

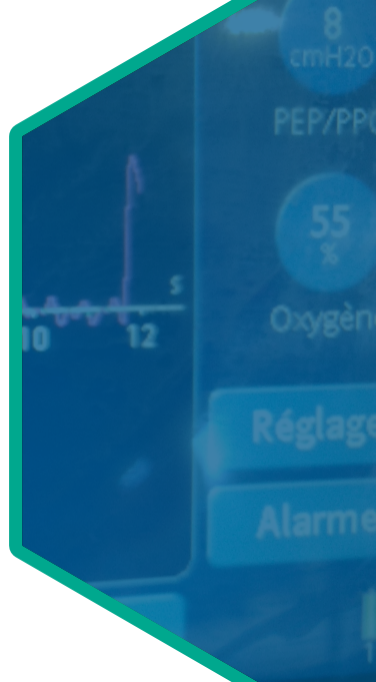
Faux positifs et faux négatifs

Failles de l'algorithme de déclenchement inspiratoire

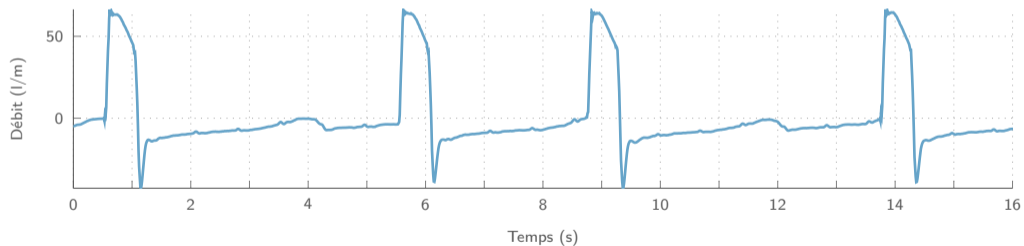
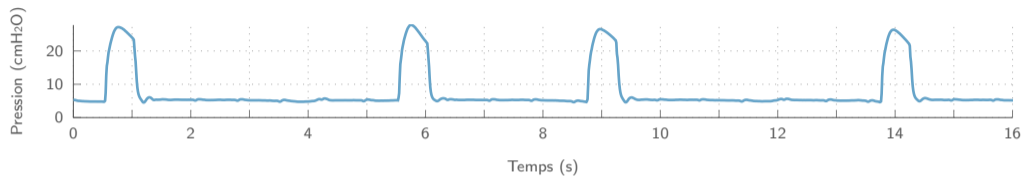
Nicolas Blais St-Laurent, inh

Service d'inhalothérapie générale
Centre hospitalier de l'Université de Montréal

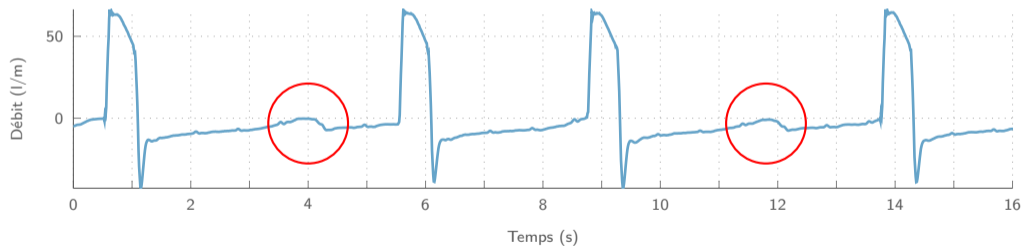
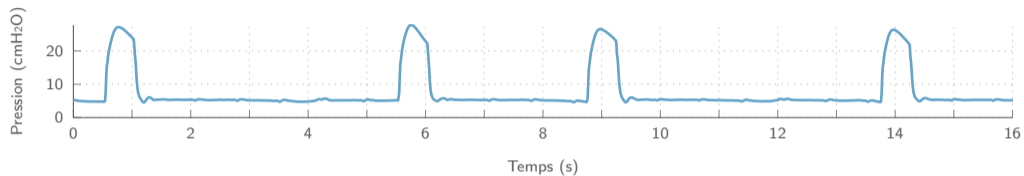
27 octobre 2021
4^e vague de COVID-19



