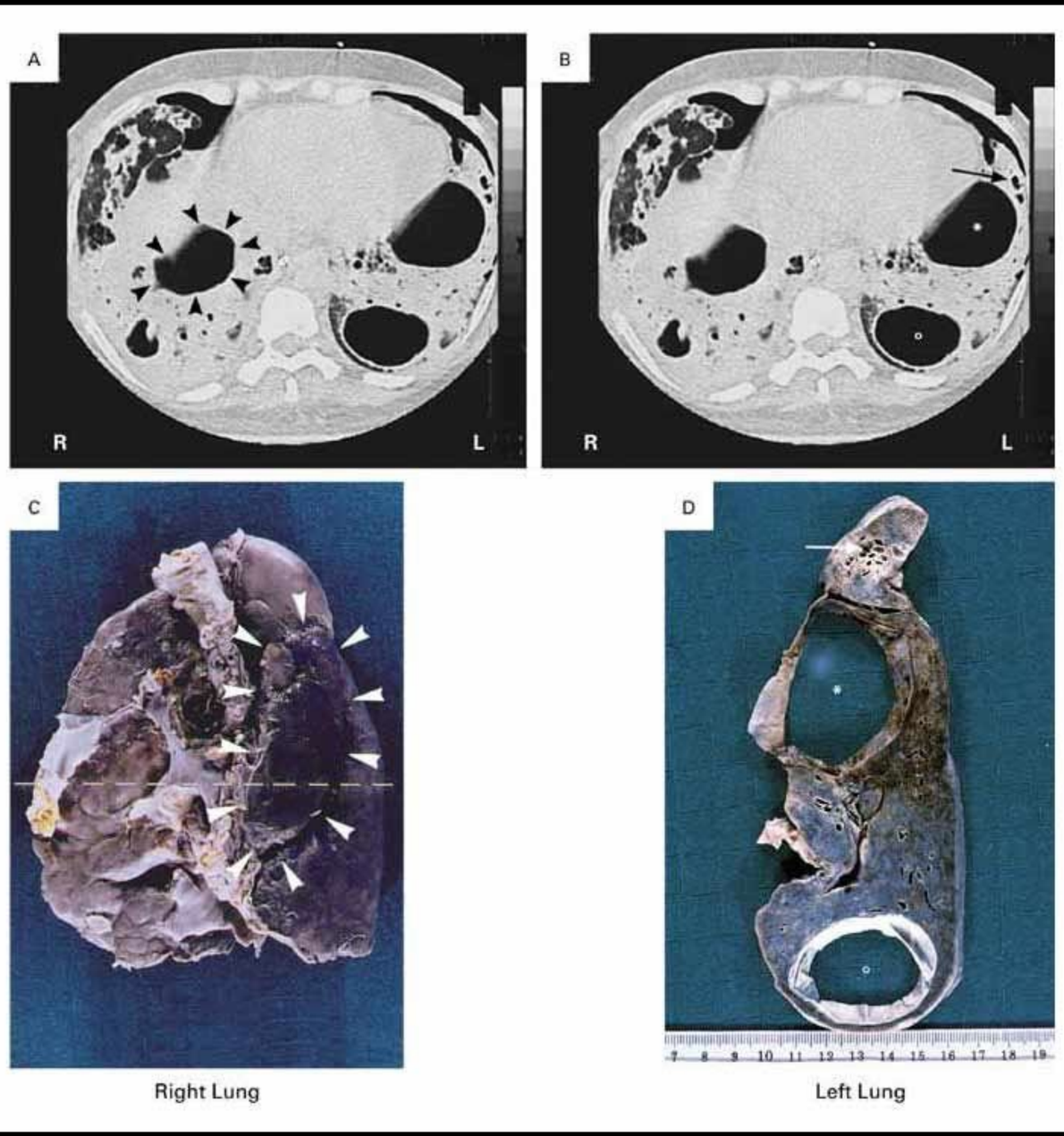
Minhas et al. Mayo Clinic Proceedings 2015



Minhas et al. Mayo Clinic Proceedings 2015

Que deviennent nos patients ?

Que deviennent les survivants du SDRA ?



Right Lung

Left Lung

The NEW ENGLAND JOURNAL of MEDICINE

ESTABLISHED IN 1812 APRIL 7, 2011 VOL. 364 NO. 14

Functional Disability 5 Years after Acute Respiratory Distress Syndrome

Margaret S. Herridge, M.D., M.P.H., Catherine M. Tansey, M.Sc., Andrea Matté, B.Sc., George Tomlinson, Ph.D., Natalia Diaz-Granados, M.Sc., Andrew Cooper, M.D., Cameron B. Guest, M.D., C. David Mazer, M.D., Sangeeta Mehta, M.D., Thomas E. Stewart, M.D., Paul Kudlow, B.Sc., Deborah Cook, M.D., Arthur S. Slutsky, M.D., and Angela M. Cheung, M.D., Ph.D., for the Canadian Critical Care Trials Group

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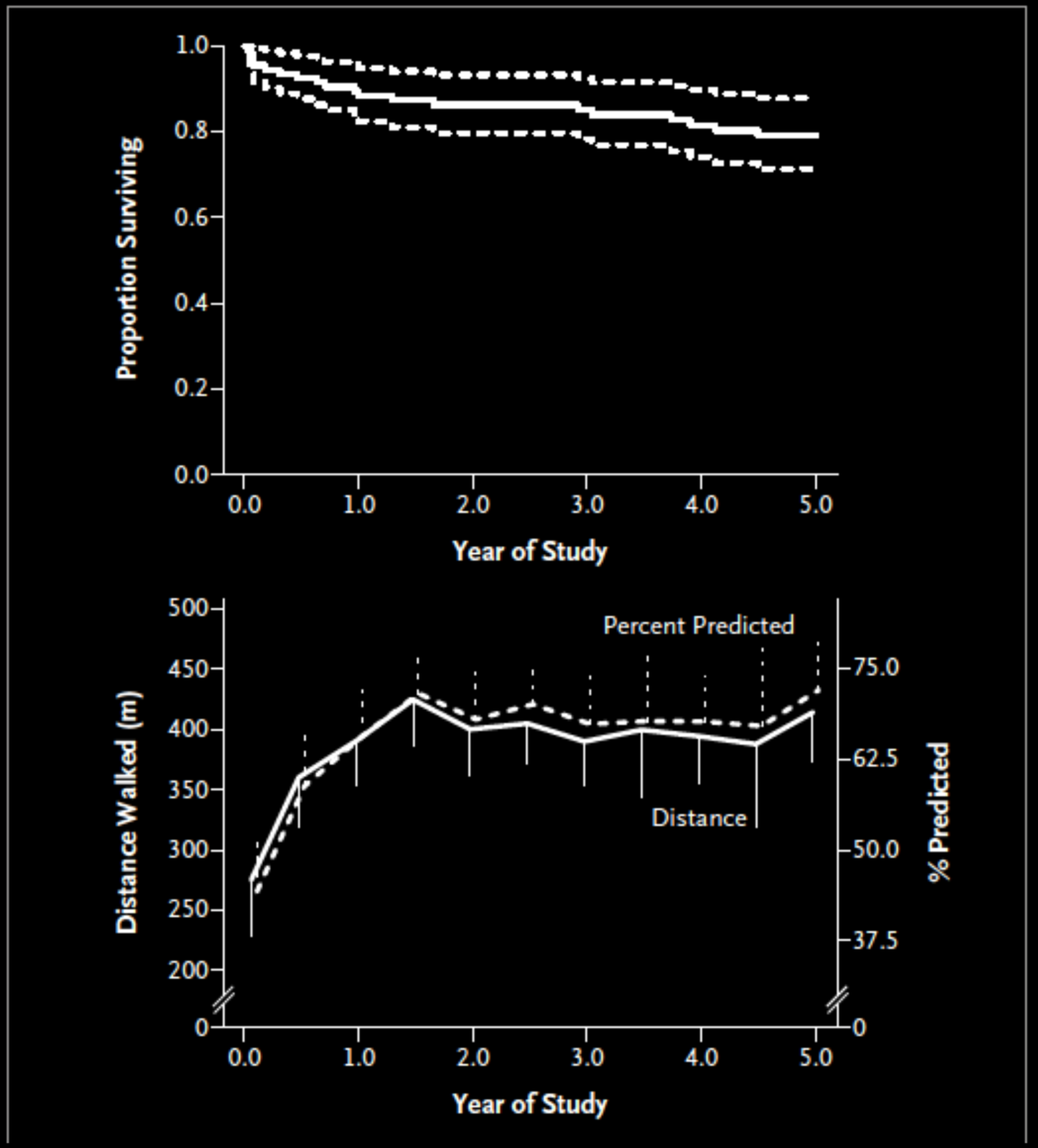

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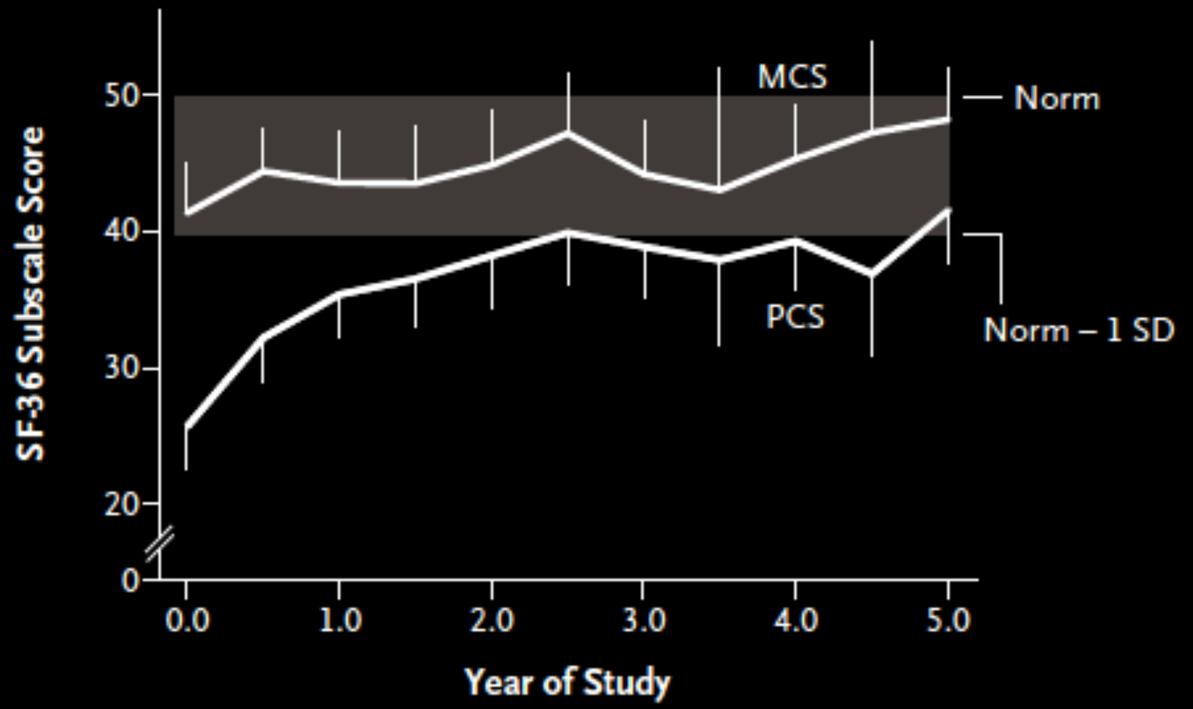
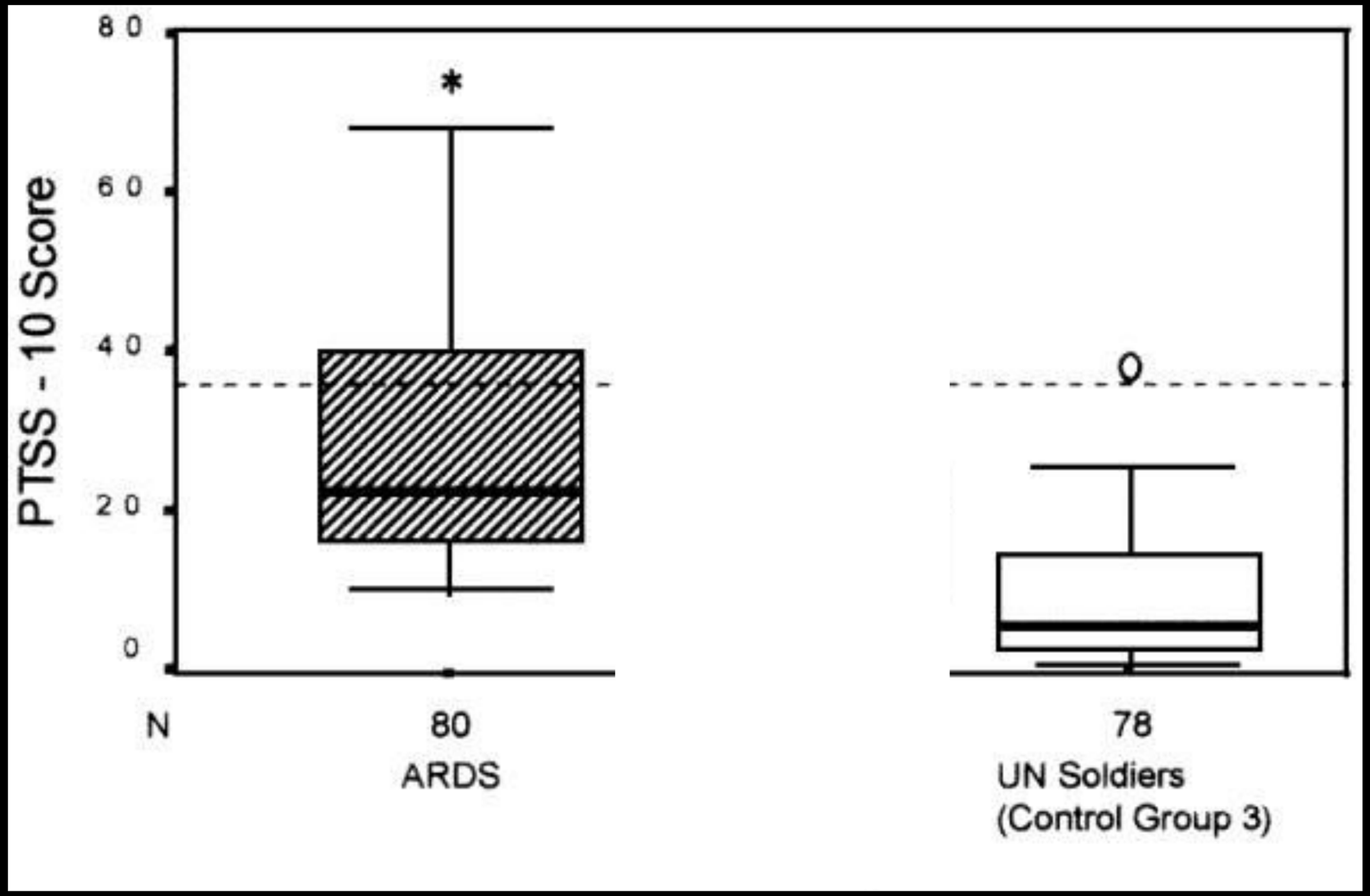


No. at Risk	109	92	86	79	77	74	69	64
No. for 6-Min Walk	80	78	81	60	64	64	57	54
No. for SF-36	67	74	74	56	57	57	49	50

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...).

Health-related quality of life and posttraumatic stress disorder in survivors of the acute respiratory distress syndrome.



Schelling, CCM 1998.

The NEW ENGLAND JOURNAL of MEDICINE

ESTABLISHED IN 1812 APRIL 7, 2011 VOL. 364 NO. 14

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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.

Impact d’un protocole de sédation ?

Protocolized sedation effect on post-ICU posttraumatic stress disorder prevalence: A systematic review and network meta-analysis

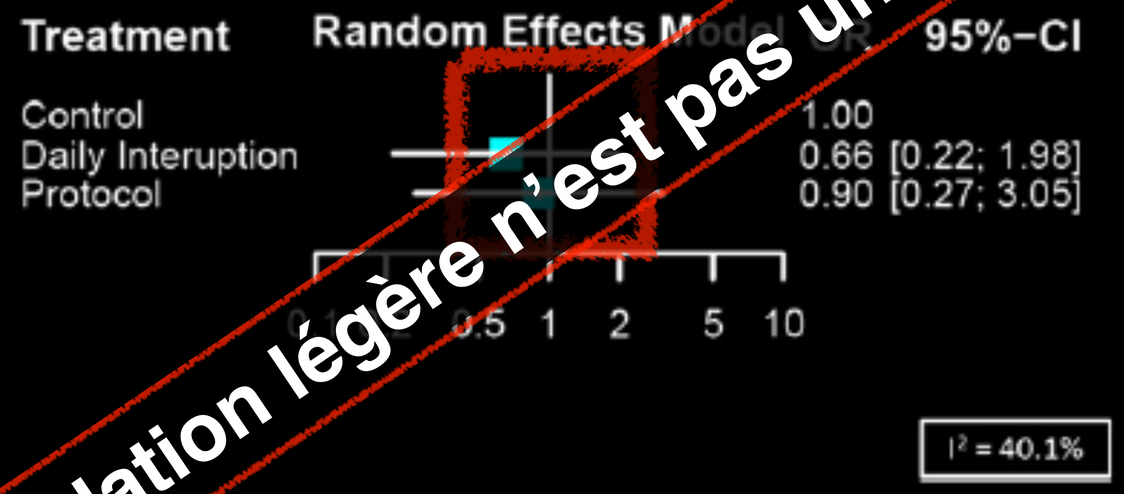


Fig. 3. Forest plot for PTSD prevalence.

La sédation légère n'est pas un fin en soi.

