JAVA

Samedi 9 Décembre 2017
8 h 30 - 17 h 30
Faculté de Médecine de Créteil
8 rue du Général Sarrail, 94000 Créteil
Métro Ligne 8, Station Créteil L'Échat

srlf
SOCIÉTÉ DE RÉANIMATION DE LANGUE FRANÇAISE

Sommeil et sevrage de la ventilation mécanique: nouvelles données

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Conflicts of interest

None

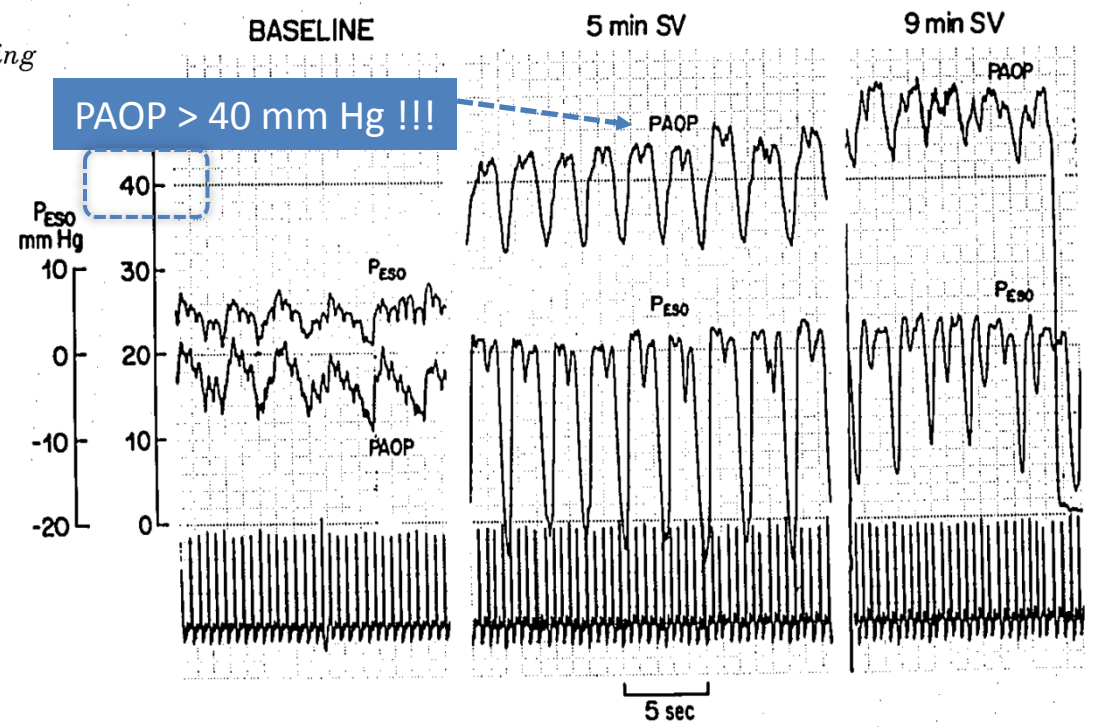
Weaning-induced pulmonary oedema

Anesthesiology
69:171–179, 1988

Acute Left Ventricular Dysfunction during Unsuccessful Weaning from Mechanical Ventilation

Francois Lemaire, M.D., Jean-Louis Teboul, M.D.,† Luc Cinotti, M.D.,‡ Guillen Giotto, M.D.,§ Fekri Abrouk, M.D.,§ Gabriel Steg, M.D.,§ Isabelle Macquin-Mavier, M.D.,¶ Warren M. Zapol, M.D.***

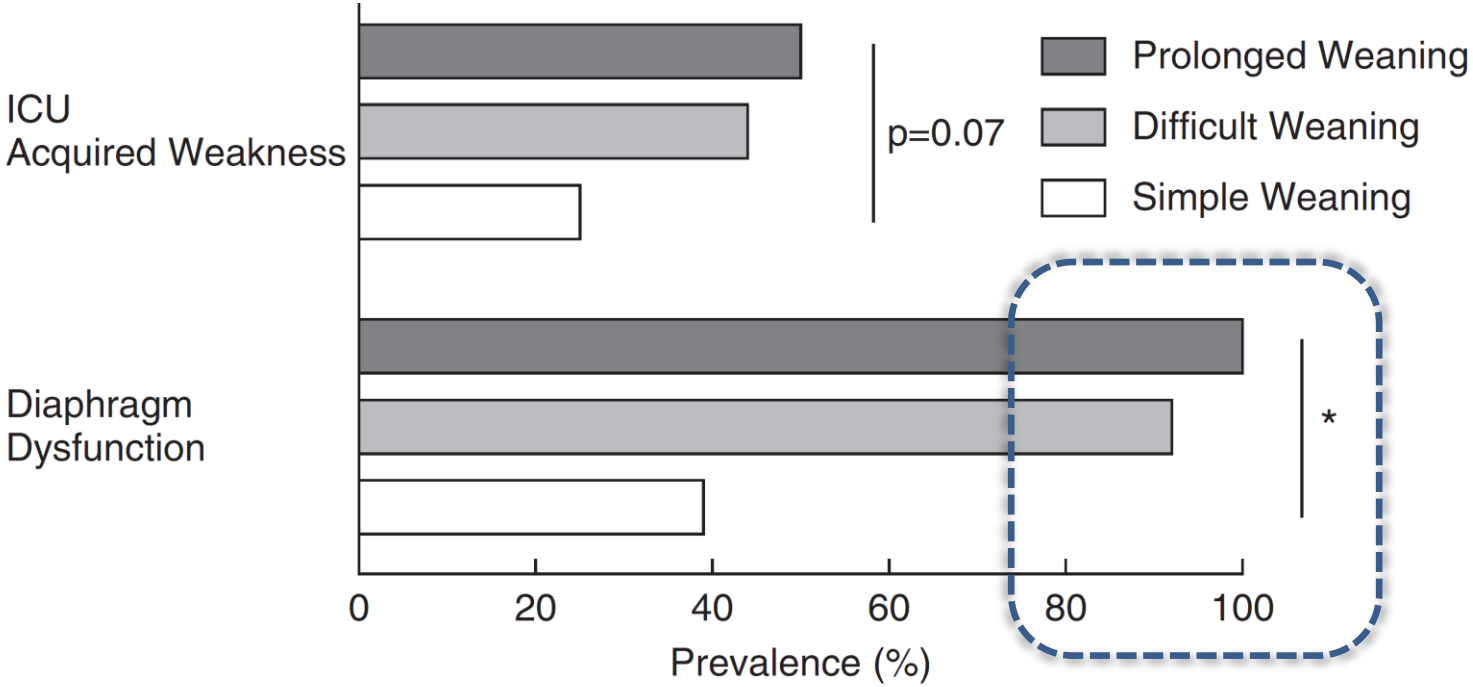
Lemaire, Teboul et al., Anesthesiology 1988; 69:171-179.