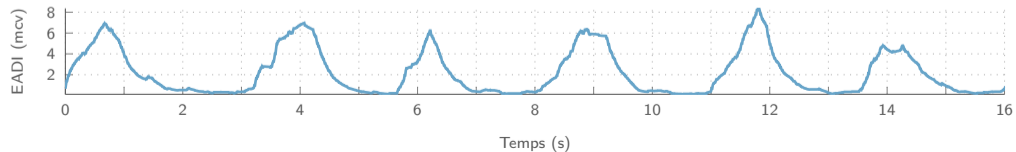
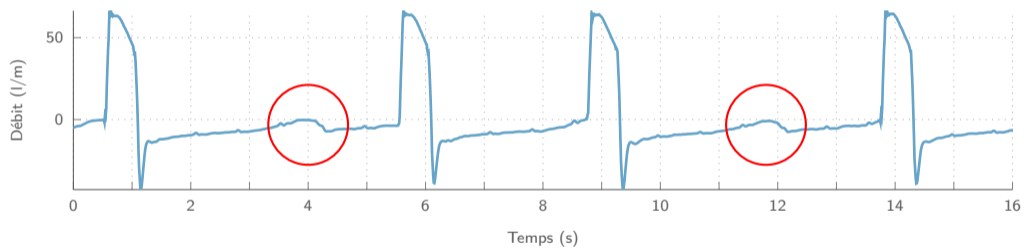
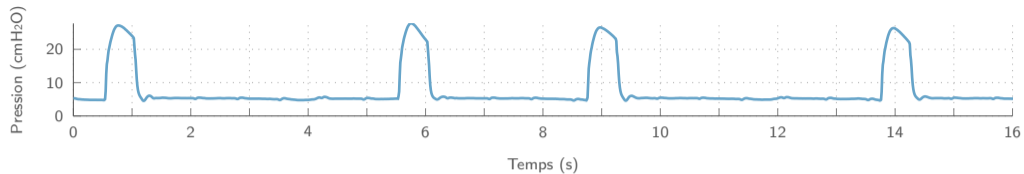
Qu'est-ce qui cloche ?



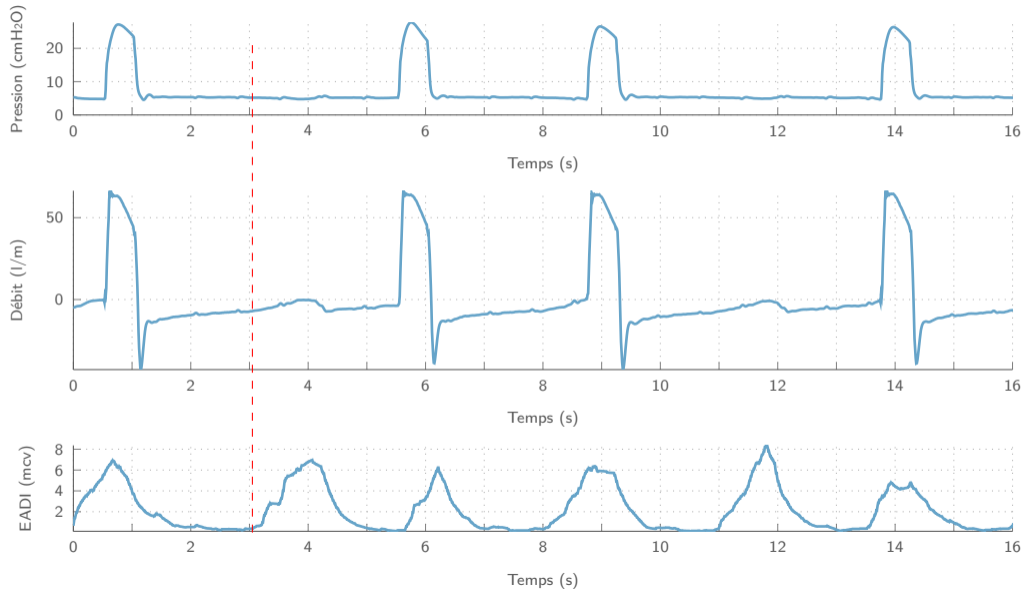
Qu'est-ce qui cloche ?