Nassar, JCC 2015

Neuro-myopathie

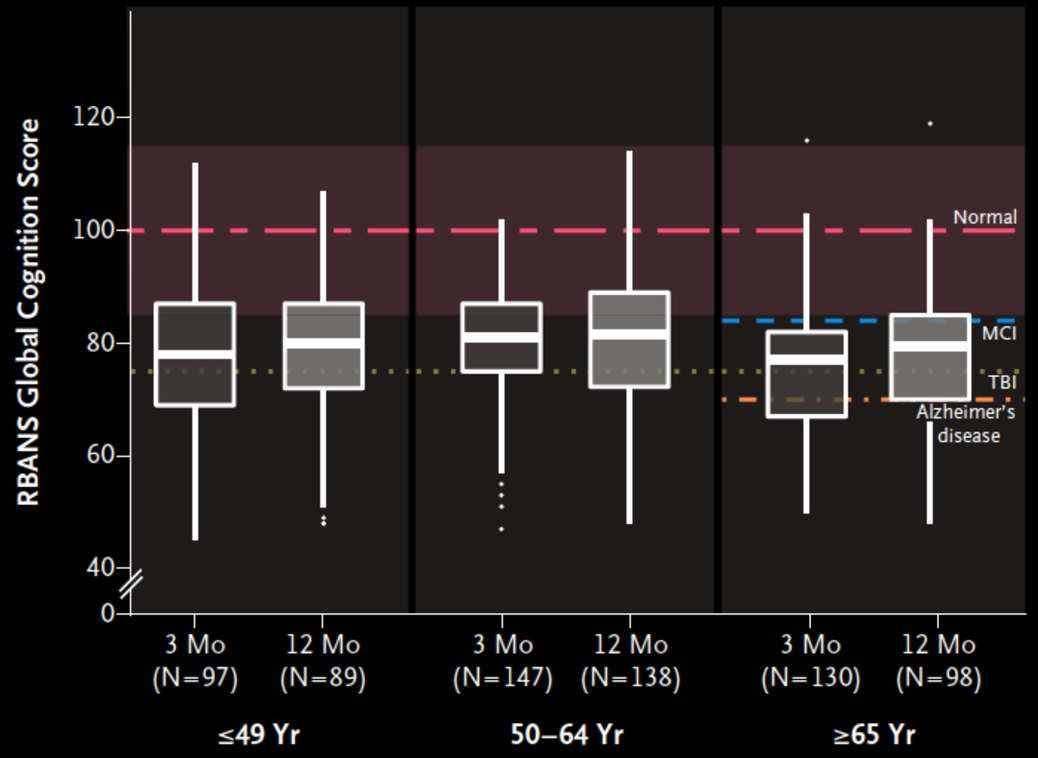
Troubles cognitifs

The NEW ENGLAND JOURNAL of MEDICINE

ORIGINAL ARTICLE

Long-Term Cognitive Impairment after Critical Illness

P.P. Pandharipande, T.D. Girard, J.C. Jackson, A. Morandi, J.L. Thompson, B.T. Pun, N.E. Brummel, C.G. Hughes, E.E. Vasilevskis, A.K. Shintani, K.G. Moons, S.K. Geevarghese, A. Canonico, R.O. Hopkins, G.R. Bernard, R.S. Dittus, and E.W. Ely, for the BRAIN-ICU Study Investigators*



Pandharipande NEJM 2013

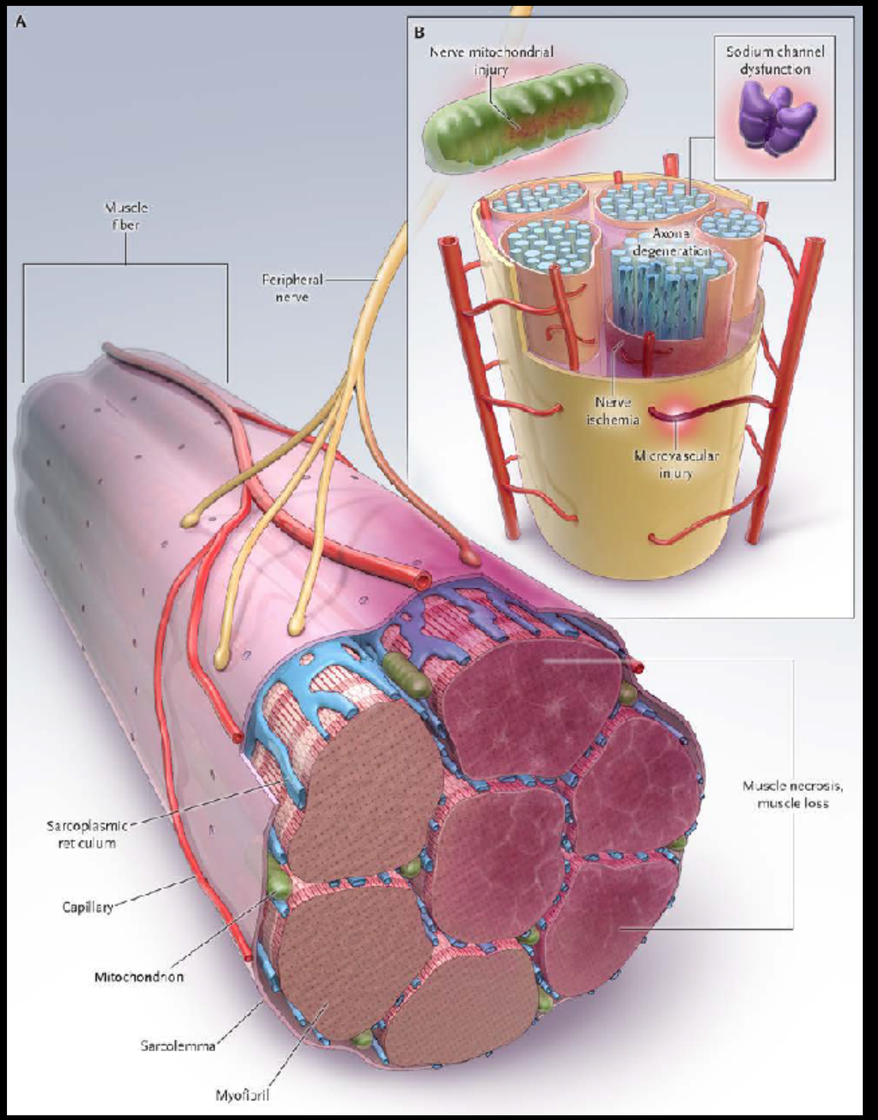
The NEW ENGLAND JOURNAL of MEDICINE

REVIEW ARTICLE

CRITICAL CARE MEDICINE

ICU-Acquired Weakness and Recovery from Critical Illness

John P. Kress, M.D., and Jesse B. Hall, M.D.

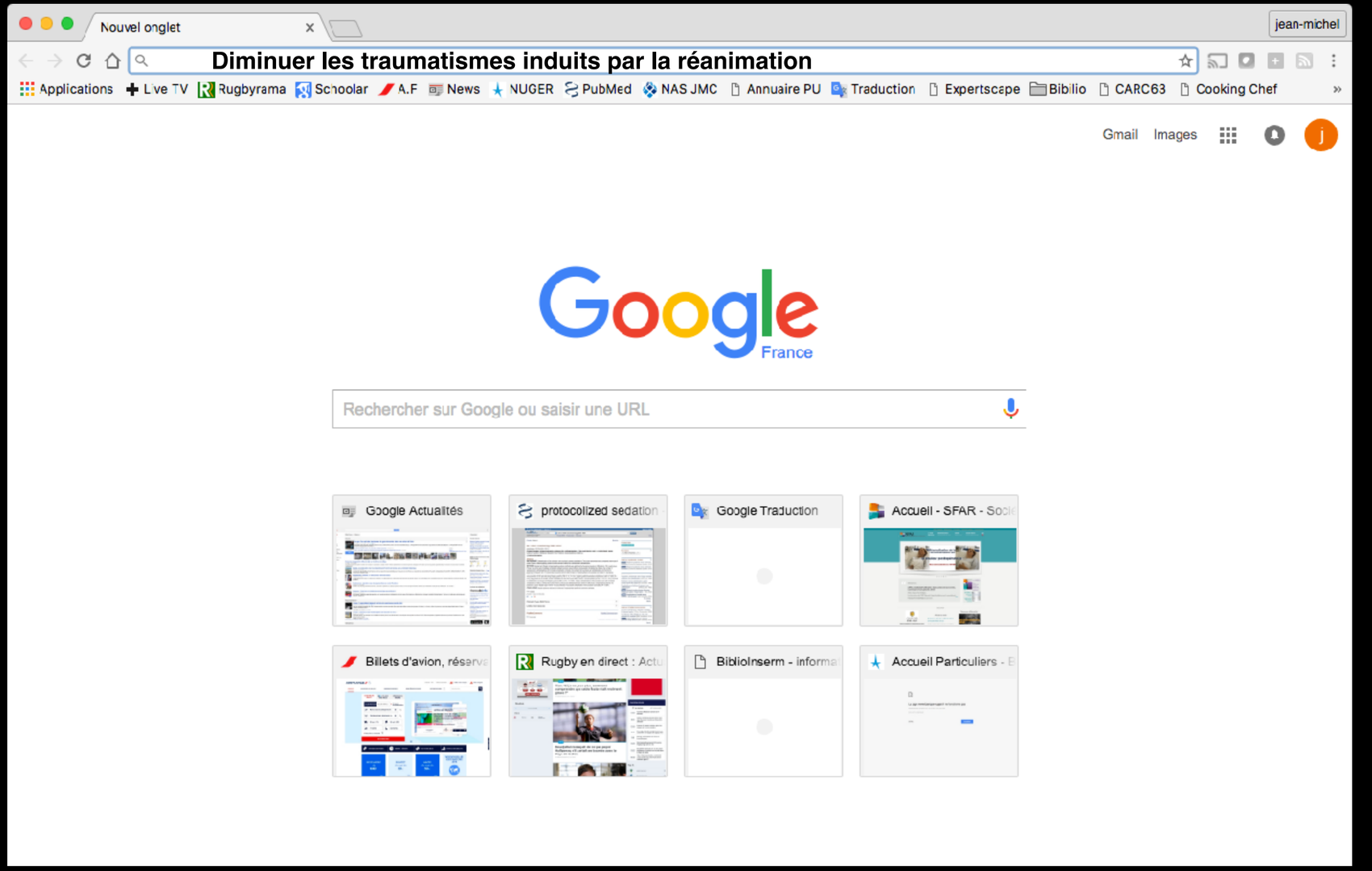


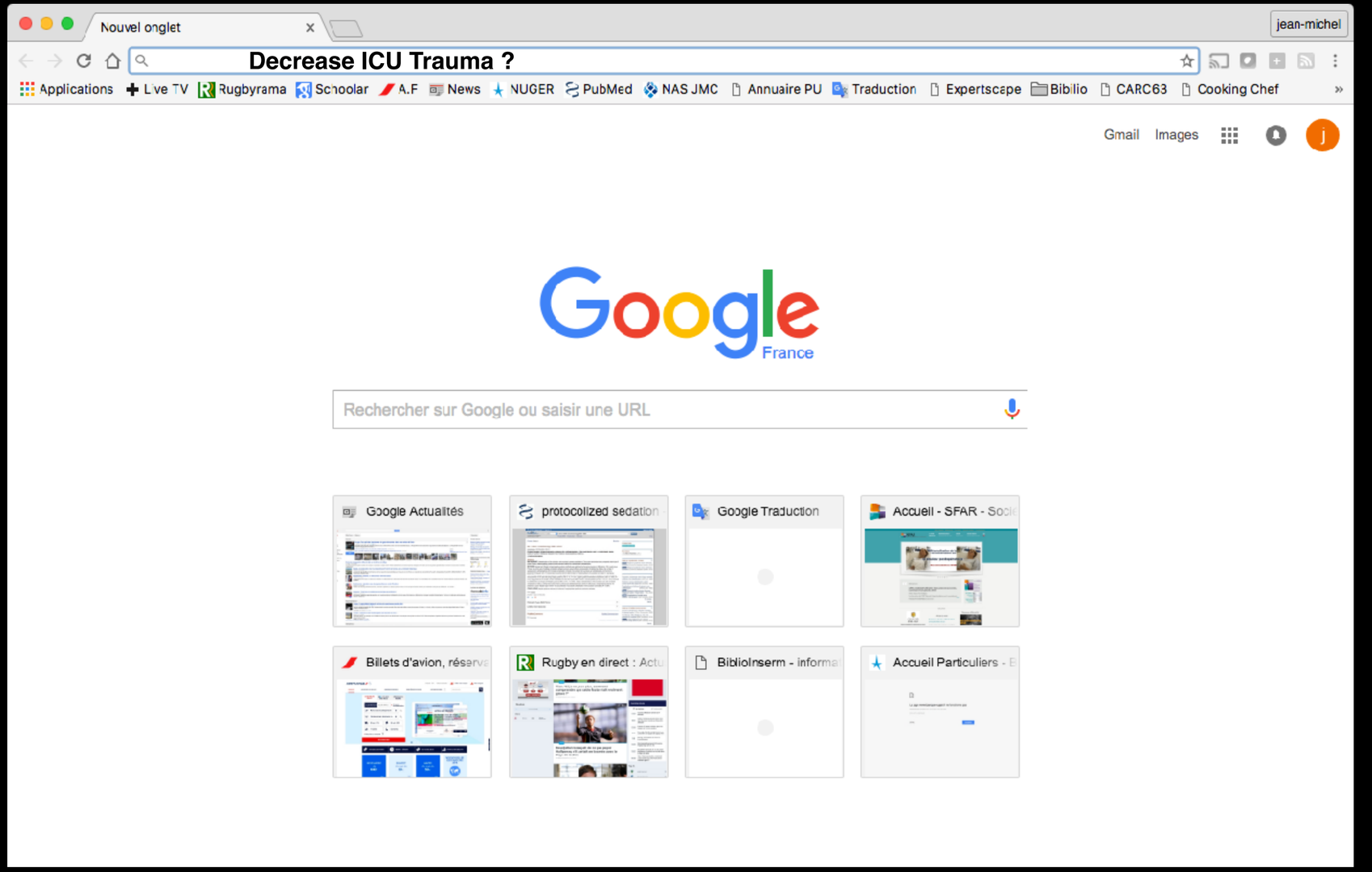
Kress NEJM 2014

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]

Solutions ?


Nouvel onglet
jean-michel
Diminuer les traumatismes induits par la réanimation
Applications
Live TV
Rugbyrama
Schoolar
A.F
News
NUGER
PubMed
NAS JMC
Annuaire PU
Traduction
Expertscape
Bibilio
CARC63
Cooking Chef
Gmail
Images
Google
France
Rechercher sur Google ou saisir une URL
Google Actualités
protocolized sedation
Google Traduction
Accueil - SFAR - Soci
Billets d'avion, réserv
Rugby en direct : Actu
BiblioInserm - informa
Accueil Particuliers - E


Nouvel onglet
jean-michel
Decrease ICU Trauma ?
Applications
Live TV
Rugbyrama
Schoolar
A.F
News
NUGER
PubMed
NAS JMC
Annuaire PU
Traduction
Expertscape
Bibilio
CARC63
Cooking Chef
Gmail
Images
Google
France
Rechercher sur Google ou saisir une URL
Google Actualités
protocolized sedation
Google Traduction
Accueil - SFAR - Soci
Billets d'avion, réserv
Rugby en direct : Actu
BiblioInserm - informa
Accueil Particuliers - E

"All the News That's Fit to Print"

The New York Times

Washington Edition

Today, a mix of sun and clouds, highs in low 40s. Tonight, partly cloudy, lows around 30. Tomorrow, thickening clouds, colder late, highs in low 40s. Weather map, Page D8.

VOL. CLVIII .... No. 54,553 © 2009 The New York Times MONDAY, JANUARY 12, 2009 $1.50

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

Schweickert Lancet 2009

Let’s GO !

Primum non nocere

Early mobilization in the critical care unit: A review of adult and pediatric literature

Saoirse Cameron, MA [a,b], Ian Ball, MD, MSc [b,c], Gediminas Cepinskas, DVM, PhD [b,d], Karen Choong, MB, BCh, MSc [a,e], Timothy J. Doherty, MD, PhD [a,b,f], Christopher G. Ellis, PhD [b,c,d], Claudio M. Martin, MD, MSc [b,c], Tina S. Mele, MD, PhD [b,g], Michael Sharpe, MD [b,h], J. Kevin Shoemaker, PhD [a,b,i], Douglas D. Fraser, MD, PhD [a,b,j,*]

RESEARCH Open Access

Expert consensus and recommendations on safety criteria for active mobilization of mechanically ventilated critically ill adults

Safety and feasibility of femoral catheters during physical rehabilitation in the intensive care unit☆,☆☆,★

Abdulla Damluji MB, ChB, MPH [a,b], Jennifer M. Zanni PT, DScPT [b,c], Earl Mantheiy BA [b,e], Elizabeth Colantuoni PhD [b,d], Michelle E. Kho PT, PhD [b,c], Dale M. Needham MD, PhD [b,c,e,*]

Very Early Passive Cycling Exercise in Mechanically Ventilated Critically Ill Patients: Physiological and Safety Aspects - A Case Series

Ruy Camargo Pires-Neto [1,2*], Yurika Maria Fogaça Kawaguchi [1], Adriana Sayuri Hirota [1], Carolina Fu [1,3], Clarice Tanaka [1,3], Pedro Caruso [1], Marcelo Park [1], Carlos Roberto Ri[beiro], [de] Carvalho [1]

Early activity is feasible and safe in respiratory failure patients

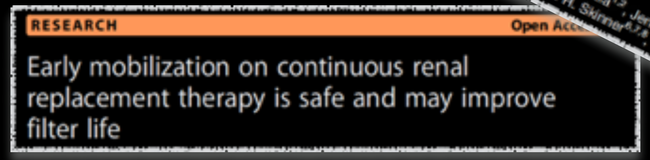
Polly Bailey, RN, APRN; George E. Thomsen, MD; Vicki J. Spuhler, RN, MS; Robert Blair, PT; James Jewkes, PT; Louise Bezdjian, RN, BSN; Kristy Veale, RN, BSN; Larissa Rodriquez, AS; Ramona O. Hopkins, PhD

Safety profile and feasibility of early physical therapy and mobility for critically ill patients in the medical intensive care unit: Beginning experiences in Korea☆,☆☆

Hyun Lee, MD, MS [a], Young Jun Ko, PT, MS [b], Gee Young Suh, MD, PhD [a,c], Jeong Hoon Yang, MD, PhD [c,d], Chi-Min Park [c,e], Kyeongman Jeon, MD, PhD [a,c], Yun Hee Park, MD, MS [f], Chi Ryang Chung, MD, MS [c,g],

Published in final edited form as:
Intensive Care Med. 2014 March ; 40(3): 370–379. doi:10.1007/s00134-013-3136-0.

Feasibility and safety of early combined cognitive and physical therapy for critically ill medical and surgical patients: the Activity and Cognitive Therapy in ICU (ACT-ICU) trial



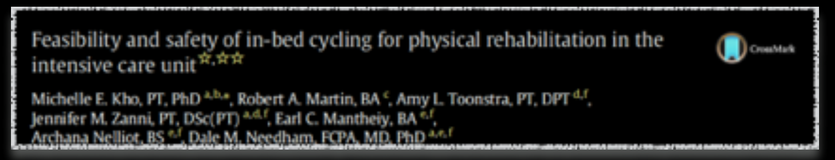
RESEARCH Open Access

Early mobilization on continuous renal replacement therapy is safe and may improve filter life

ORIGINAL RESEARCH

Feasibility and Safety of Physical Therapy during Continuous Renal Replacement Therapy in the Intensive Care Unit

Amy L. Toonstra [1,2], Jennifer M. Zanni [1,2,3], C. John Sperati [4], Archana Neilot [2,5], Earl Mantheiy [2,5], Elizabeth H. Skinner [6,7,8], and Dale M. Needham [2,3,8]



Feasibility and safety of in-bed cycling for physical rehabilitation in the intensive care unit☆,☆☆

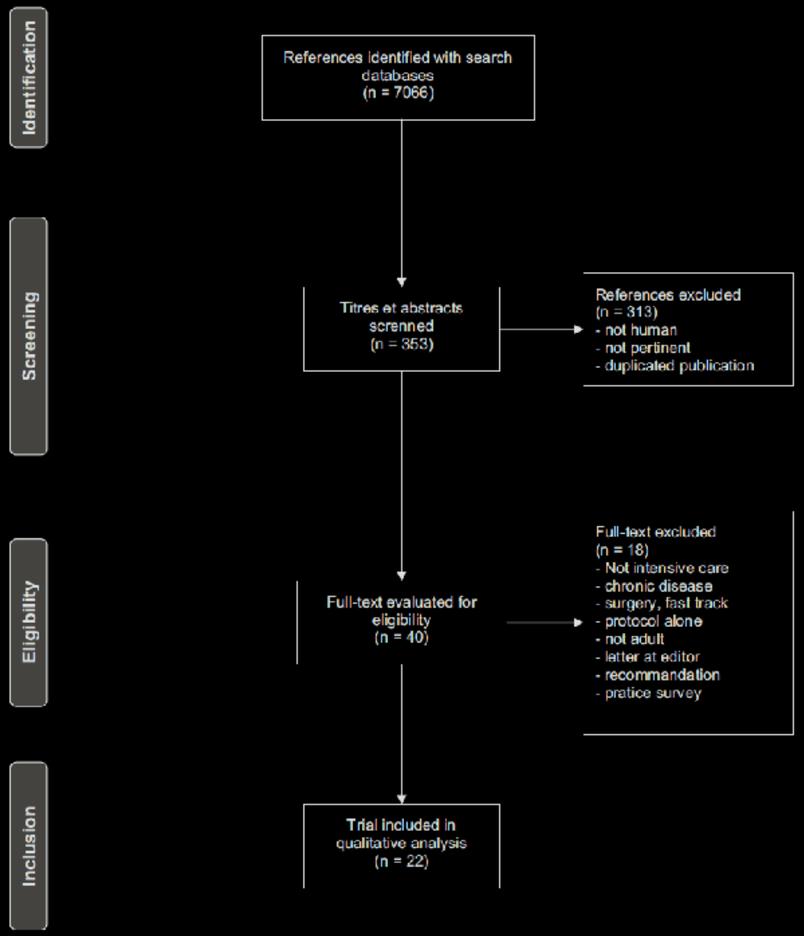
Michelle E. Kho, PT, PhD [a,b,*], Robert A. Martin, BA [c], Amy L. Toonstra, PT, DPT [d,f], Jennifer M. Zanni, PT, DSc(PT) [a,d,f], Earl C. Mantheiy, BA [e,f], Archana Nellist, BS [e,f], Dale M. Needham, FCPA, MD, PhD [a,e,f]

Que faire ?