ORIGINAL ARTICLE Am J Respir Crit Care Med Vol 195, Iss 1, pp 57–66, Jan 1, 2017

Coexistence and Impact of Limb Muscle and Diaphragm Weakness at Time of Liberation from Mechanical Ventilation in Medical Intensive Care Unit Patients

Martin Dres[1,2]*, Bruno-Pierre Dubé[1,3]*, Julien Mayaux[2], Julie Delemazure[2], Danielle Reuter[2], Laurent Brochard[4,5], Thomas Similowski[1,2], and Alexandre Demoule[1,2]

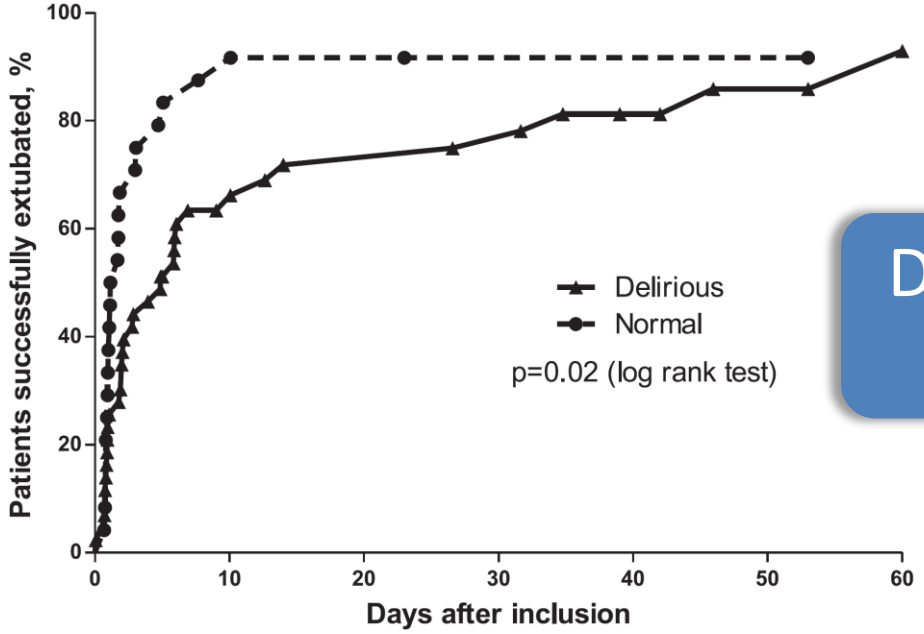


Delirium and Circadian Rhythm of Melatonin During Weaning From Mechanical Ventilation

