



Spécificités respiratoires du patient transplanté pulmonaire en réa



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Transplantation 🫁



Un don

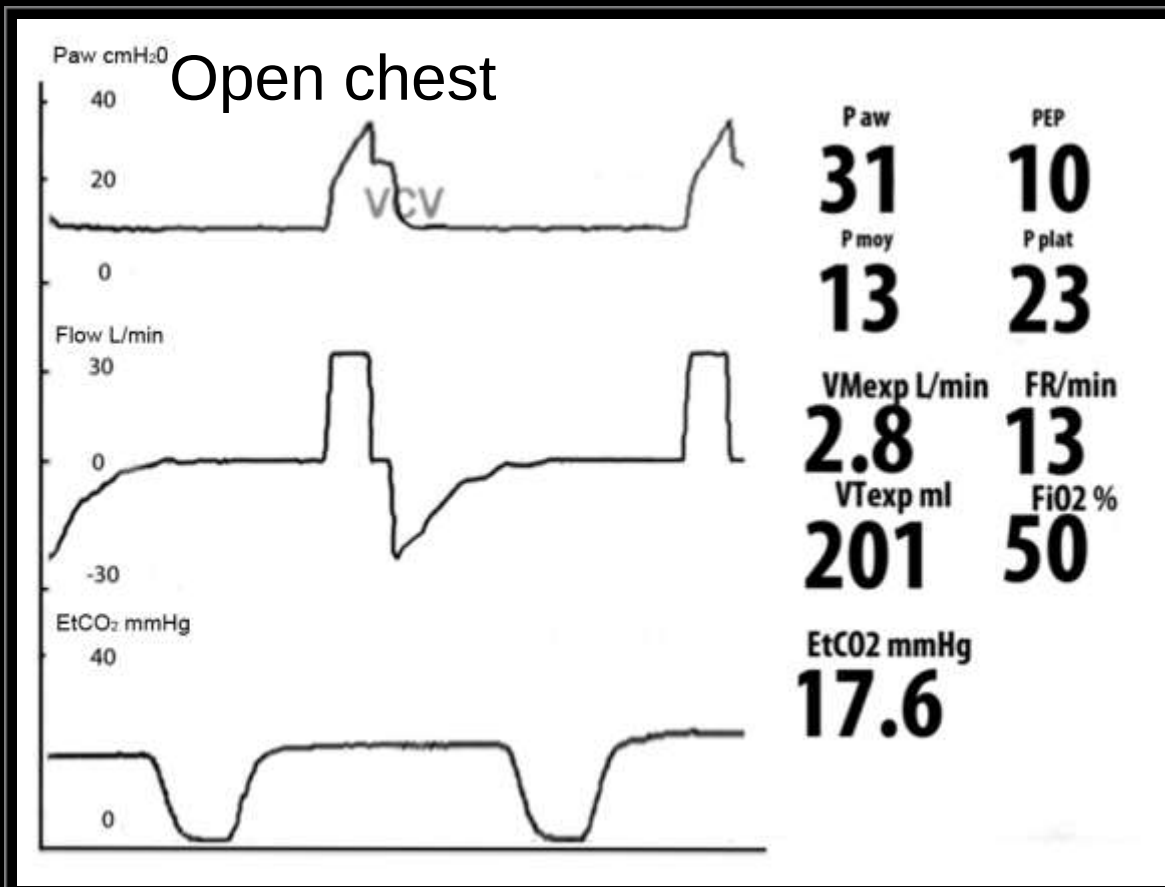
Donneur

Effect of a Lung Protective Strategy for Organ Donors on Eligibility and Availability of Lungs for Transplantation A Randomized Controlled Trial

JAMA. 2010;304(23):2620-2627



Receveur pendant la transplantation



Per transplantation

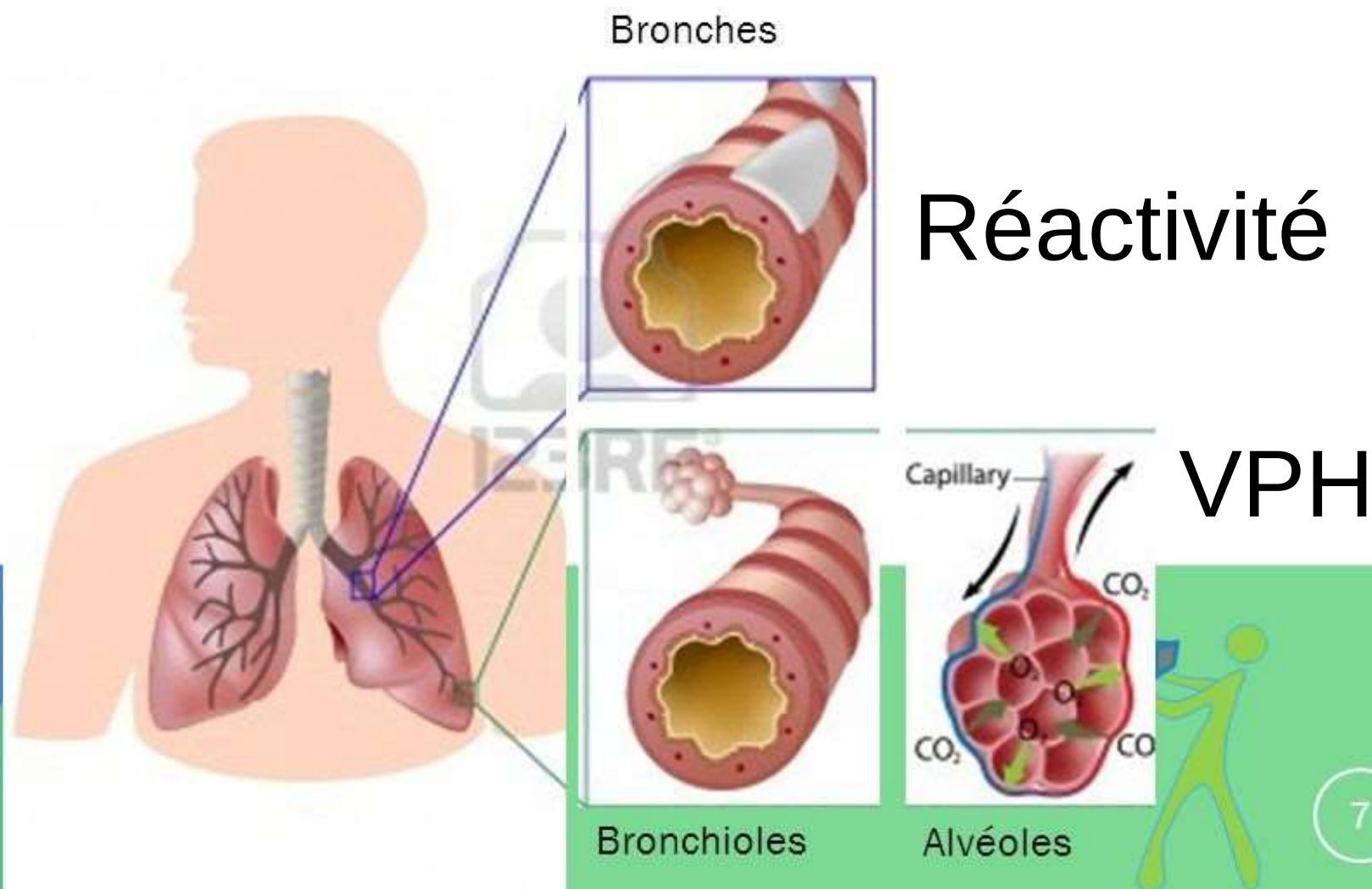
Roze et al. J Cardiothorac Vasc Anesth. 2013;27:467-

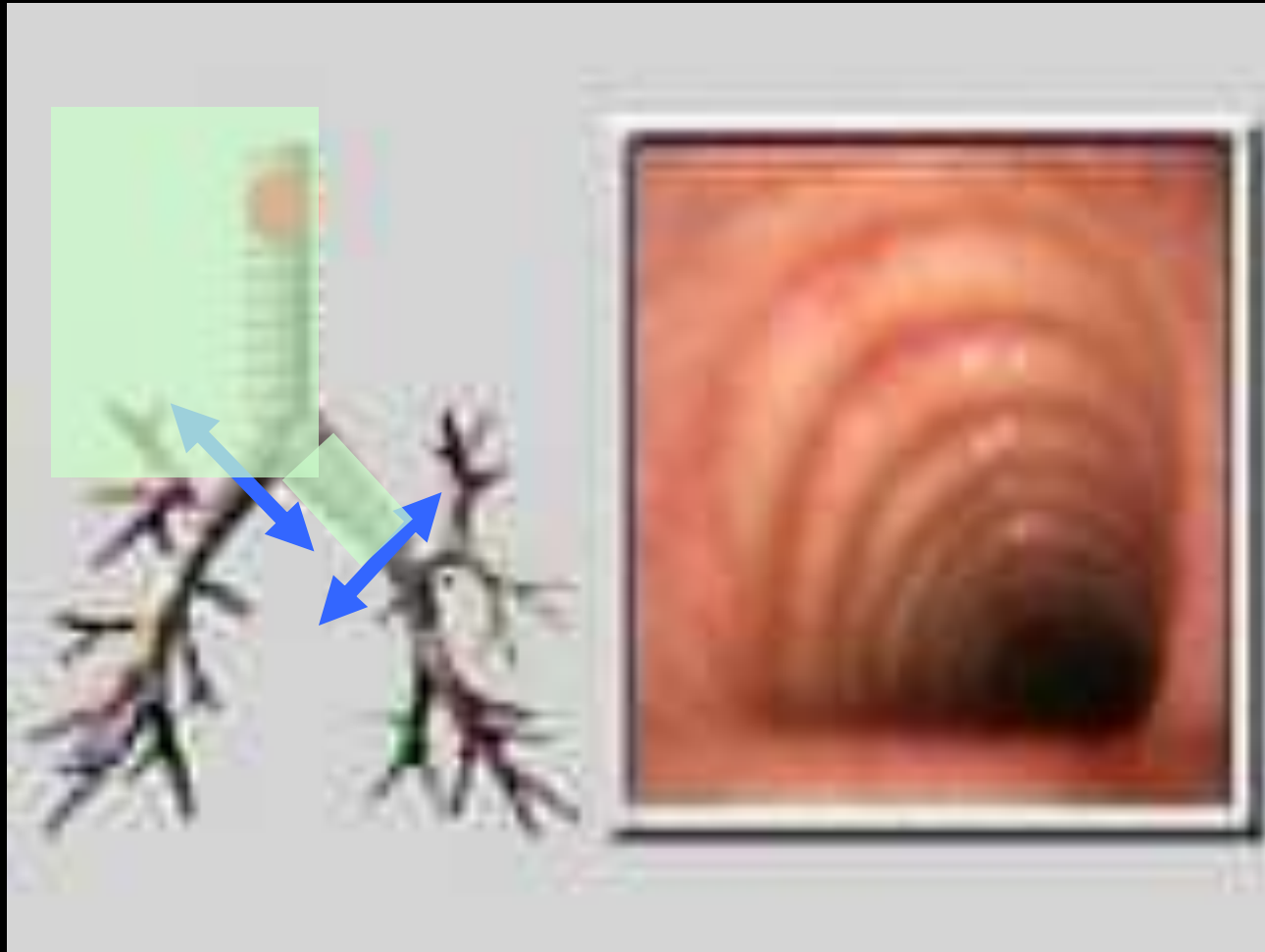
Spécificités

- Voies aériennes
- Alvéoles
- Fonction pompe
- Innervation
- Contrôle
- Vascularisation
- Abdominal