Review

Systematic review of early exercise in intensive care: A qualitative approach

Hélène Laurent [a], Sylvie Aubreton [a], Ruddy Richard [b,c], Yannael Gorce [a], Emilie Caron [a], Aurélie Vallat [a], Anne-Marie Davin [a], Jean-Michel Constantin [d,*], Emmanuel Coudeyre [a]



Review

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Qui fait ?

Move the body and the brain
…of ICU patients

Just ask the physiotherapists

Yes, just ask physiotherapists!

For a 20 beds ICU :

2 physiotherapists Upper limbs
2 physiotherapists Lower limbs
2 Respiratory physiotherapists
...
7 days / 12h

24 beds ICU

24 beds ICU

2 physiotherapists
5 days / 7
8 hours

involve Nurses for the early rehabilitation process

just ask nurses to do that !

We already manage:

Sedation
wining from mechanical ventilation
Tight glycemic control
Vasopressors
Relatives and family
…

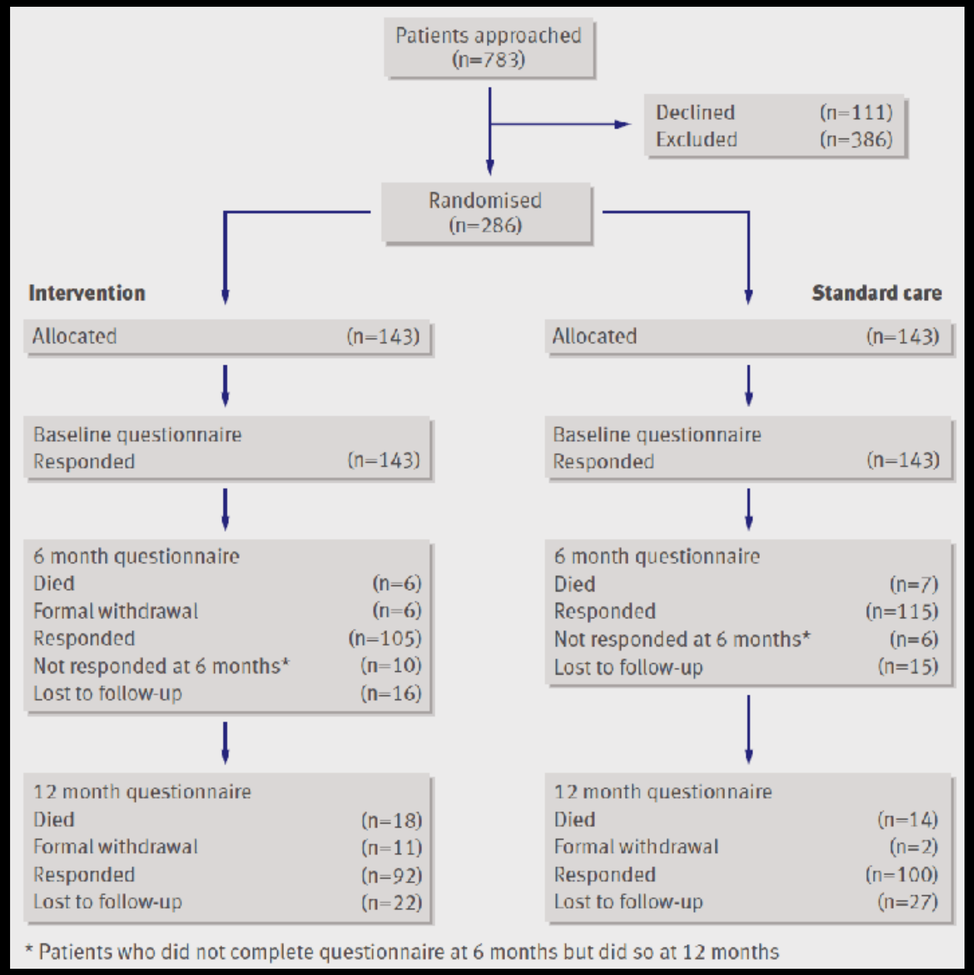
What Else ?

Protocole

BMJ

RESEARCH

The PRaCTICaL study of nurse led, intensive care follow-up programmes for improving long term outcomes from critical illness: a pragmatic randomised controlled trial



Cuthbertson BMJ 2009

BMJ

RESEARCH

The PRaCTICaL study of nurse led, intensive care follow-up programmes for improving long term outcomes from critical illness: a pragmatic randomised controlled trial

Table 3 | Primary outcome of trial of a nurse led rehabilitation programme for patients discharged from intensive care. Results were analysed on the basis of intention to treat (adjusted for minimisation covariates*), per protocol, and the treatment received

	Intervention		Standard care		Effect size	
SF-36 score at 12 months	No of patients	Mean (SD) score	No of patients	Mean (SD) score	(95% CI)	P value
Intention to treat analysis						
Physical component score	90	42.0 (10.6)	97	40.8 (11.9)	1.1 (−1.9 to 4.2)	0.46
Mental component score	90	47.1 (12.7)	97	46.8 (12.4)	0.4 (−3.0 to 3.7)	0.83
Per protocol analysis						
Physical component score	80	42.3 (10.8)	97	40.8 (11.9)	1.6 (−1.6 to 4.8)	0.33
Mental component score	80	48.5 (11.8)	97	46.8 (12.4)	1.7 (−1.7 to 5.1)	0.33
Treatment received analysis						
Physical component score	80	42.3 (10.8)	107	40.7 (11.7)	1.7 (−1.4 to 4.8)	0.27
Mental component score	80	48.5 (11.8)	107	45.8 (13.0)	2.6 (−0.8 to 6.0)	0.14

*Minimisation covariates were age, sex, HADS score, APACHE II score, ICE score, and trial centre (see table 1 for definitions of abbreviations).

Cuthbertson BMJ 2009

RESEARCH Open Access

Health-related quality of life and physical recovery after a critical illness: a multi-centre randomised controlled trial of a home-based physical rehabilitation program

Doug Elliott[1*], Sharon McKinley[2], Jennifer Alison[3], Leanne M Aitken[4], Madeleine King[5], Gavin D Leslie[6], Patricia Kenny[7], Penny Taylor[1], Rachel Foley[8] and Elizabeth Burmeister[9]

Elliott CCF 2011

RESEARCH Open Access

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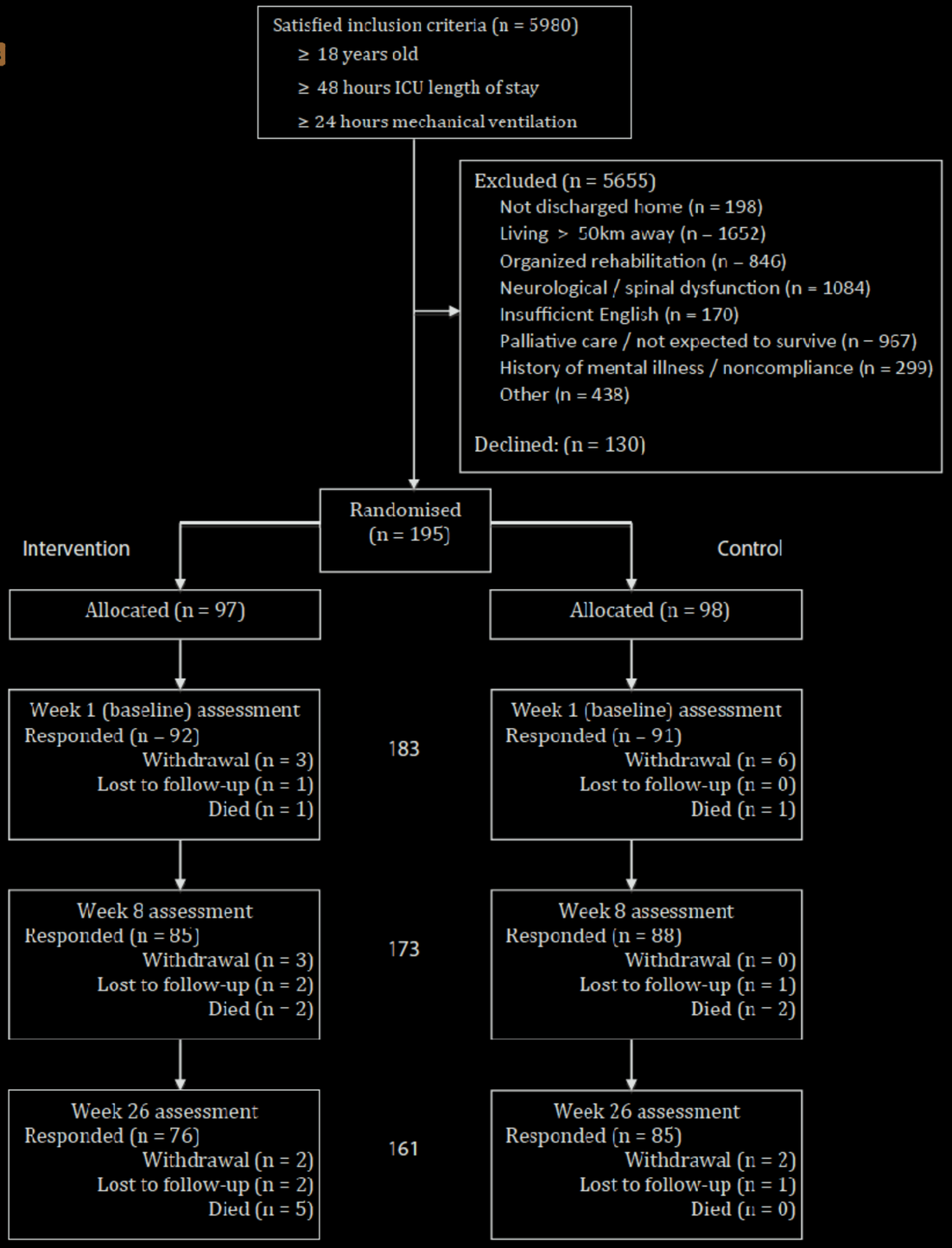

RESEARCH Open Access

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SF-36 Domains	Week 1		Week 8		Week 26	
Groups	C	I	C	I	C	I
Physical function	29.1	27.3	41.0	39.9	41.8	42.6
Role function-physical	25.5	25.1	38.0	38.2	40.9	42.1
Bodily pain	43.0	38.7	49.0	46.7	46.9	44.5
General health	43.5	41.7	46.0	44.7	45.3	44.8
Vitality	38.1	36.0	46.9	45.5	47.0	47.6
Social function	30.1	27.9	44.9	43.0	44.5	44.5
Role function-emotional	32.0	28.0	42.4	41.1	42.9	43.6
Mental health	43.4	40.1	48.2	48.0	48.1	48.4
Physical component Summary	33.0	31.6	42.7	40.5	42.9	42.8
Mental component summary	40.0	36.6	47.5	46.9	47.2	48.0

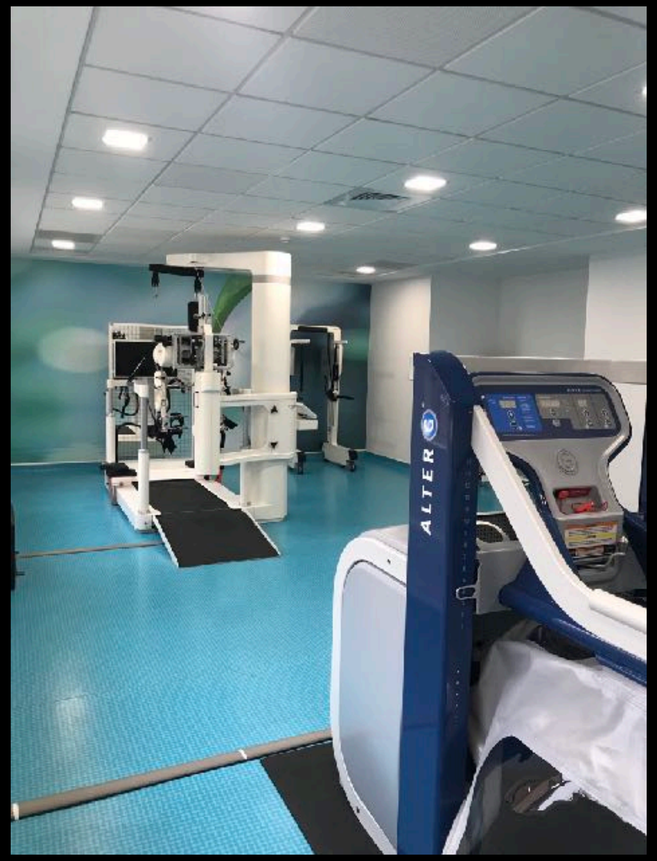
RESEARCH Open Access

Health-related quality of life and physical recovery after a critical illness: a multi-centre randomised controlled trial of a home-based physical rehabilitation program

Doug Elliott[1*], Sharon McKinley[2], Jennifer Alison[3], Leanne M Aitken[4], Madeleine King[5], Gavin D Leslie[6], Patricia Kenny[7], Penny Taylor[1], Rachel Foley[8] and Elizabeth Burmeister[9]

RESEARCH

The PRaCTICaL study of nurse led, intensive care follow-up programmes for improving long term outcomes from critical illness: a pragmatic randomised controlled trial


ALTER G

"All the News That's Fit to Print"

The New York Times

Washington Edition

Today, a mix of sun and clouds, highs in low 40s. Tonight, partly cloudy, lows around 30. Tomorrow, thickening clouds, colder late, highs in low 40s. Weather map, Page D8.

VOL. CLVIII .... No. 54,553 © 2009 The New York Times MONDAY, JANUARY 12, 2009 $1.50

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-

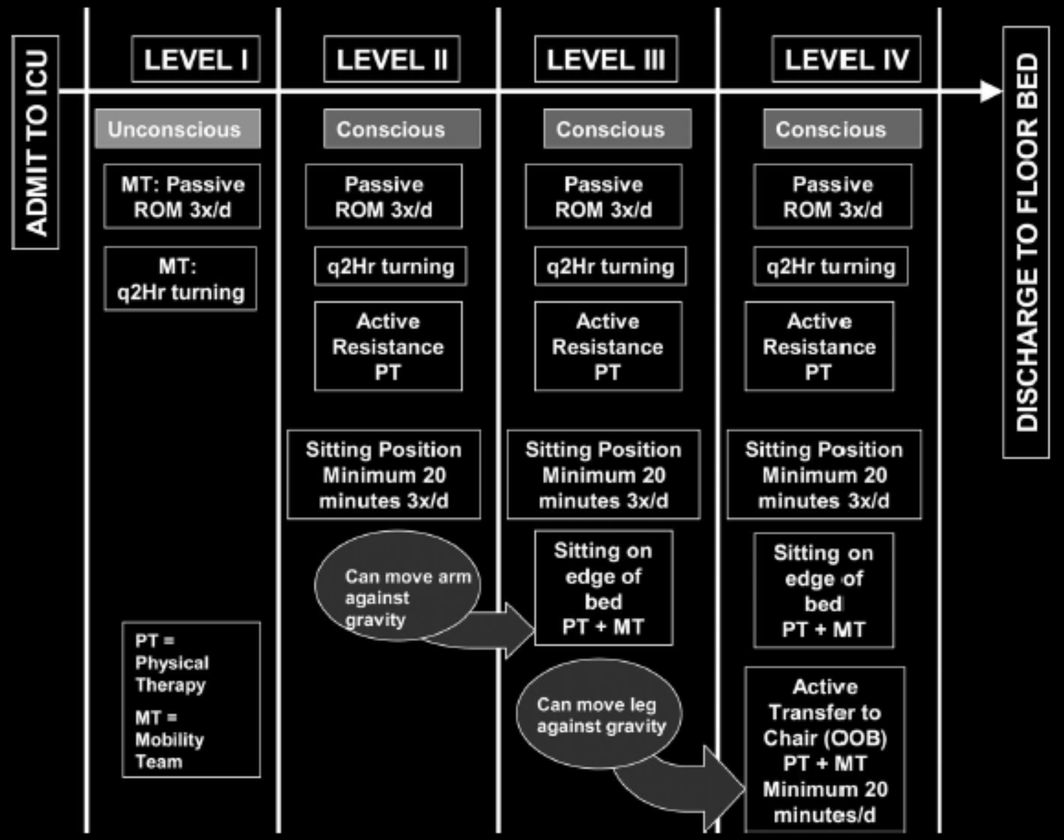
Continued on Page A11

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

Plus Tôt !!

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*

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

	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

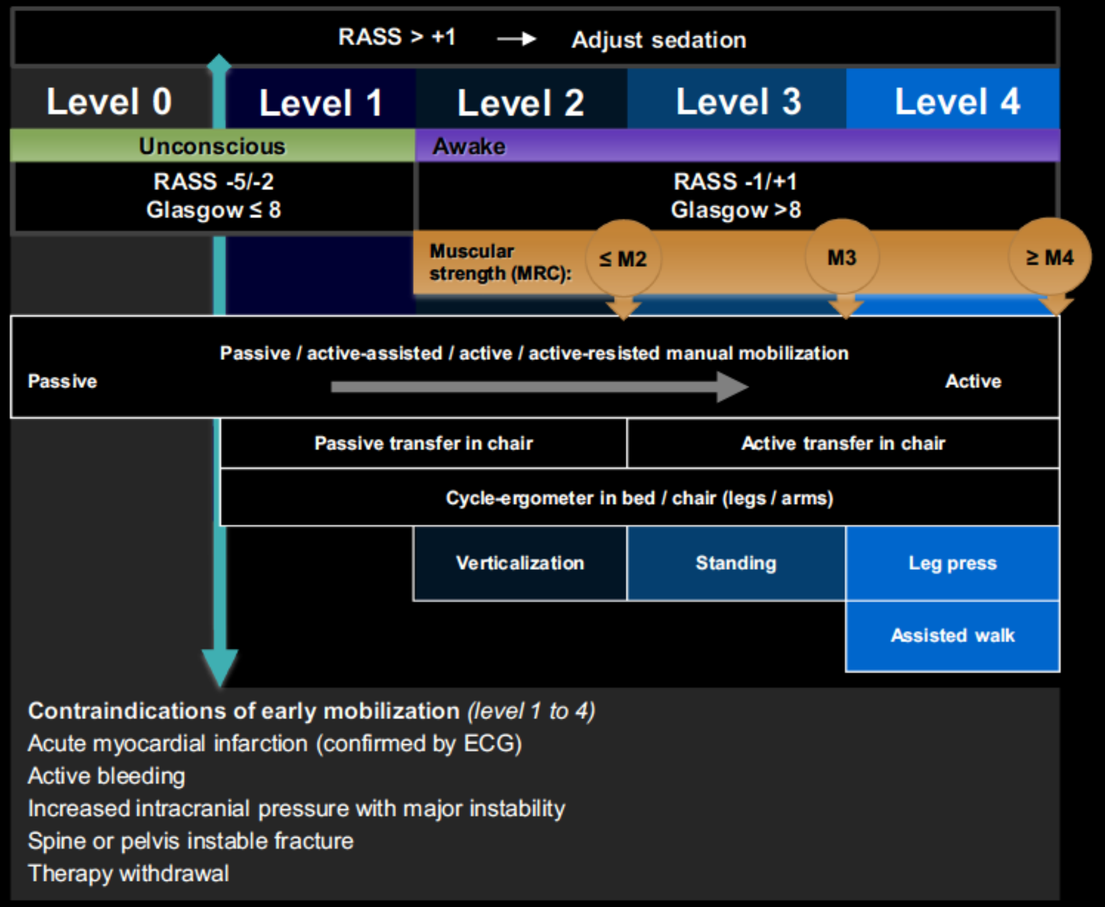
RESEARCH Open Access

Teamwork enables high level of early mobilization in critically ill patients

Cheryl Elizabeth Hickmann, Diego Castanares-Zapatero, Emilie Bialais, Jonathan Dugernier, Antoine Tordeur, Lise Colmant, Xavier Wittebole, Giuseppe Tirone, Jean Roeseler and Pierre-François Laterre*

Early mobilization protocol

M. Patri, CE. Hickmann, E. Bialais, J. Dugernier, P-F Laterre , J. Roeseler
Intensive care unit, Saint Luc university hospital, Brussels.

