



Module de Formation Continue: « Analgésie & Sédation »



# La sédation aux Soins Intensifs

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## Les nouvelles recommandations

Mardi 26 janvier 2016

Lionel Haentjens  
CHU Ambroise Paré - Mons

# Retour vers... le passé

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## Pratiques de sédation inspirées de l'anesthésie générale

Hansen-Flaschen, *JAMA*, 1991



1995

### Critical Care Medicine

Issue: Volume 23(9), September 1995, pp 1596-1600

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### Practice parameters for intravenous analgesia and sedation for adult patients in the intensive care unit: An executive summary

Shapiro, Barry A. MD FCCM; Warren, Jonathan MD FCCM; Egol, Andrew B. DO FCCM; Greenbaum, Dennis M. MD FCCM; Jacobi, Judith PharmD FCCM; Nasraway, Stanley A. MD; Schein, Roland M. MD FCCM; Spevetz, Antoinette MD; Stone, James R. MD FCCM

6 recommandations basées sur 13 références

# Premiers « guidelines »

2002

Crit Care Med 2002 Vol. 30, No. 1

## Clinical practice guidelines for the sustained use of sedatives and analgesics in the critically ill adult

Judith Jacobi, PharmD, FCCM, BCPS; Gilles L. Fraser, PharmD, FCCM; Douglas B. Coursin, MD; Richard R. Riker, MD; Dorrie Fontaine, RN, DNSc, FAAN; Eric T. Wittbrodt, PharmD; Donald B. Chalfin, MD, MS, FCCM; Michael F. Masica, MD, MPH; H. Scott Bjerke, MD; William M. Coplin, MD; David W. Crippen, MD, FCCM; Barry D. Fuchs, MD; Ruth M. Kelleher, RN; Paul E. Marik, MDBCh, FCCM; Stanley A. Nasraway, Jr, MD, FCCM; Michael J. Murray, MD, PhD, FCCM; William T. Peruzzi, MD, FCCM; Philip D. Lumb, MB, BS, FCCM. Developed through the Task Force of the American College of Critical Care Medicine (ACCM) of the Society of Critical Care Medicine (SCCM), in collaboration with the American Society of Health-System Pharmacists (ASHP), and in alliance with the American College of Chest Physicians; and approved by the Board of Regents of ACCM and the Council of SCCM and the ASHP Board of Directors

- ✓ Traitement du delirium
- ✓ Spécificité du traitement selon différentes situations cliniques
- ✓ Nécessité d'études à large échelle

# Dernières recommandations

## Critical Care Medicine

Society of  
Critical Care Medicine  
The Intensive Care Professionals



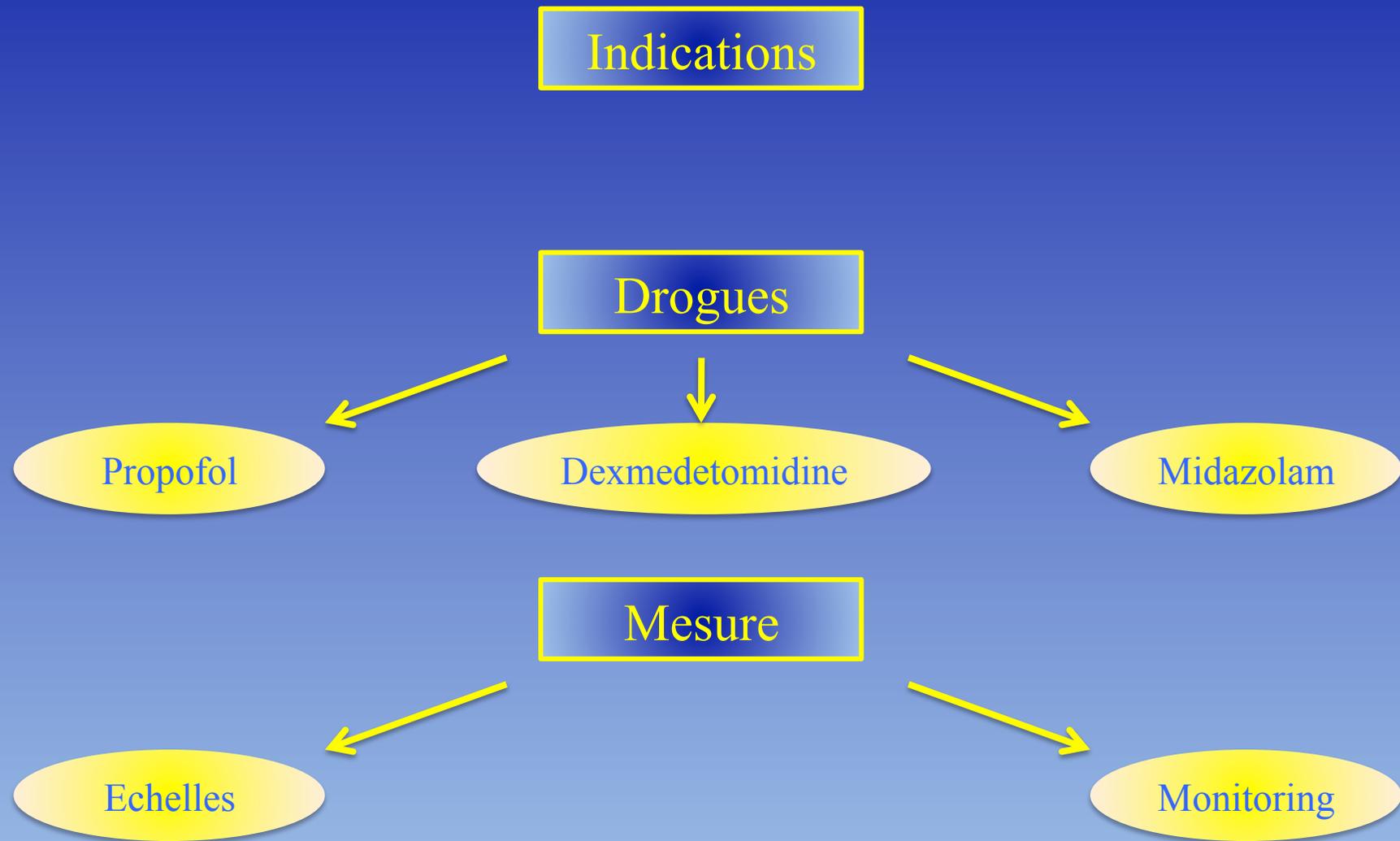
Special Article

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

Juliana Barr, MD, FCCM<sup>1</sup>; Gilles L. Fraser, PharmD, FCCM<sup>2</sup>; Kathleen Puntillo, RN, PhD, FAAN, FCCM<sup>3</sup>; E. Wesley Ely, MD, MPH, FACP, FCCM<sup>4</sup>; Céline Gélinas, RN, PhD<sup>5</sup>; Joseph F. Dasta, MSc, FCCM, FCCP<sup>6</sup>; Judy E. Davidson, DNP, RN<sup>7</sup>; John W. Devlin, PharmD, FCCM, FCCP<sup>8</sup>; John P. Kress, MD<sup>9</sup>; Aaron M. Joffe, DO<sup>10</sup>; Douglas B. Coursin, MD<sup>11</sup>; Daniel L. Herr, MD, MS, FCCM<sup>12</sup>; Avery Tung, MD<sup>13</sup>; Bryce R. H. Robinson, MD, FACS<sup>14</sup>; Dorrie K. Fontaine, PhD, RN, FAAN<sup>15</sup>; Michael A. Ramsay, MD<sup>16</sup>; Richard R. Riker, MD, FCCM<sup>17</sup>; Curtis N. Sessler, MD, FCCP, FCCM<sup>18</sup>; Brenda Pun, MSN, RN, ACNP<sup>19</sup>; Yoanna Skrobik, MD, FRCP<sup>20</sup>; Roman Jaeschke, MD<sup>21</sup>