An Ancillary Study of a Weaning Trial

CHEST 2015; 148(5):1231-1241

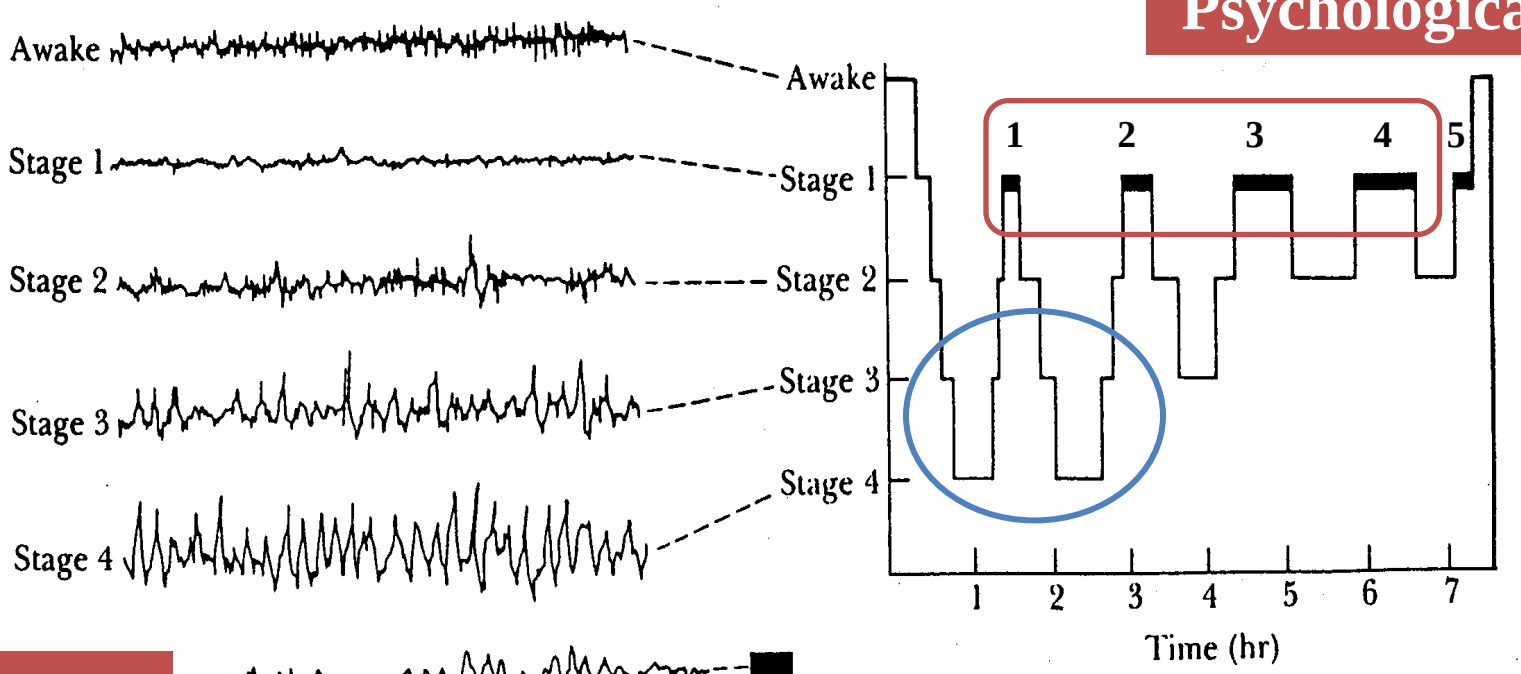
Armand Mekontso Dessap, MD, PhD; Ferran Roche-Campo, MD; Jean-Marie Launay, PharmD, PhD; Anais Charles-Nelson, MSc; Sandrine Katsahian, MD, PhD; Christian Brun-Buisson, MD; and Laurent Brochard, MD



Delirium à la phase précoce du sevrage

Et le sommeil?

Psychological



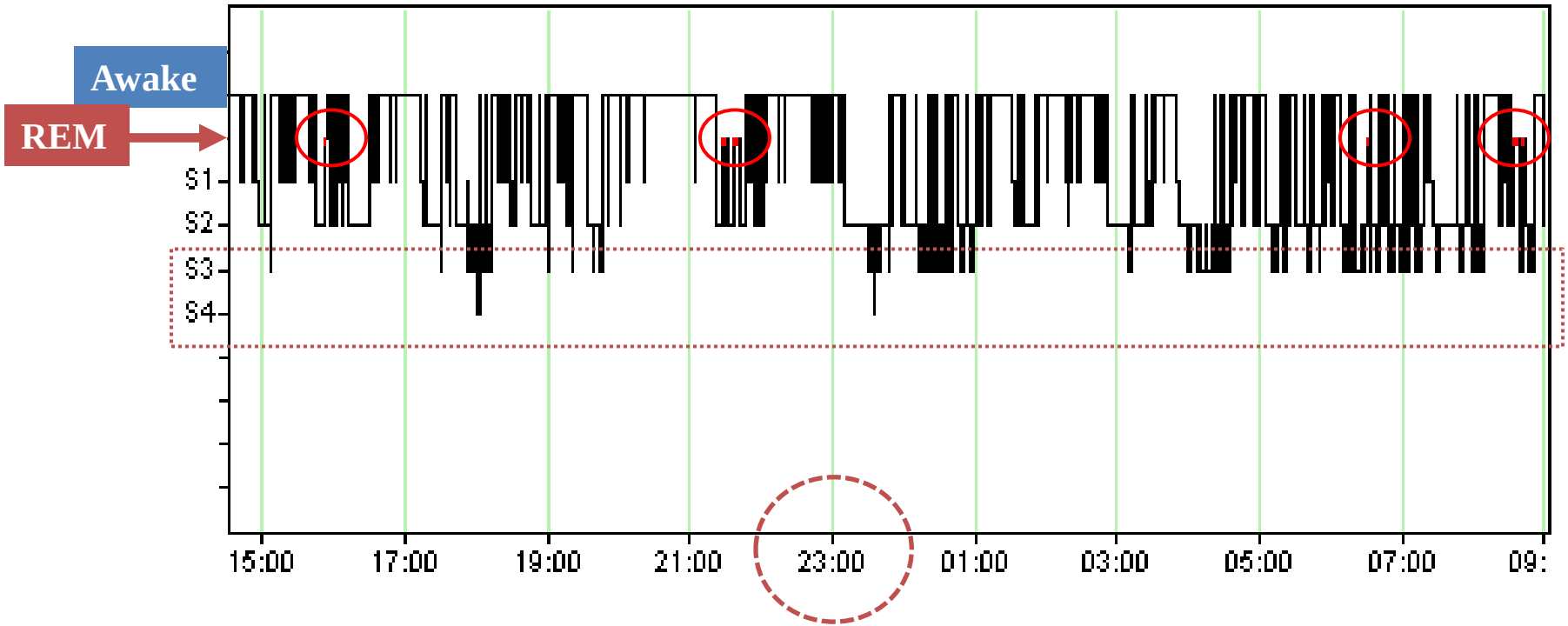
Non REM sleep

[80 %]

REM sleep

[20 %]