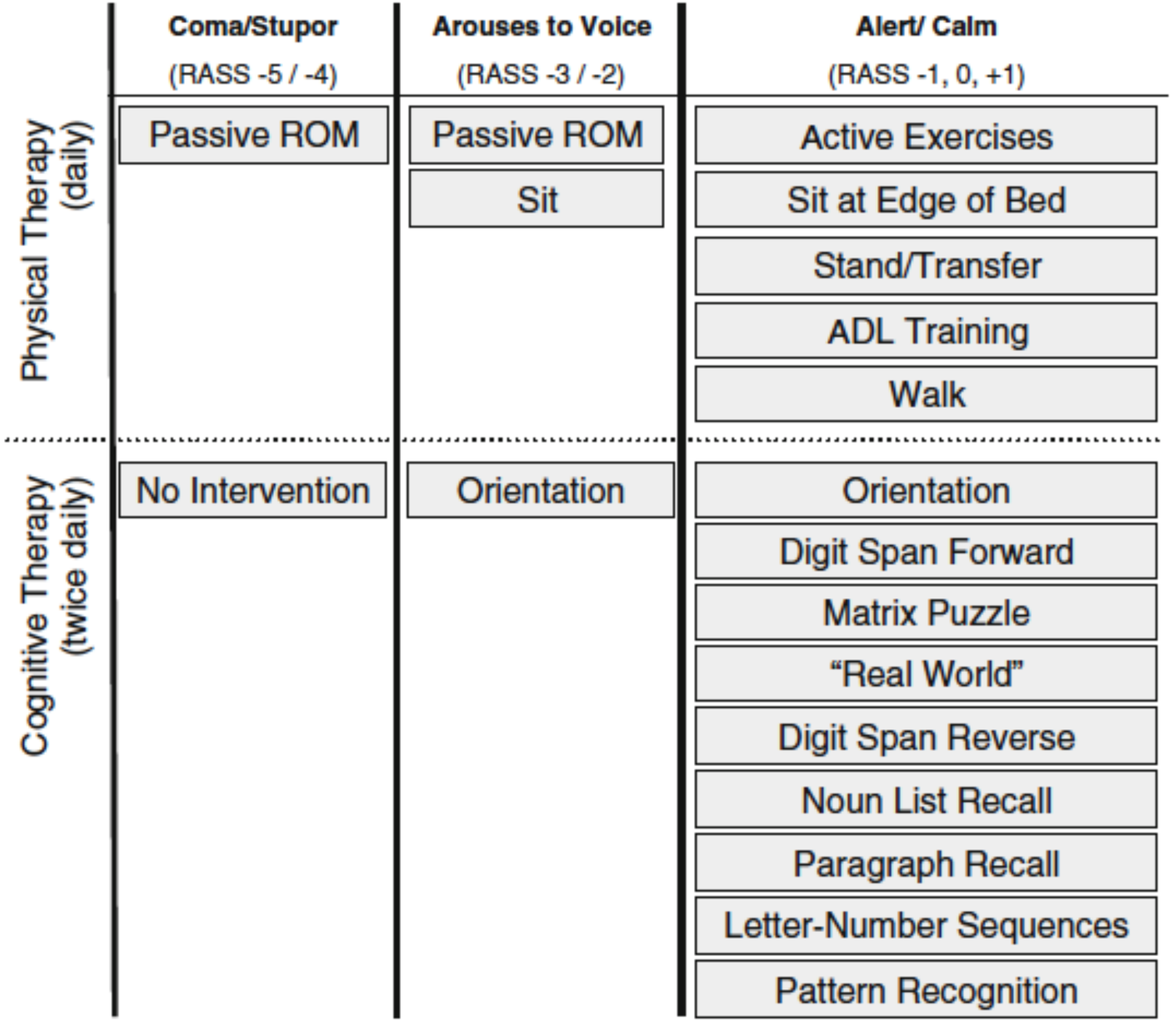


Contraindications of early mobilization *(level 1 to 4)*

Acute myocardial infarction (confirmed by ECG)
Active bleeding
Increased intracranial pressure with major instability
Spine or pelvis instable fracture
Therapy withdrawal

Feasibility and safety of early combined cognitive and physical therapy for critically ill medical and surgical patients: the Activity and Cognitive Therapy in ICU (ACT-ICU) trial

N. E. Brummel
T. D. Girard
E. W. Ely
P. P. Pandharipande
A. Morandi
C. G. Hughes
A. J. Graves
A. Shintani
E. Murphy
B. Work
B. T. Pun
L. Boehm
T. M. Gill
R. S. Dittus
J. C. Jackson



ACRM
AMERICAN CONGRESS OF REHABILITATION MEDICINE

Archives of Physical Medicine and Rehabilitation

journal homepage: www.archives-pmr.org

Archives of Physical Medicine and Rehabilitation 2017; ■: ■■■-■■■

ORIGINAL RESEARCH

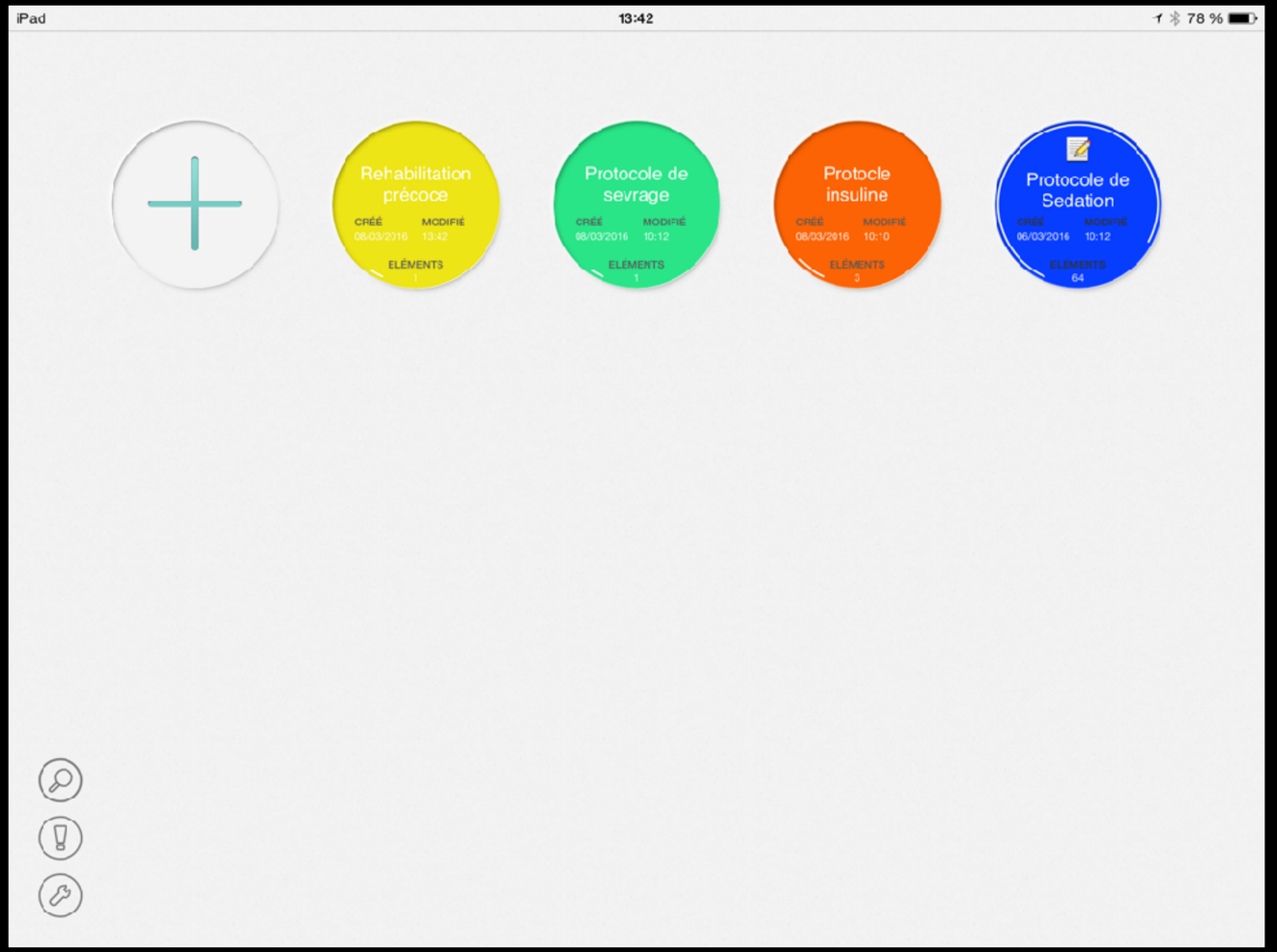
Intensive Early Rehabilitation in the Intensive Care Unit for Liver Transplant Recipients: A Randomized Controlled Trial

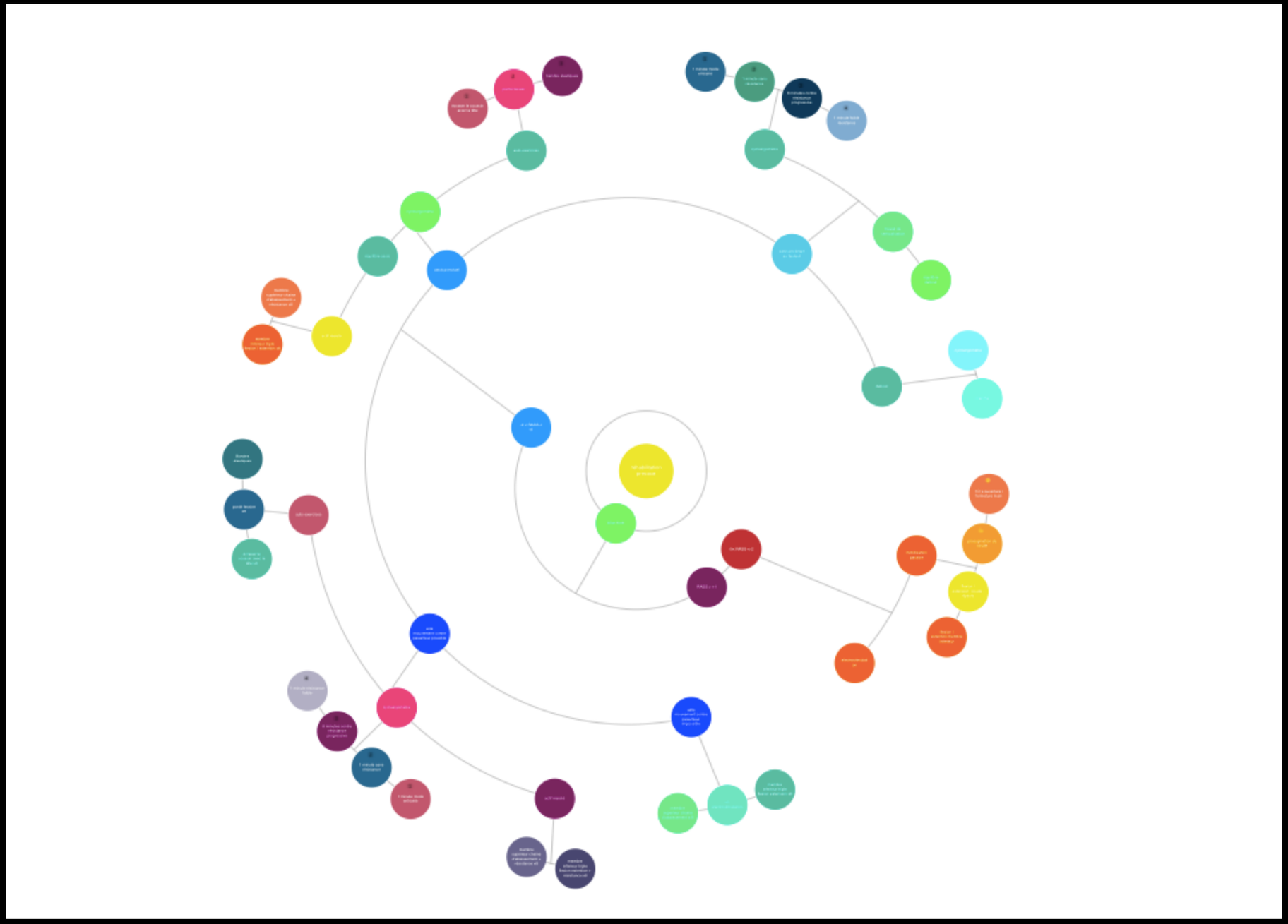
Pierre Maffei,[a] Sandrine Wiramus, MD,[b] Laurent Bensoussan, MD, PhD,[a] Laurence Bienvenu,[a] Eric Haddad,[a] Sophie Morange, MD,[c] Mohamed Fathallah, PhD,[c] Jean Hardwigsen, MD,[d] Jean-Michel Viton, MD, PhD,[a] Y. Patrice Le Treut, MD,[d] Jacques Albanese, MD, PhD,[b] Emilie Gregoire, MD, PhD[d]

Table 4 Number of days between entry into the ICU and first sitting on the edge of bed, first sitting in a chair, first walking, and first transit; duration of mechanic ventilation; and LOS in ICU, MCU, and hospital

		Usual Treatment Group (n = 20)	Experimental Group (n = 20)	*P**
First sitting on the edge of bed	Mean ± SD	10±13	3±2	.048*
First sitting on a chair	Mean ± SD	10±13	4±4	.114
First walking	Mean ± SD	22±9	31±38	>.99
First transit	Mean ± SD	6±3	4±2	.015*
Ventilation, h	Mean ± SD	30.4±48.5	11.7±13	.104
	Median (min-max)	8.5 (2–168)	6 (3–59)	
LOS in ICU, d	Mean ± SD	14.3±20	12±15.7	.690
	Median (min-max)	7 (3–94)	7 (2–73)	
LOS in MCU, d	Mean ± SD	8±6.3	7±10	.863
	Median (min-max)	2.5 (0–27)	0 (0–17)	
LOS in ICU plus MCU, d	Mean ± SD	19.3±21	15.2±16.1	.499
	Median (min-max)	11.5 (4–94)	10 (3–73)	
LOS in Surgery department, d	Mean ± SD	11.6±7.2	12.7±7.8	.644
	Median (min-max)	9.5 (3–29)	10 (4–36)	
LOS in Hospital, d	Mean ± SD	31±25	28±18	.672
	Median (min-max)	22 (12–123)	21 (11–89)	

Abbreviations: max, maximum; MCU, middle care unit; min, minimum.
* Significant, Mann-Whitney *U* test.


iPad
13:42
78 %
Rehabilitation précoce
CRÉÉ
08/03/2016
MODIFIÉ
13:42
ELÉMENTS
1
Protocole de sevrage
CRÉÉ
08/03/2016
MODIFIÉ
10:12
ELÉMENTS
1
Protocle insuline
CRÉÉ
08/03/2016
MODIFIÉ
10:10
ELÉMENTS
3
Protocole de Sedation
CRÉÉ
06/03/2016
MODIFIÉ
10:12
ELÉMENTS
64



Protocole de réhabilitation

Réhabilitation précoce :
-Lutter contre les troubles de l'alitement prolongé
-Conserver l'indépendance fonctionnelle
-Améliorer la qualité de vie

- Protocole standardisé pour une meilleure efficacité des soins sans nuire au patient

- Nécessite surveillance hémodynamique et ventilatoire

- Tolérance mesurée par une EVA d'Inconfort : Douleur, fatigue et gène respiratoire

EVA 0 pas d'inconfort 1-3 inconfort léger 4-6 inconfort modéré 7 inconfort sévère


réhabilitation precoce
bilan kiné
...