# Sédation et contrôle de l'agitation

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# Indications

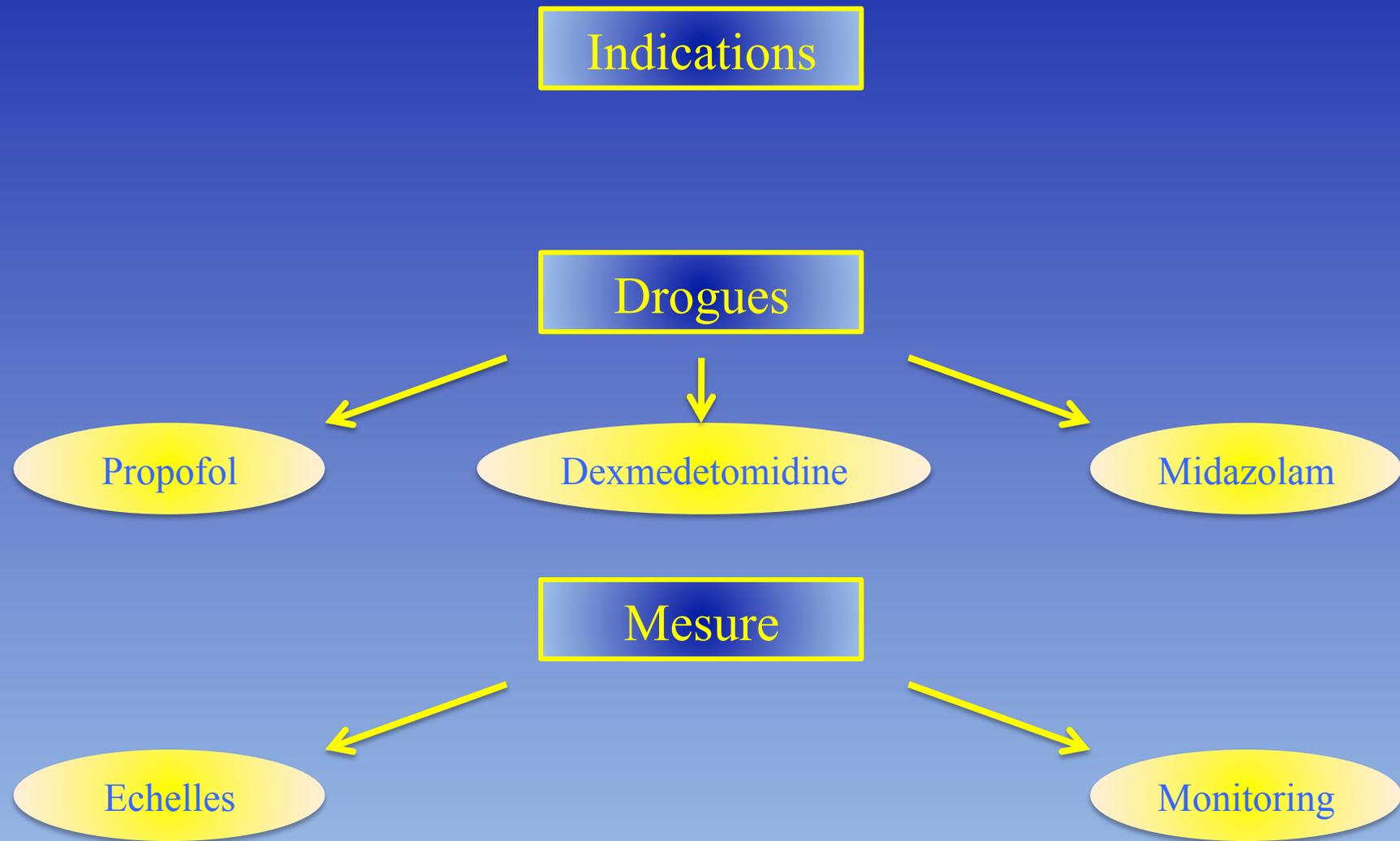
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- ✓ L'agitation et la sédation sont associées à des issues cliniques défavorables: augmentation de la durée de séjour, fréquence élevée d'auto-extubation, fréquence élevée de complications liées à l'intubation
- ✓ Correction des facteurs favorisant l'agitation: DOULEUR, DELIRIUM, hypoxémie, hypoglycémie, hypotension, sevrage alcool ou autres substances
- ✓ L'agitation ➔ la consommation en O<sub>2</sub>

➔ la fréquence cardiaque et la TA

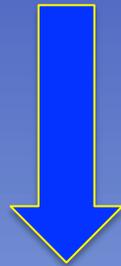
# Sédation et contrôle de l'agitation

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# Drogues

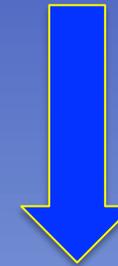
## Guidelines 2002



Si nécessité  
d'interruption  
journalière



Sédation à  
court terme



Sédation  
prolongée

# Drogues dans la vraie vie...

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Continuing Medical Education Article

## Use of intravenous infusion sedation among mechanically ventilated patients in the United States\*

Hannah Wunsch, MD, MSc; Jeremy M. Kahn, MD, MSc; Andrew A. Kramer, PhD;  
Gordon D. Rubenfeld, MD, MSc