Physical



Sleep fragmented by numerous arousals and awakenings

Loss of the circadian sleep-cycle

Short deep and REM sleep time

Sleep Medicine 13 (2012) 7–14

Contents lists available at SciVerse ScienceDirect

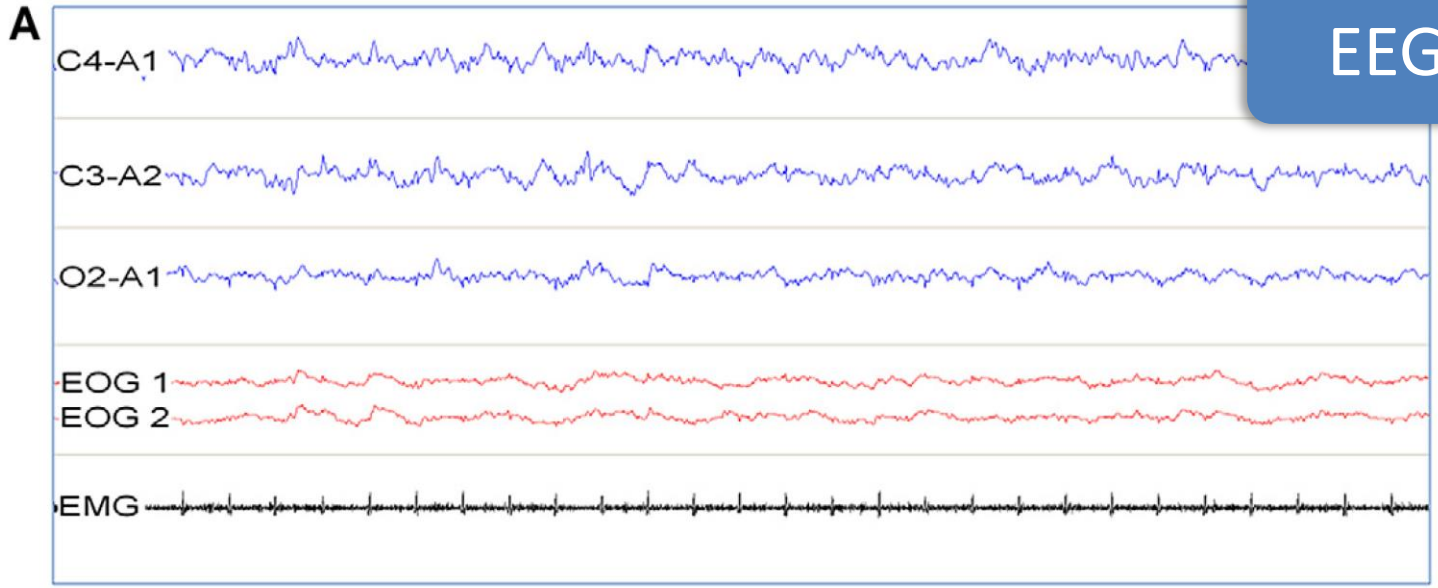
Sleep Medicine

journal homepage: www.elsevier.com/locate/sleep

Original Article

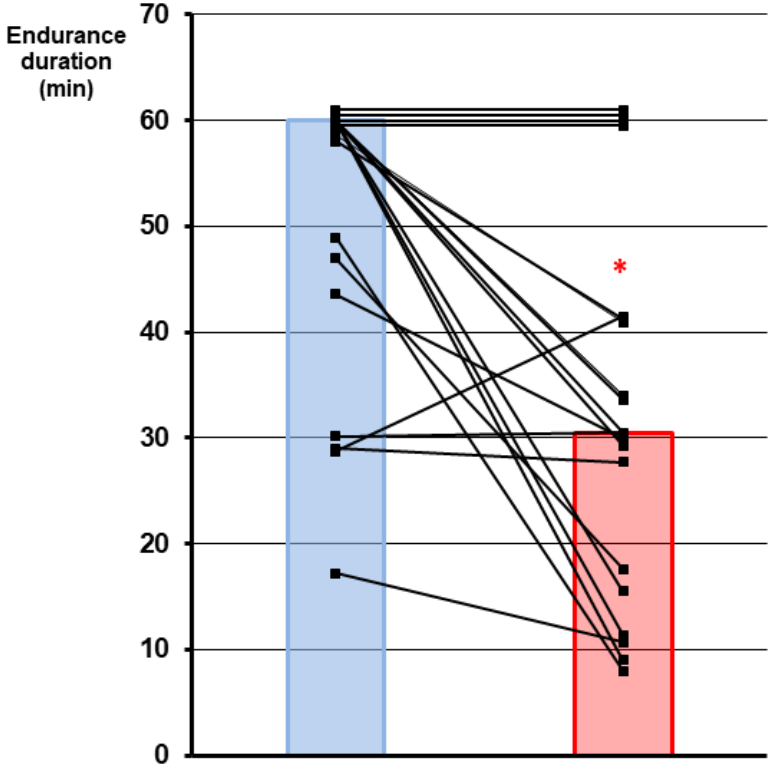
A new classification for sleep analysis in critically ill patients ☆

Xavier Drouot [a,b,*], Ferran Roche-Campo [c,d,1], Arnaud W. Thille [c,1], Belen Cabello [c,d], Fabrice Galia [c], Laurent Margarit [a], Marie-Pia d'Ortho [a,f], Laurent Brochard [c,e]



EEG reactivity?