Bilan Kiné

- Niveau conscience
- Niveau participation

- Bilan articulaire : déficit, attitudes vicieuses
- Bilan douleur, cutané

- Evaluation de la motricité

-Motricité périphérique : Score MRC

-Tonus Axial

- Bilan fonctionnel

-Transferts

-Equilibre assis, debout, marche

-gestes vie quotidienne : boire, écrire……

MESURE

Score MRC (Medical Research Council)

Fonctions évaluées (6 à droite et 6 à gauche)	Score attribué à chaque groupe musculaire
▪ Antepulsion du bras ▪ Flexion de l'avant-bras ▪ Extension du poignet ▪ Flexion de cuisse ▪ Extension de la jambe ▪ Flexion dorsale du pied	0 = absence de contraction visible 1 = contraction visible sans mouvement du membre 2 = mouvement insuffisant pour vaincre la pesanteur 3 = mouvement permettant de vaincre la pesanteur 4 = mouvement contre la pesanteur et contre résistance 5 = force musculaire normale

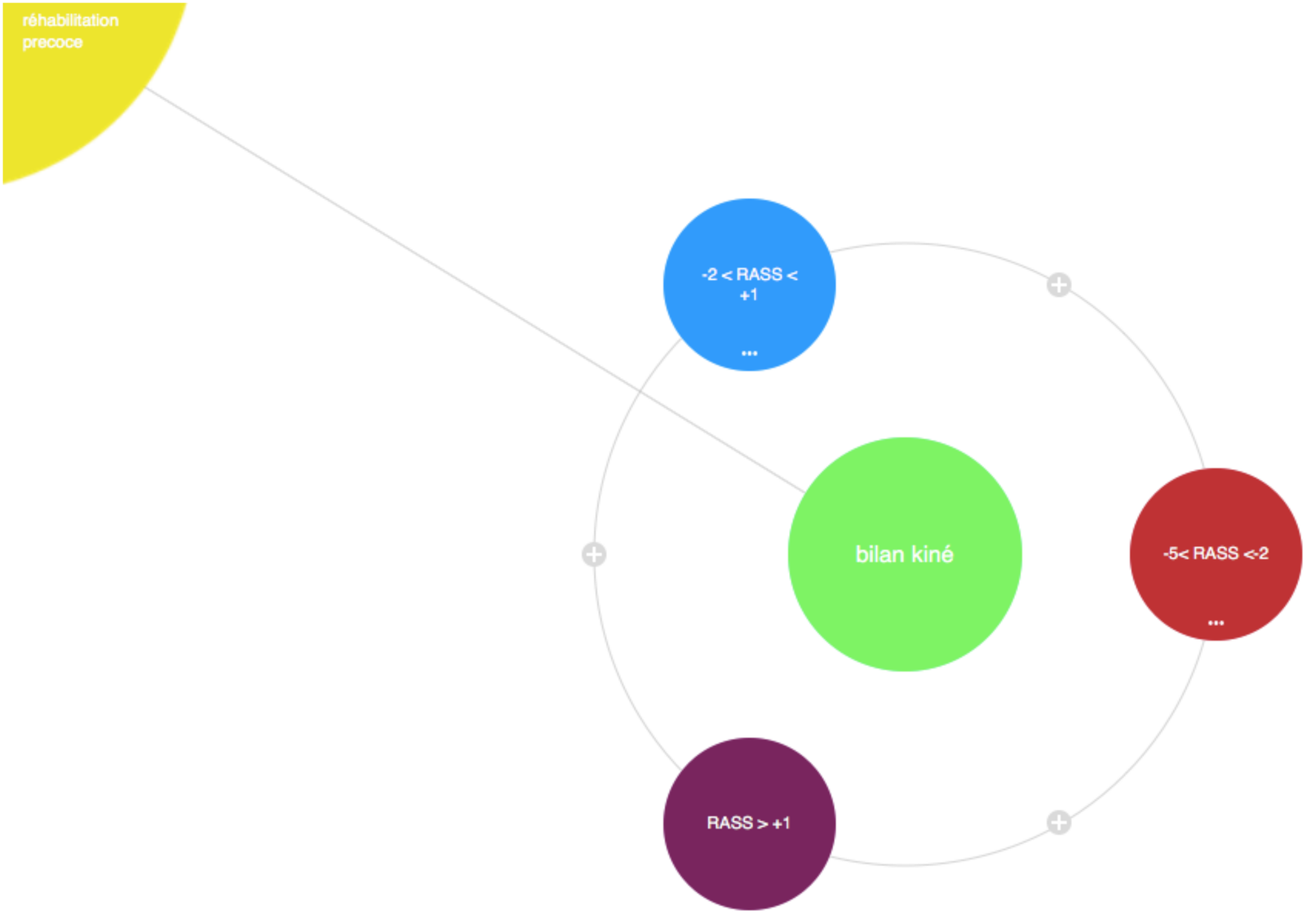
6

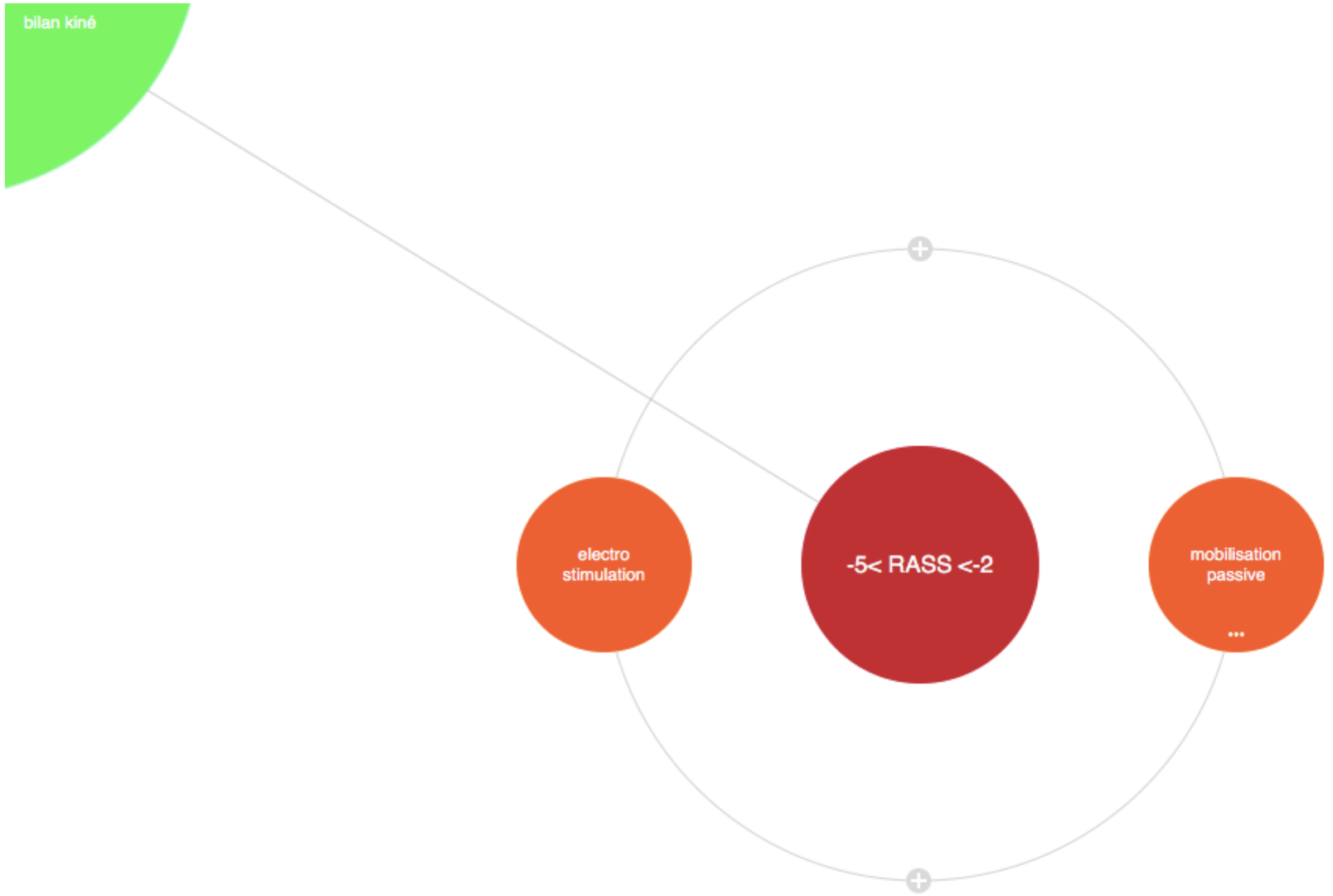
Si pathologie spécifique (neurologique, orthopédique) → bilan kiné adapté et rééducation spécifique

Permet de définir les capacités et les déficiences du patient ainsi que les principes de précaution.

Permet d'adapter l'intensité et la durée des exercices en fonction de l'évolution du patient.

→ Réhabilitation adaptée


réhabilitation precoce
-2 < RASS < +1
...
bilan kiné
-5< RASS <-2
...
RASS > +1


bilan kiné
electro stimulation
-5< RASS <-2
mobilisation passive
...


-5< RASS <-2
flexion / extention membre inferieur
flexion / extension coude - épaule
mobilisation passive
1O x ouverture / fermeture main
prosupination du coude

Mobilisation passive

- Débutée le plus tôt possible

- Maintien des amplitudes articulaires en évitant les rétractions musculo-tendineuses
- Entretenir la trophicité musculaire
- Entretenir le schéma moteur, l'image mentale du mouvement.

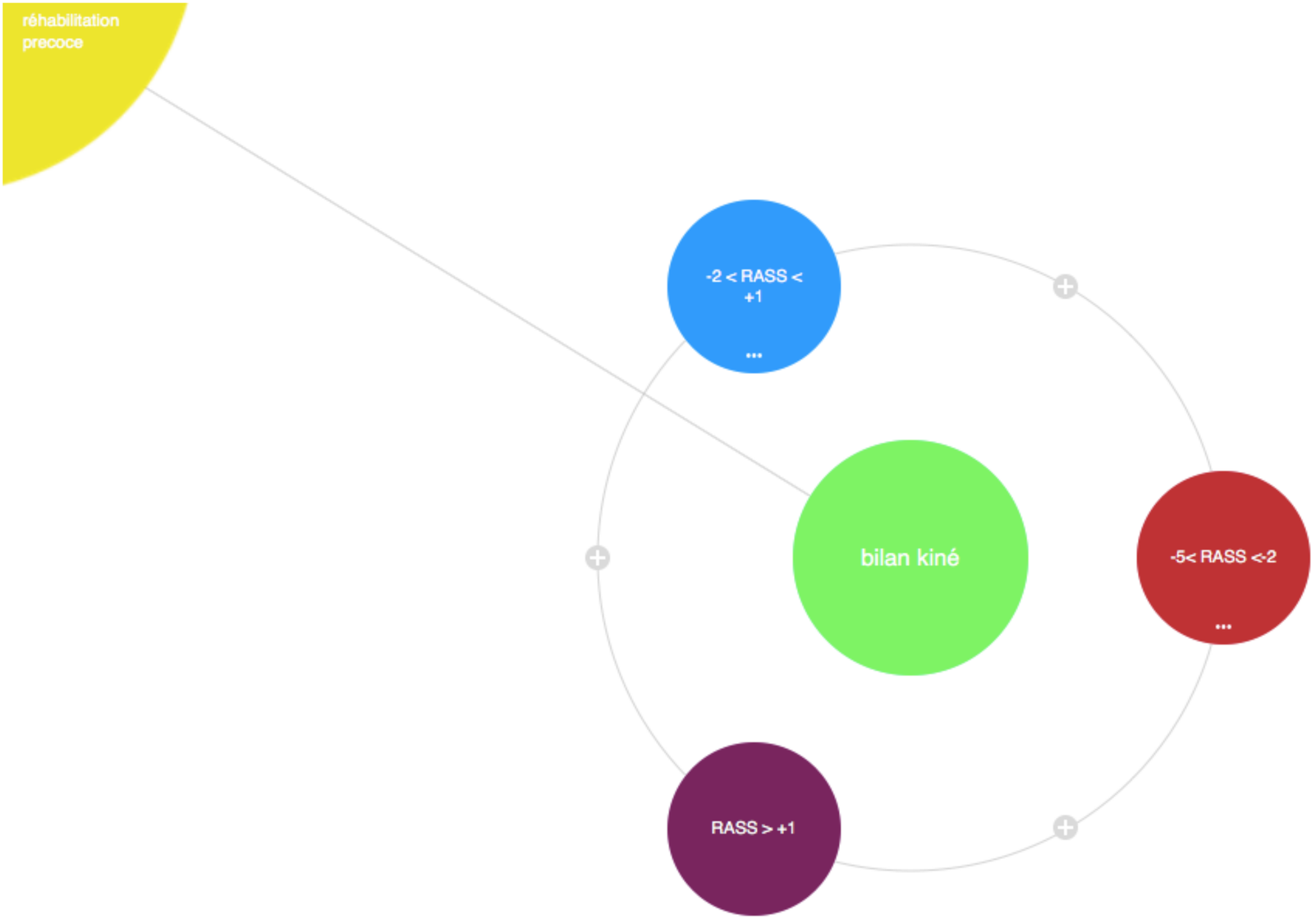
- Etape préliminaire à la réhabilitation

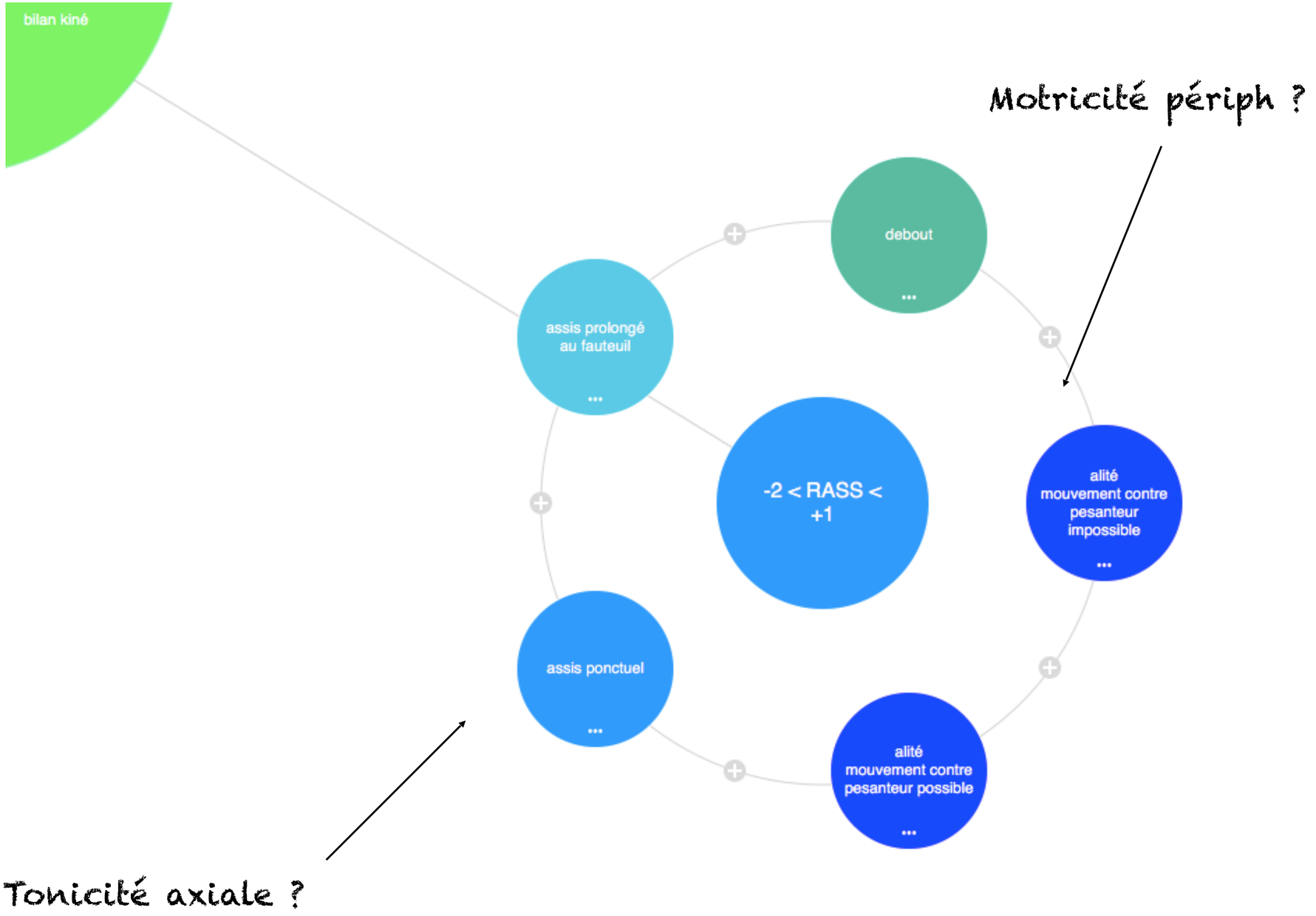
Electrostimulation

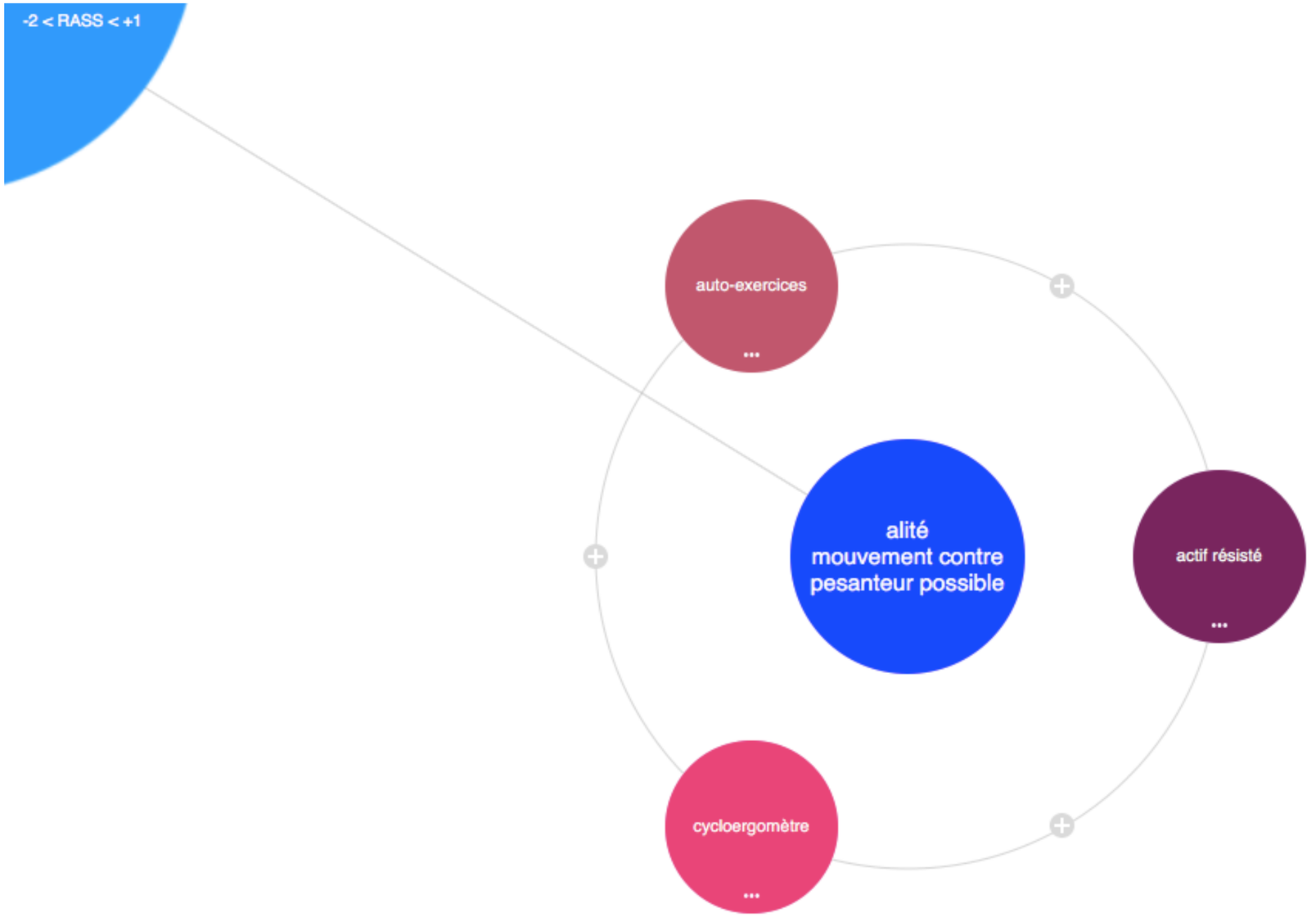
- Ne pas être délétère
- Gain de force musculaire

