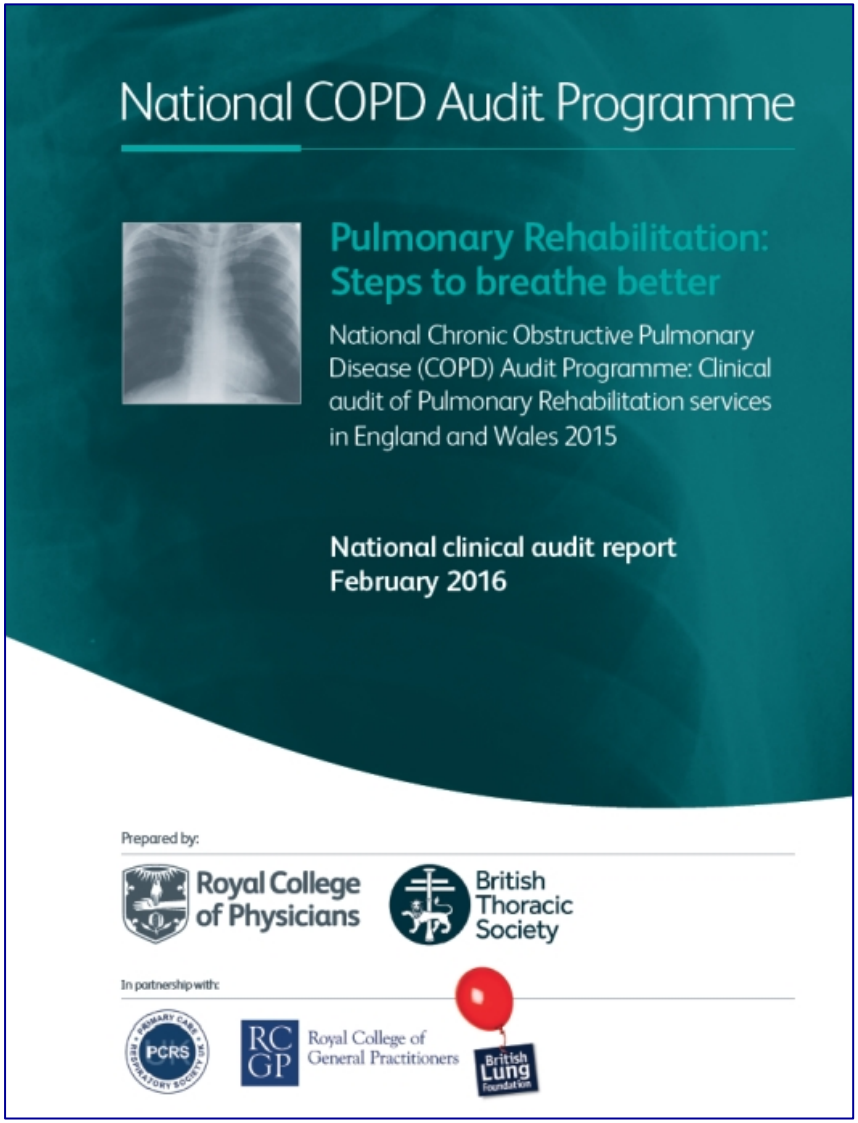
La RHB améliore-t-elle la dyspnée des patients BPCO ?

Preuves et Mécanismes

Secteur Santé
UNIVERSITÉ Grenoble Alpes
b.aguilaniu@gmail.com

La vraie vie confirme-t-elle les études prospectives ?



63 % des patients ont une amélioration objective (au moins 1 MCID)