POUMONS, TRACHÉE, BRONCHES, BRONCHIOLES, ALVÉOLES



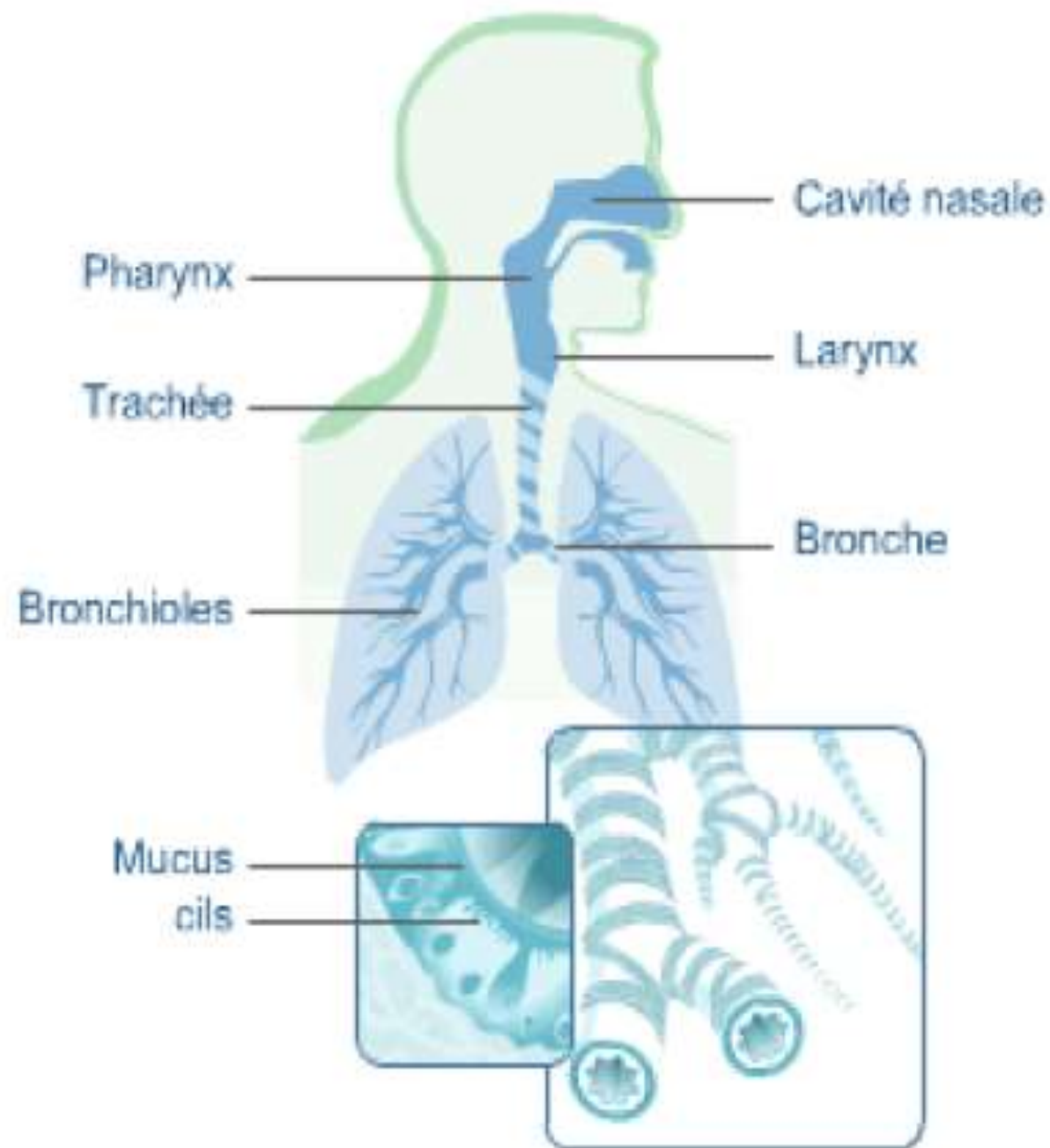


 Receveur

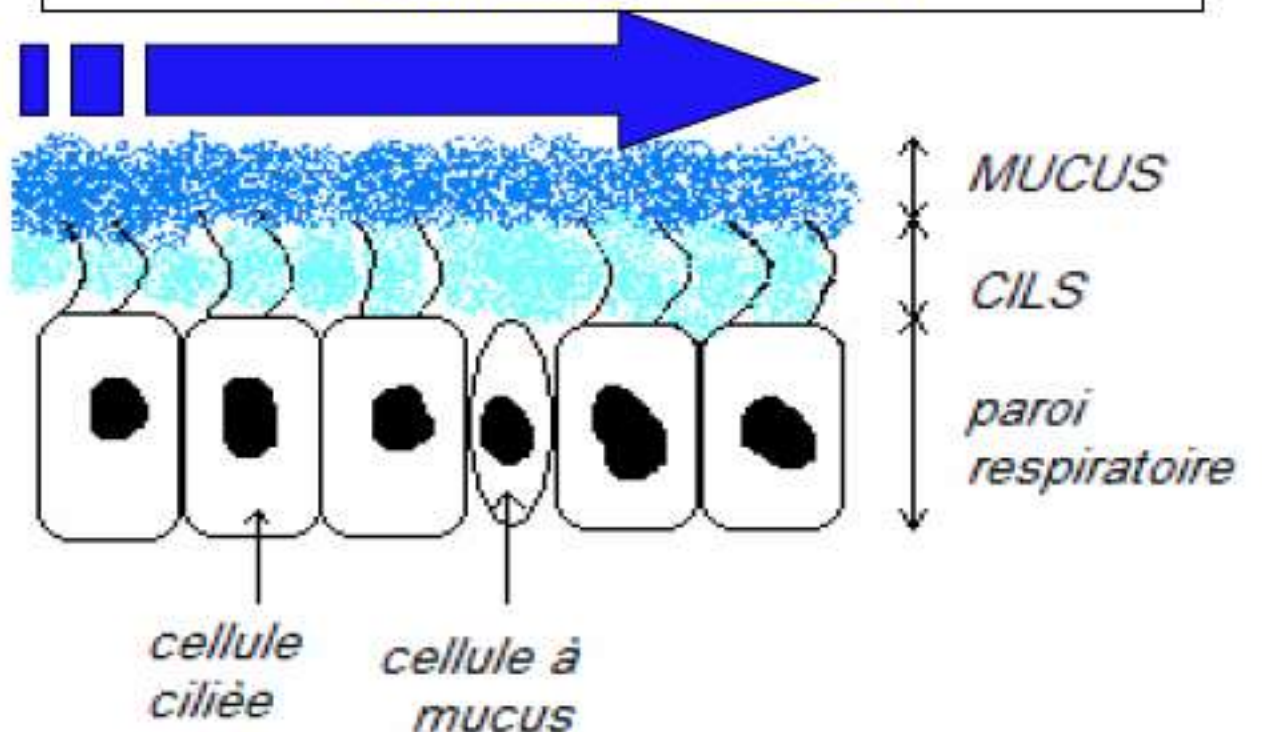
Anastomose bronchique



Dyskinésie ciliaire



LE MUCUS PROGRESSE VERS L'EXTERIEUR GRACE
AU BATTEMENT DES CILS



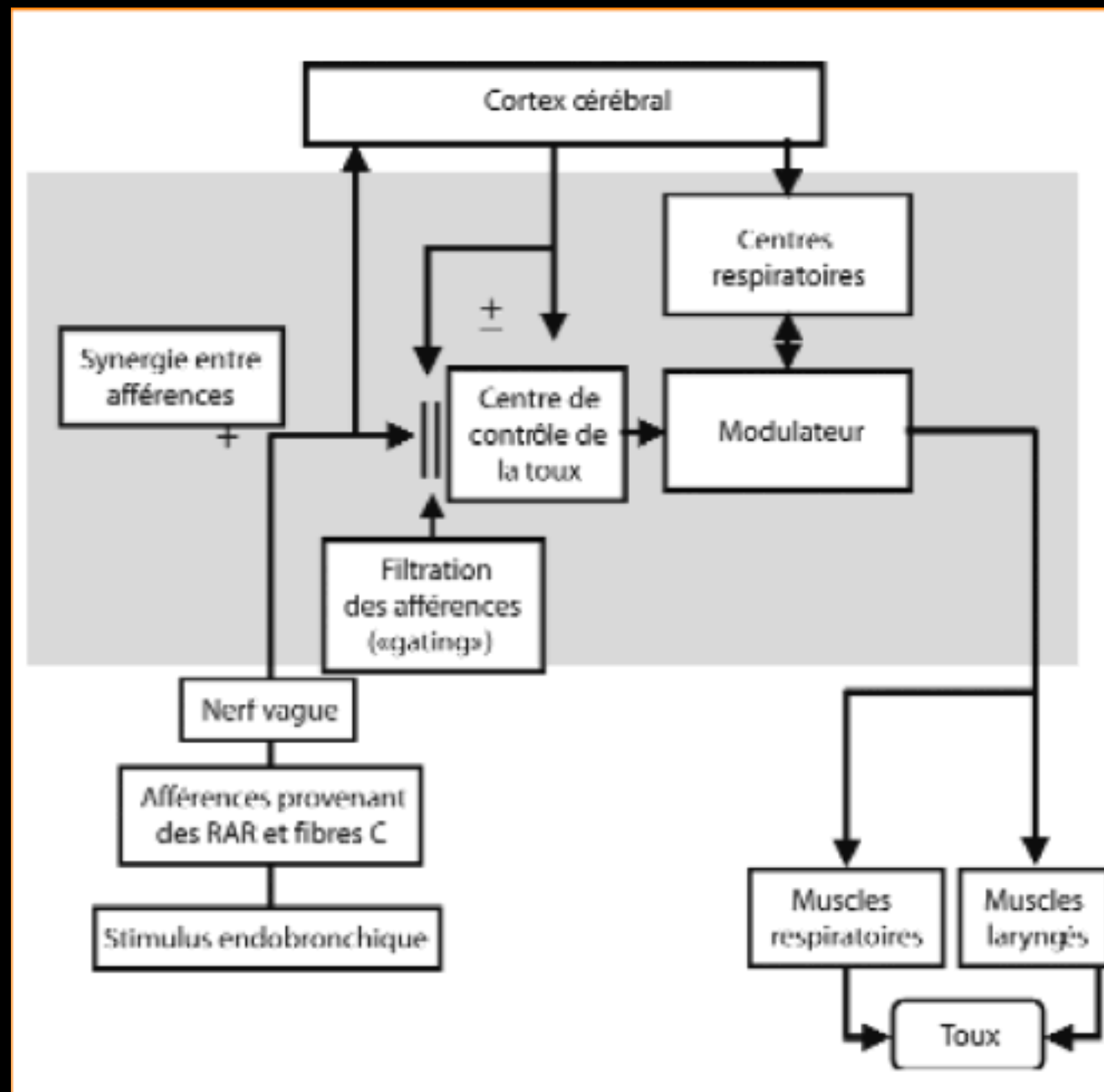
Aspiration post greffe sous fibroscopie



Sécrétions post greffe

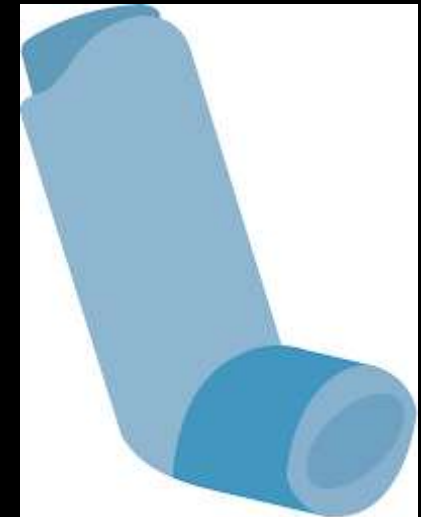


La toux



Les bronchodilatateurs anticholinergique ou parasymphaticolytique entraînent une relaxation des muscles lisses bronchiques, et donc une broncho dilatation des greffons.

Idem les bêta 2, l'adrénaline en aérosols



Involvement of Peripheral Airways during Methacholine-induced Bronchoconstriction after Lung Transplantation

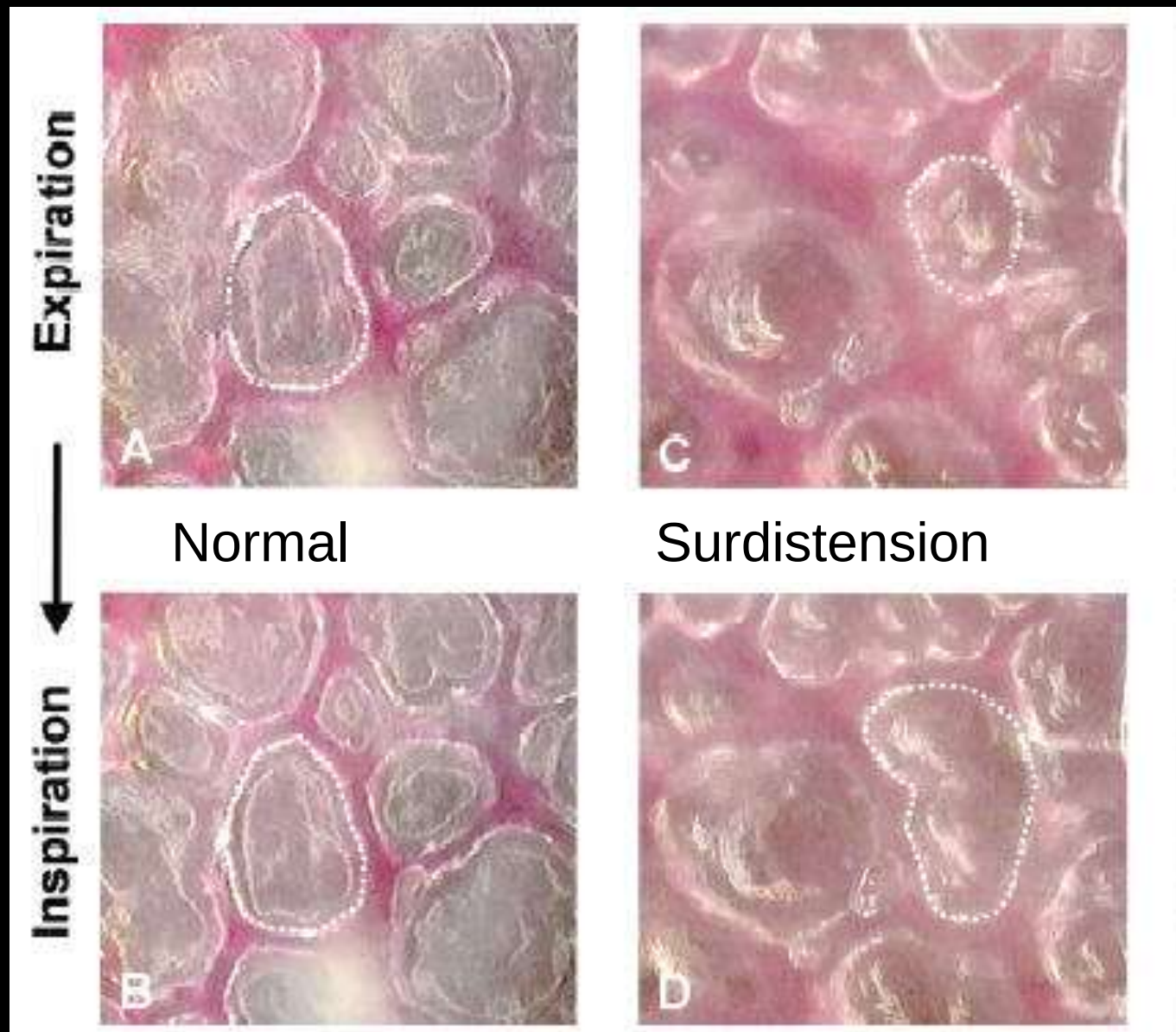
ALAIN VAN MUYLEM, MANUEL PAIVA, and MARC ESTENNE

Department of Chest Medicine, Erasme University Hospital, and Biomedical Physics Laboratory, Brussels School of Medicine, Brussels, Belgium