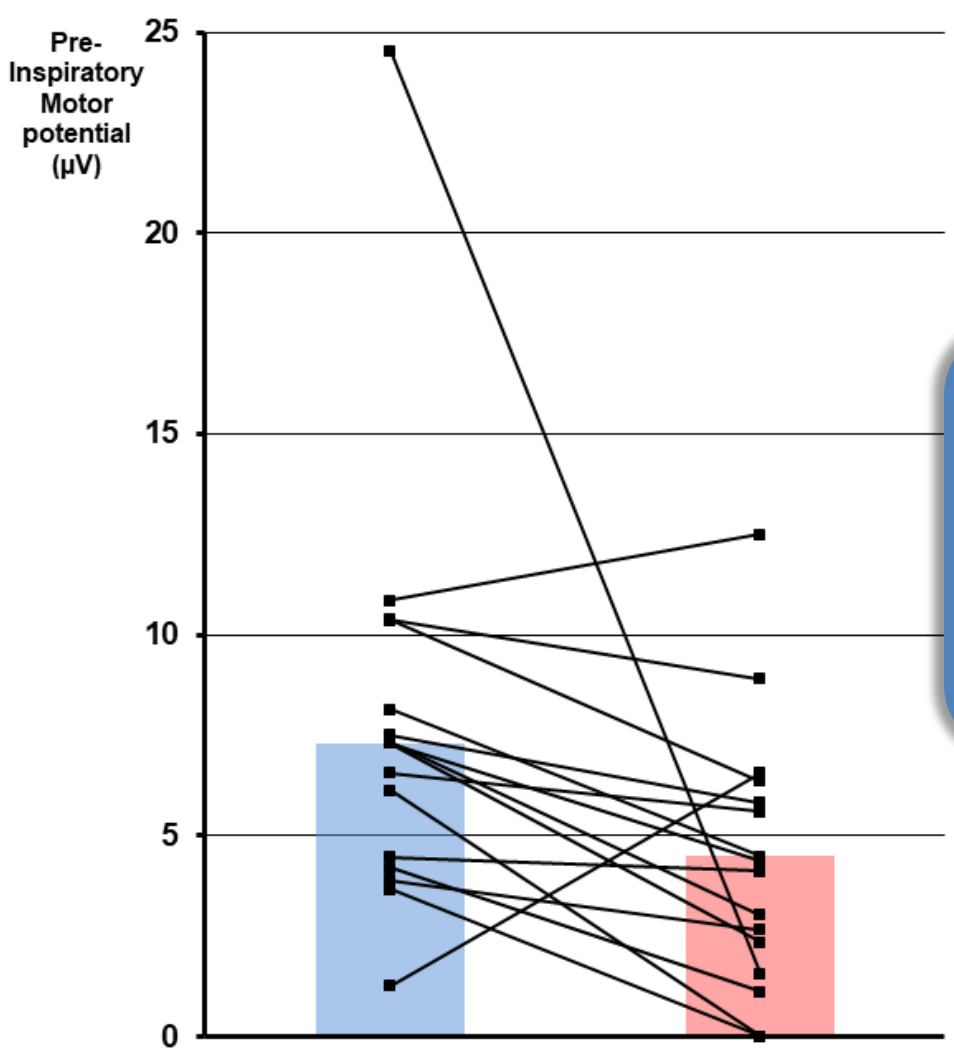
In healthy subjects, sleep deprivation may alter inspiratory muscle endurance



Chen HI, Tang YR.
Sleep loss impairs inspiratory muscle endurance.
The American review of respiratory disease 1989;140:907-909.

20 sujets sains privés de sommeil:

épreuve d'endurance inspiratoire à 30% de la PI max. pendant 1h



Respiratory muscles strength was not altered…
Impairment of the neural respiratory drive to breathe?