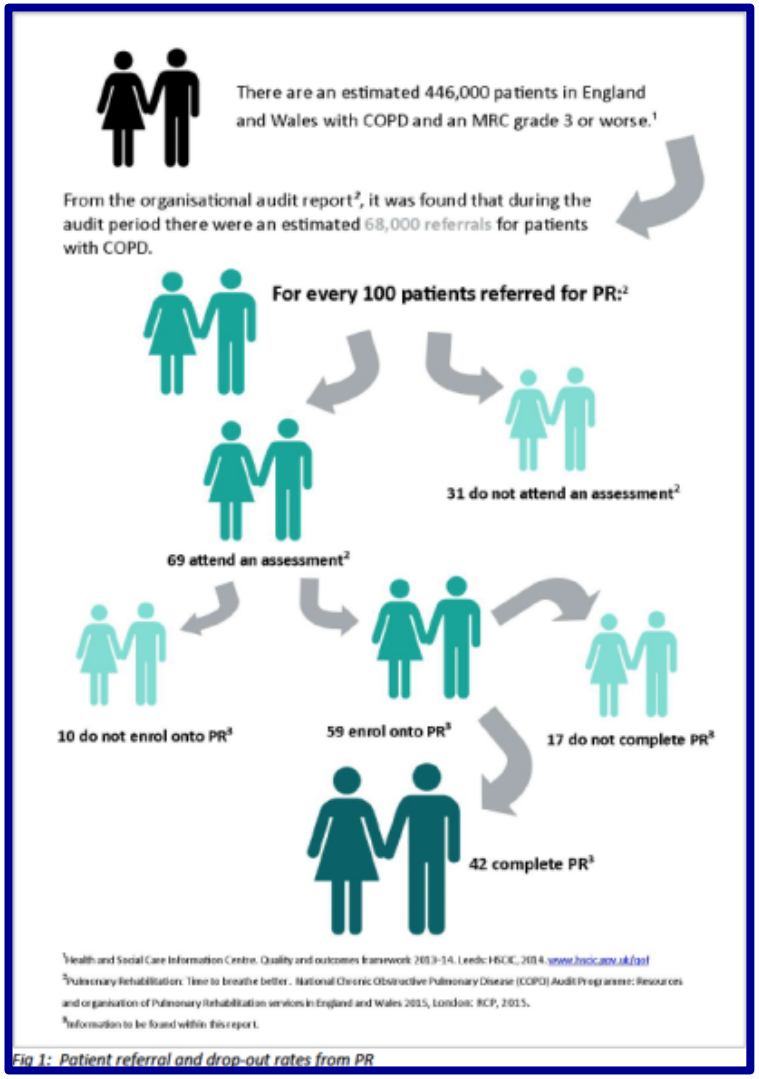
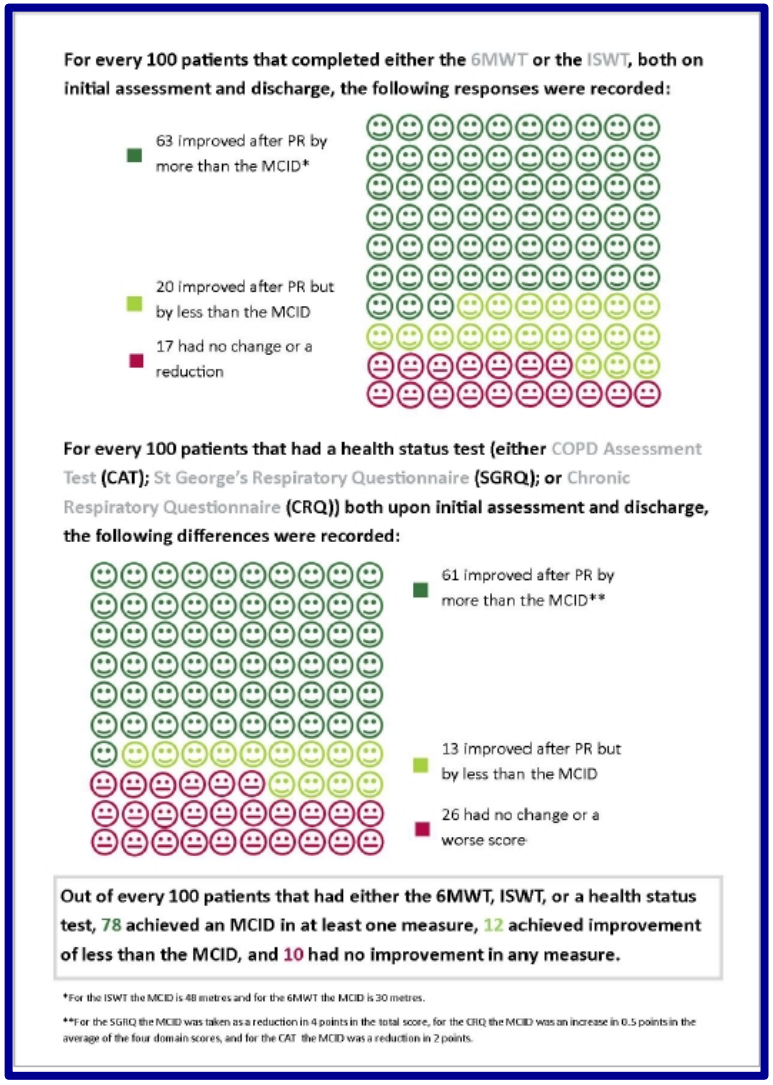