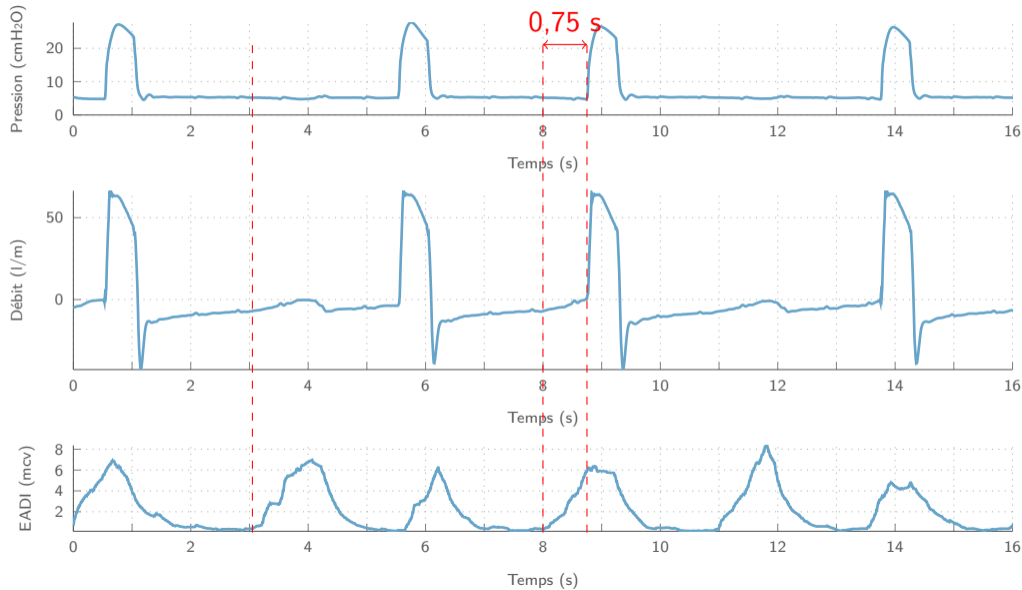
Qu'est-ce qui cloche ?



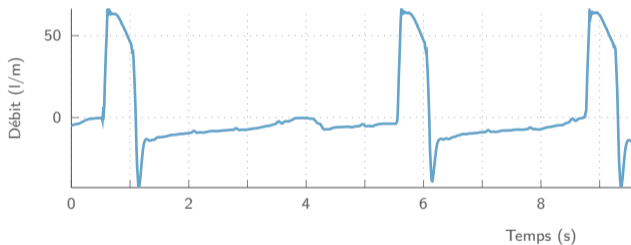
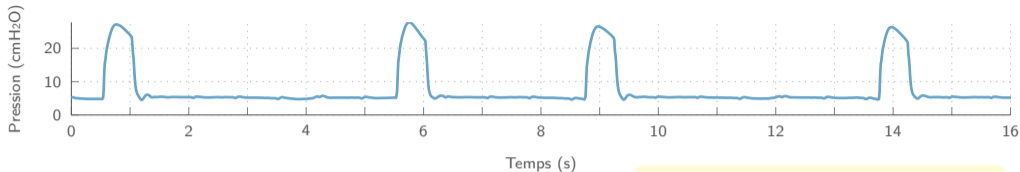
Qu'est-ce qui cloche ?



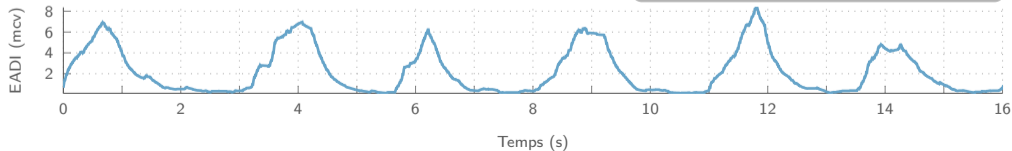
Qu'est-ce qui cloche ?



Qu'est-ce qui cloche ?



Volume courant : 450 ml
PEP : 5 cmH₂O
F resp. : 12 resp/min
Conc. O₂ : 35 %
Pente tps insp. : 0 s
Durée de plateau : 0 s
Décl. en débit : 0 l/min
Ti : 0,5 s



Équation du mouvement de l'air

$$P_{musc} + P_{vent} = P_{el} + P_{res}$$

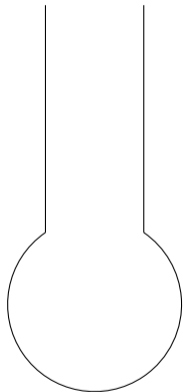
Équation du mouvement de l'air

$$P_{musc} + P_{vent} = P_{el} + P_{res}$$

$$P_{musc} + P_{vent} = \frac{\text{Volume} - \text{CRF}}{\text{Compliance}} + \text{Resist.} \times \dot{V}$$

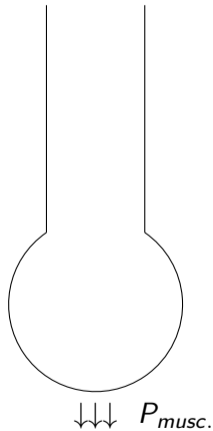
Comment respirer...

En 4 étapes *faciles* !



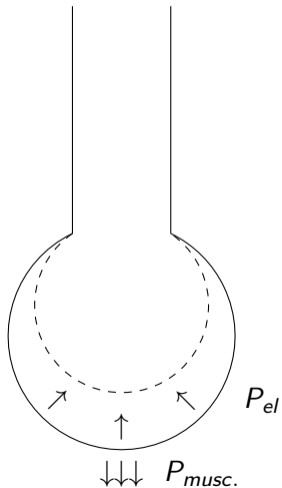
Comment respirer...