Am J Respir Crit Care Med Vol 164. pp 1200–1203, 2001

Hyperréactivité bronchique distale et BOS précoce

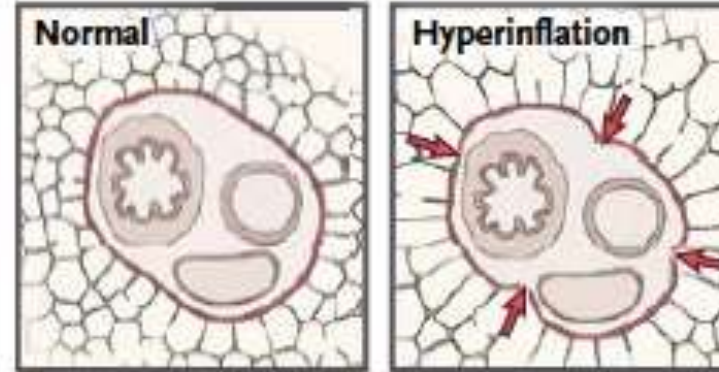
DYNAMIQUE ALVÉOLAIRE



Lésions Ruptures



B Ventilation at high lung volume

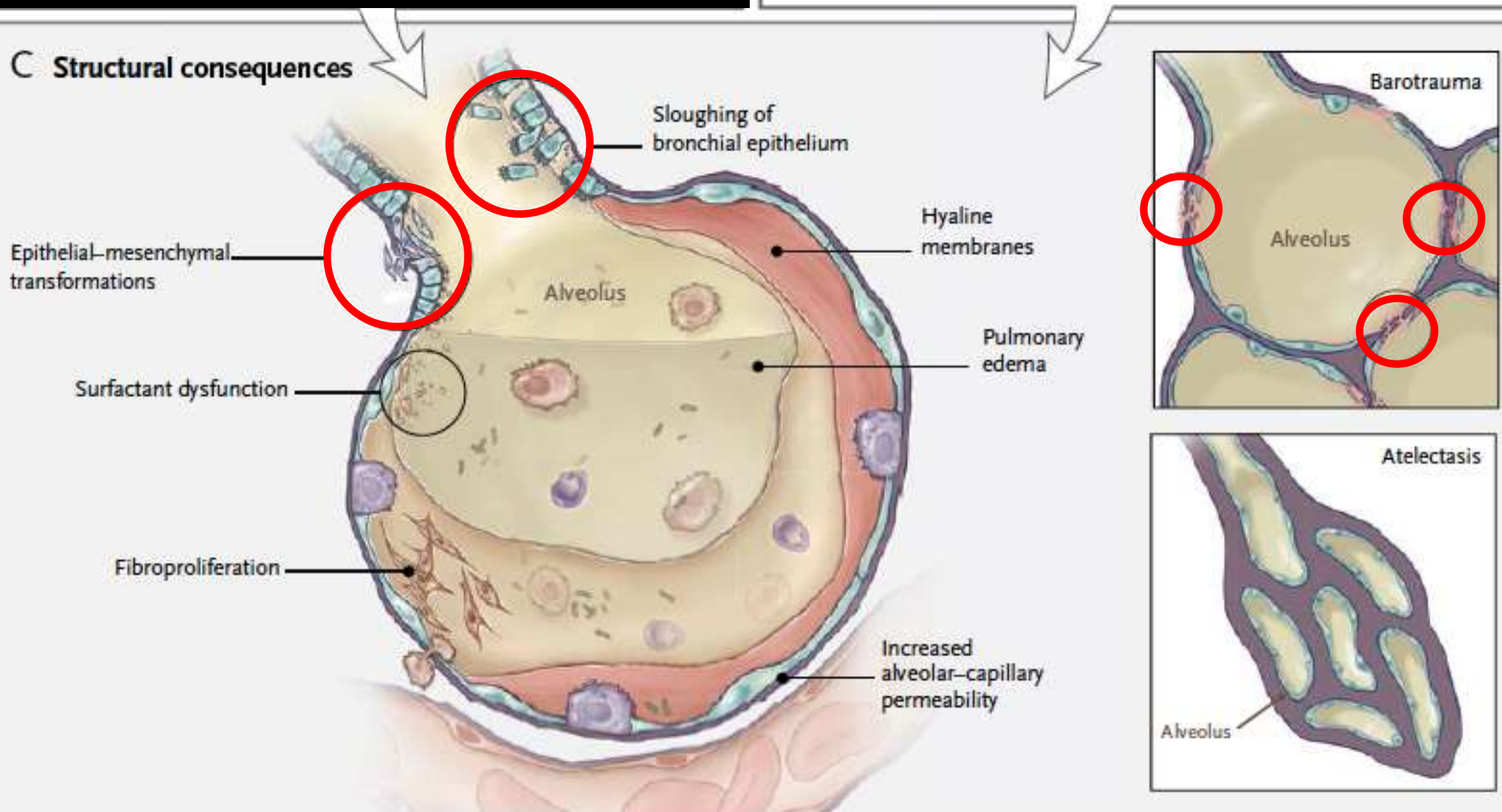


Air leaks

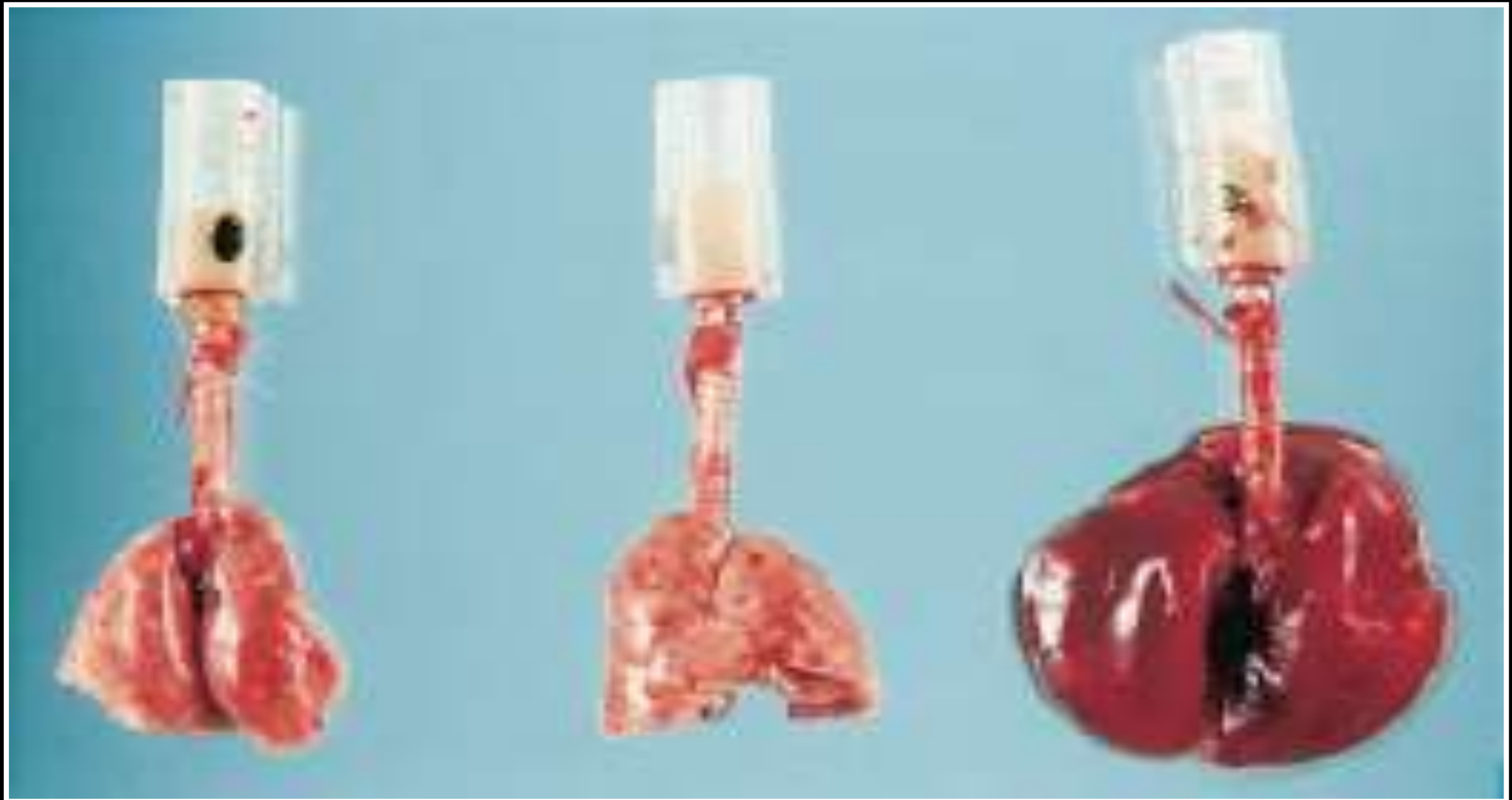


Overdistention

C Structural consequences



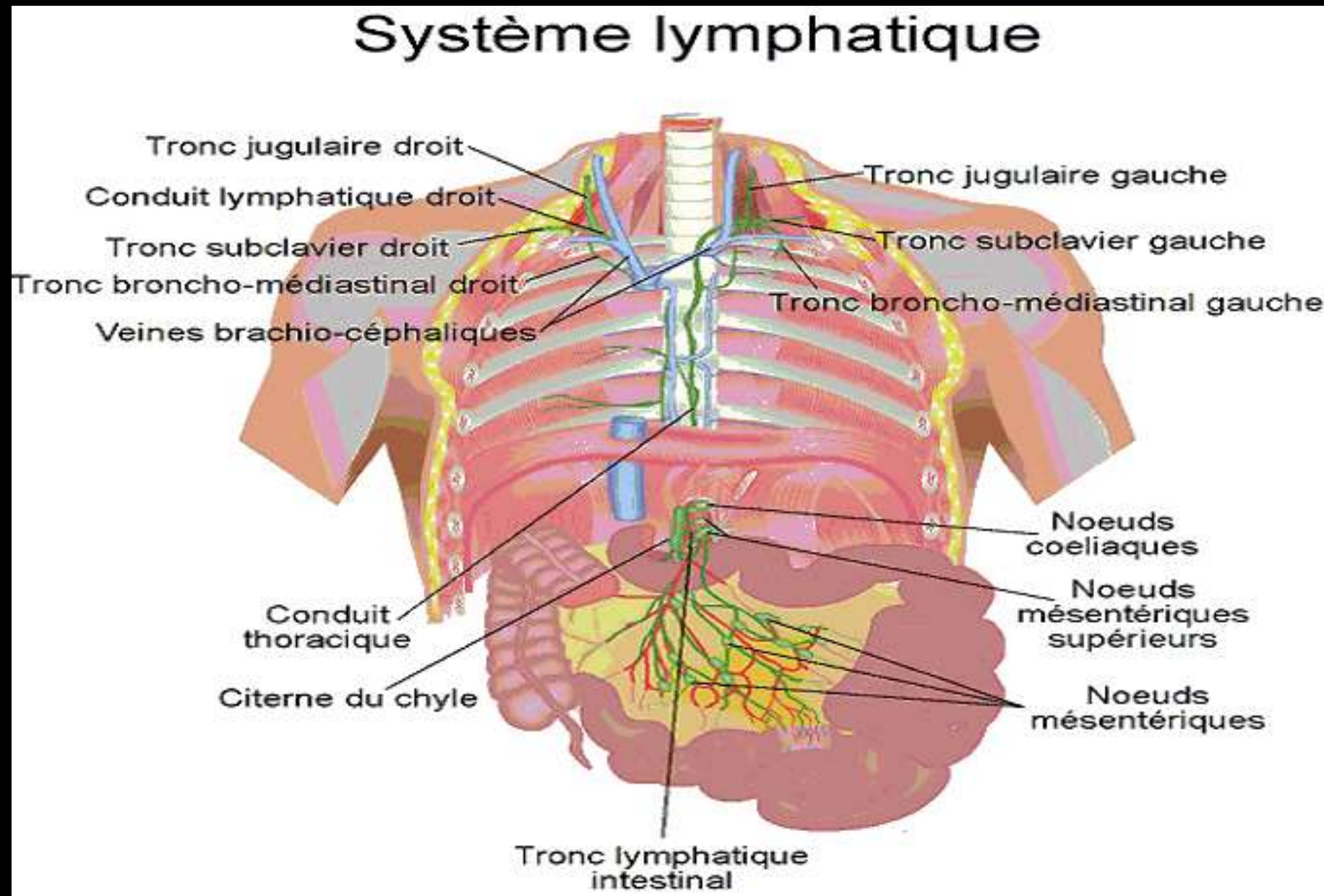
Lésions de ventilation mécanique



[Dreyfuss D, Saumon G](#)