MIDAZOLAM / PROPOFOL

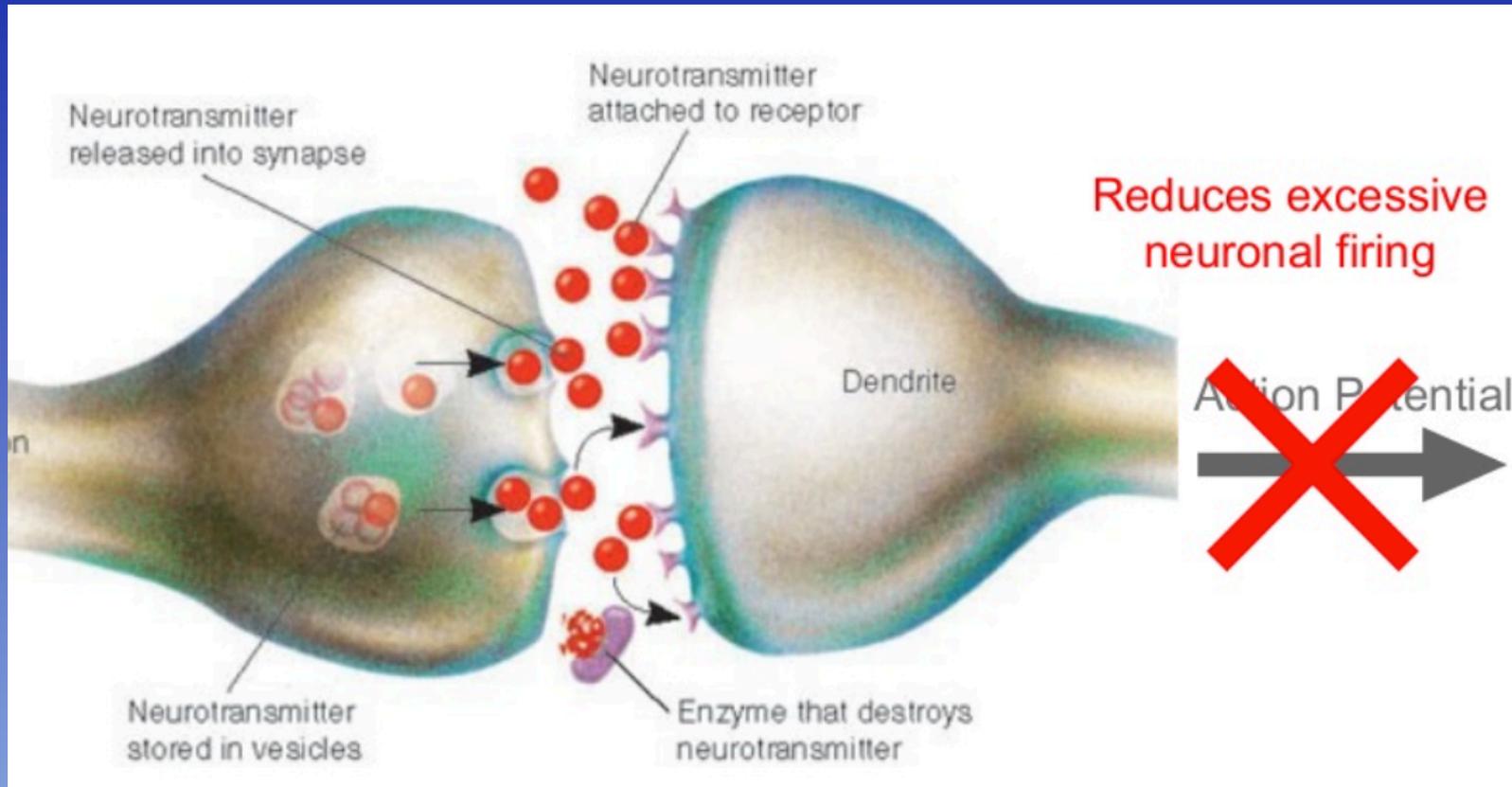
LORAZEPAM

BARBITURIQUES

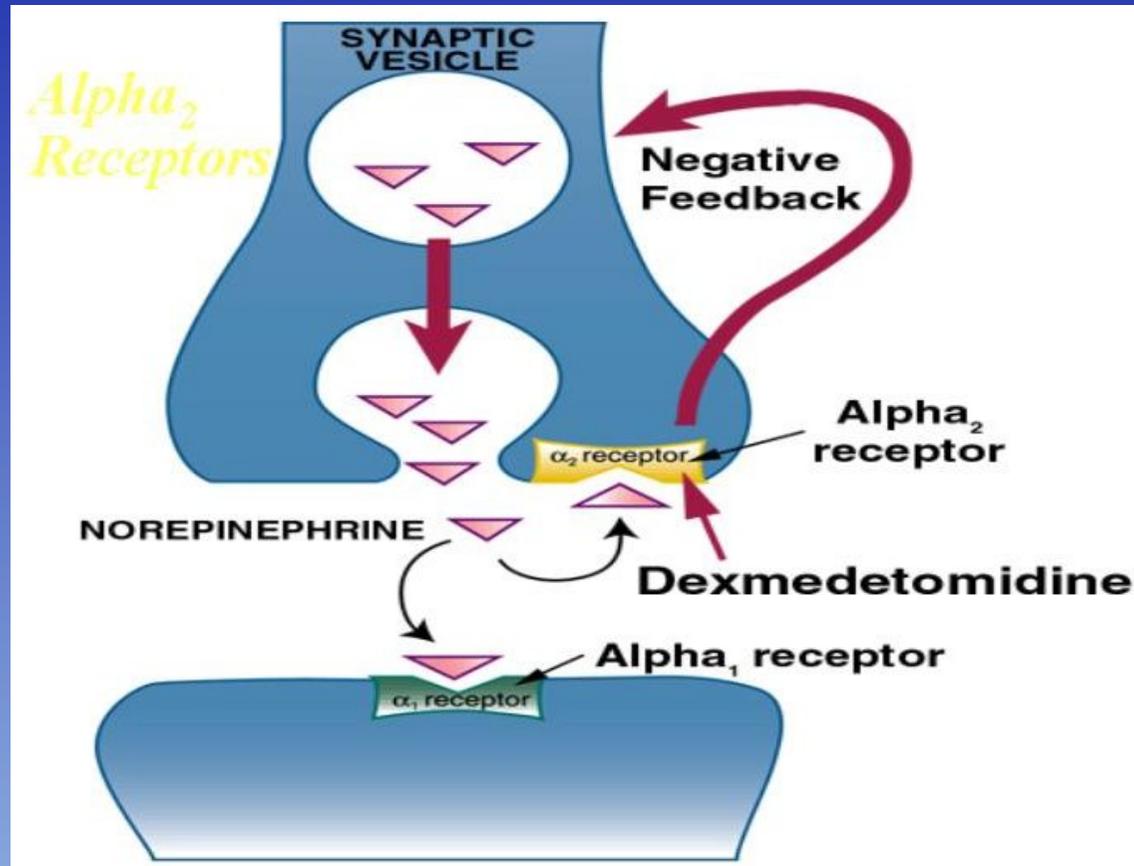
DIAZEPAM

KETAMINE

# Drogues – BZD et propofol



# Drogues - Dexmedetomidine



# BENZODIAZEPINES

Agent	Onset After IV Loading Dose	Elimination Half-Life	Active Metabolites	Loading Dose (IV)	Maintenance Dosing (IV)	Adverse Effects
Midazolam	2–5 min	3–11 hr	Yes <sup>a</sup>	0.01–0.05 mg/kg over several minutes	0.02–0.1 mg/kg/hr	Respiratory depression, hypotension
Lorazepam	15–20 min	8–15 hr	None	0.02–0.04 mg/kg ( $\leq 2$ mg)	0.02–0.06 mg/kg q2–6 hr prn or 0.01–0.1 mg/kg/hr ( $\leq 10$ mg/hr)	Respiratory depression, hypotension; propylene glycol-related acidosis, nephrotoxicity
Diazepam	2–5 min	20–120 hr	Yes <sup>a</sup>	5–10 mg	0.03–0.1 mg/kg q0.5–6 hr prn	Respiratory depression, hypotension, phlebitis <sup>e</sup>

Anxiolytiques

Annésiants

Sédatifs

Anticonvulsivants

# PROPOFOL

Agent	Onset After IV Loading Dose	Elimination Half-Life	Active Metabolites	Loading Dose (IV)	Maintenance Dosing (IV)	Adverse Effects
Propofol	1–2 min	Short-term use = 3–12 hr Long-term use = $50 \pm 18.6$ hr	None	5 $\mu\text{g}/\text{kg}/\text{min}$ over 5 min <sup>b</sup>	5–50 $\mu\text{g}/\text{kg}/\text{min}$	Pain on injection <sup>f</sup> , hypotension, respiratory depression, hypertriglyceridemia, pancreatitis, allergic reactions, propofol-related infusion syndrome; deep sedation with propofol is associated with significantly longer emergence times than with light sedation

Anxiolytiques

Amnésiants

Anticonvulsivants

Sédatifs

Antiémétiques

# DEXMEDETOMIDINE

Agent	Onset After IV Loading Dose	Elimination Half-Life	Active Metabolites	Loading Dose (IV)	Maintenance Dosing (IV)	Adverse Effects
Dexmedetomidine	5–10 min	1.8–3.1 hr	None	1 µg/kg over 10 min <sup>c</sup>	0.2–0.7 µg/kg/hr <sup>d</sup>	Bradycardia, hypotension; hypertension with loading dose; loss of airway reflexes

Sédatifs

Potentialisateur  
opiacés

# DEXMEDETOMIDINE

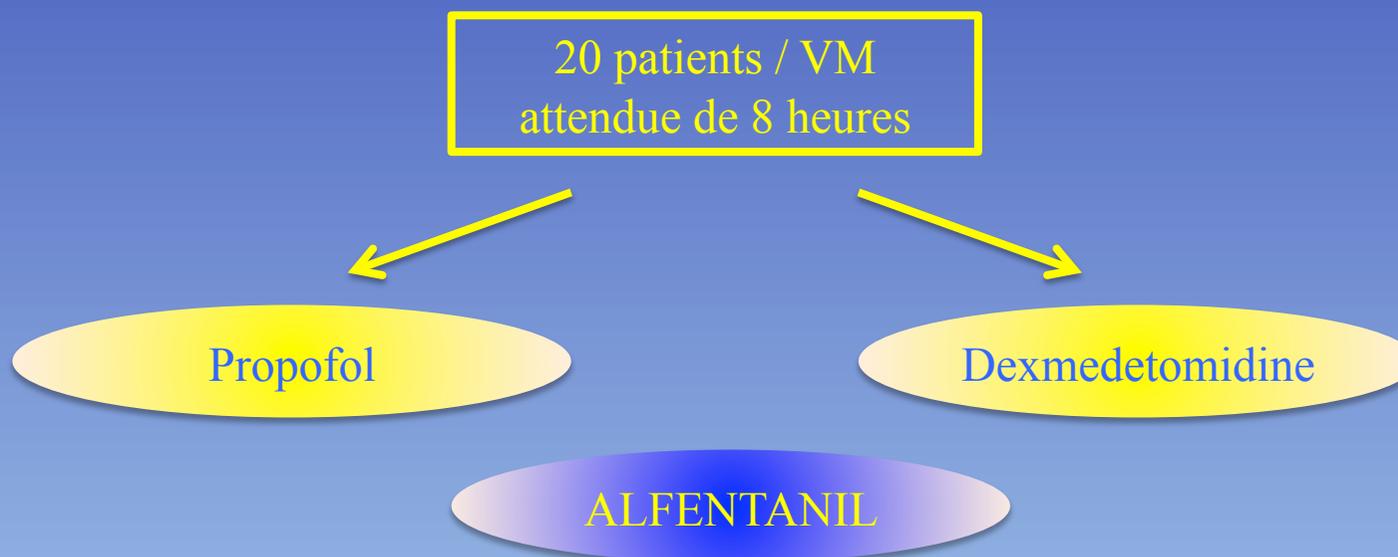
*British Journal of Anaesthesia* 87 (5): 684–90 (2001)

BJA

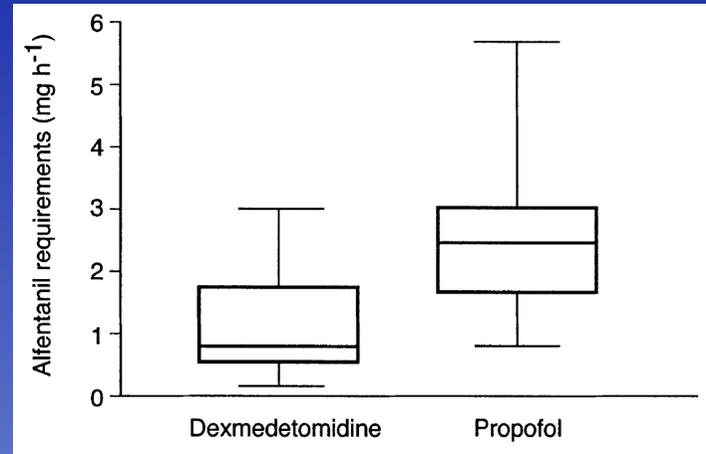
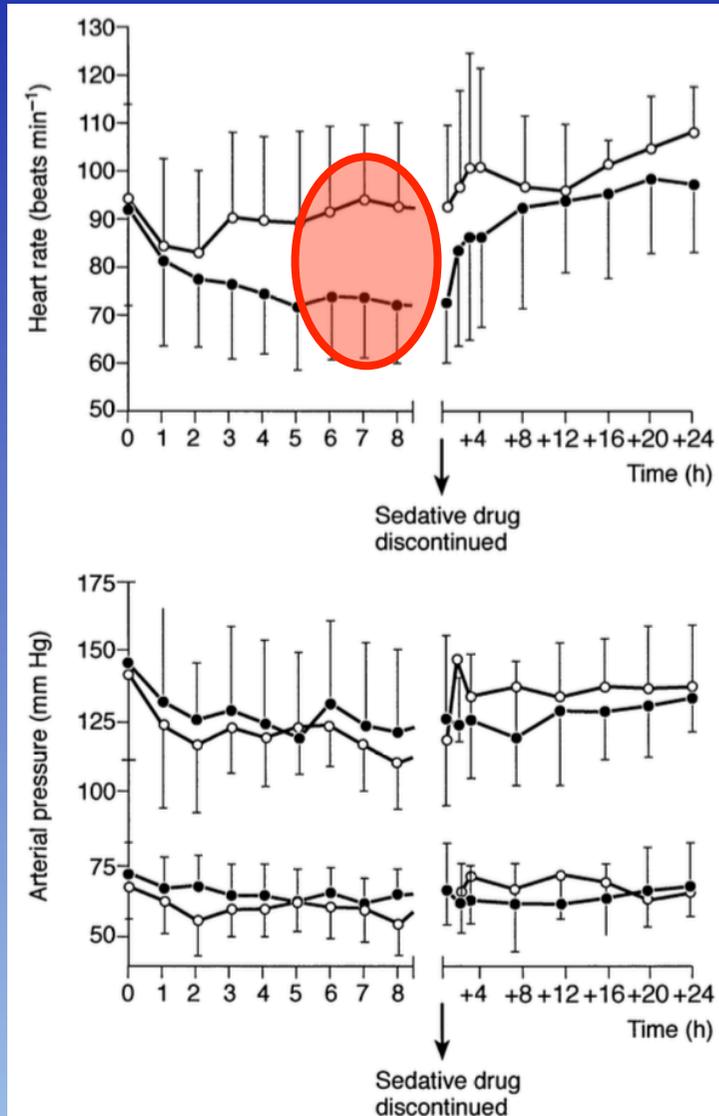
## CLINICAL INVESTIGATIONS