Fig 1: Patient referral and drop-out rates from PR



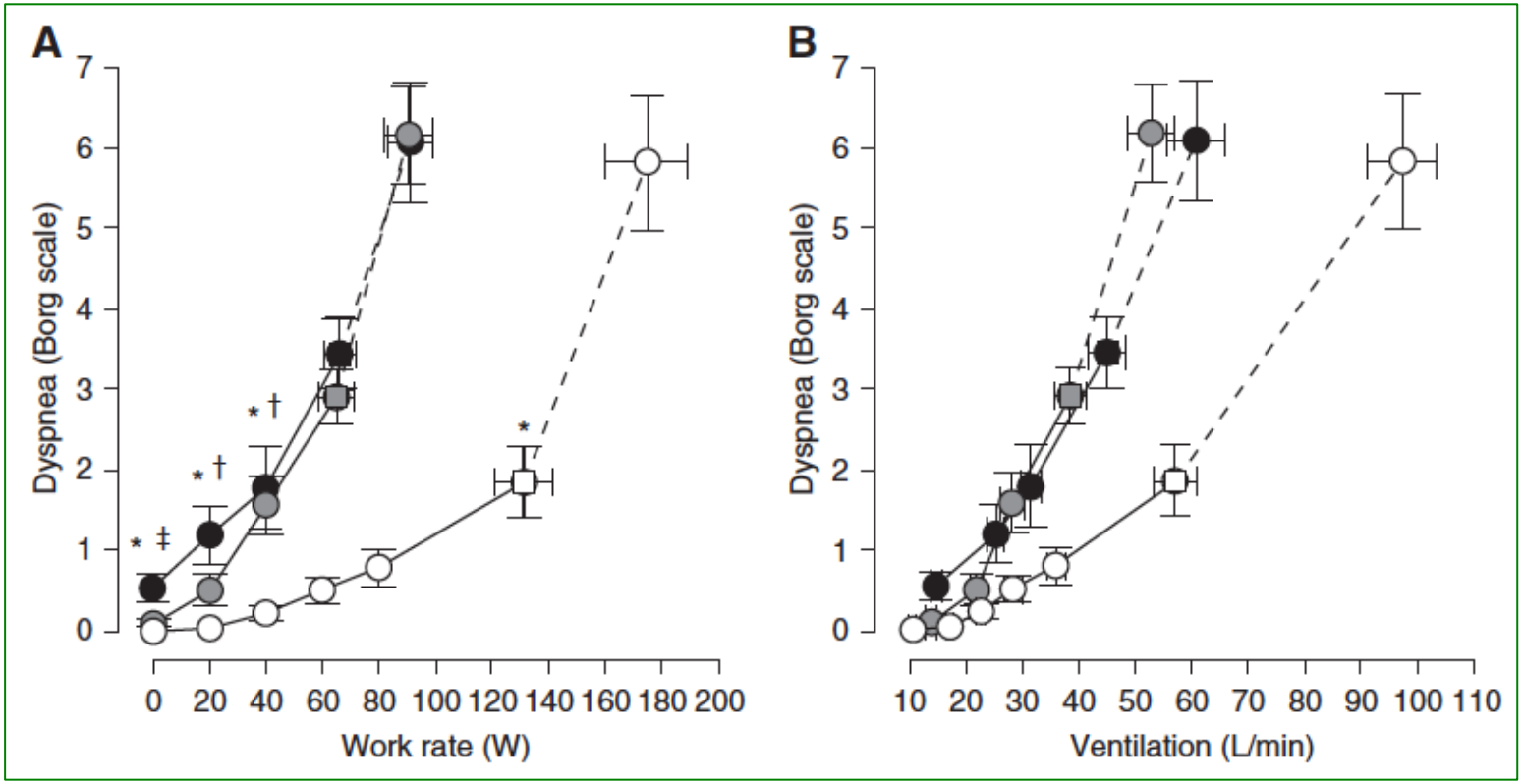