Wean Sleep study

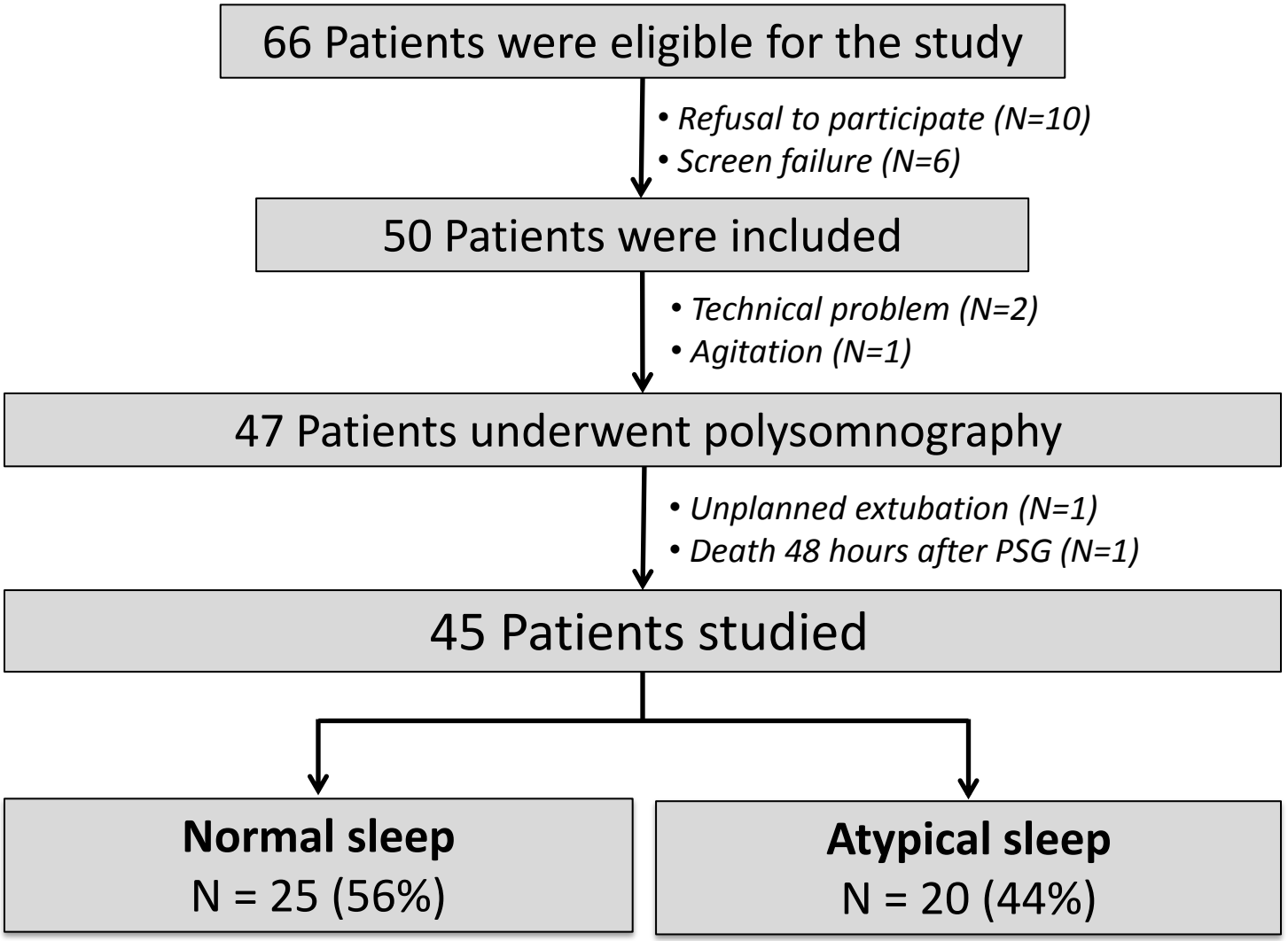

66 Patients were eligible for the study
• Refusal to participate (N=10)
• Screen failure (N=6)
50 Patients were included
• Technical problem (N=2)
• Agitation (N=1)
47 Patients underwent polysomnography
• Unplanned extubation (N=1)
• Death 48 hours after PSG (N=1)
45 Patients studied
Normal sleep
N = 25 (56%)
Atypical sleep
N = 20 (44%)

Table 1: Comparison of patients with normal sleep vs. atypical sleep on polysomnography (PSG)

	Normal sleep (N = 25)	Atypical sleep (N = 20)	*P* value
Patient characteristics			
Age (years)	62 [52-68]	66 [55-75]	0.58
Male sex, n (%)	16 (64%)	16 (80%)	0.33
Body mass index (kg/m^2)	30 [26-35]	27 [24-38]	0.66
SAPS II at admission	44 [38-54]	49 [37-64]	0.44
Underlying cardiac disease, n (%)	9 (36%)	6 (30%)	0.76
Underlying chronic lung disease, n (%)	11 (44%)	7 (35%)	0.76
Number of SBT failure prior to PSG, n (%)	1 [1-2]	1 [1-1]	0.22
Duration of MV prior to PSG (days)	5 [4-13]	13 [7-19]	**0.02**
Number of days with sedation	3 [2-9]	10 [6-14]	**0.02**
Cumulative dosis of Midazolam (mg)	360 [144-1200]	1308 [534-2670]	**0.02**
Number of sedation-free days at time of PSG, n (%)	2 [1-3]	3 [1-5]	0.14

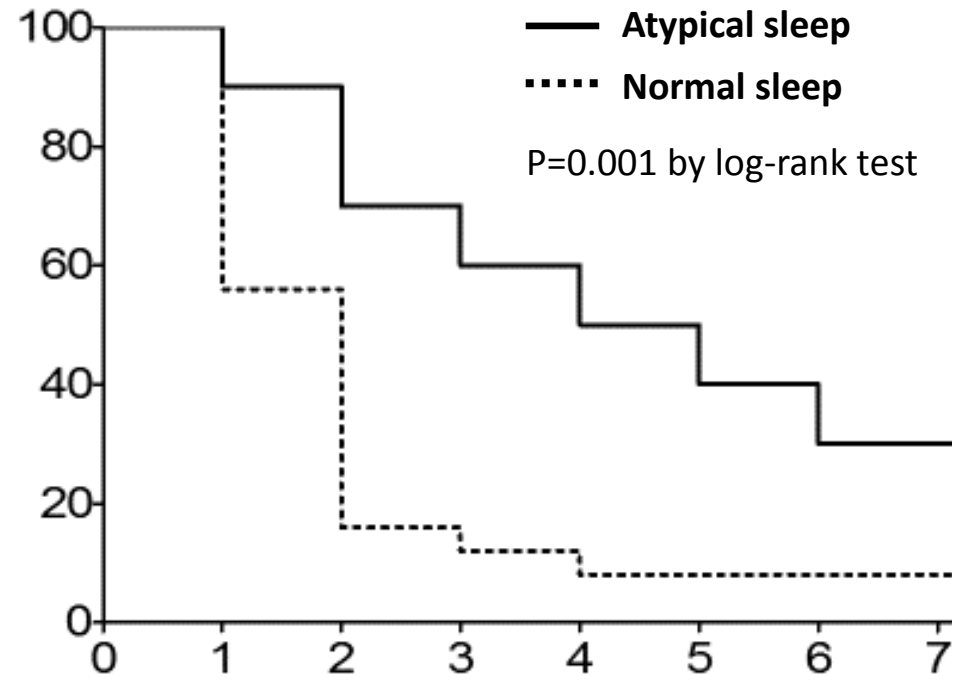
Table 1: Comparison of patients with normal sleep vs. atypical sleep on polysomnography (PSG)