**Comparison between dexmedetomidine and propofol for sedation  
in the intensive care unit: patient and clinician perceptions<sup>†</sup>**

**R. M. Venn<sup>1\*</sup> and R. M. Grounds<sup>2‡</sup>**



# DEXMEDETOMIDINE



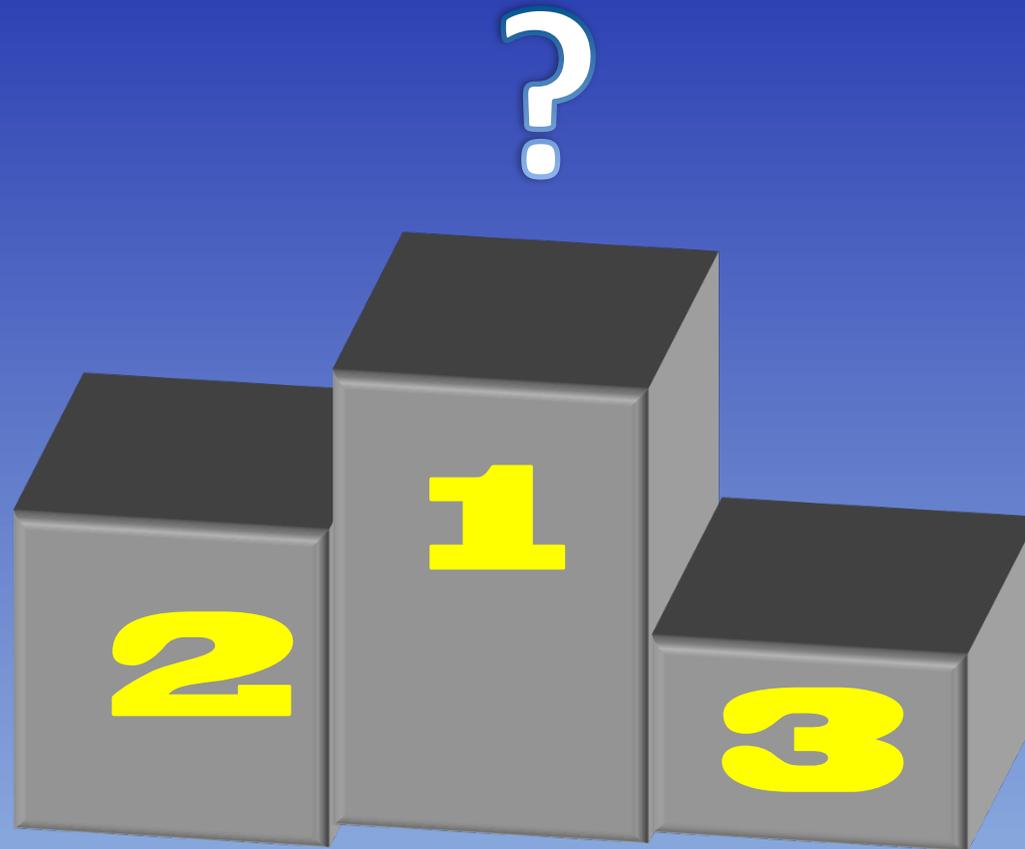
- ✓ Plus de bradycardie dans le groupe DEXMEDETOMIDINE
- ✓ Pas de modifications tensionnelles entre les deux groupes
- ✓ Moins de consommation morphinique dans le groupe DEXMEDETOMIDINE

# DEXMEDETOMIDINE vs CLONIDINE

CLONIDINE	DEXMEDETOMIDINE
Sélectivité $\alpha_2/\alpha_1$ : 200	Sélectivité $\alpha_2/\alpha_1$ : 1600
D'abord anti-HTA	D'abord sédatif
Potentialisateur antalgique	Potentialisateur antalgique
$T_{1/2}$ vie: 8 heures	$T_{1/2}$ vie: 2 heures
Réveil lent	Réveil rapide

# DXM vs BZD vs PROPOFOL

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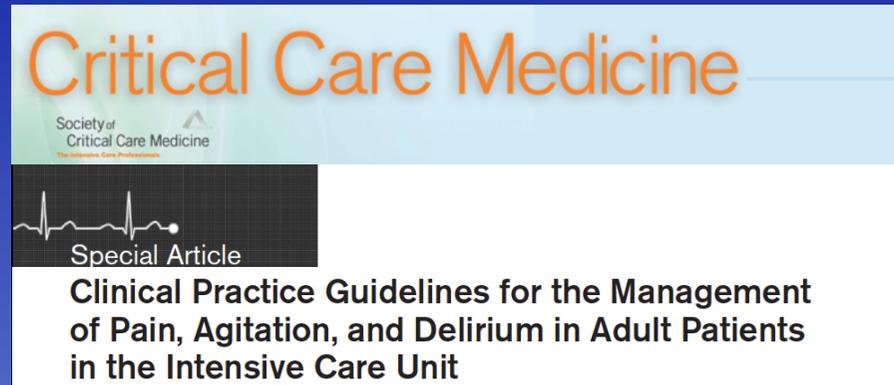


# Choix du sédatif

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- ✓ Indications spécifiques et du but de la sédation (durée, intensité)
- ✓ La pharmacologie de la drogue, y compris son délai d'action et ses effets secondaires
- ✓ Les coûts liés à l'utilisation du sédatif

# DXM vs BZD vs PROPOFOL

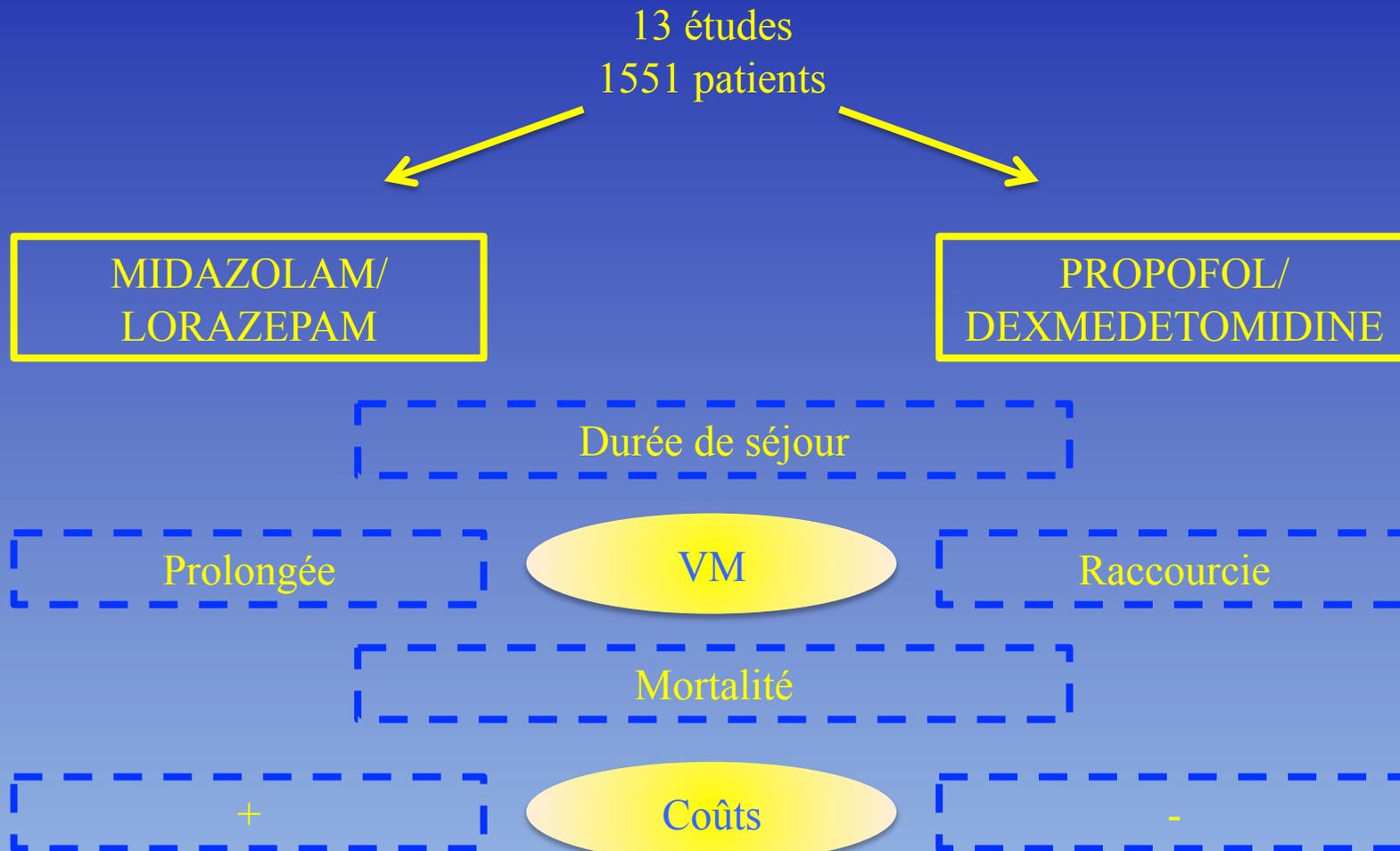


## Choice of Sedative

*Question:* Should nonbenzodiazepine-based sedation, instead of sedation with benzodiazepines, be used in mechanically ventilated adult ICU patients? (actionable)

*Answer:* We suggest that sedation strategies using nonbenzodiazepine sedatives (either propofol or dexmedetomidine) may be preferred over sedation with benzodiazepines (either midazolam or lorazepam) to improve clinical outcomes in mechanically ventilated adult ICU patients (+2B).