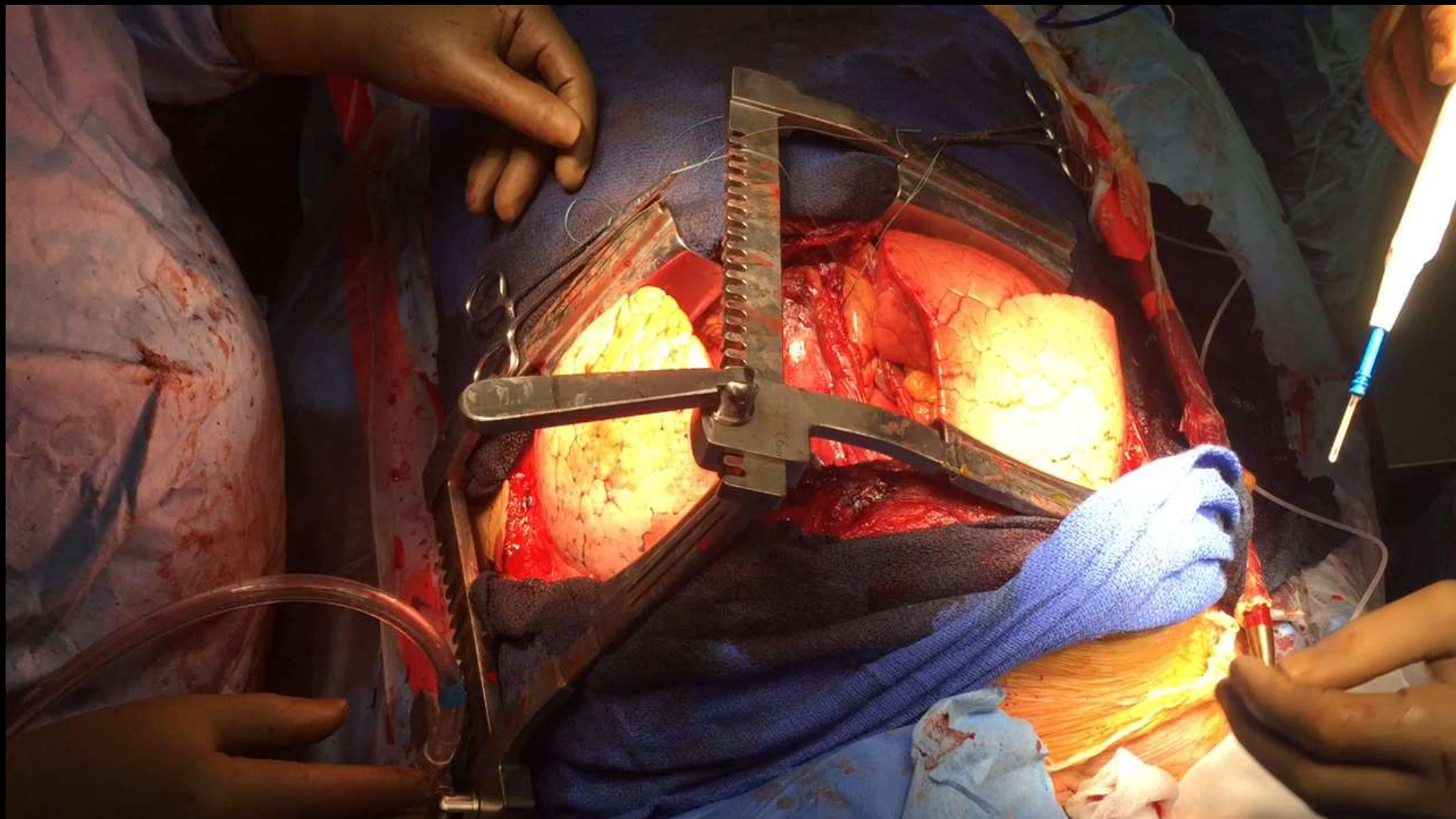
Ventilator-induced lung injury: lessons from experimental studies.
Am J Respir Crit Care Med. 1998 ;157:294-323. Review.

Systeme lymphatique

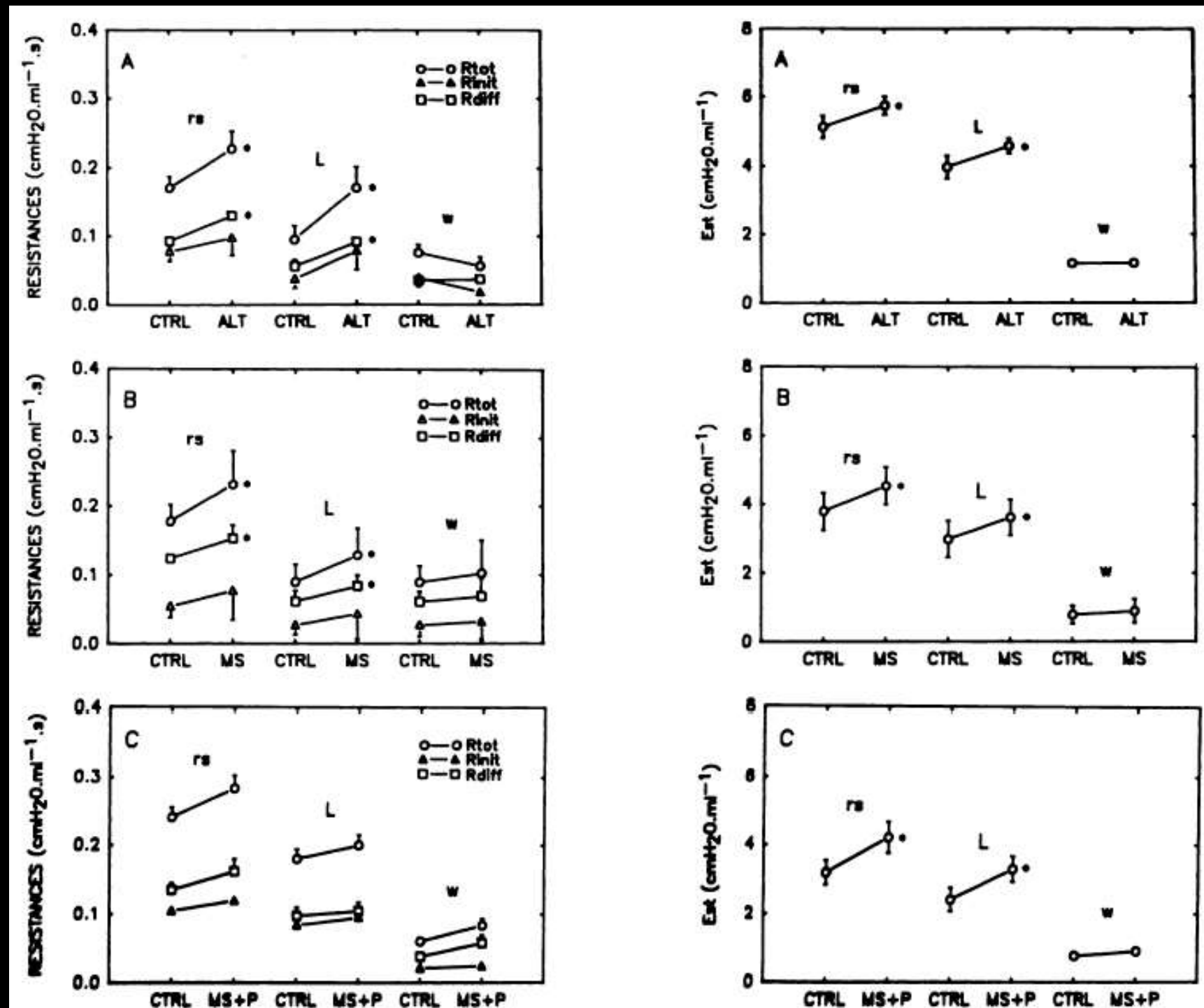


Résorption de l'odeme plus longue

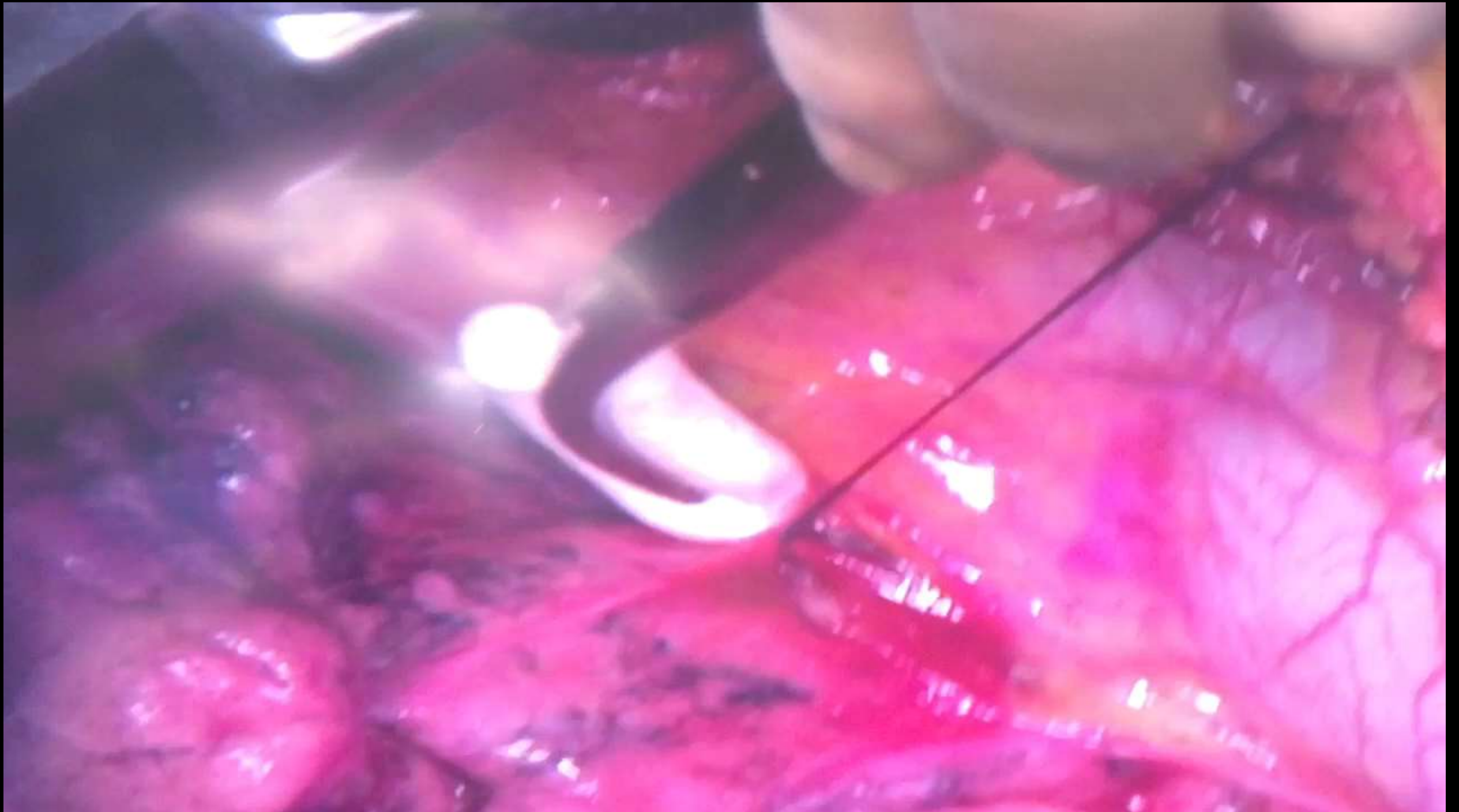
Effets de l'incision



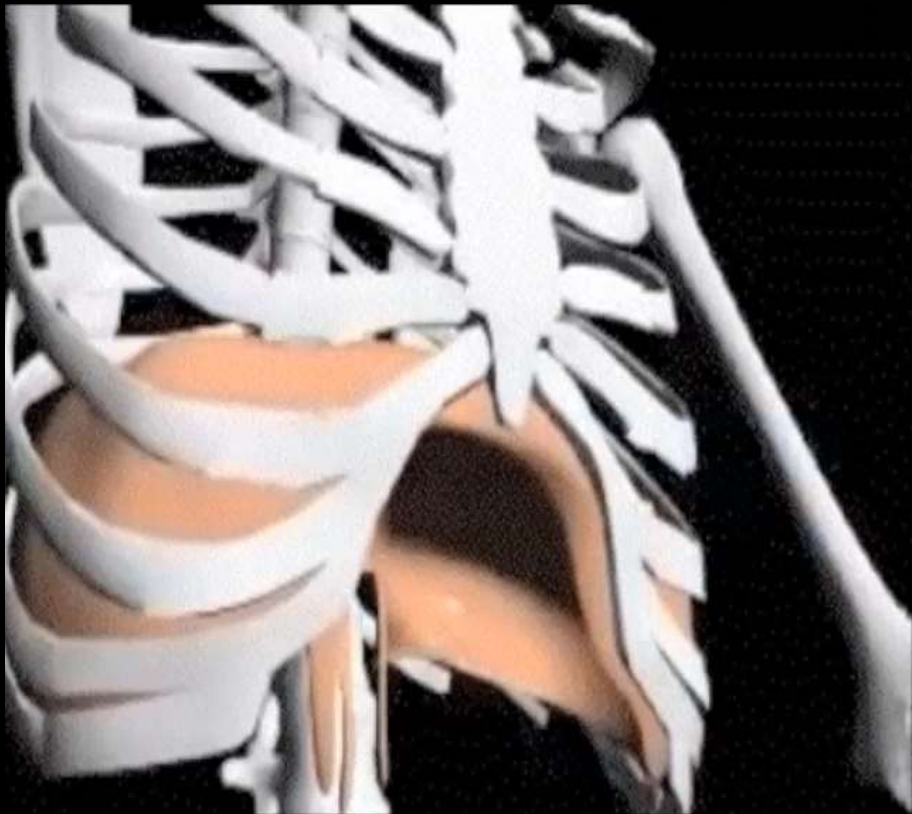
Sterno/thoraco/Clampshell



Nerf phrénique



Dysfonction Diaphragmatiq

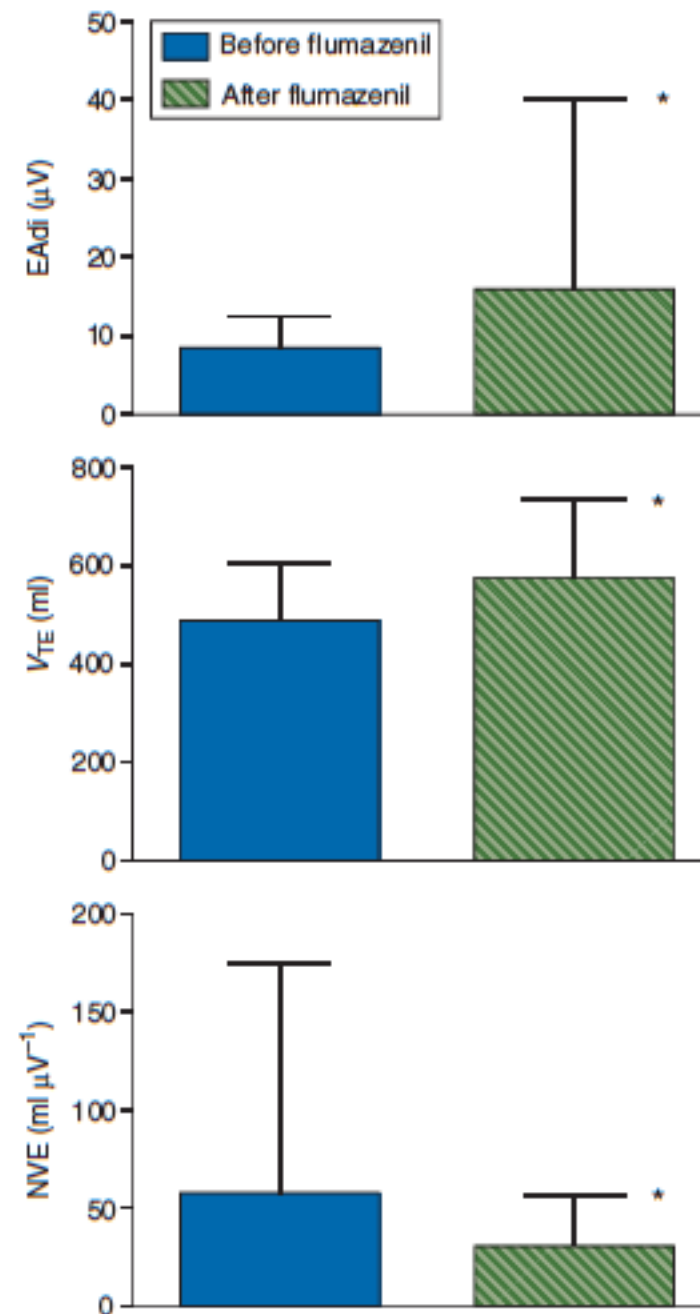


Effect of flumazenil on diaphragm electrical activation during weaning from mechanical ventilation after acute respiratory distress syndrome