	Normal sleep (N = 25)	Atypical sleep (N = 20)	*P* value
Respiratory parameters at time of PSG			
Maximal inspiratory pressure (cm H_2O)	39 [34-54]	42 [34-61]	0.85
$P_{0.1}$ (cm H_2O)	3.6 [3.4-3.7]	3.6 [3.5-3.8]	0.59
pH	7.43 [7.40-7.46]	7.43 [7.41-7.48]	0.64
PCO_2 (mm Hg)	46 [39-54]	42 [40-47]	0.20
PaO_2/FiO_2 (mm Hg)	235 [190-270]	233 [184-255]	0.79
Bicarbonates (mmol/L)	31 [26-35]	31 [26-35]	0.36
Clinical parameters at time of PSG			
SOFA score	3 [2-4]	3 [3-4]	0.26
RASS score	0 [0-0]	0 [-0.3-0]	0.82
ICDSC score	1 [0-4]	3 [2-4]	0.18
Delirium, n (%)	8 (32%)	8 (40%)	0.76
MRC score	55 [36-60]	36 [26-57]	0.06
ICU-acquired weakness (MRC < 48), n (%)	9 (36%)	12/19 (63%)	0.13

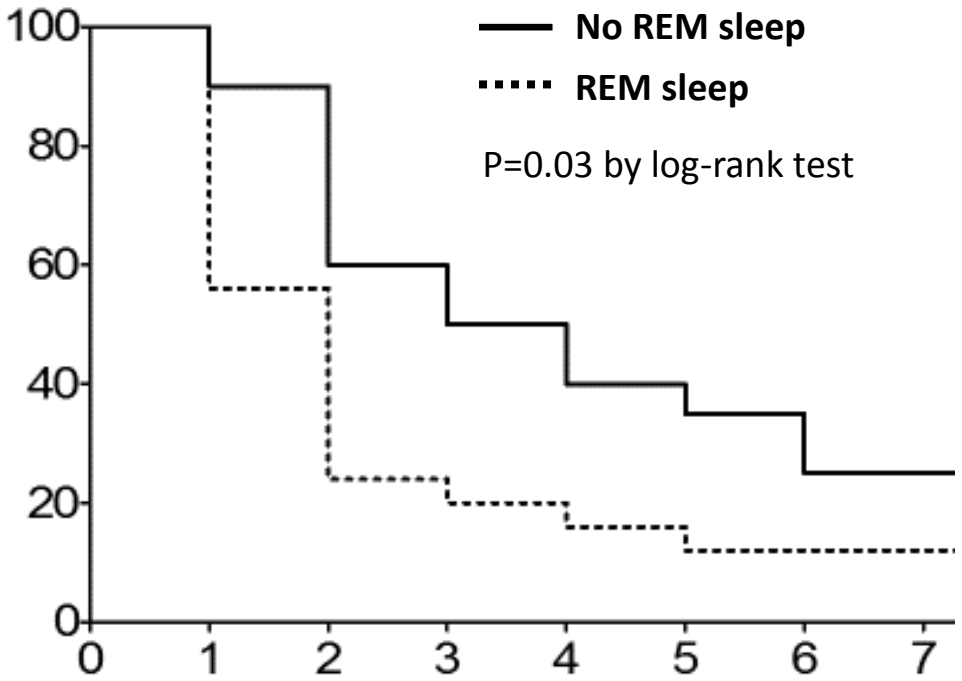
Table 2: Comparison of sleep in patients with atypical sleep vs. normal sleep on polysomnography

	Normal sleep (N = 25)	Atypical sleep (N = 20)	*P* value
Sleep duration			
Duration of polysomnography recording (h)	17 [16-19]	17 [16-19]	0.93
Sleep duration (h)	5 [2-7]	3 [2-8]	0.62
Sleep efficiency (%)	30 [13-39]	19 [11-47]	0.54
Duration of sleep stage 1 (min)	31 [11-50]	0 [0-0]	**<0.001**
Duration of sleep stage 2 (min)	150 [69-206]	0 [0-0]	**<0.001**
Duration of deep sleep stage 3 (min)	57 [30-120]	0 [0-0]	**<0.001**
Duration of REM sleep stage, min	31 [0-53]	0 [0-4]	**0.001**
Sleep quality			
Absence of deep sleep stage 3, n (%)	2 (8%)	20 (100%)	**<0.001**
Absence of REM stage, n (%)	7 (28%)	13 (65%)	**0.02**
Absence of EEG reactivity at eyes opening, n (%)	0 (0%)	12 (60%)	**<0.001**
Altered EEG reactivity at eyes opening, n (%)	4/23 (17%)	18 (90%)	**<0.001**

Cumulative probability of remaining intubated under mechanical ventilation (%)