En 4 étapes *faciles* !



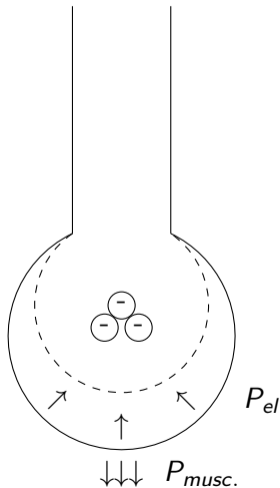
Comment respirer...

En 4 étapes *faciles!*



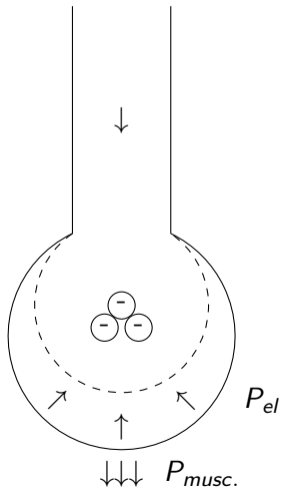
Comment respirer...

En 4 étapes *faciles!*



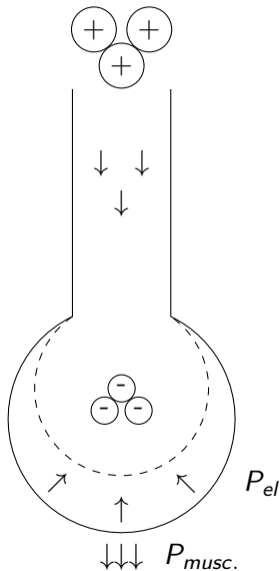
Comment respirer...

En 4 étapes *faciles!*



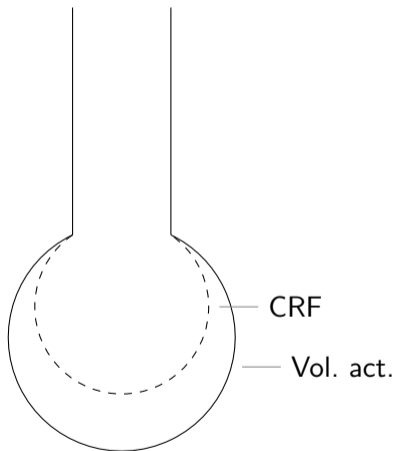
Comment respirer...

En 4 étapes *faciles!*



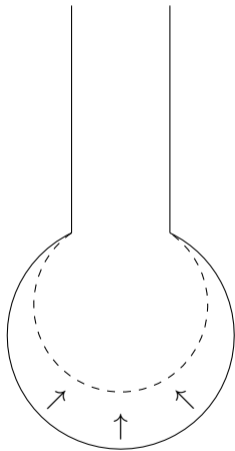
Quand ça ne marche pas comme prévu ...

En 4 étapes moins faciles ...



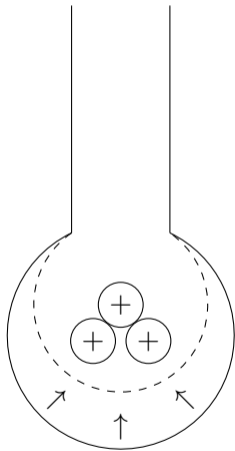
Quand ça ne marche pas comme prévu ...

En 4 étapes moins faciles ...



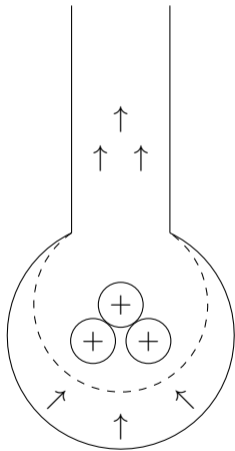
Quand ça ne marche pas comme prévu ...

En 4 étapes moins faciles ...



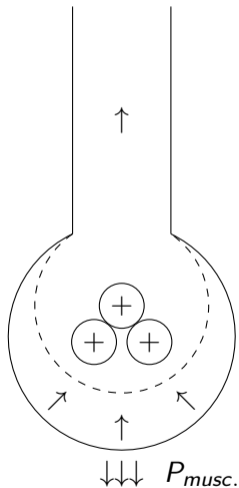
Quand ça ne marche pas comme prévu ...

En 4 étapes moins faciles ...



Quand ça ne marche pas comme prévu ...

En 4 étapes moins faciles ...