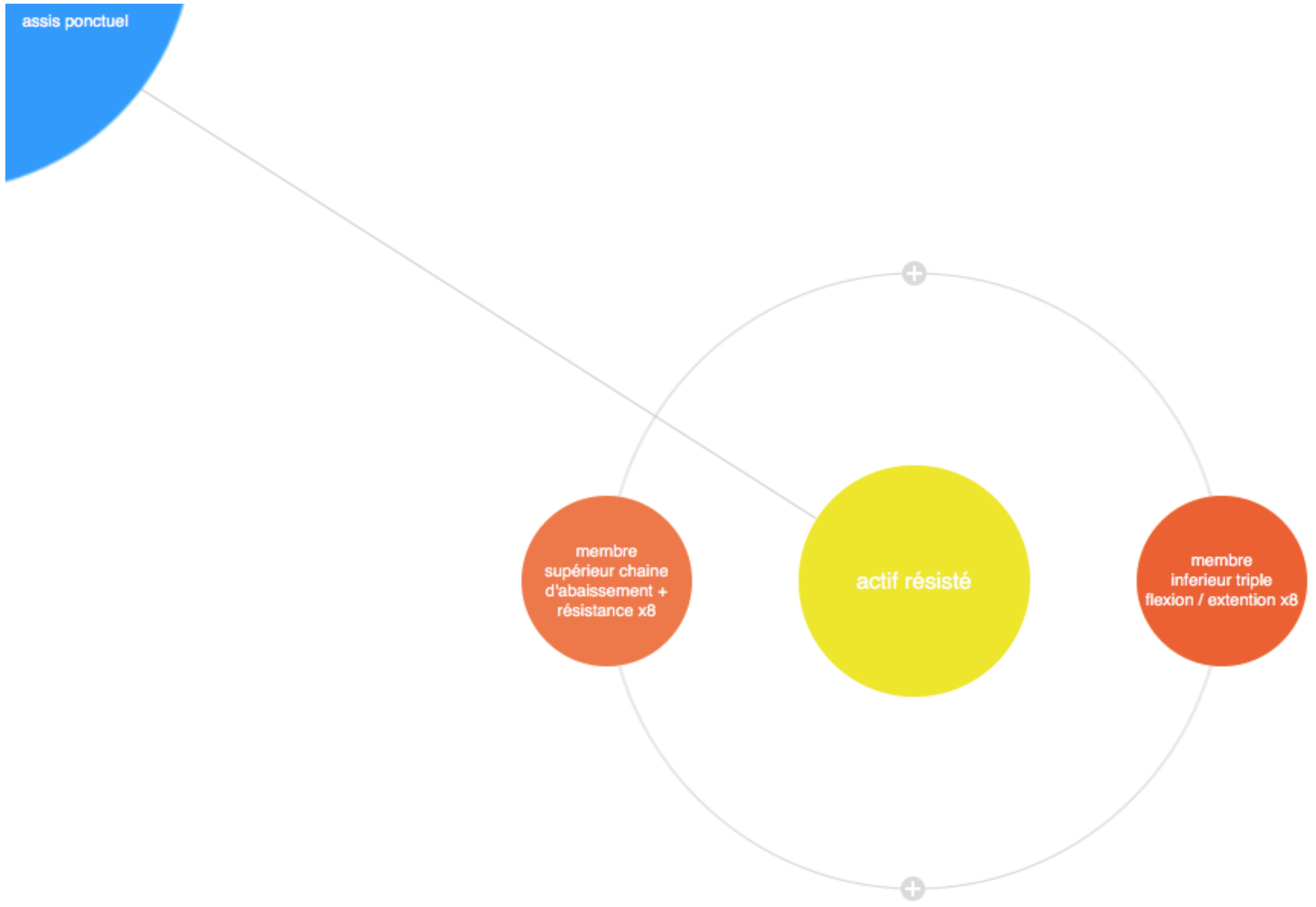
Installation du patient

- Eviter attitudes vicieuses
- Articulations en position fonctionnelle
- Dossier relevé 45°, jambes surélevées
- Utilisation de coussins de positionnement, de gouttières


réhabilitation
precoce
-2 < RASS < +1
...
bilan kiné
-5< RASS <-2
...
RASS > +1


bilan kiné
Motricité périph ?
debout
...
assis prolongé
au fauteuil
...
-2 < RASS <
+1
alité
mouvement contre
pesanteur
impossible
...
assis ponctuel
...
alité
mouvement contre
pesanteur possible
...
Tonicité axiale ?


-2 < RASS < +1
auto-exercices
...
alité
mouvement contre
pesanteur possible
actif résisté
...
cycloergomètre
...


assis ponctuel
membre supérieur chaine d'abaissement + résistance x8
actif résisté
membre inferieur triple flexion / extention x8

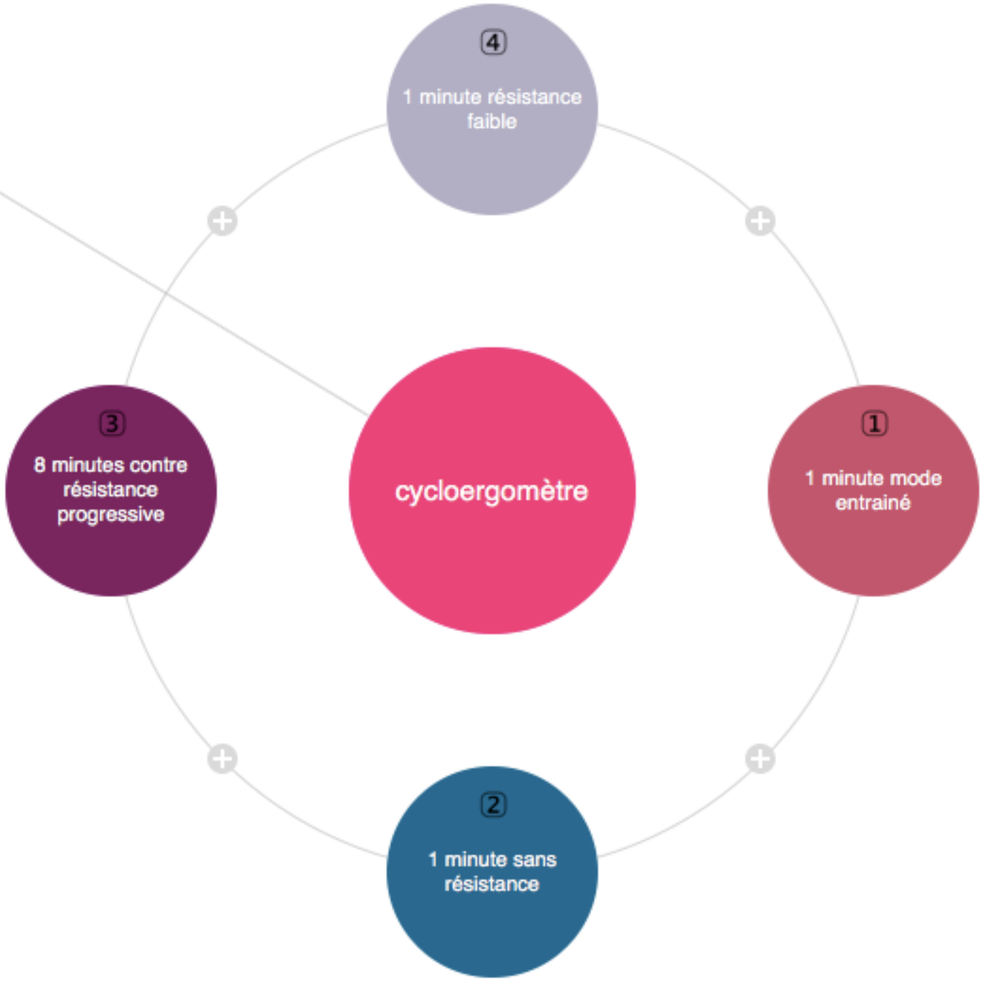
Mobilisation active

- Rechercher le plus tôt possible la collaboration du patient
- Notion d'encouragement primordiale, rôle de coaching du soignant
- Avec temps de repos Respect fatigabilité et douleur
- Progressive Actif-aidé, Actif libre, contre résistance.
- Bilans kiné réguliers pour réévaluer les capacités du patient et réadapter la réhabilitation

Cycloergomètre

- En mode entrainé
- Contre résistance progressive
- Contrôle du genou

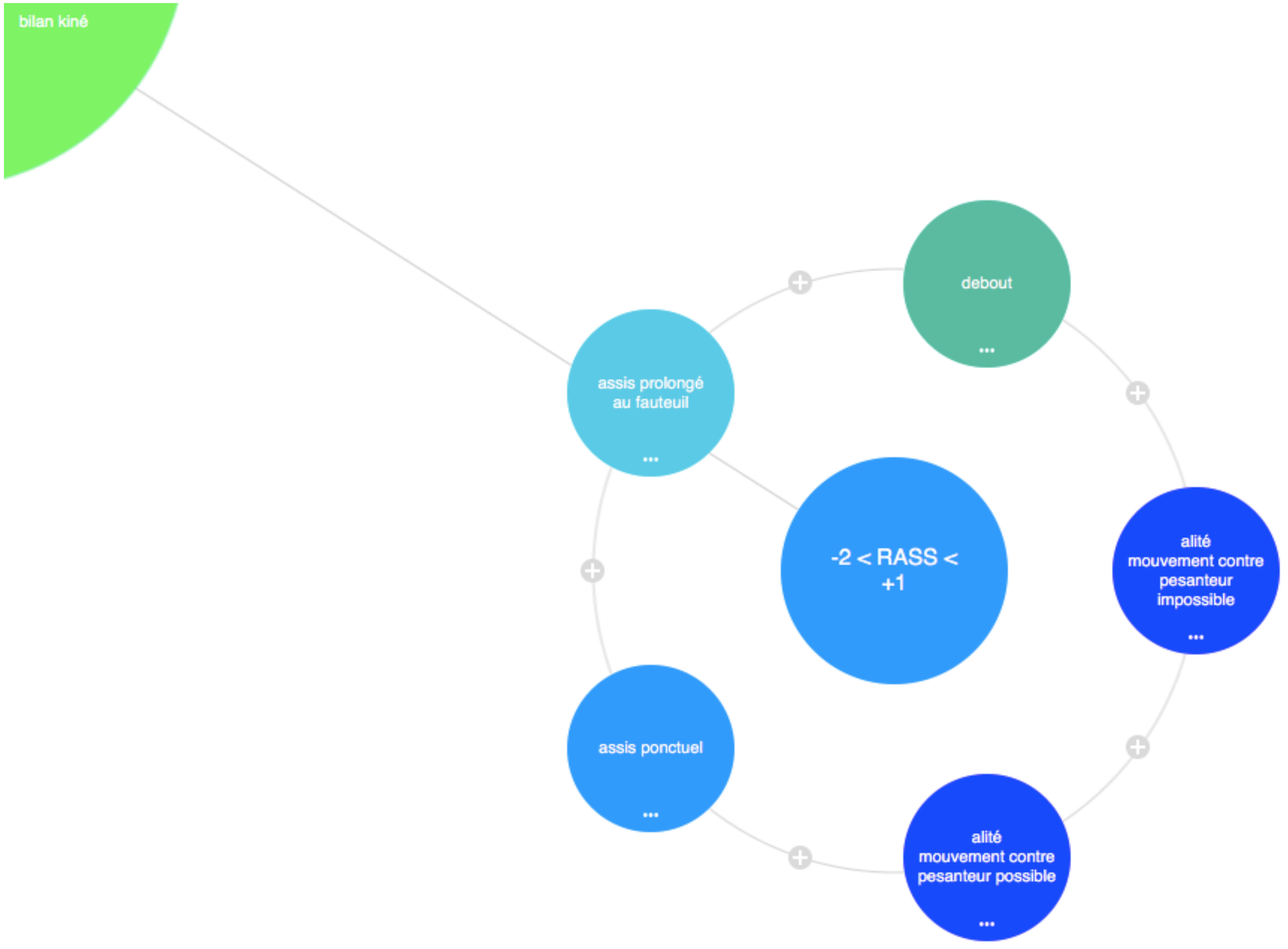
alité mouvement
contre pesanteur



Auto-exercices

- écrase coussin, ponté fessier
- balles, altères, travail de préhension …

→ implique le patient, début d’autonomie.


bilan kiné
assis prolongé au fauteuil
...
debout
...
-2 < RASS < +1
alité mouvement contre pesanteur impossible
...
assis ponctuel
...
alité mouvement contre pesanteur possible
...

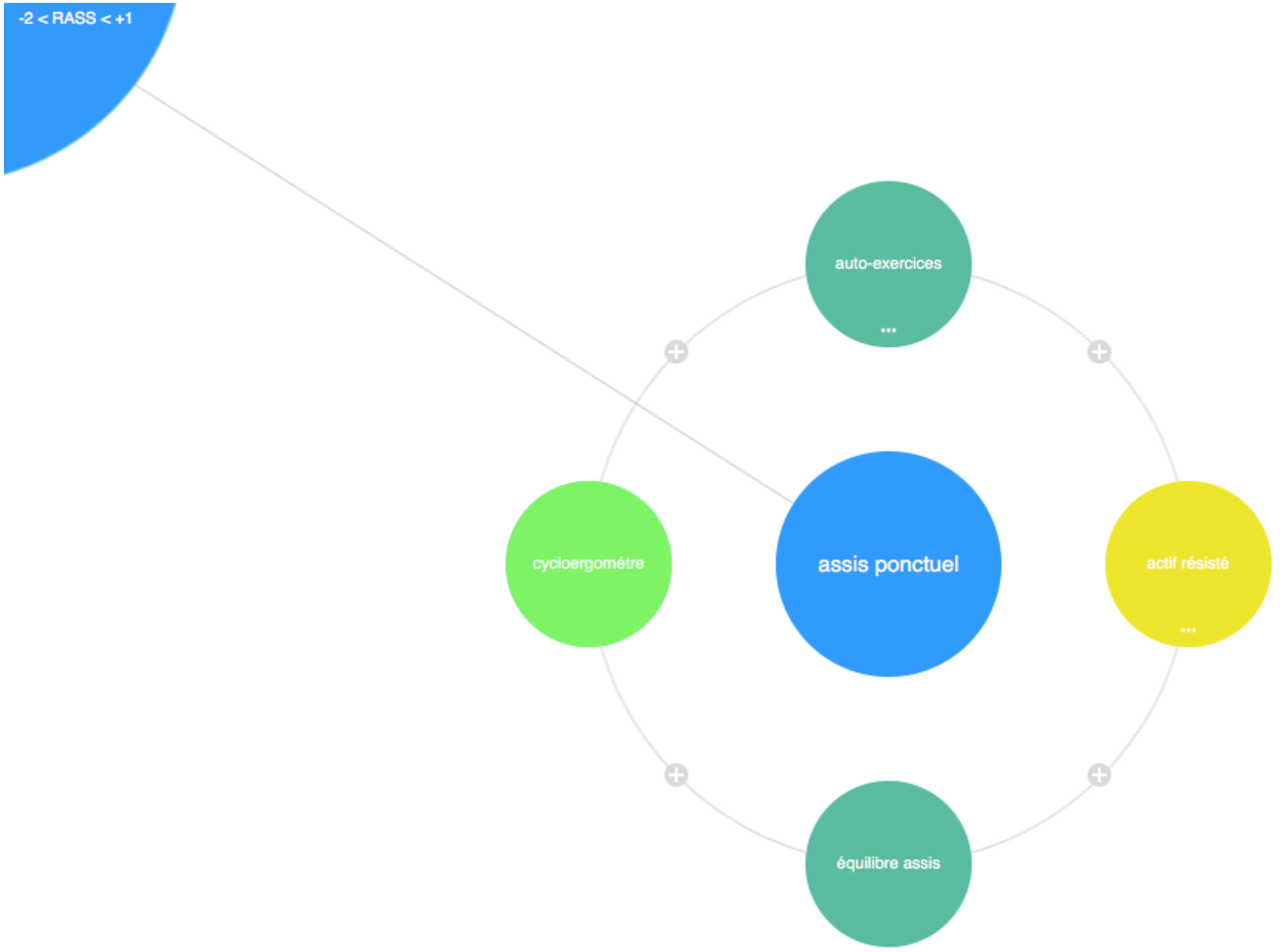
Verticalisation progressive

- Implication de toute l’équipe pluridisciplinaire
- Préparation environnement
- Informer le patient pour obtenir son adhésion et sa participation
- Sollicitation progressive des muscles antigravitaires

Assis Ponctuel bord du lit

- Stimulation du tonus axial
- Travail équilibre assis
- Redressement axial actif
- Favoriser les stimulations proprioceptives : pieds au sol .


120
99
14

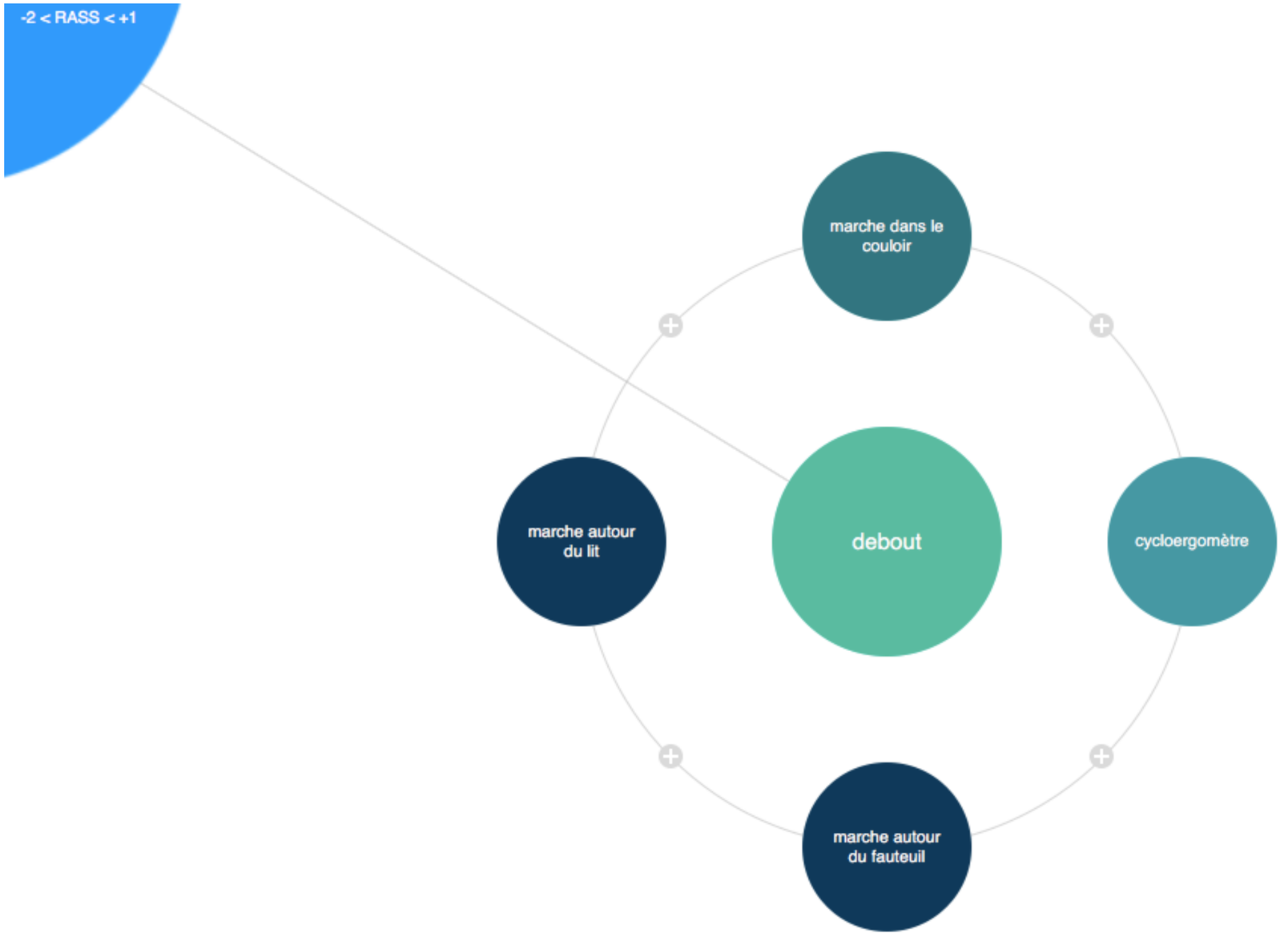

-2 < RASS < +1
auto-exercices
...
cycloergomètre
assis ponctuel
actif résisté
...
équilibre assis