H. Rozé^{1,2,3*}, A. Germain¹, V. Perrier¹, A. Dewitte^{1,4}, O. Joannes-Boyau¹, C. Fleureau¹ and A. Ouattara^{1,2,3}

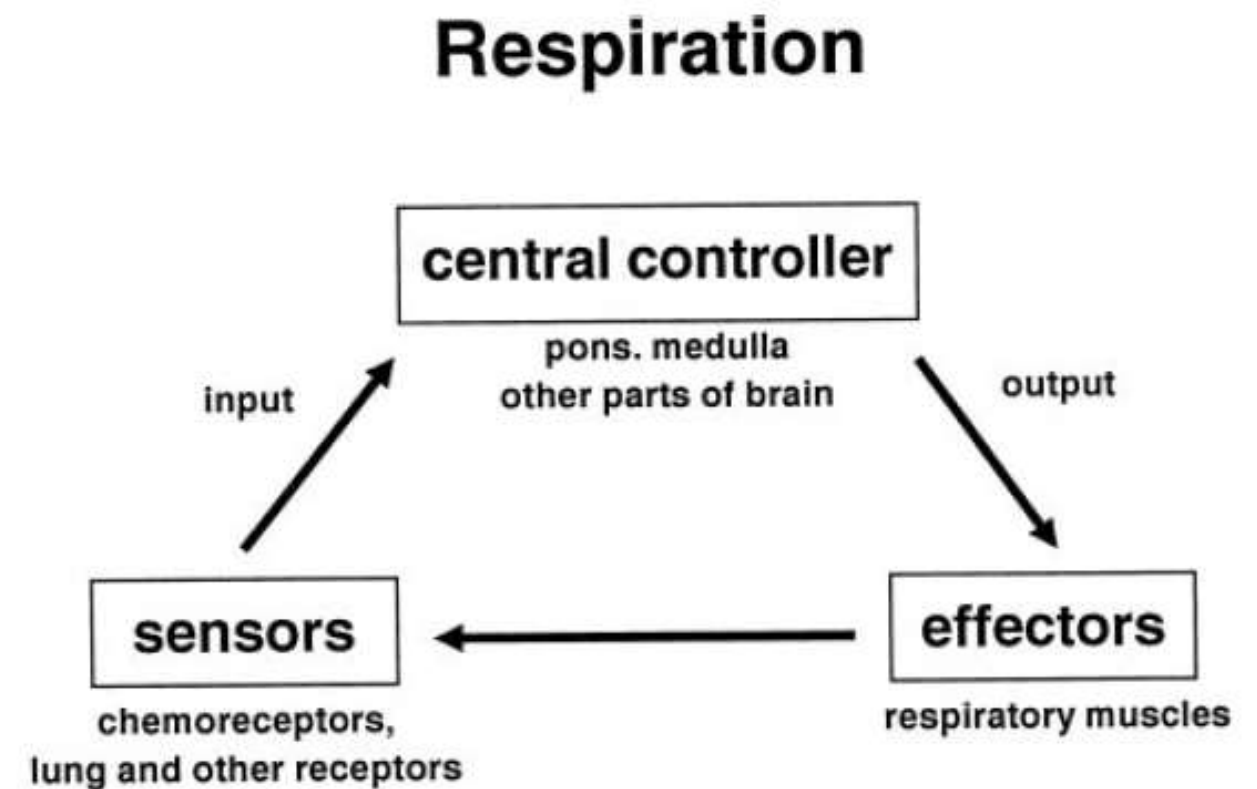
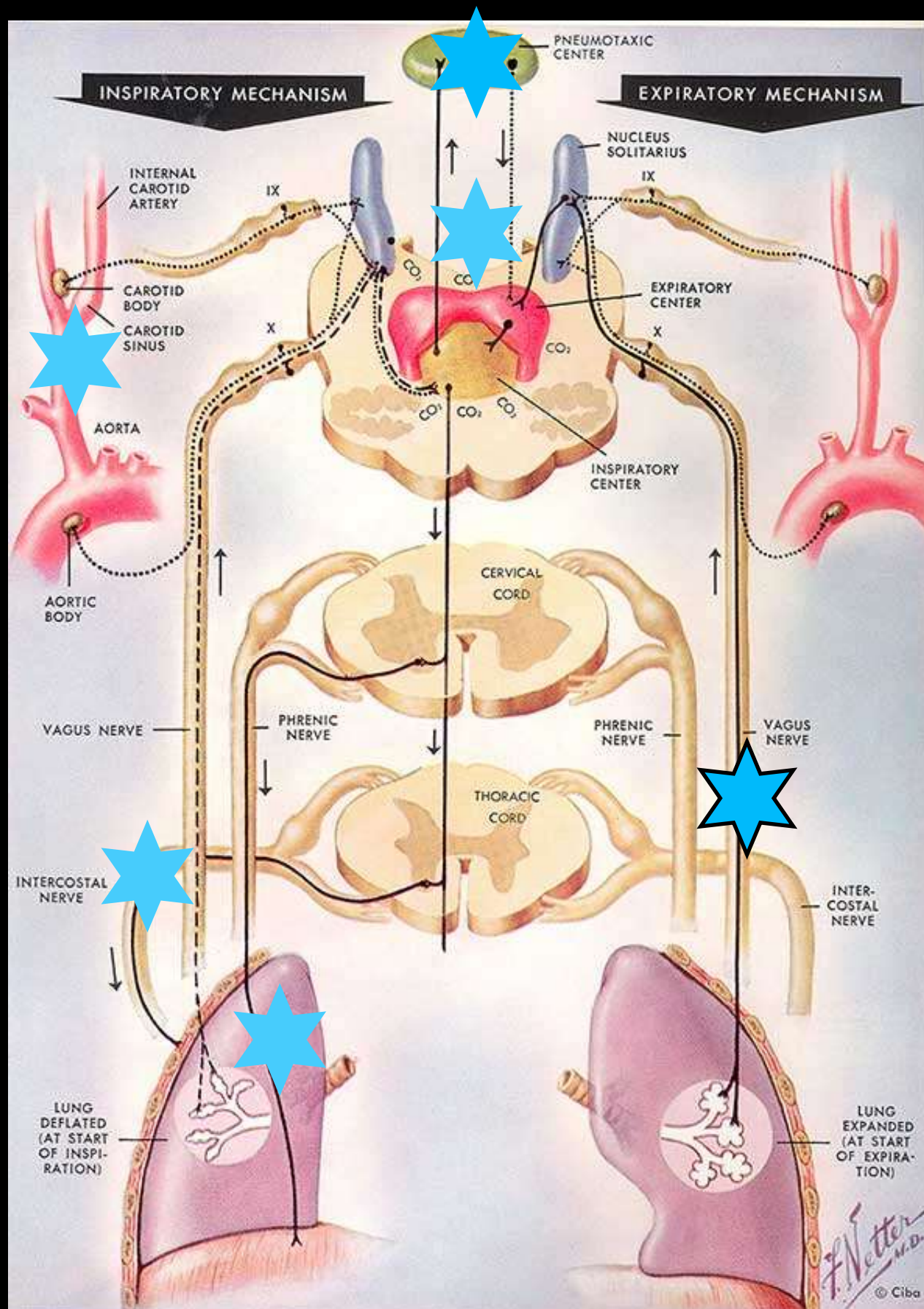