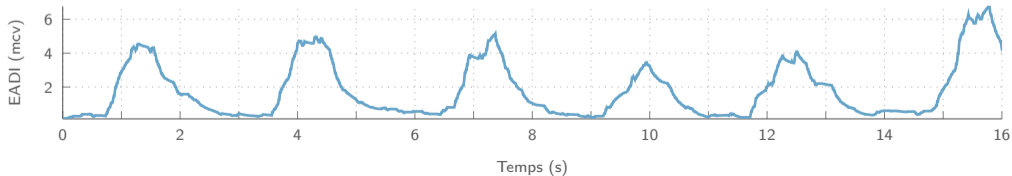
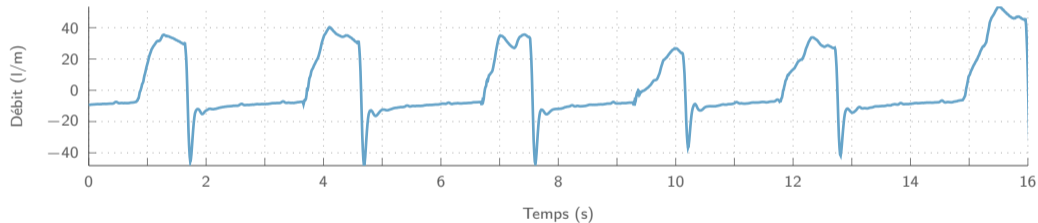
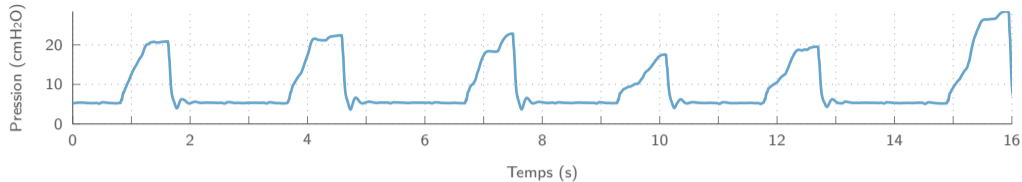


Caractéristiques des non-déclencheur

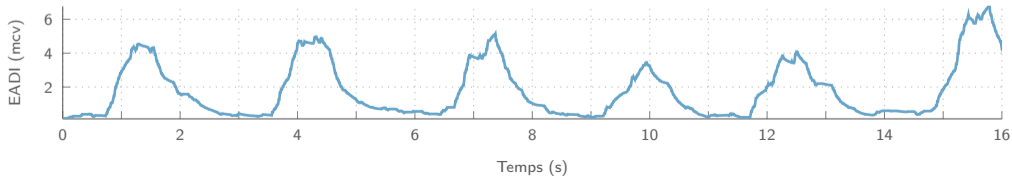
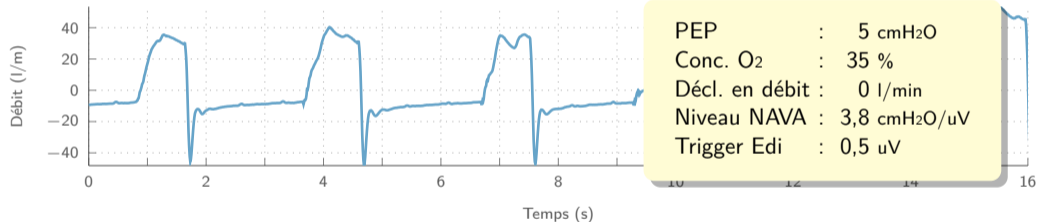
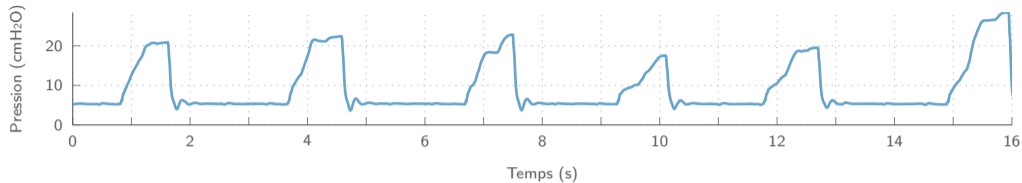
Faux négatifs		< 10 %	> 10 %
Nombre de patients		51	11
Hommes	(%)	71	100
MPOC	(%)	20	55
pH		7,44	7,49
Bicarbonates	(mmol/l)	24	28
Volume courant	(ml)	500	650
Fréq. du ventilateur	(/min)	25	18
Seuil de déclenchement	(l/min)	1,0	1,5
Pressions de pointe	(cmH ₂ O)	20	25
Aide inspiratoire	(cmH ₂ O)	15	18

* Adapté de : THILLE *et al.* 2006.