# Rationnel

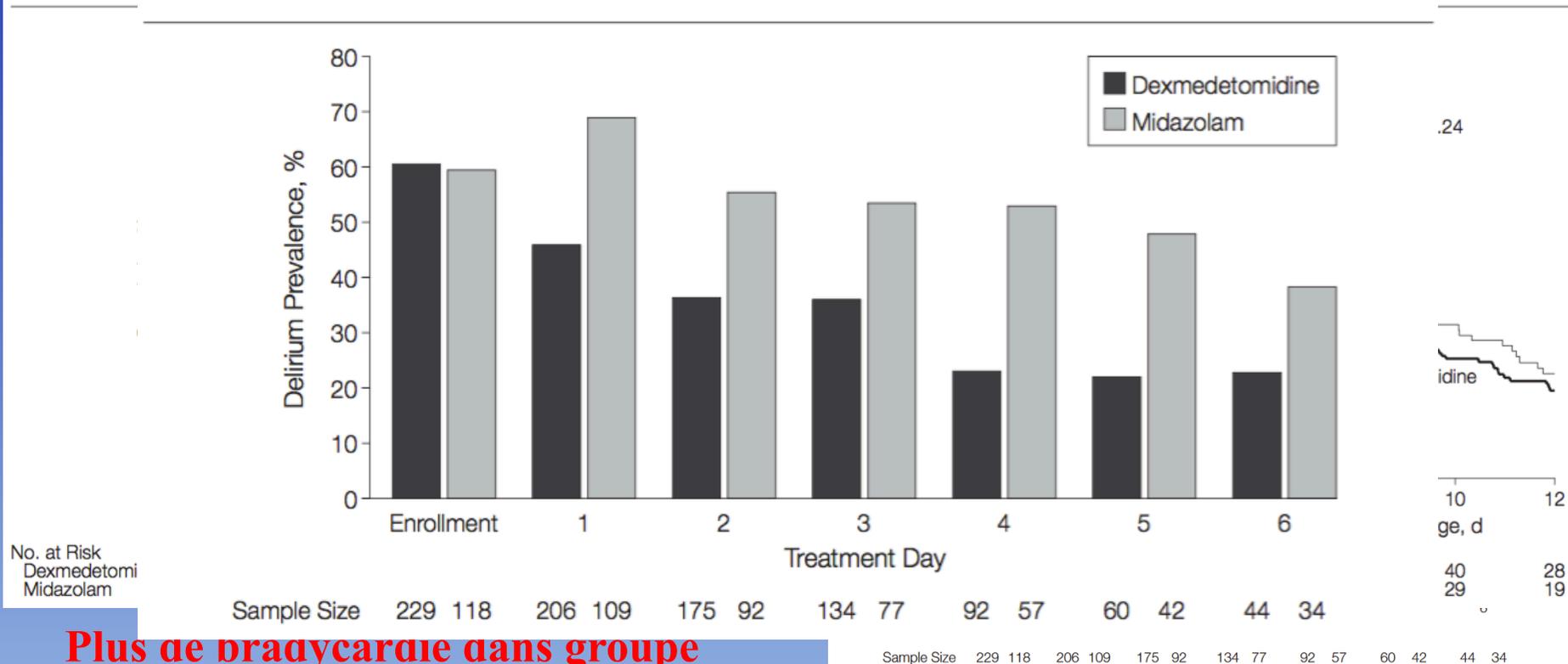


# MIDAZOLAM vs DEXMEDETOMIDINE

CARING FOR THE  
CRITICALLY ILL PATIENT

## Etude SEDCOM

**Figure 2.** Daily Prevalence of Delirium Among Intubated Intensive Care Unit Patients Treated With Dexmedetomidine vs Midazolam



**Plus de bradycardie dans groupe  
DEXMEDETOMIDINE**

# PROPOFOL vs MIDAZOLAM

Intensive Care Med (2008) 34:1969–1979  
DOI 10.1007/s00134-008-1186-5

SYSTEMATIC REVIEW

Kwok M. Ho  
Joseph Y. Ng

## The use of propofol for medium and long-term sedation in critically ill adult patients: a meta-analysis

- ✓ Méta-analyse
- ✓ 16 études randomisées et contrôlées
- ✓ 1386 patients

- ✓ Pas de différence de mortalité entre PROPOFOL et autres sédatifs
- ✓ Diminution de la durée de VM
- ✓ Diminution de la durée de séjour au SI avec autres sédatifs (sauf MIDAZOLAM)

# DEXMEDETOMIDINE vs PROPOFOL

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 CARING FOR THE  
CRITICALLY ILL PATIENT

## **Dexmedetomidine vs Midazolam or Propofol for Sedation During Prolonged Mechanical Ventilation** Two Randomized Controlled Trials

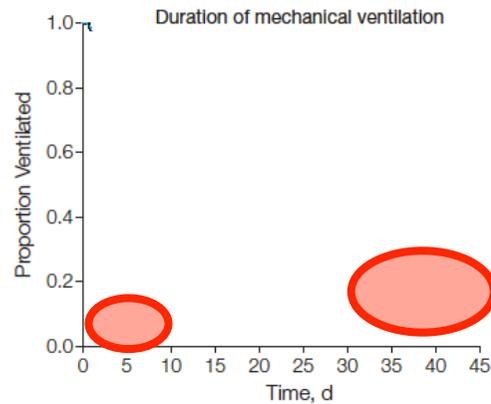
### Etude MIDEX et PRODEX

- ✓ 2 études prospective, randomisée, 2ble aveugle
- ✓ 44 centres / 9 pays / 2007 à 2010
- ✓ MIDEX = 460 patients et PRODEX = 437 patients

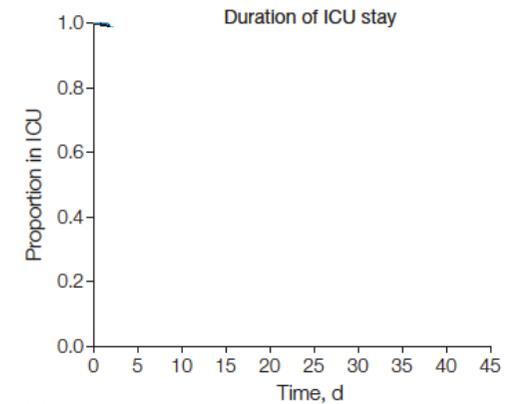
# MIDEX & PRODEX

**Figure 2.** Duration of Mechanical Ventilation and Intensive Care Unit Stay

**A** MIDEX trial

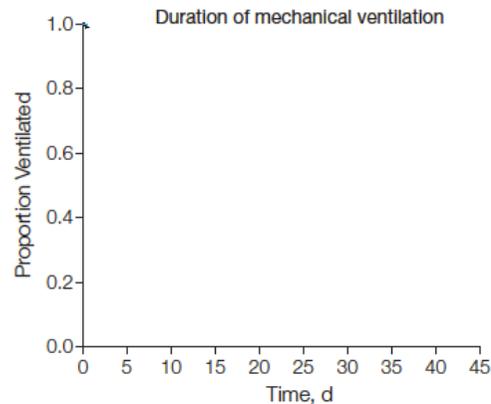


No. of patients at risk	0	5	10	15	20	25	30	35	40	45
Dexmedetomidine	249	128	77	62	54	52	51	49	47	43
Midazolam	251	162	81	68	53	45	43	41	40	34

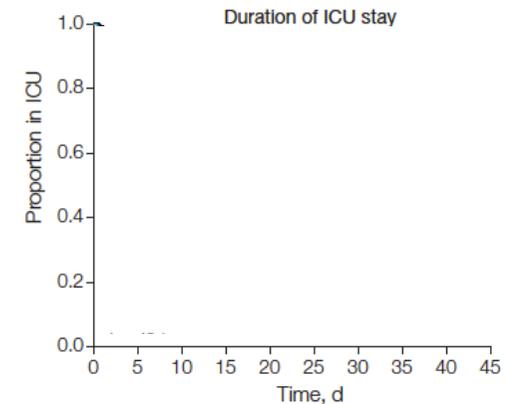


No. of patients at risk	0	5	10	15	20	25	30	35	40	45
Dexmedetomidine	249	181	115	93	80	72	69	64	63	60
Midazolam	251	203	129	95	79	68	59	56	53	46

**B** PRODEX trial



No. of patients at risk	0	5	10	15	20	25	30	35	40	45
Dexmedetomidine	251	111	70	53	45	42	38	35	35	32
Propofol	247	125	82	58	46	39	36	32	32	27



No. of patients at risk	0	5	10	15	20	25	30	35	40	45
Dexmedetomidine	251	151	97	75	64	53	49	43	43	39
Propofol	247	159	107	79	65	57	49	47	45	37

# MIDEX & PRODEX

**Table 3.** Patients' Arousability, Ability to Communicate Pain, and Ability to Cooperate With Nursing Care

	Adjusted Mean Estimate (95% CI)		P Value <sup>a</sup>	Estimate of Difference (95% CI)
	Dexmedetomidine (n = 249)	Preferred Usual Care (n = 251)		
Dexmedetomidine vs midazolam (MIDEX)	(n = 249)	(n = 251)		
Total VAS score <sup>b</sup>	49.7 (45.5 to 53.8)	30.0 (25.9 to 34.1)		19.7 (15.2 to 24.2)
Can the patient communicate pain?	46.3 (41.7 to 50.9)	24.2 (19.7 to 28.8)		22.1 (17.1 to 27.1)
How arousable is the patient?	58.2 (53.7 to 62.6)	40.7 (36.3 to 45.1)		17.5 (12.7 to 22.3)
How cooperative is the patient?	44.8 (40.3 to 49.2)	25.1 (20.8 to 29.5)		19.7 (14.8 to 24.5)
Dexmedetomidine vs propofol (PRODEX)	(n = 251)	(n = 247)		
Total VAS score <sup>b</sup>	51.3 (46.9 to 55.7)	40.1 (35.7 to 44.6)		11.2 (6.4 to 15.9)
Can the patient communicate pain?	49.3 (44.5 to 54.2)	35.4 (30.5 to 40.4)		13.9 (8.7 to 19.1)
How arousable is the patient?	59.1 (54.7 to 63.4)	47.8 (43.4 to 52.3)		11.2 (6.5 to 16.0)
How cooperative is the patient?	47.2 (42.3 to 52.2)	38.0 (33.0 to 43.0)		9.2 (3.9 to 14.5)

Abbreviation: VAS, visual analogue scale.