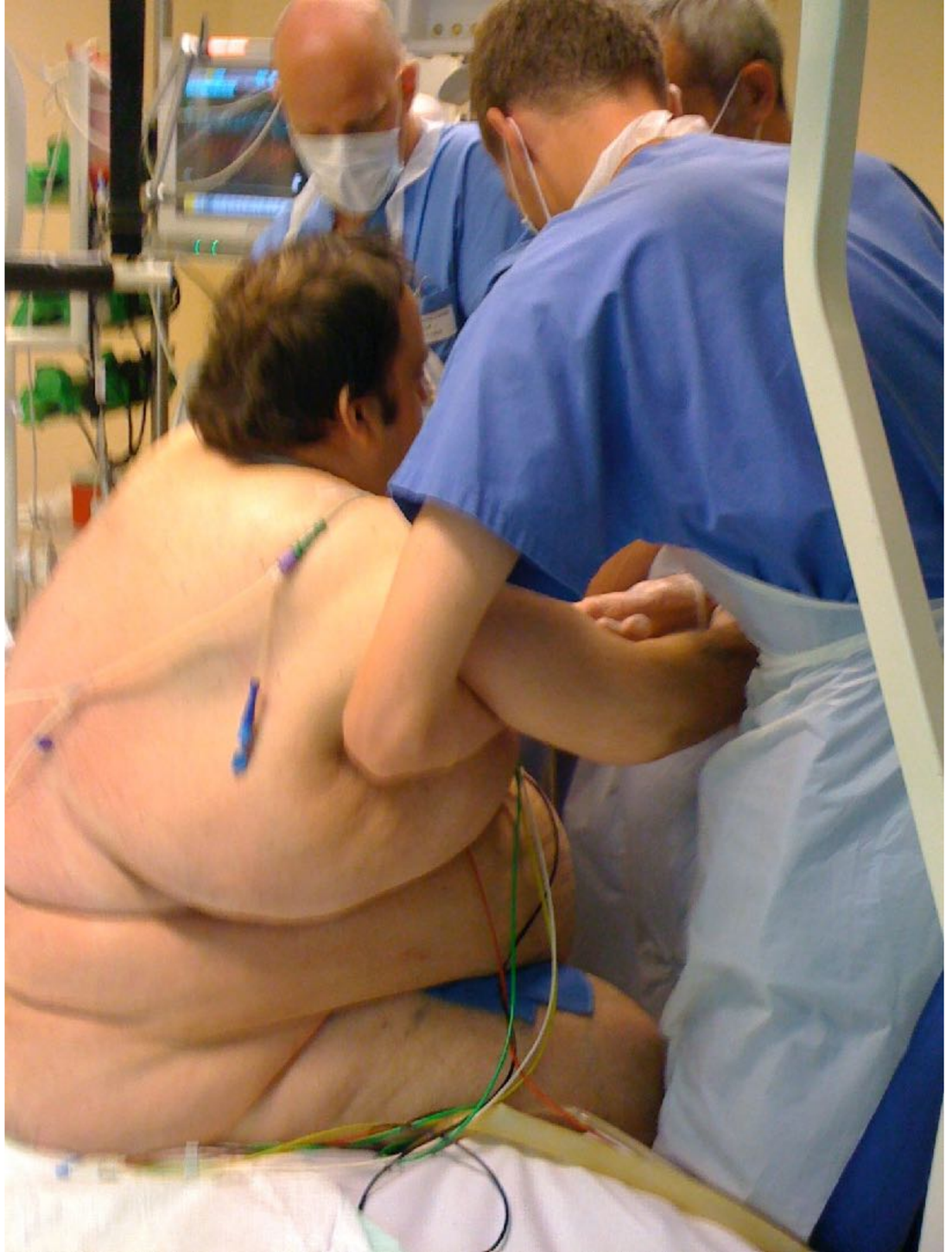
Fauteuil

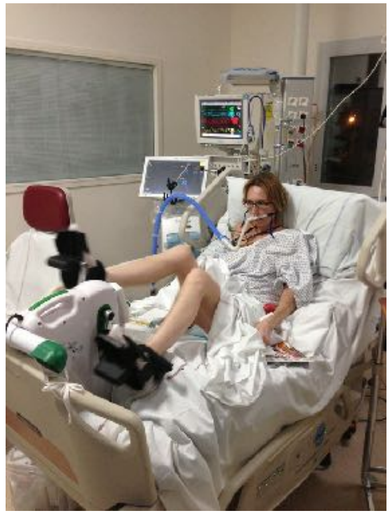
- Travail de la verticalisation
- Actif résisté, auto exercices, cycloergomètre avec résistance progressive
- Aides techniques (DBL, lève-malade, …)

Debout

- Renforcement musculaire en charge
- Travail équilibre
- Marche sur place puis augmentation périmètre marche


-2 < RASS < +1
marche dans le couloir
marche autour du lit
debout
cycloergomètre
marche autour du fauteuil

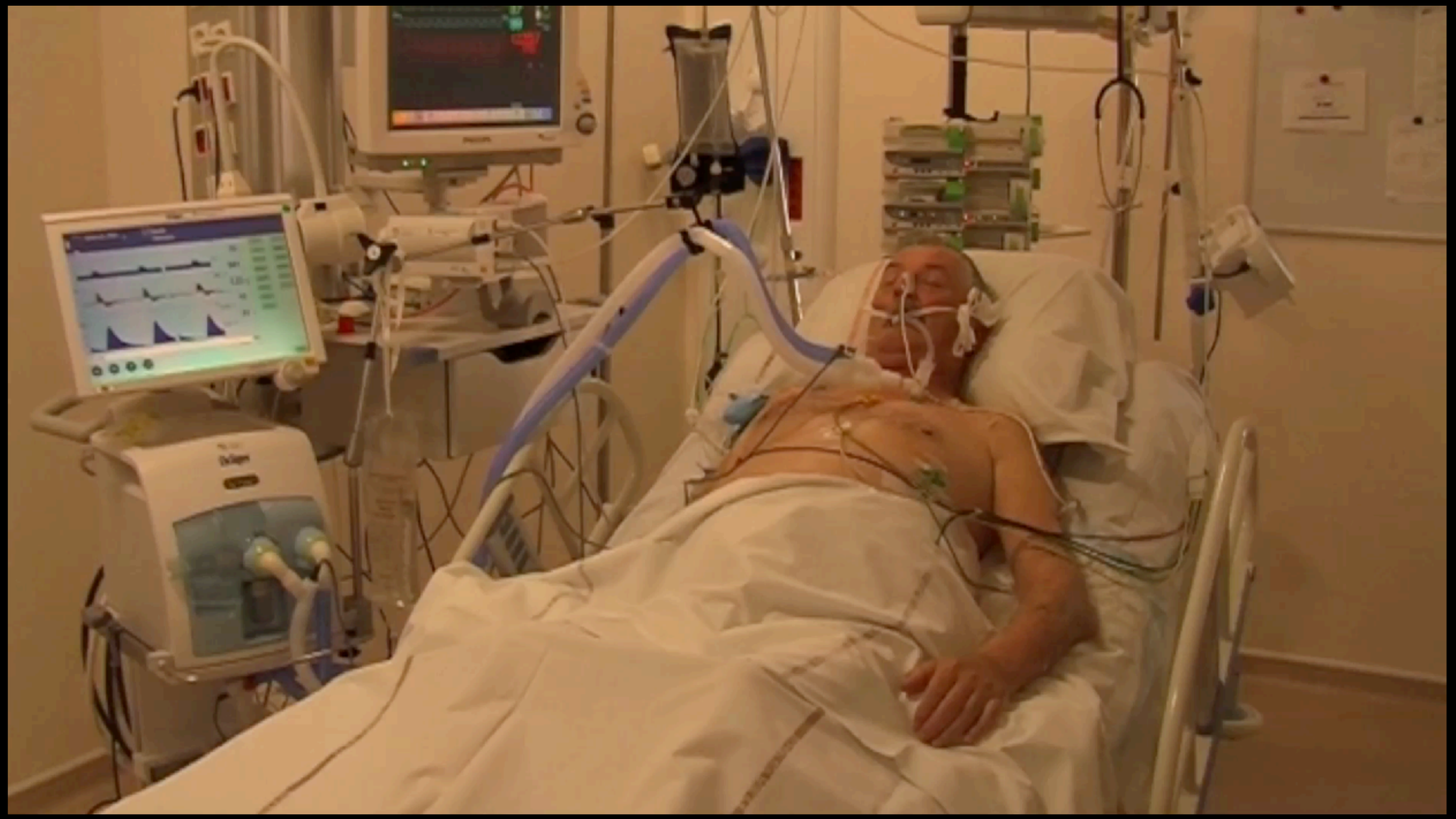




Envisager
dés l’admission


SORTIE

Early mobilization is an integral part of standard care



Sédation Coopérative

Réhabilitation précoce

Oui mais pas chez moi

Barriers and Strategies for Early Mobilization of Patients in Intensive Care Units

Rolf Dubb[1*], Peter Nydahl[2*], Carsten Hermes[3], Norbert Schwabbauer[4], Amy Toonstra[5], Ann M. Parker[6], Arnold Kaltwasser[1], and Dale M. Needham[7]

Barriers and Strategies for Early Mobilization of Patients in Intensive Care Units

Rolf Dubb[1*], Peter Nydahl[2*], Carsten Hermes[3], Norbert Schwabbauer[4], Amy Toonstra[5], Ann M. Parker[6], Arnold Kaltwasser[1], and Dale M. Needham[7]

Barriers	Strategy (References)
Physical barriers	
High severity of illness, patients "too sick" or "too well"	Interprofessional meetings*†; PT screening of ICU patients*† (32, 41, 42, 46)
Hemodynamic instability, arrhythmias	Stepwise approach*†‡; protocols*†‡; safety criteria*†‡; avoid mobilization until 2 h after increase in vasopressor dose*†, valid assessment *†‡ (9, 10, 19, 23, 24, 26, 31, 44, 46, 48, 50)
Respiratory instability/distress, ventilator asynchrony	Stepwise approach to mobility, including a safety check after each step*†‡; protocol for standardized mobilization, including safety criteria*†‡; adjust FI_{O_2}, PEEP, or other ventilator settings for mobilization*† (9, 10, 19, 24, 26, 31)
Pain	Screen for pain*†; provide pain medication before mobilization*† (10, 48)
Poor nutritional status	Perform nutritional screening‡* (38)
Obesity (e.g., BMI ⩾30)	Use protocol for standardized mobilization*†‡ (33, 47, 48)
Baseline or new immobility/weakness	Initiate mobility within 24 h of admission*†; re-evaluate daily*†; consult neurology*† (10, 24)
Neuropsychological barriers	
Deep sedation and/or paralysis	Perform routine assessments of sedation and pain*†; target lighter sedation goals*†; avoid medications with long half-lives*†‡, interprofessional approach‡* (10, 19, 44, 46–48, 50)
Delirium, agitation	Delirium screening*†; use of antipsychotics*†; reduce benzodiazepine use*† (10, 25, 36, 44)
Patient refusal, lack of motivation, anxiety	Adjust treatment plan with patient input*†; provide patient education and encouragement*† (9, 19, 25)
Fatigue, need for rest, sleepiness	Safety criteria*†; sleep protocols to improve sleep quality*† (10, 25, 27, 36)
Palliative care	Focus treatment on patient goals for quality of life ‡ (25)
ICU devices and equipment	
Hemodynamic monitoring equipment	Use portable monitors*†; secure application of equipment and lines*† (10, 12)
ICU-related devices	Stepwise approach to mobility*†; secure lines/tubes/drains†; perform premobility planning*†; interdisciplinary teamwork*†‡; define responsibilities for each discipline*†‡; strategic choice of catheter insertion location‡ (9–13, 19, 27, 29, 39, 43, 44, 46–48)

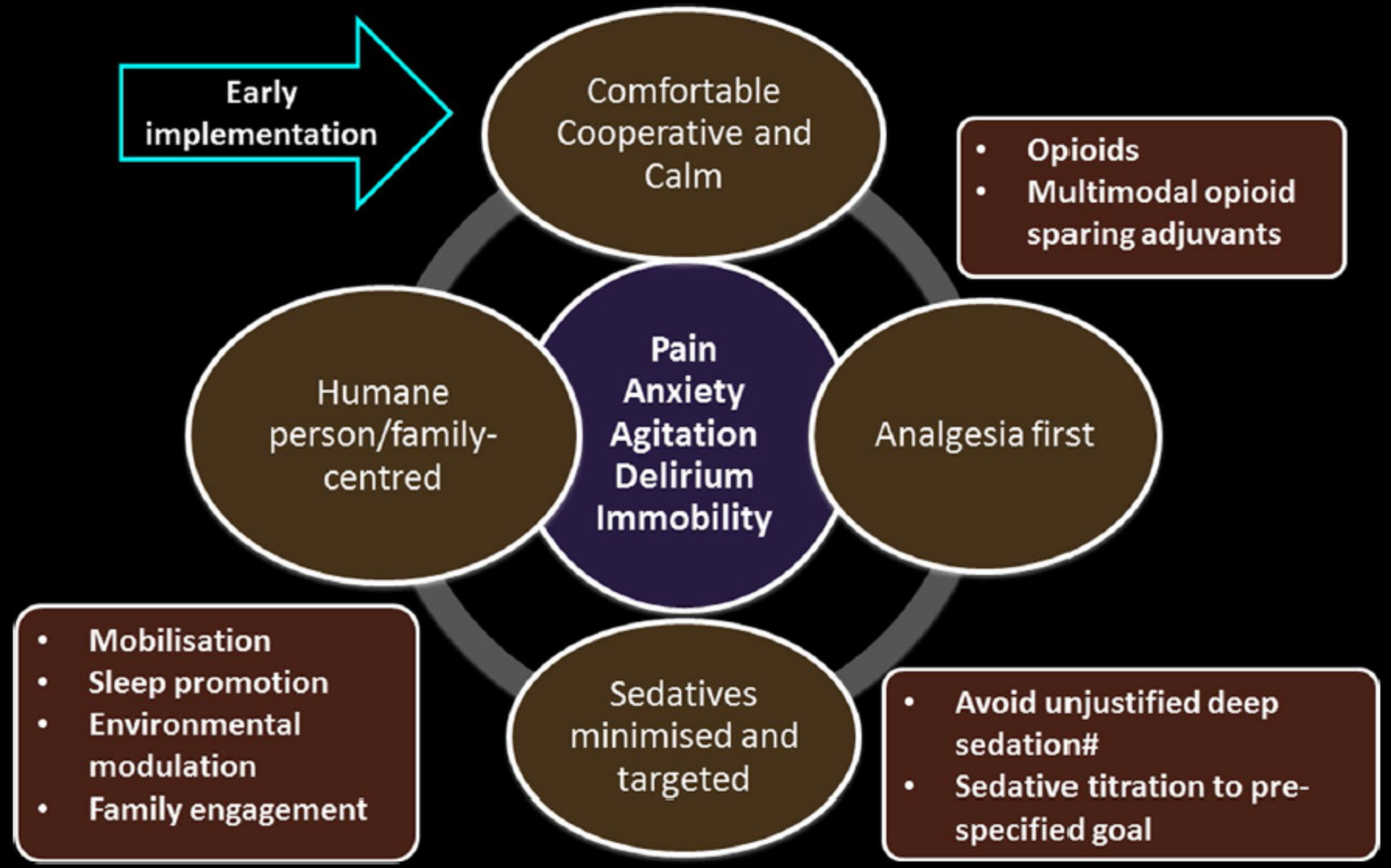
Barrière	Stratégie
Patient trop grave, instable sur le plan hémodynamique, arythmique …	Débuts progressifs, discussions multi-professionnelles, pas de mobilisation pendant 2h après augmentation des amines, critères d'évaluation précis…
Problèmes respiratoires	Débuts progressifs, protocoles incluant les paramètres du ventilateur.
Douleur	Evaluation de la douleur, analgésie avant les exercices.
Dénutrition	Evaluation de la dénutrition, assurer un apport suffisant.
Obésité	Utiliser un protocole spécifique. Mobiliser plus de ressources humaines.
Sédation	Cibler une sédation légère, évaluer quotidiennement la sédation et l'analgésie, éviter les molécules à demi-vie longue, favoriser les échanges multi-professionnels
Delirium	Evaluer et détecter le delirium, traiter si delirium productif, éviter les benzodiazépines.
Refus du patient, faible motivation	Mettre en avant le but en ciblant que la qualité de vie.
Moniteurs et équipement encombrants	Favoriser les moniteurs portables
Drains, sondes, cathéters …	Approche progressive, sécuriser les drains sondes cathéters avant mobilisation
EER	Contrindiquer si accès vasculaire en fémoral. Possible en cave >. Favoriser pose cathéter en cave >.

Pas possible …

REVIEW

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

Jean-Louis Vincent[1*], Yahya Shehabi[2], Timothy S. Walsh[3], Pratik P. Pandharipande[4], Jonathan A. Ball[5], Peter Spronk[6], Dan Longrois[7], Thomas Strøm[8], Giorgio Conti[9], Georg-Christian Funk[10], Rafael Badenes[11], Joan Mantz[12], Claudia Spies[13] and Jukka Takala[14]



ERAS

Information
Conselling

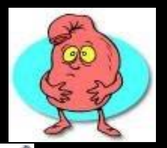
No bowel preparation

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

Audit

Sédation

Ventilation

Hypotension

Balance Hydrique

Dénutrition

Confusion

Sédation

Ventilation

Hypotension

Balance Hydrique

Dénutrition

Confusion

CLINICAL UPDATE
CRITICALLY ILL PATIENTS

ONLINE FIRST

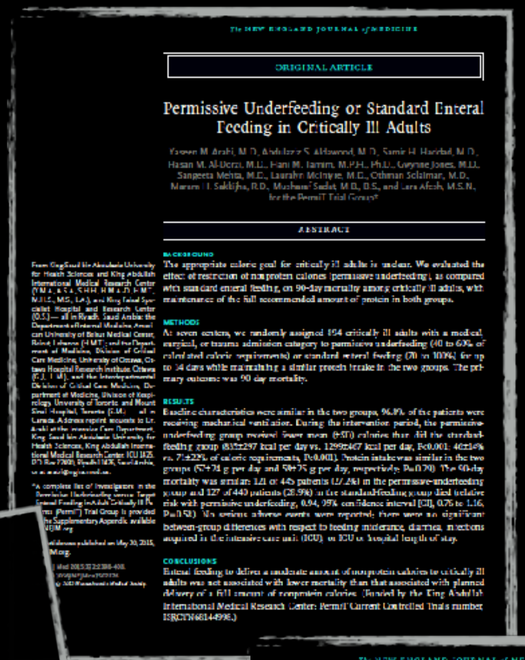
Initial Trophic vs Full Enteral Feeding in Patients With Acute Lung Injury