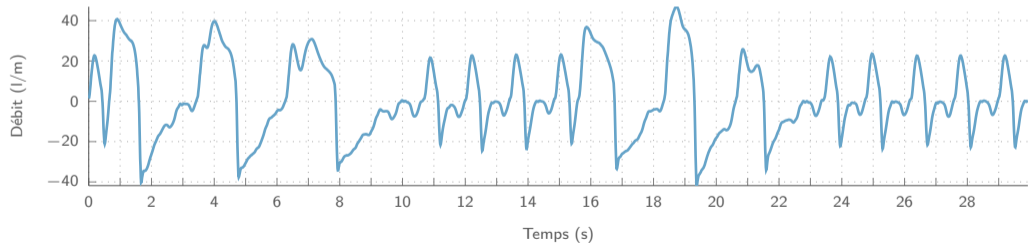
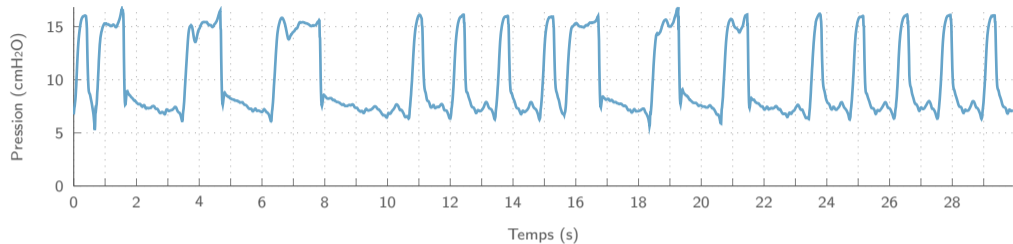
Magie du NAVA ...



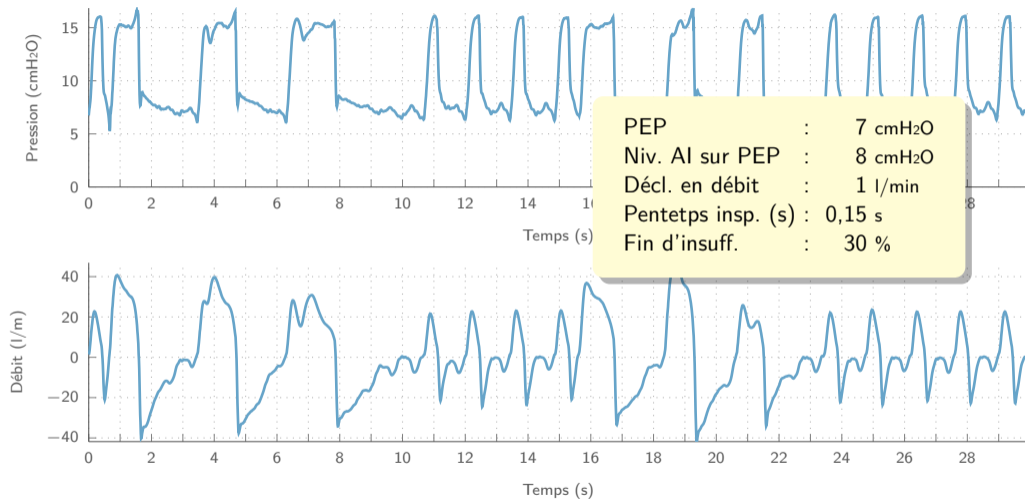
Magie du NAVA ...



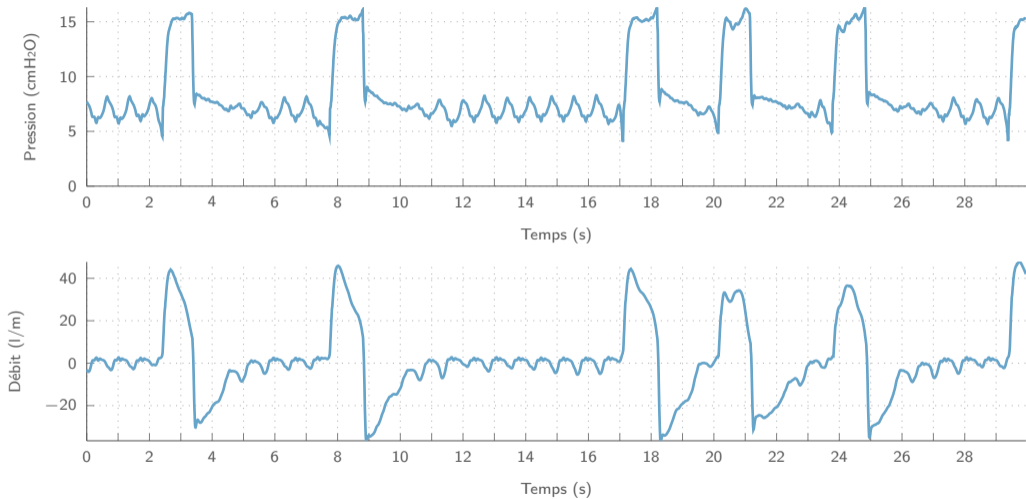
Qu'est-ce qui cloche ?