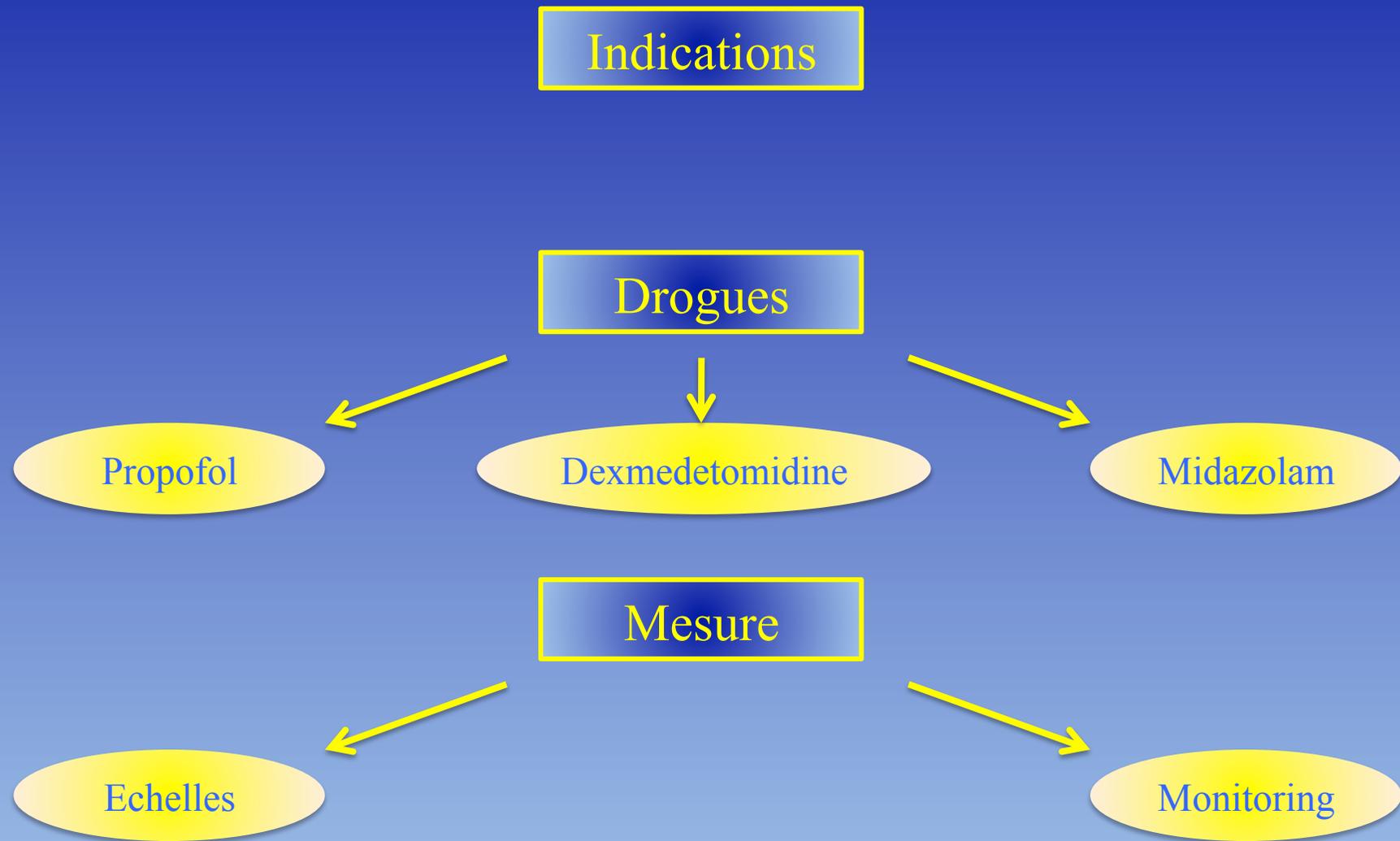
<sup>a</sup>Analysis of covariance with effects for treatment, country, and baseline values.

<sup>b</sup>A higher score represents a better outcome.

**Amélioration de la COMMUNICATION, de la COLLABORATION avec le patient**

# Sédation et contrôle de l'agitation

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# Type de sédation

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Niveau de sédation  
léger

↘ Durée de séjour et de VM	5 études
↗ Réponse de stress physiologique	3 études
Etat de stress post-traumatique	4 études

# Type de sédation

Intensive Care Med (2013) 39:910–918  
DOI 10.1007/s00134-013-2830-2

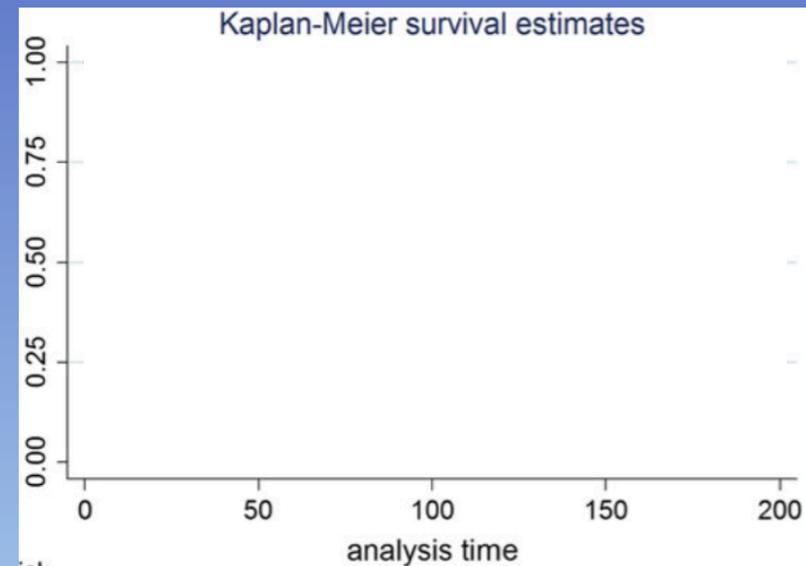
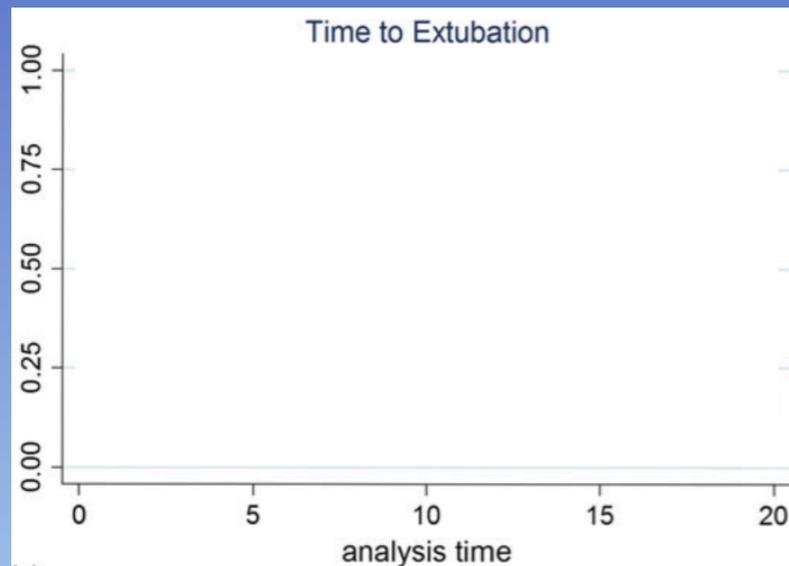
ORIGINAL

Yahya Shehabi  
Lucy Chan  
Suhaini Kadiman  
Anita Alias  
Wan Nasrudin Ismail  
Mohd Ali T. Ismail Tan  
Tien Meng Khoo  
Saedah Binti Ali  
Mat Ariffin Saman  
Ahmad Shaltut  
Cheng Cheng Tan  
Cow Yen Yong  
Michael Bailey

The Sedation Practice in Intensive Care  
Evaluation (SPICE) Study Group investigators

## Sedation depth and long-term mortality in mechanically ventilated critically ill adults: a prospective longitudinal multicentre cohort study

- ✓ Etude de cohorte prospective
- ✓ 11 centres malaysiens
- ✓ 259 patients
- ✓ Lien entre la sédation profonde initiale et (1) délai d'extubation (2) delirium et (3) mortalité



# Echelles

The Minnesota Sedation Assessment Tool (MSAT) can be used to monitor the level of sedation of patients in the intensive care unit (ICU). The authors are from the University of Minnesota.