Sédation et Inhibition De la contraction diaphragmatique



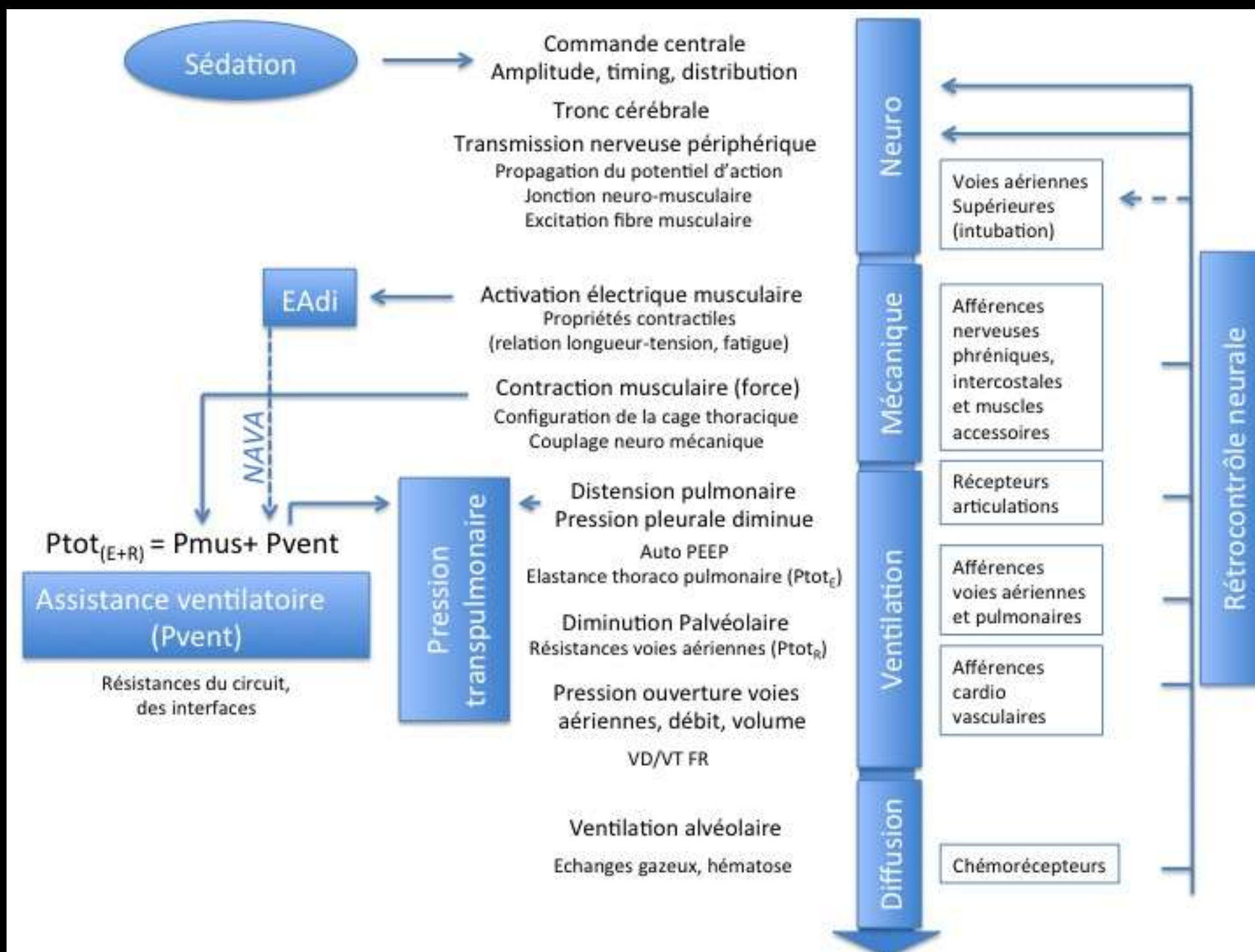
Innervation

Contrôle ventilatoire

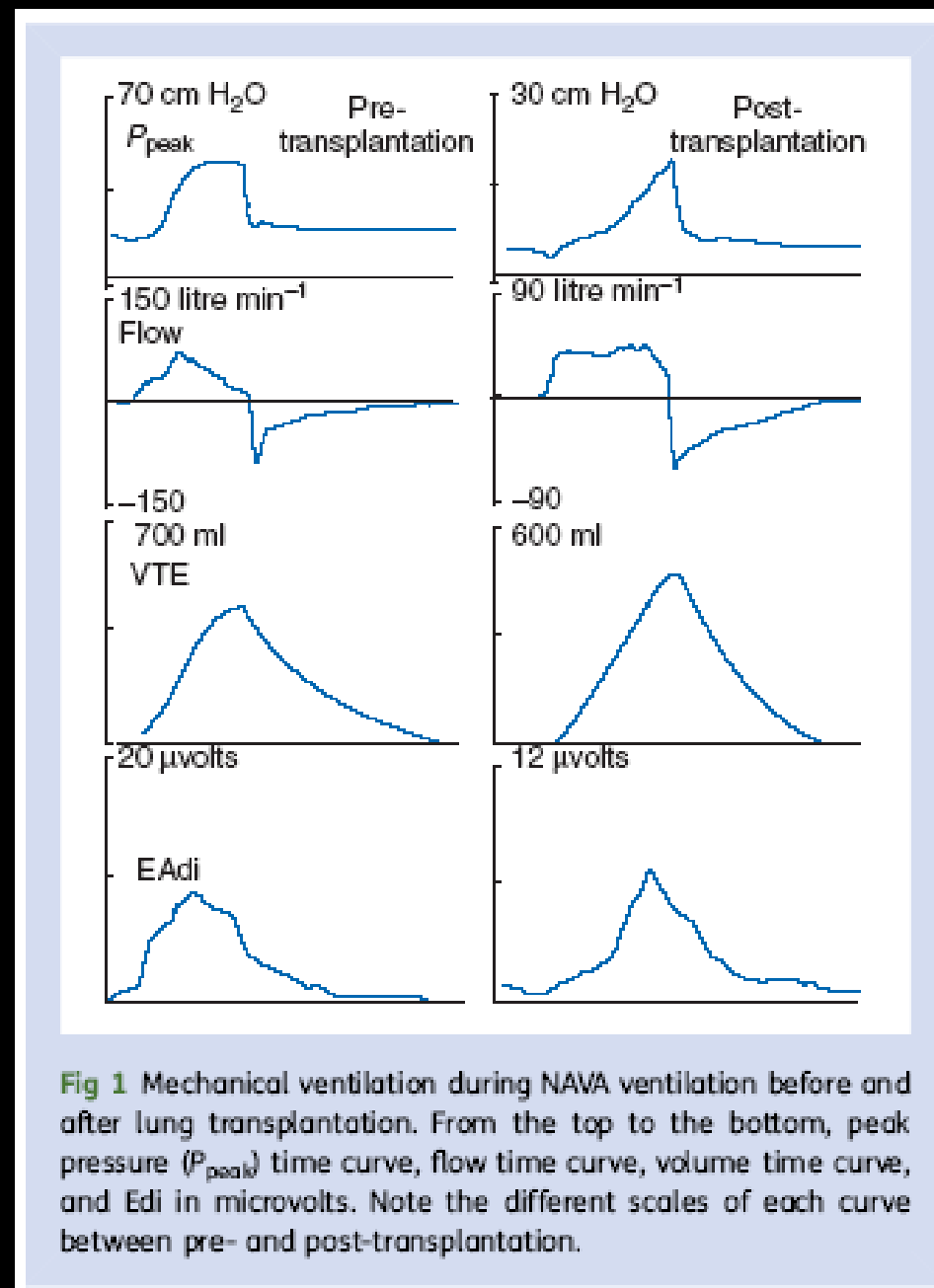


CHEST 2000; 117:205-225

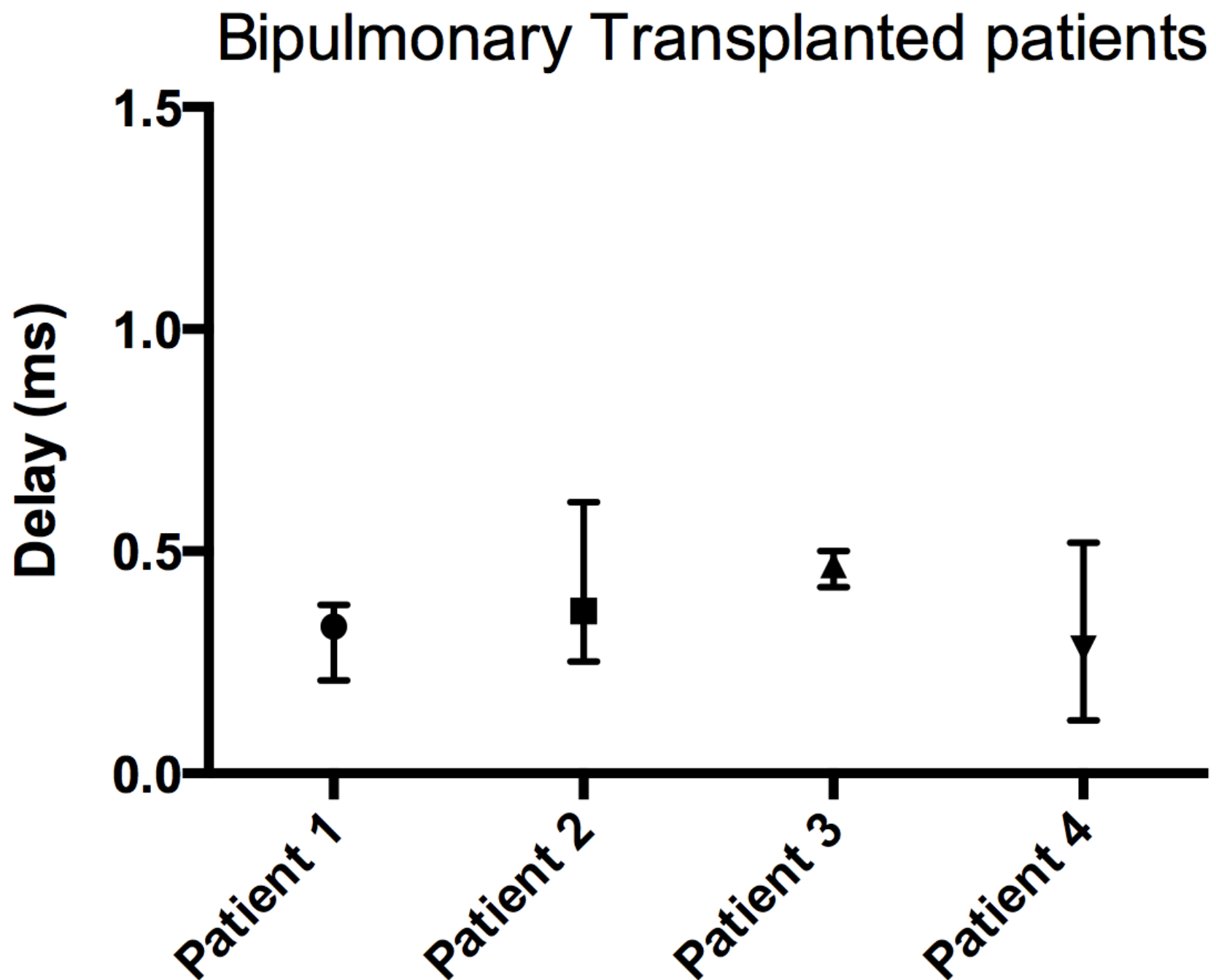
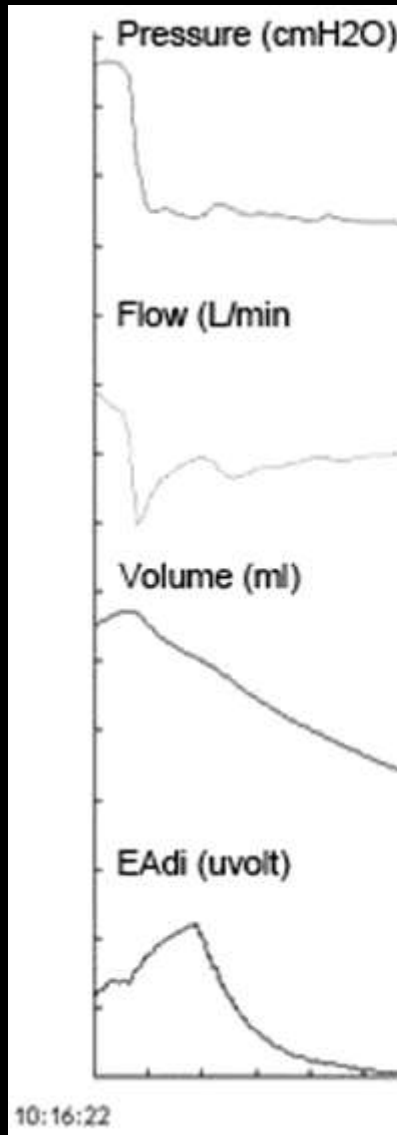
Acidose respiratoire
post opératoire



Commande avant/après

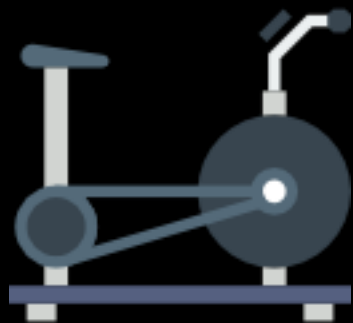


Muscles accessoires



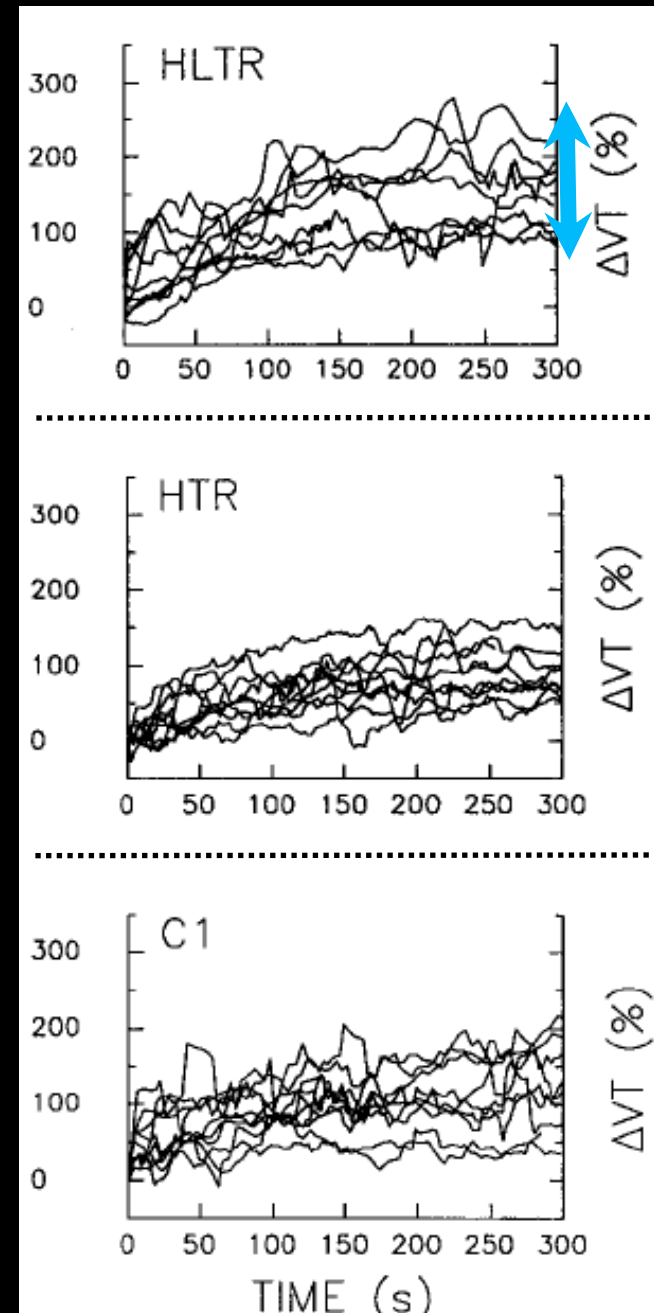
V_T pendant l'exercice après transplantation

Cardio
pulmonar



Cardiac

Control



Frequency of mechanical ventilation and respiratory activity after double lung transplantation

F. Lofaso^{a,1}, G. Simonneau^a, F. Le Roy Ladurie^b, J. Cerrina^b, A. Chapelier^b, F. Brenot^a, P. Darteville^b and P. Herve^b

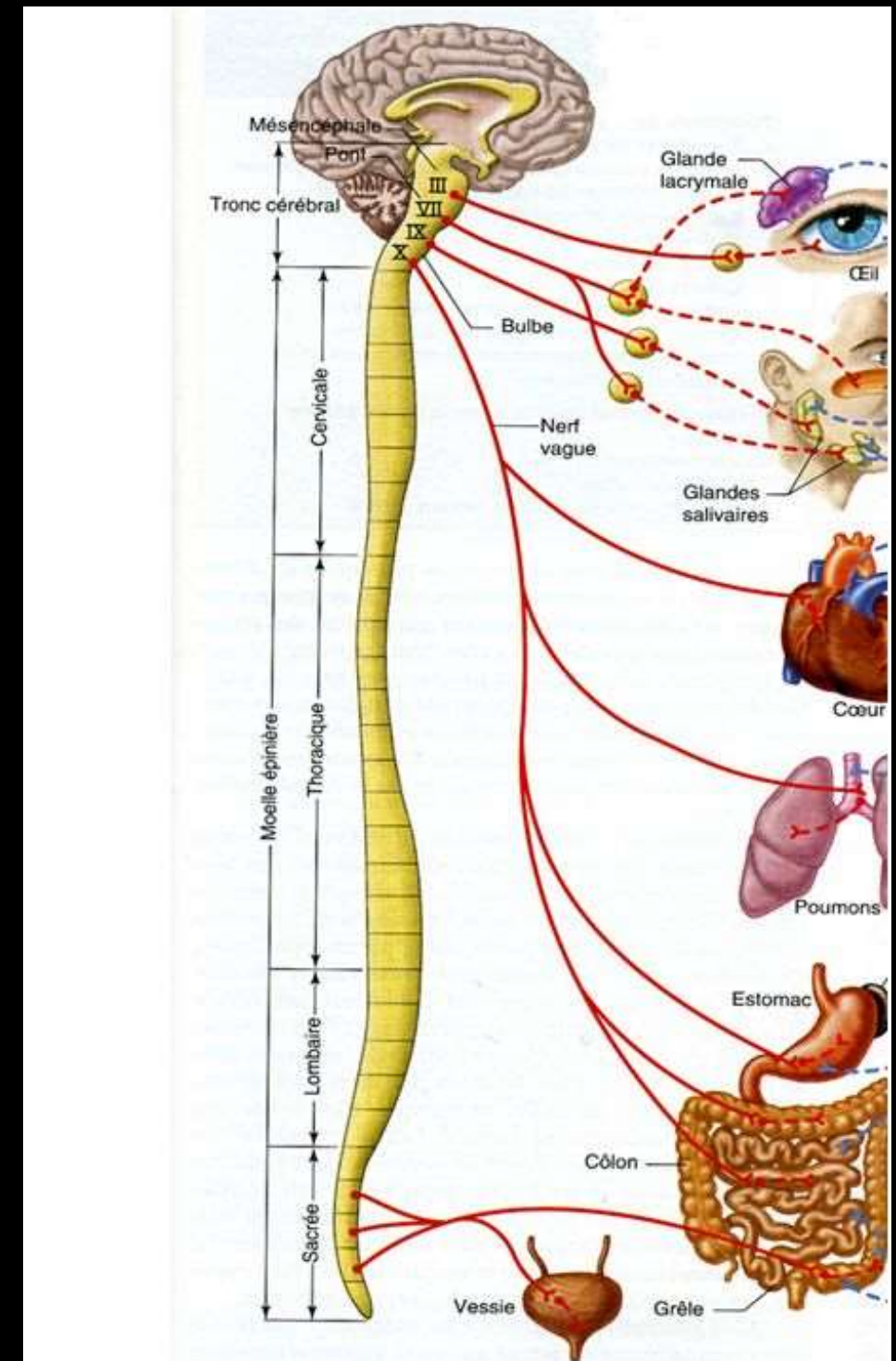
Vagotomie / Reflexe de Herring Brauer

In studies of the effects of exercise in transplant patients (Sciurba *et al.*, 1988), control of breathing was affected in the same way as in normal subjects with anesthetized airways: transplant patients had an appropriate level of ventilation with a disproportionate increase in tidal volume. This suggests that intrapulmonary receptors are important in regulating the pattern of ventilation during stress conditions.