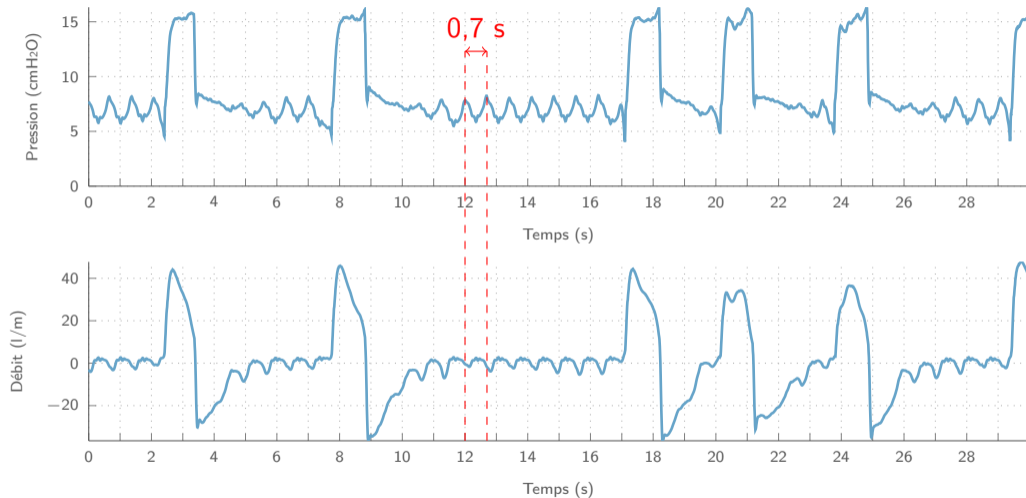
Qu'est-ce qui cloche ?



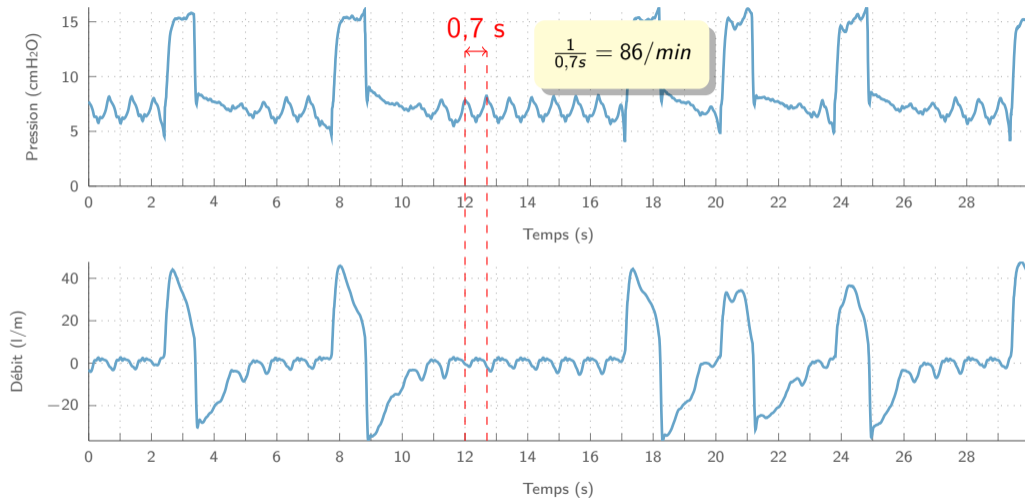
Après un petit ajustement ...