Table 1 - Ramsay scale for the assessment of the level of sedation

Parameters:

- Resp (1) motor activity (based on highest level)
- Respo (2) arousal state (based on eyes being open)
- Lethargic (3) nurse assessment of overall sedation

Parameter	Finding
motor activity	no spontaneous movements
	movements
	movements
	no spontaneous movements

Table 1

Parameter	Finding
arousal state	eyes open
	eyes open
	eyes closed
	eyes closed
	eyes do not open
	eyes do not open
overall sedation quality	adequate
	oversedated
	undersedated

## STEP 1 Level of Consciousness Assessment

### RICHMOND AGITATION-SEDATION SCALE (RASS)

Scale	Label	Description
+4	COMBATIVE	Combative, violent, immediate danger to staff
+3	VERY AGITATED	Pulls to remove tubes or catheters; aggressive
+2	AGITATED	Frequent non-purposeful movement, fights ventilator
+1	RESTLESS	Anxious, apprehensive, movements not aggressive
0	ALERT & CALM	Spontaneously pays attention to caregiver
-1	DROWSY	Not fully alert, but has sustained awakening to voice (eye opening & contact >10 sec)
-2	LIGHT SEDATION	Briefly awakens to voice (eyes open & contact <10 sec)
-3	MODERATE SEDATION	Movement or eye opening to voice (no eye contact)
<p><b>If RASS is <math>\geq -3</math> proceed to CAM-ICU (Is patient CAM-ICU positive or negative?)</b></p>		
-4	DEEP SEDATION	No response to voice, but movement or eye opening to physical stimulation
-5	UNAROUSABLE	No response to voice or physical stimulation
<p><b>If RASS is -4 or -5 → STOP (patient unconscious), RECHECK later</b></p>		

VOICE TOUCH

AS)	POINTS
	1
e catheters, climbing	2
shing side-to-side	3
verbal reminding of	4
ns to verbal instructions	5
mands	6
verbal stimuli or gentle	7
but drifts off again	8
es not communicate or	9
ntaneously	10
stimuli, does not	11
relaxed face	12
st	13
attention	14
back to	15

Sessler, et al., Am J Respir Crit Care Med 2002; 166: 1338-1344

Elv. et al., JAMA 2003; 286: 2983-2991

Shake shoulder	4	Only facial or motor expression	4
Nail bed pressure	5	No response at all	5

Interpretation of sum scores: 2 = not sedated; 3-4 = lightly sedated; 5-7 = moderately sedated; 8-9 = deeply sedated; 10 = anesthetized

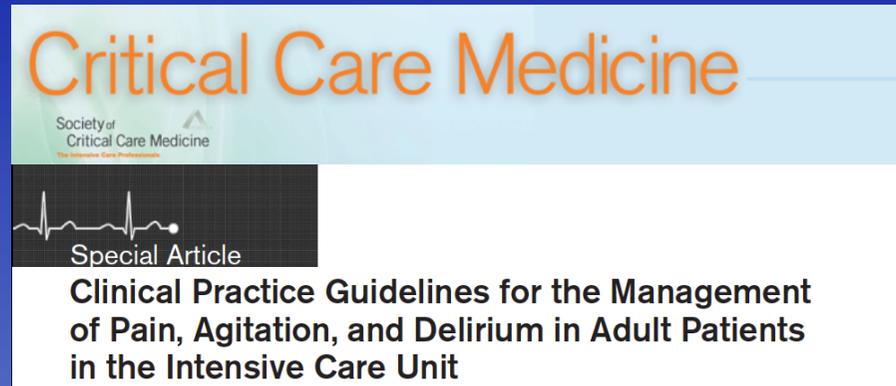
\*Painful stimulus: aspiration or 5 seconds of orbital, sternum or nail bed pressure

# Tests psychométriques

Psychometric Criteria Scored	Sedation Scale					Sedation Scale				
	Observer's Assessment of Alertness/Sedation Scale	Ramsay Sedation Scale	New Sheffield Sedation Scale	Sedation Intensive Care Score	Motor Activity Assessment Scale	Adaptation to the Intensive Care Environment	Minnesota Sedation Assessment Tool	Vancouver Interaction and Calmness Scale	Sedation-Agitation Scale	Richmond Agitation-Sedation Scale
Item selection description	0	0	2	1	0	2	2	2	1	2
Content validation	0	0	0	0	0	1	1	1	1	0
Limitations presented	0	0	1	0	0	1	1	1	1	0
Interrater reliability	0	1	2	2	2	2	2	2	2	2
Interrater reliability tested with nonresearch team	0	1	1	1	1	1	1	1	1	1
Interrater reliability tested if interrater reliability is low or inconsistent	NA	0	NA	NA	NA	NA	NA	NA	NA	NA
Total number of participants	1	2	0	1	2	2	2	2	2	2
Criterion validation	1	2	0	0	1	0	0	0	2	2
Discriminant validation	0	0	0	2	0	0.5	1	2	2	2
Feasibility	0	0	0	0	0	0	0	0	0	1
Directives of use	1	0	1	0	1	1	1	1	1	1
Relevance of scale in practice	0	0	0	0	0	0	0	0	0	1
Total score (range: 0–18)	3	6	7	7	7	10.5	11	12	13	14
Weighted score <sup>a</sup> (range: 0–20)	3.7	7.7	8.5	10.5	11	12.3	13	14.3	16.5	19
Quality of psychometric evidence (based on weighted scores)	VL	VL	VL	L	L	M	M	M	VG	VG

- ✓ 27 études
- ✓ 2805 patients
- ✓ Corrélation interindividuelles, validation discriminative, corrélation avec EEG ou BIS

# Echelles de sédation



a. Sedation scales

*Question:* Which subjective sedation scales are the most valid and reliable in the assessment of depth and quality of sedation in mechanically ventilated adult ICU patients? (descriptive)

*Answer:* The Richmond Agitation-Sedation Scale (RASS) and Sedation-Agitation Scale (SAS) are the most valid and reliable sedation assessment tools for measuring quality and depth of sedation in adult ICU patients (B).

# And the Winner is...

## STEP 1 RICHMOND AGITATION-SEDATION SCALE (RASS) Level of Consciousness Assessment

Scale	Label	Description
+4	COMBATIVE	Combative, violent, immediate danger to staff
+3	VERY AGITATED	Pulls to remove tubes or catheters; aggressive
+2	AGITATED	Frequent non-purposeful movement, fights ventilator
+1	RESTLESS	Anxious, apprehensive, movements not aggressive
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-3	MODERATE SEDATION	Movement or eye opening to voice (no eye contact)
<p><b>VOICE</b></p> <p>If RASS is <math>\geq -3</math> proceed to CAM-ICU (Is patient CAM-ICU positive or negative?)</p>		
-4	DEEP SEDATION	No response to voice, but movement or eye opening to physical stimulation
-5	UNAROUSABLE	No response to voice or physical stimulation
<p><b>TOUCH</b></p> <p>If RASS is -4 or -5 → STOP (patient unconscious), RECHECK later</p>		

Sessler, et al. Am J Respir Crit Care Med 2002; 166: 1338-1344

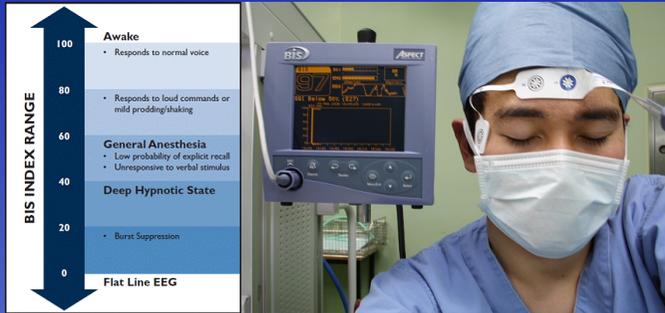
Elv, et al. JAMA 2003; 286: 2983-2991

## Riker Sedation-Agitation Scale (SAS)

Score	Term	Descriptor
7	Dangerous Agitation	Pulling at ET tube, trying to remove catheters, climbing over bedrail, striking at staff, thrashing side-to-side
6	Very Agitated	Requiring restraint and frequent verbal reminding of limits, biting ETT
5	Agitated	Anxious or physically agitated, calms to verbal instructions
4	Calm and Cooperative	Calm, easily arousable, follows commands
3	Sedated	Difficult to arouse but awakens to verbal stimuli or gentle shaking, follows simple commands but drifts off again
2	Very Sedated	Arouses to physical stimuli but does not communicate or follow commands, may move spontaneously
1	Unarousable	Minimal or no response to noxious stimuli, does not communicate or follow commands