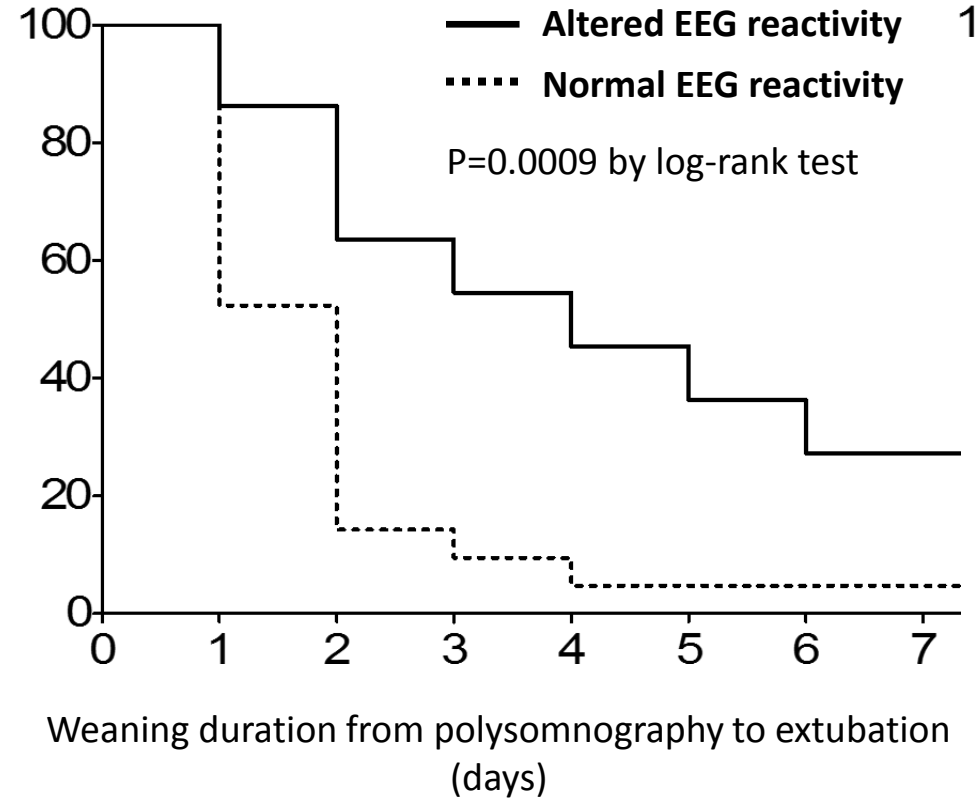


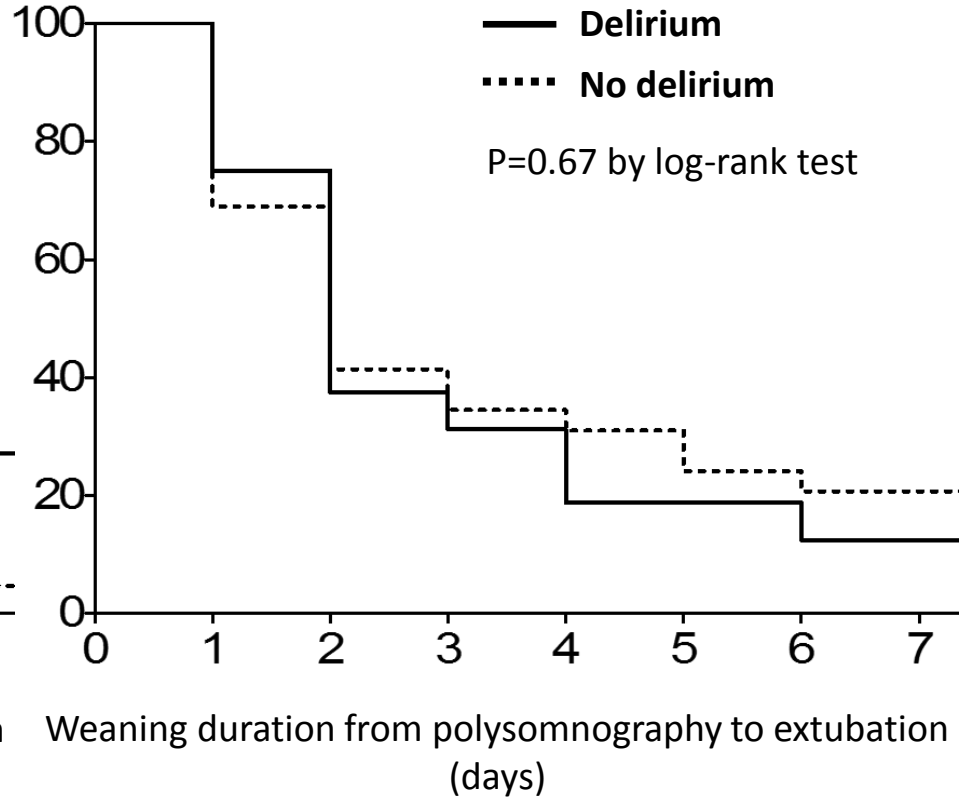
Weaning duration from polysomnography to extubation (days)



Weaning duration from polysomnography to extubation (days)

Cumulative probability of remaining intubated under mechanical ventilation (%)





Prolonged weaning > 48h

Table 3: Variables independently associated with prolonged weaning (more than 48 hours after polysomnography to extubation)

	Adjusted odds ratio (95% confident interval)	P value
SOFA score at time of polysomnography (by point)	1.66 (1.07-2.88)	0.04
Atypical sleep on polysomnography	13.9 (3.2-85.7)	0.001

EEG reactivity

Table E3: Sensitivity and specificity of reactivity on electroencephalogram (EEG) to detect atypical sleep on polysomnography

EEG reactivity at eyes opening	**Normal sleep (N=23)**	**Atypical sleep (N=20)**	Sensitivity % (95CI)	Specificity % (95CI)	PPV % (95CI)	NPV % (95CI)
Normal EEG reactivity	N=19	N=2	--	--	--	--
Altered EEG reactivity	N=4	N=18	90% (67-98)	83% (60-94)	82% (59-94)	90% (68-98)
No EEG reactivity	N=0	N=12	60% (36-80)	100% (82-100)	100% (70-100)	74% (55-87)

Conclusions

ICU-patients patients with atypical sleep or no REM sleep had markedly longer weaning duration than did others.

Atypical sleep was a strong predictor of prolonged weaning and could be detected using EEG reactivity.

Brain dysfunction may have an influence on ability to breathe spontaneously in patients under mechanical ventilation.