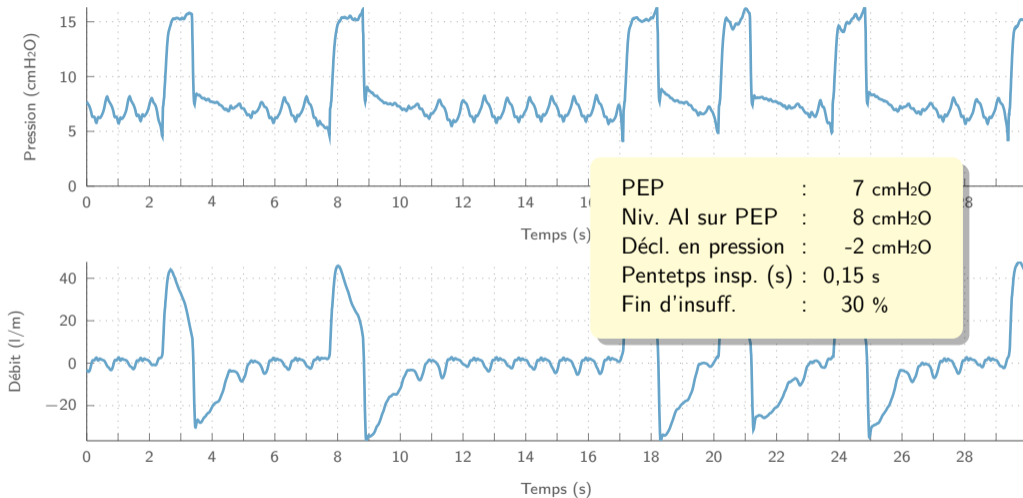
Après un petit ajustement ...



Après un petit ajustement ...



Après un petit ajustement ...





Caractéristiques des autodéclencheur

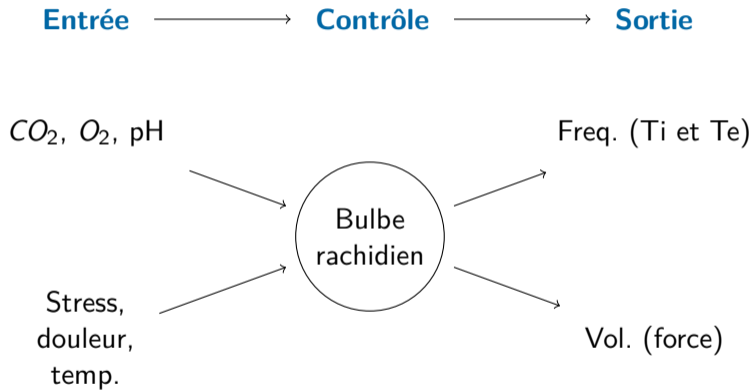
		FP	Non-FP	
		n=23	n=81	
Résistances voies respi.	cmH ₂ O/l/s	8.5	10	p < .01
Constante de temps	s	.41	.49	p < .01
Ratio cardiothoracique	%	61	58	p < .05
Débit cardiaque	l/min	5.5	4.2	p < .01
Index cardiaque	l/min/m ²	3,38	2,62	p < .01
Volume d'éjection	ml	60	48	p < .01
Pression veineuse centrale	mmHg	9,2	7,2	p < .01
Pres. cap. plum . bloq.	mmHg	10.9	8.7	p < .05
Résist. vasc. systémique	dyne·s/cm ⁵	1278	1608	p < .01
Résist. vasc. pulmonaire	dyne·s/cm ⁵	151	206	p < .01

* Adapté de : IMANAKA *et al.* 2000.

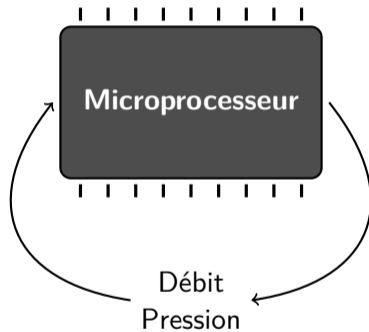
Références

-  IMANAKA, Hideaki et al. (fév. 2000). "Autotriggering caused by cardiogenic oscillation during flow-triggered mechanical ventilation". en-US. In : *Critical Care Medicine* 28.2, p. 402-407. URL : https://journals.lww.com/ccmjournal/Abstract/2000/02000/Autotriggering_caused_by_cardiogenic_oscillation.19.aspx (visité le 02/08/2021).
-  THILLE, Arnaud W. et al. (oct. 2006). "Patient-ventilator asynchrony during assisted mechanical ventilation". en. In : *Intensive Care Medicine* 32.10, p. 1515-1522. URL : <http://link.springer.com/10.1007/s00134-006-0301-8> (visité le 02/08/2021).

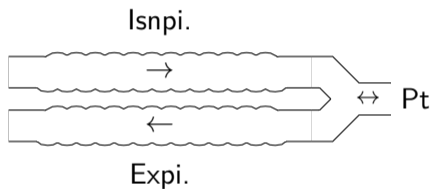
Contrôle de la respiration



Contrôle de la respiration



Déclenchement par débit



$$\dot{V}_I - \dot{V}_E = \dot{V}_{pt}$$