Abdomen



- Gastroparésie, nerfs vague
- Mucoviscidose, diarrhées,
Diabète, ATB, RGO,
Hernie hiatale
- SNG en aspiration parfois



ORL



- Sinusite
- Polypose naso sinusienne
 - ✓ Interfaces en VNI post op (masque nasal)



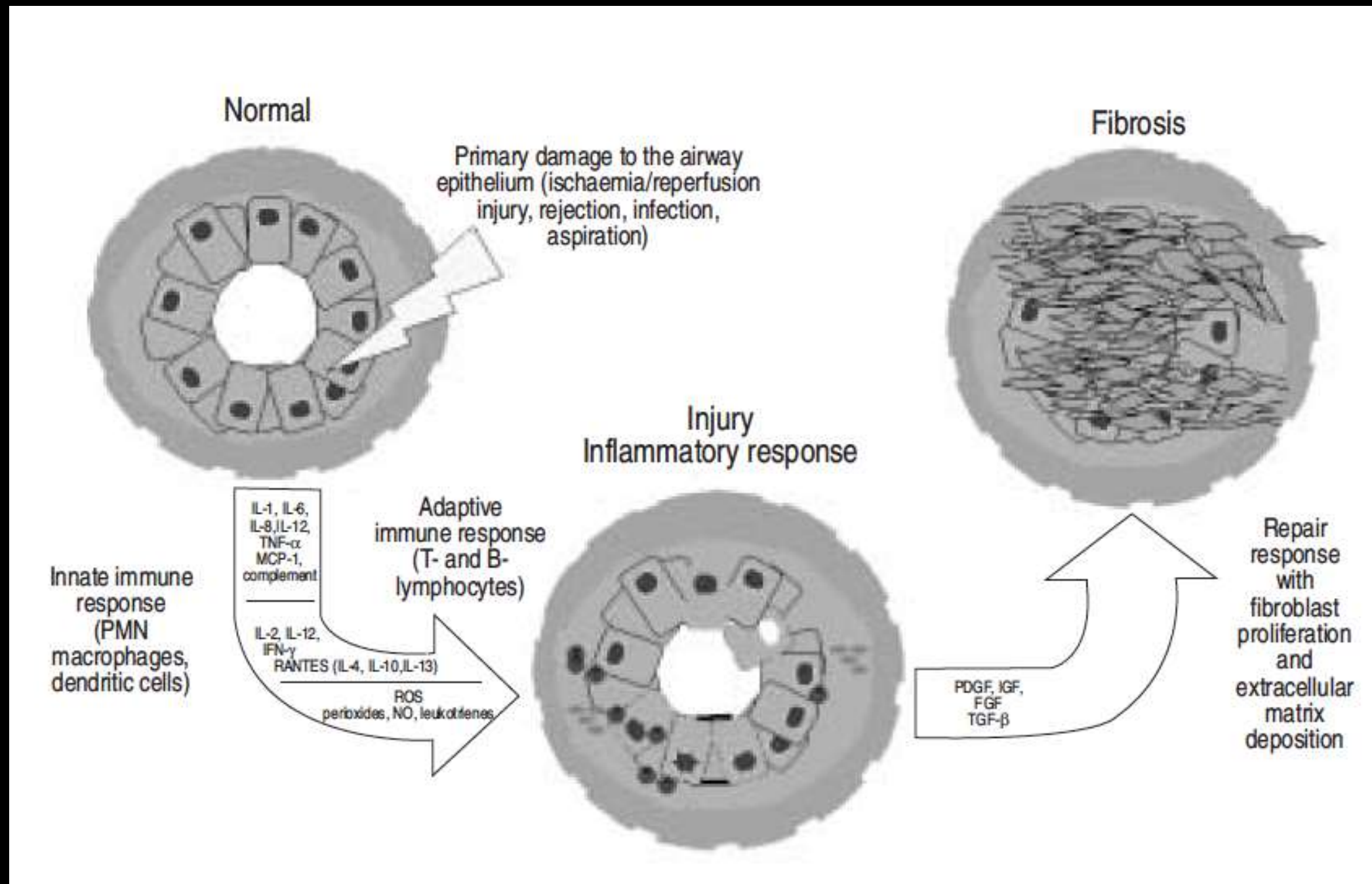
Respiratory Failure After Lung Transplantation*

Wissam M. Chatila, MD, FCCP; Satoshi Furukawa, MD; John P. Gaughan, PhD; and Gerard J. Criner, MD, FCCP

- Dysfonction primaire des greffons
- Infections Virales/Bacteries/Fongiques
...
- Rejets aigus / chroniques (CLAD)
obstructifs (BOS) et/ou restrictif (RAS)

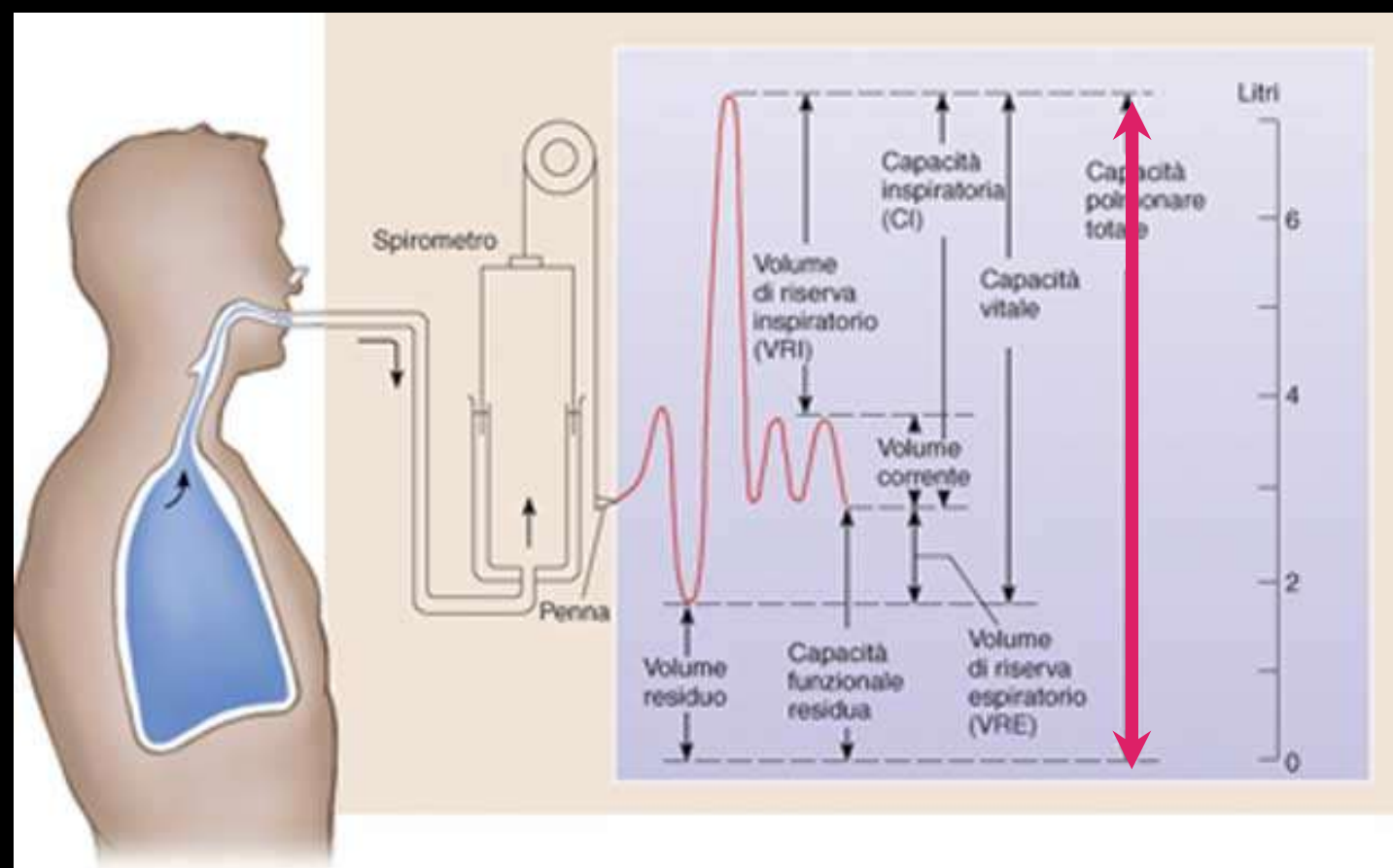
Post-transplant bronchiolitis obliterans

A. Boehler*, M. Estenne[#]

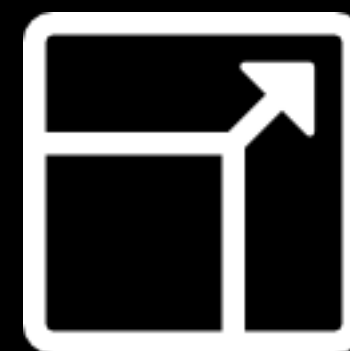




Quel Volume courant cible
en ventilation assistée
après transplantation pulmonaire ?