# Monitoring neurologique

**BIS**



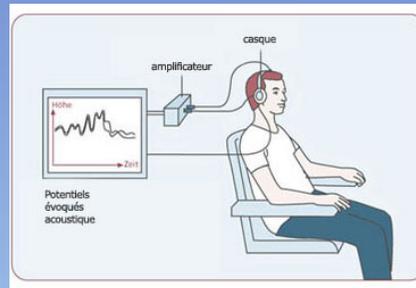
**NarcoTrend**



**State Entropy**



**PE auditif**



**Patient State Index**



# Monitoring neurologique

## Critical Care Medicine

Society of  
Critical Care Medicine



Special Article

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

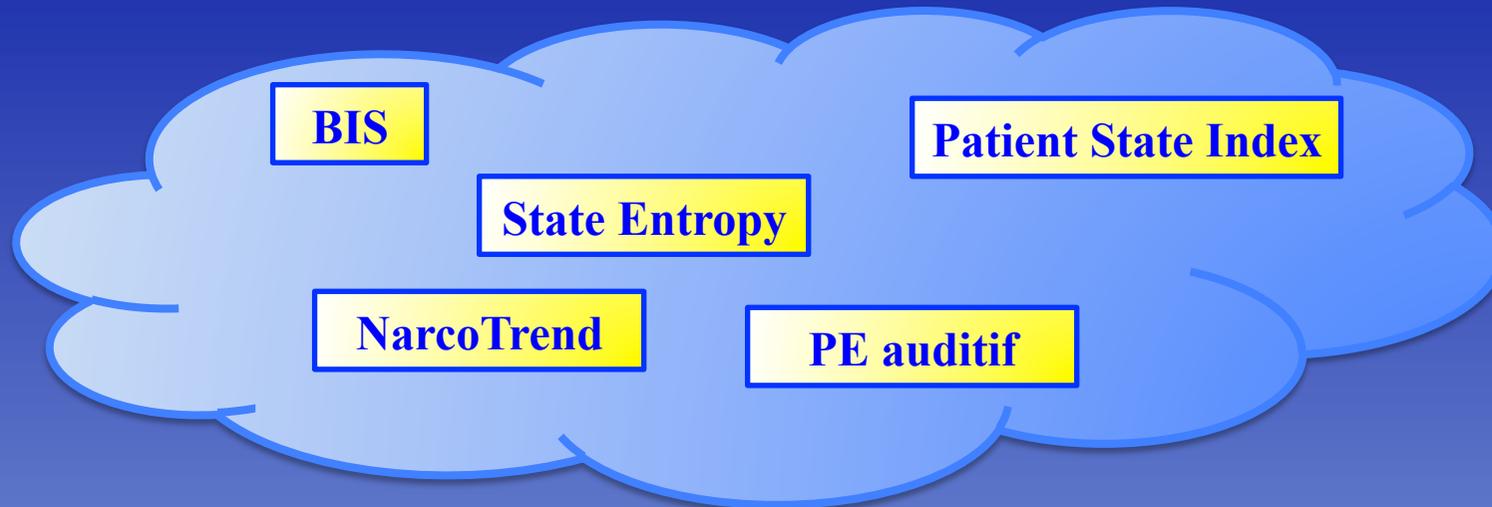
### b. Neurologic monitoring

- i. *Question:* Should objective measures of brain function (e.g., auditory evoked potentials [AEPs], bispectral index [BIS], Narcotrend Index [NI], Patient State Index [PSI], or state entropy [SE]) be used to assess depth of sedation in *noncomatose*, adult ICU patients who are not receiving neuromuscular blocking agents? (actionable)

*Answer:* We do not recommend that objective measures of brain function (e.g., AEPs, BIS, NI, PSI, or SE) be used as the primary method to monitor depth of sedation in noncomatose, nonparalyzed critically ill adult patients, as these monitors are inadequate substitutes for subjective sedation scoring systems (-1B).

# Monitoring neurologique

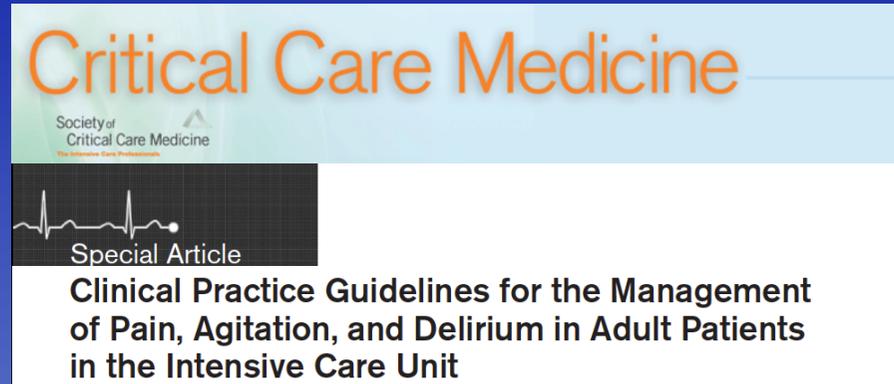
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- ✓ Perturbations électromyographiques
- ✓ Distinction uniquement entre sédation profonde et légère

# Monitoring neurologique

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- ii. *Question:* Should objective measures of brain function (e.g., AEPs, BIS, NI, PSI, or SE) be used to measure depth of sedation in adult ICU patients who *are* receiving neuromuscular blocking agents? (actionable)
- Answer:* We suggest that objective measures of brain function (e.g., AEPs, BIS, NI, PSI, or SE) be used as an adjunct to subjective sedation assessments in adult ICU patients who are receiving neuromuscular blocking agents, as subjective sedation assessments may be unobtainable in these patients (+2B).

# Guidelines 2015

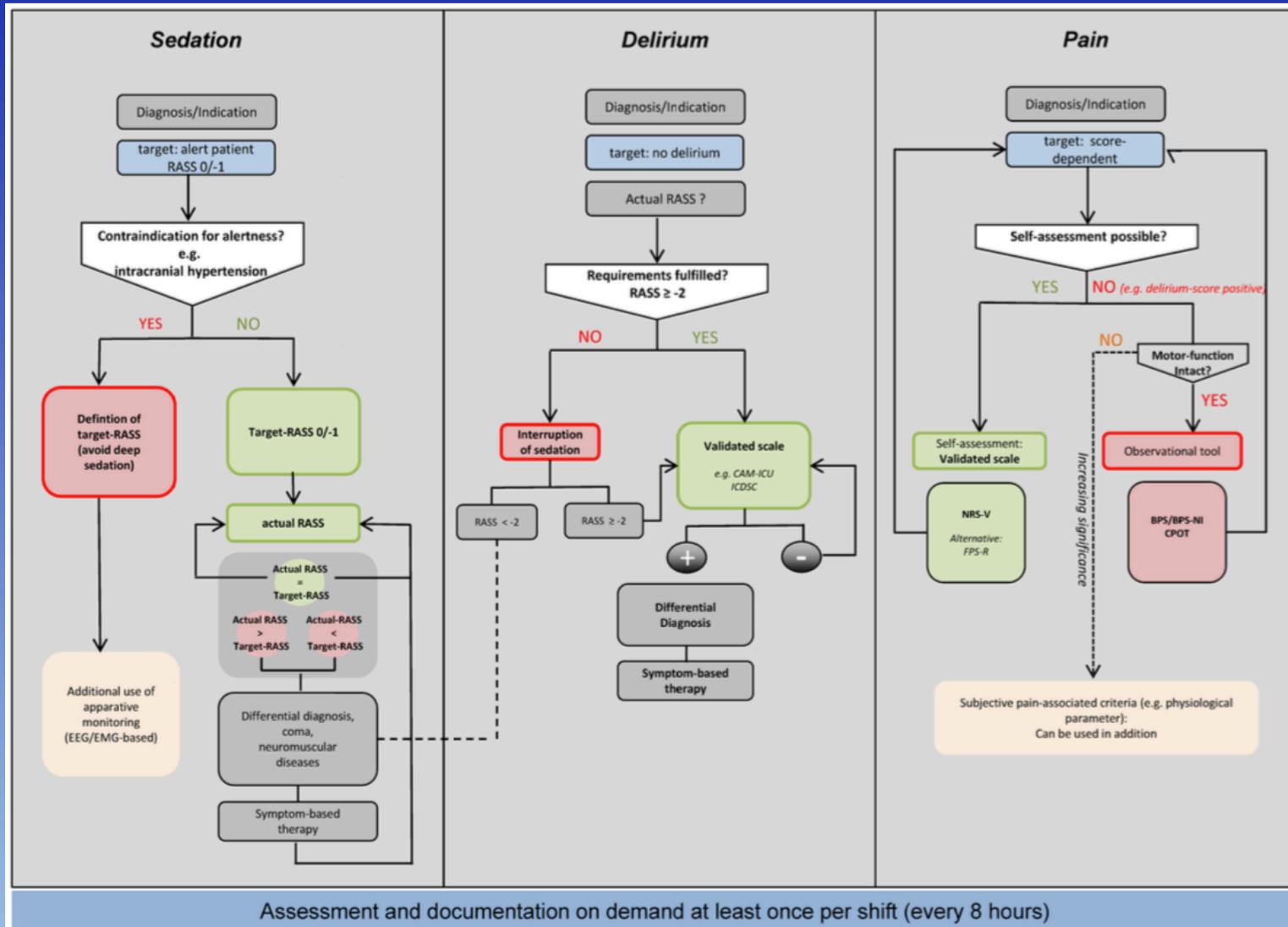
Intensive Care Medicine **OPEN ACCESS** This is the original (English) version.  
The translated (German) version starts at p. 22. Guideline

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**Evidence and consensus based guideline for the management of delirium, analgesia, and sedation in intensive care medicine. Revision 2015 (DAS-Guideline 2015) – short version**

- ✓ Validation par 17 sociétés savantes nationales allemandes
- ✓ Traitement séparé de la sédation, l'analgésie et le delirium, le STRESS et le SOMMEIL
- ✓ Attitude dans différents groupes spécifiques comme femmes enceintes, enfants

# Guidelines 2015



# Take Home Messages

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1. Privilégier les sédatifs autre que les benzodiazépines (PROPOFOL vs DEXMEDETOMIDINE)

**THE END**