The EDEN Randomized Trial

THE NEW ENGLAND JOURNAL of MEDICINE

ORIGINAL ARTICLE

Permissive Underfeeding or Standard Enteral Feeding in Critically Ill Adults



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ORIGINAL ARTICLE

Permissive Underfeeding or Standard Enteral Feeding in Critically Ill Adults

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

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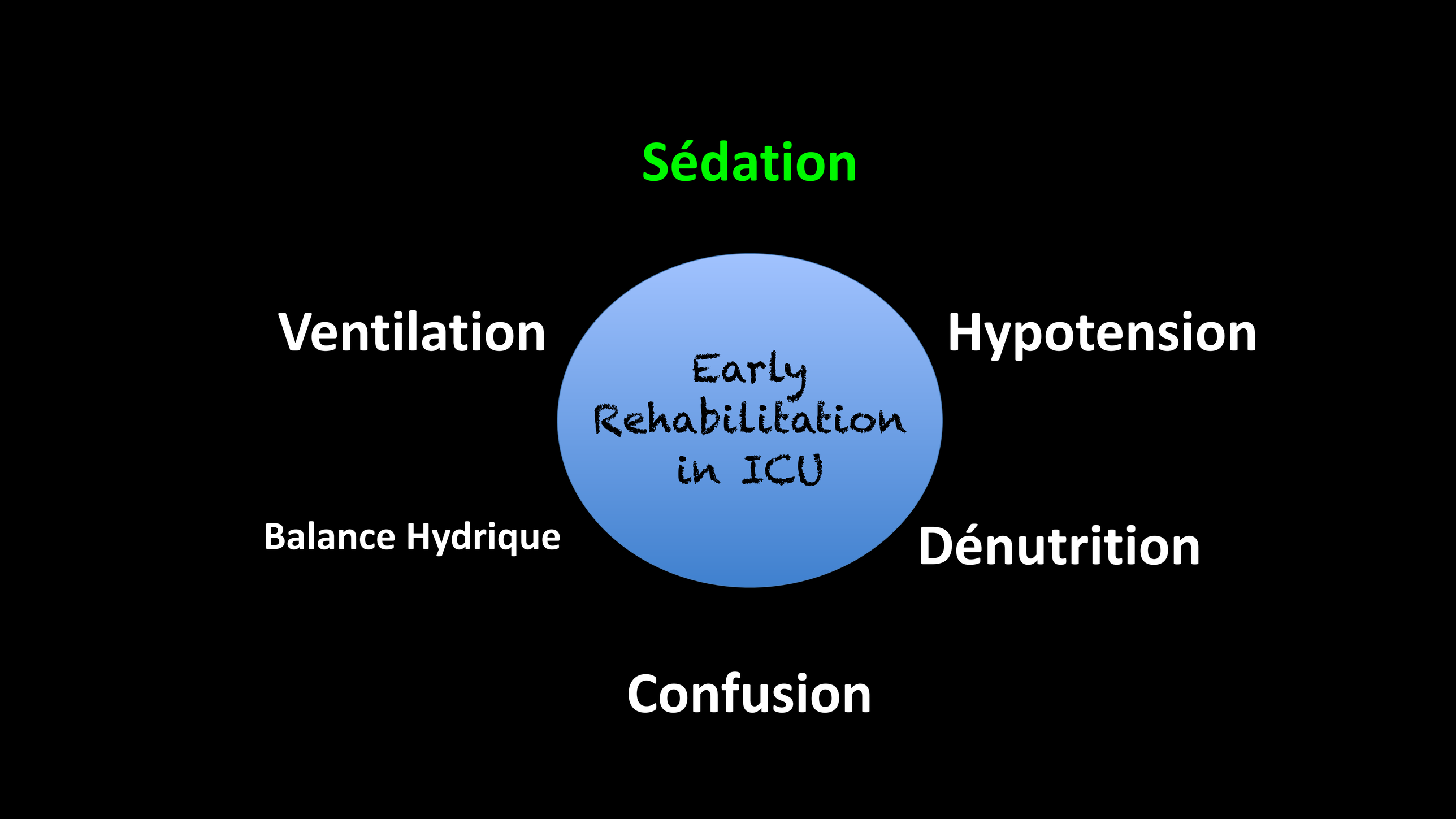
Early versus On-Demand Nasoenteric Tube Feeding in Acute Pancreatitis

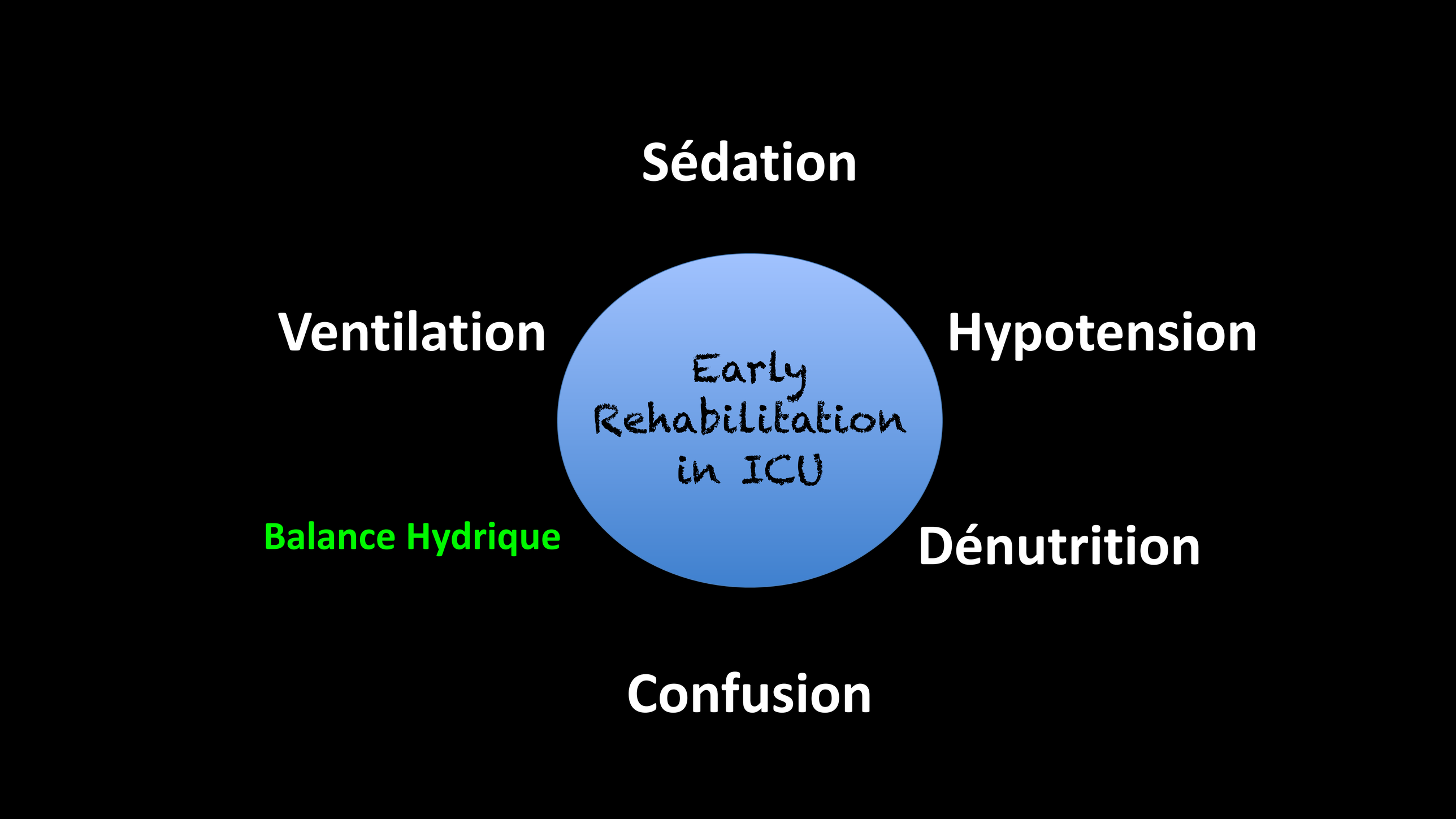
CLINICAL UPDATE
CRITICALLY ILL PATIENTS

ONLINE FIRST

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

A Randomized Controlled Trial


Sédation
Ventilation
Hypotension
Early Rehabilitation in ICU
Balance Hydrique
Dénutrition
Confusion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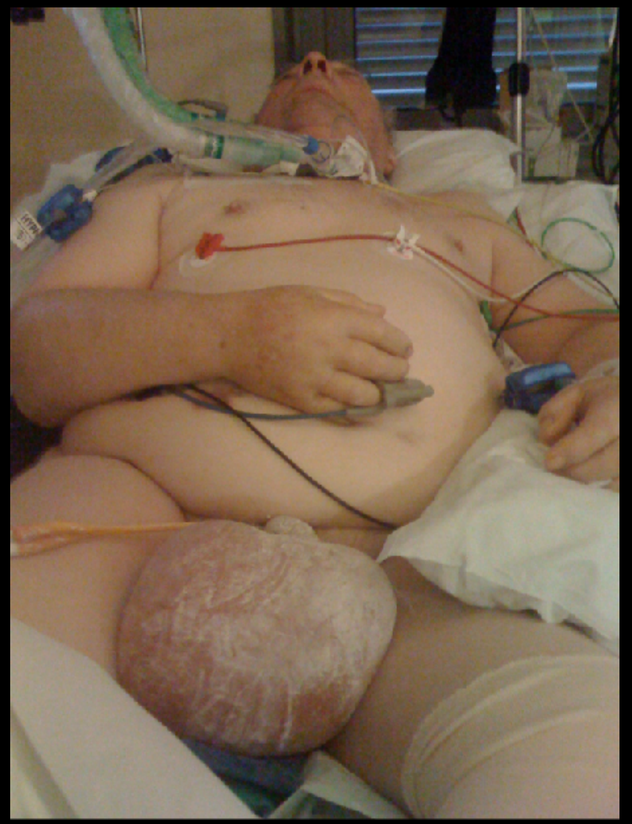

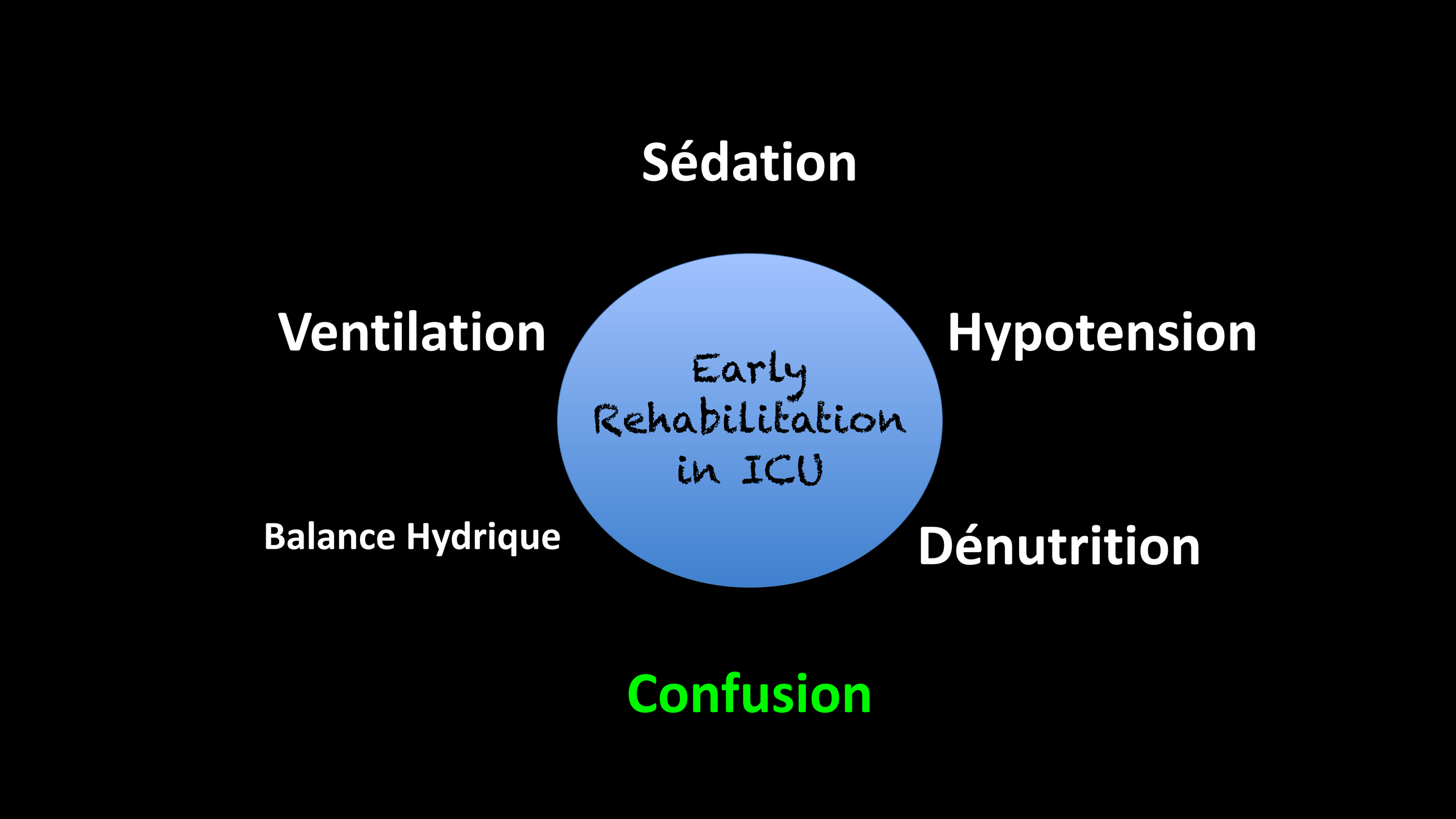
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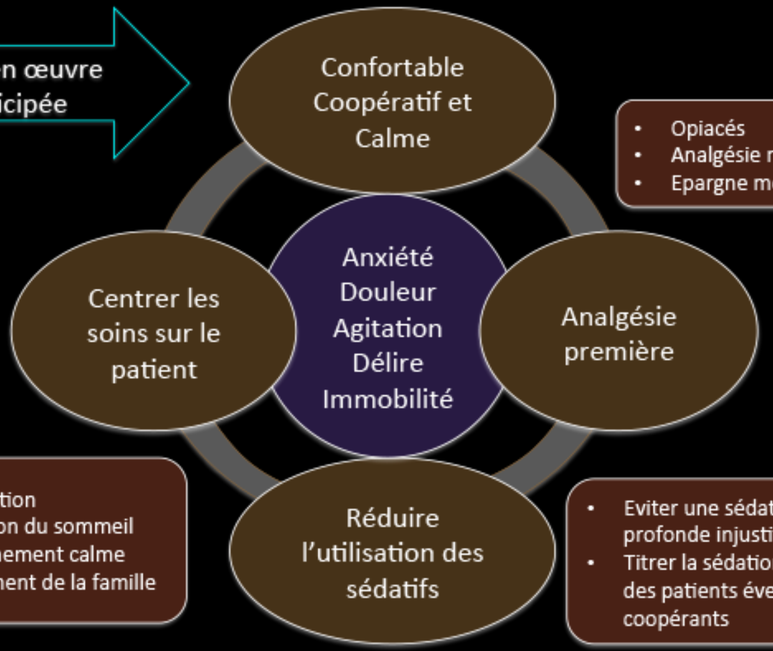
Dénutrition

Confusion

Remplissage Vasculaire

Mise en œuvre anticipée



- Opiacés
- Analgésie multimodale
- Epargne morphinique

Nutrition

Contrôle Hémodynamique

- Mobilisation
- Promotion du sommeil
- Environnement calme
- Engagement de la famille

- Eviter une sédation profonde injustifiée
- Titrer la sédation pour des patients éveillés et coopérants

Ventilation mécanique

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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Implementing early physical rehabilitation and mobilisation in the ICU: institutional, clinician, and patient considerations

Selina M. Parry[1*], Peter Nydahl[2] and Dale M. Needham[3,4,5]

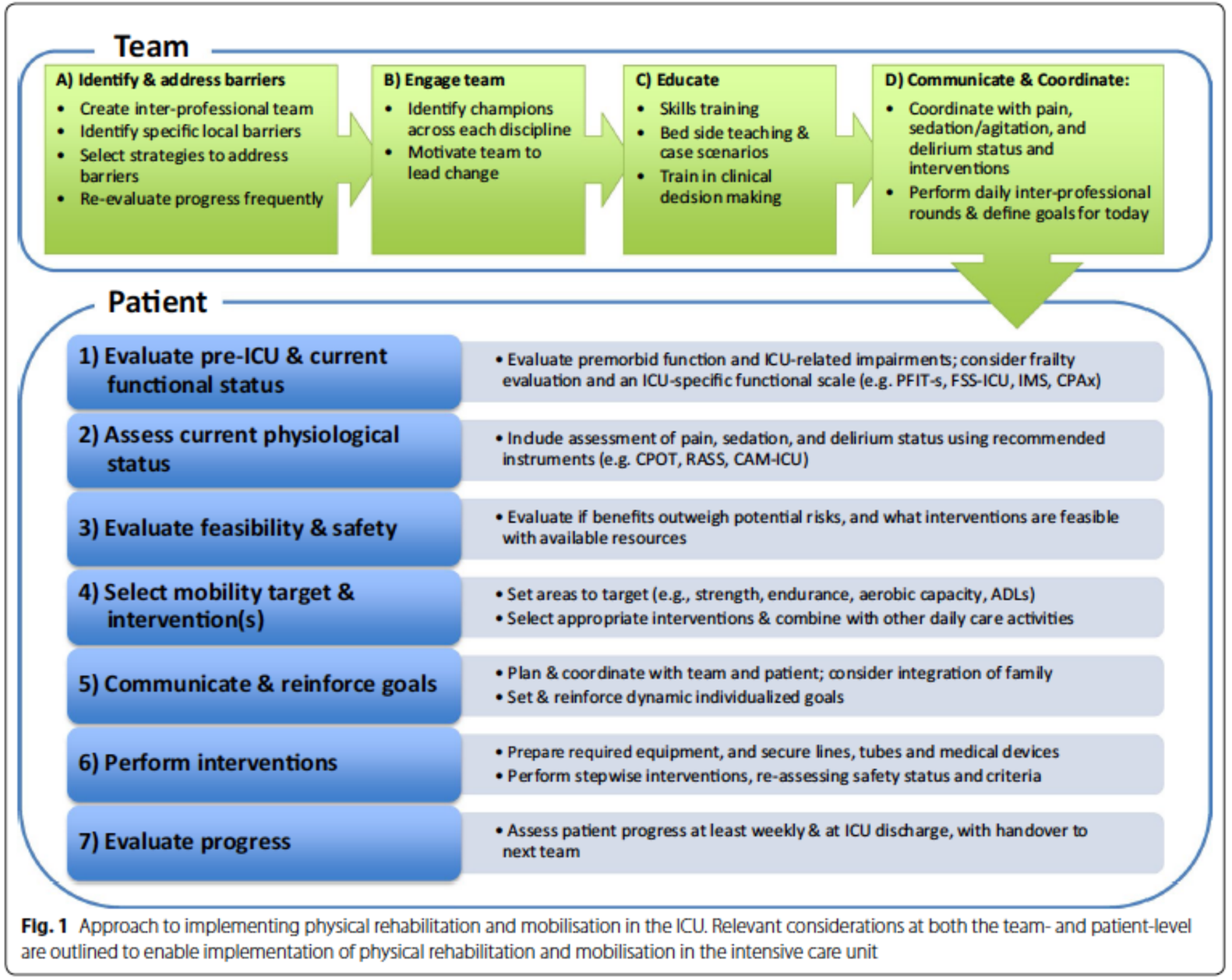

Fig. 1 Approach to implementing physical rehabilitation and mobilisation in the ICU. Relevant considerations at both the team- and patient-level are outlined to enable implementation of physical rehabilitation and mobilisation in the intensive care unit

Parry ICM 2017

Protocole progressif

Multidisciplinaire

Standard de soin

0 €

Réhabilitation précoce

Sédation

Ventilation

Hypotension

Le Patient

Oedemes

Dénutrition

Confusion

Qualité des Soins

Sédation

Ventilation

Hypotension

Le Patient

Oedemes

Dénutrition

Confusion

CHEST

Editorials

CHEST | Volume 144 | Number 1 | July 2013

Surviving the ICU Does Not Mean That the War Is Over

Merci de votre attention ...