Mismatch



20%

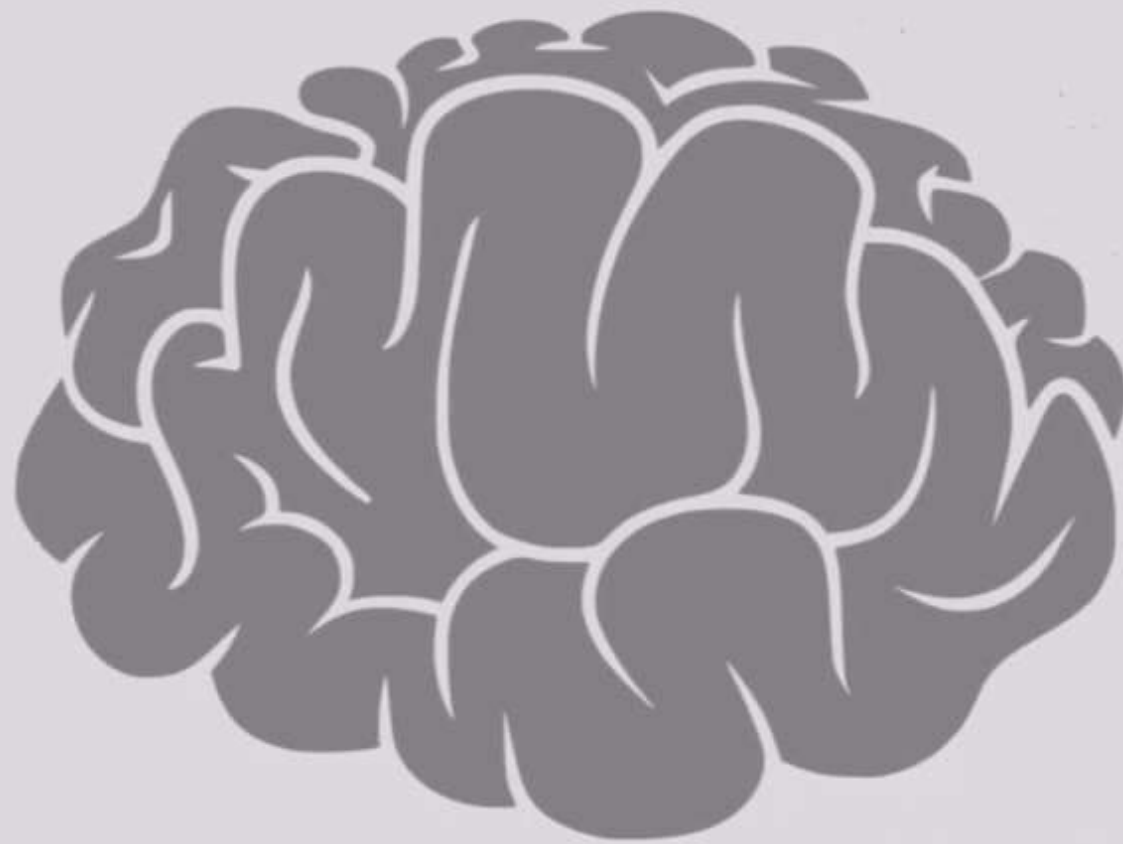
CPT en fonction de la taille et du sexe

VT & CPT

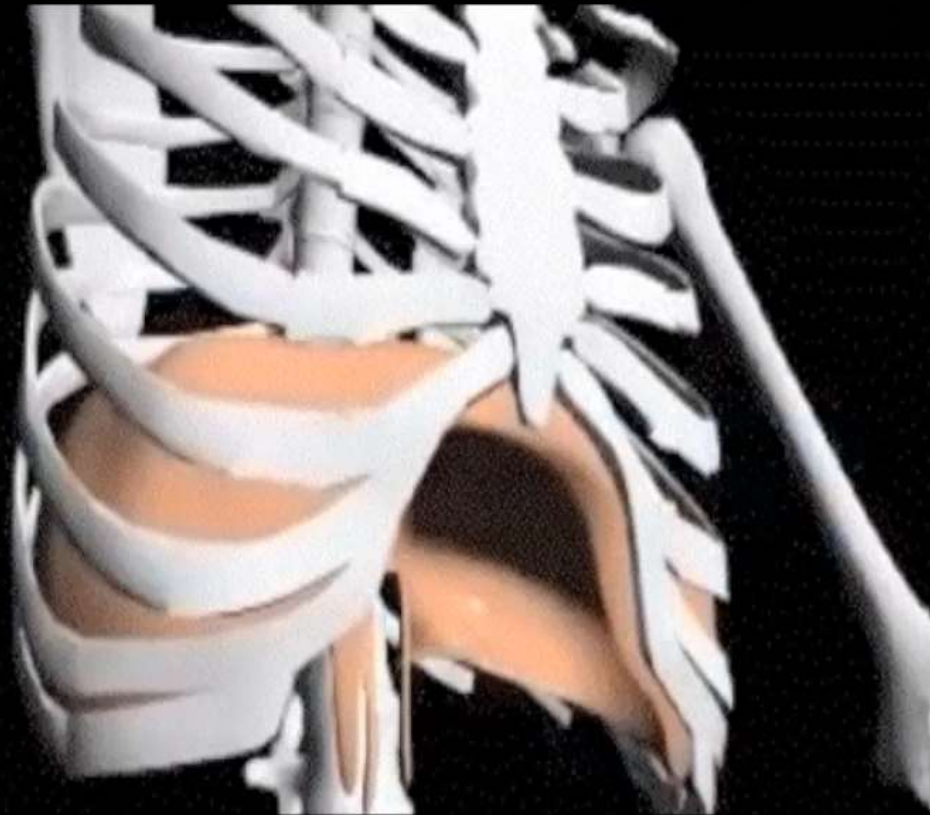
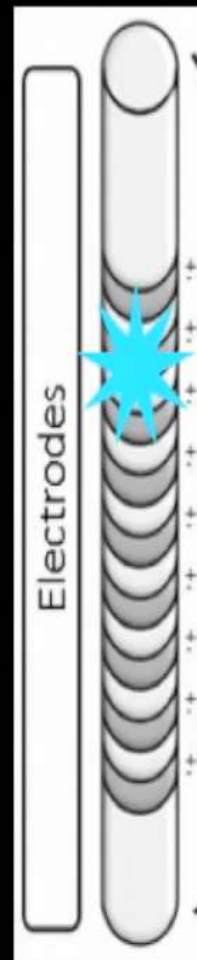
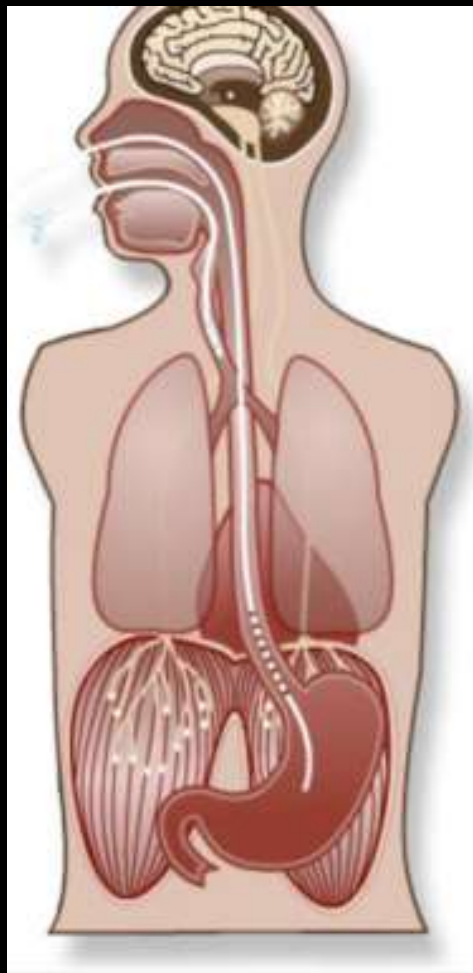


<u>Etiology</u>	Age	<u>Height (cm)</u>
PF	55	180
PF	58	162
COPD	62	158
CF	33	157
COPD	56	157
CF	26	182
CF	26	170
PF	59	180
CF	22	155
COPD	51	174
PF	62	147
COPD*	62	158
PF	49	160
PF	35	171
<u>Mean or Median</u>	47	168
<u>SD or [25th75th]</u>	16	11

Ventilation neurologique



Ventilation neurologique





NAVA

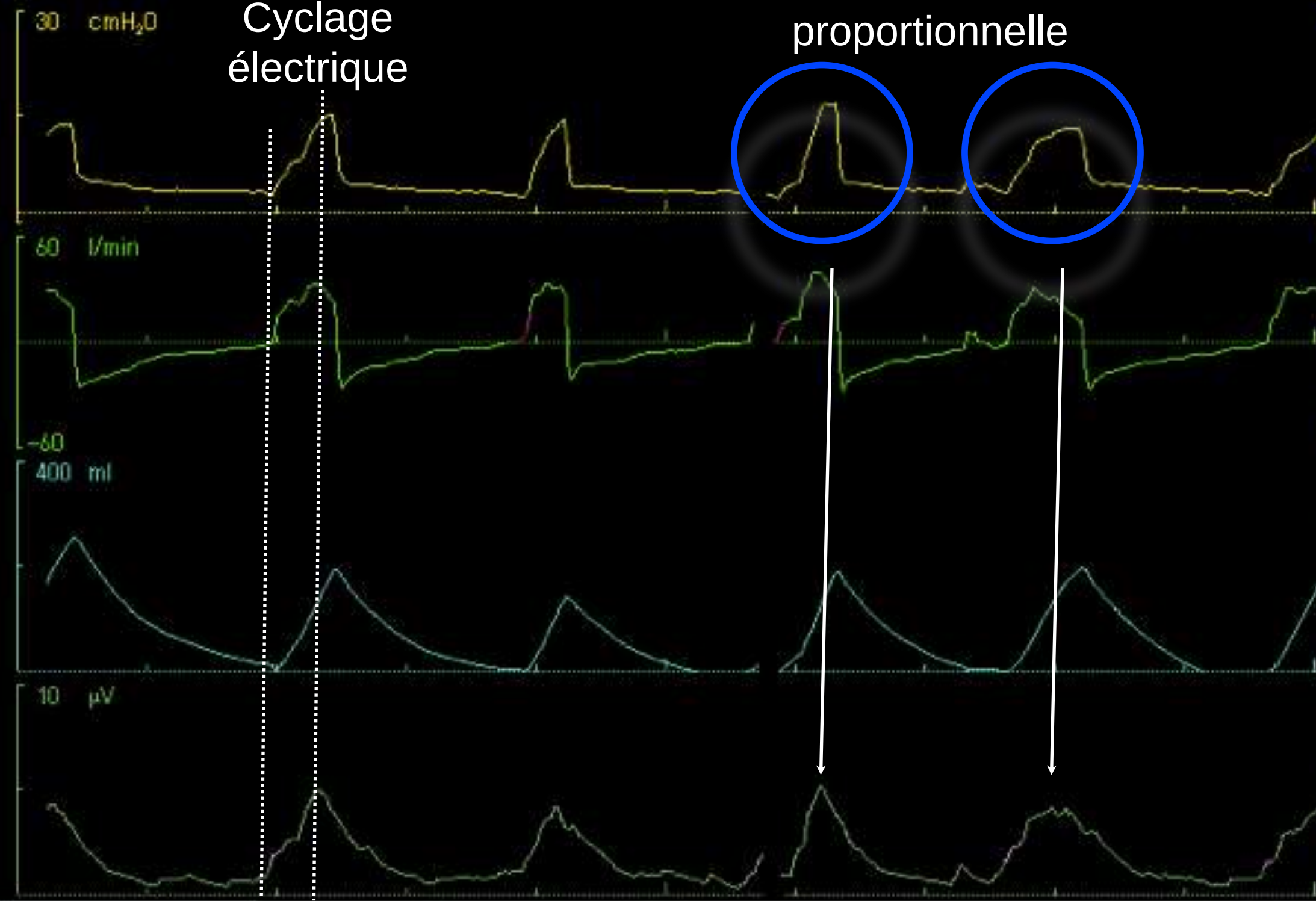
Nébuliseur

Etat
⊖

07/06 10:58

Cyclage
électrique

Aide
proportionnelle



Pcrête (cmH₂O) **14** 45
PEP (cmH₂O) **3**
F resp. (resp./min) **29** 30
O₂ (%) **50**
Ti/Ttot **0.26**
VMe (l/min) **9.3** 15.0 5.0
Vc insp. (ml) **142**
Vc exp. (ml) **189**
Edi max (µV) **4.2**
Edi min (µV) **0.5**

Autres
réglages

Conc. d'O₂ **50** %
PEP **3** cmH₂O

Niveau NAVA **2.7** cmH₂O/µV

Autres
valeurs

SBT

PSV 7/0

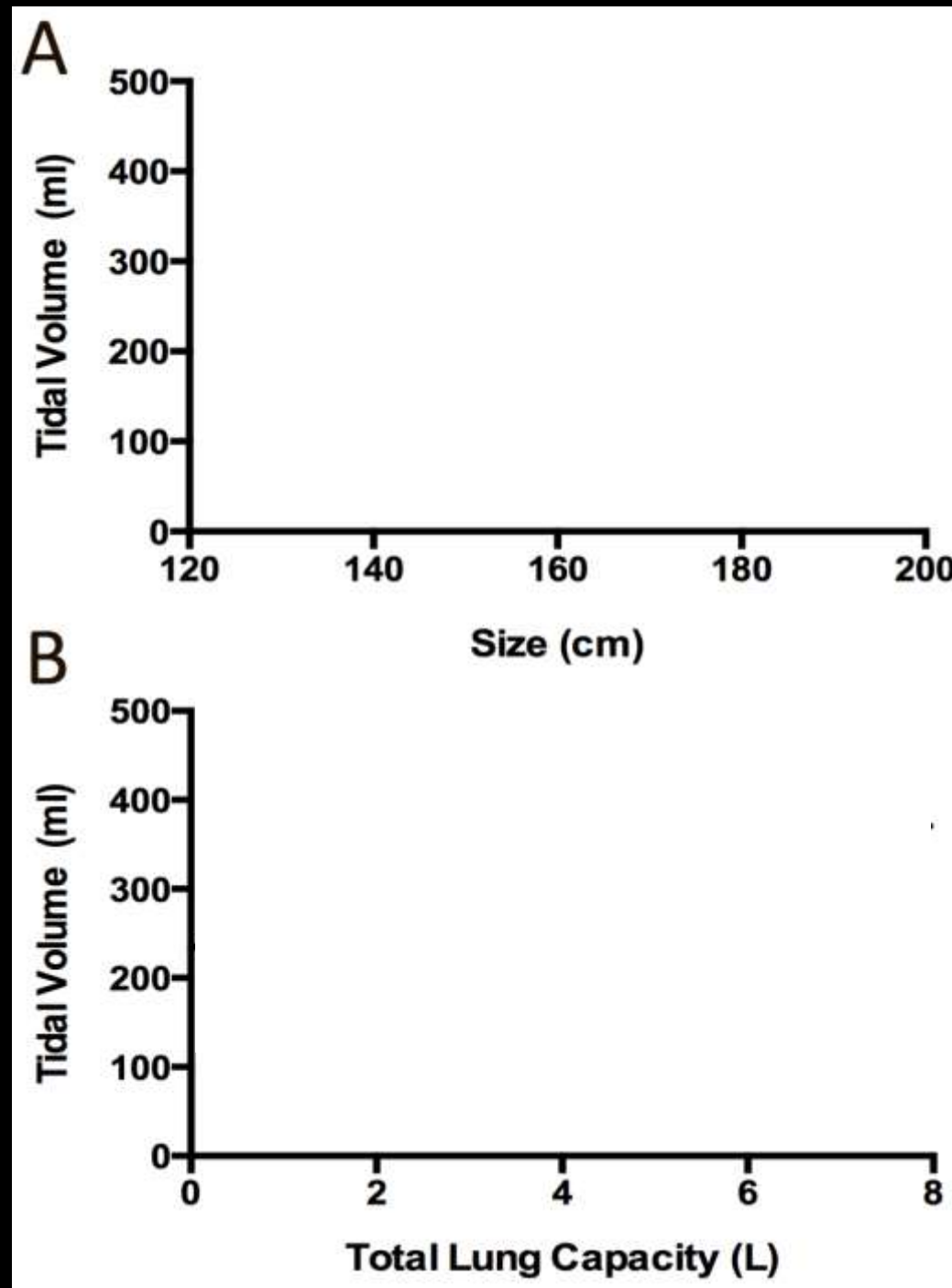
$$EAdi_{NAVA} = 60\% EAdi_{PSV\ 7/0}$$

NAVA

Niveau NAVA



NAVA



<u>Etiology</u>	Age	<u>Height (cm)</u>
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$$V_T (ml) = 217 + 20 \times TLC (L).$$

CONCLUSION

- Spécificités bronchiques bronchoapsirations, reflexe de toux
- Dévascularisation suspendue
- Dénervation: système parasympathique via nerf vague
- CPT et VT
- Spécificité de l'IRA post transplantation: Infection/ Rejet aigu/Rejet chronique