Paradoxe

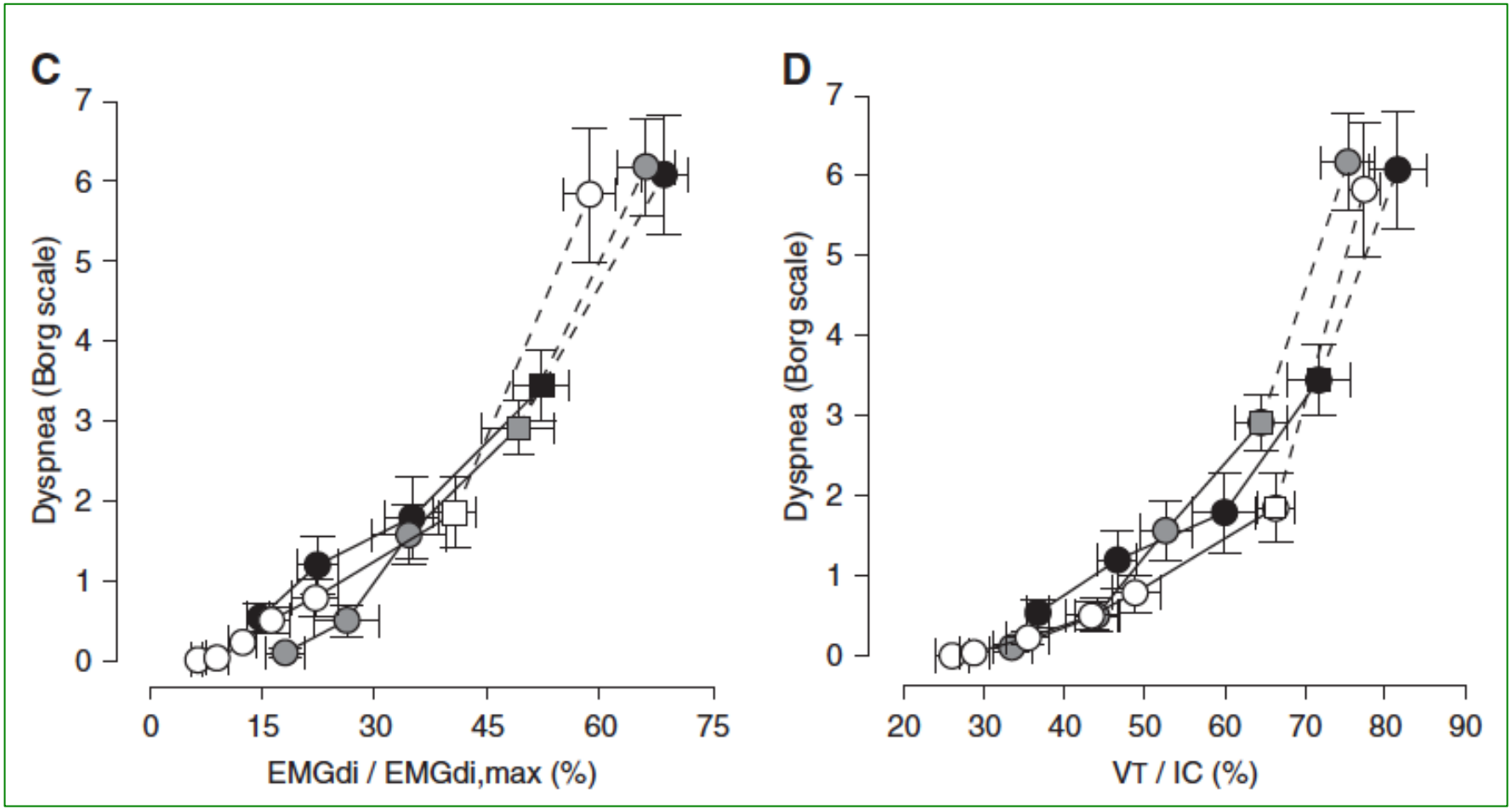
Although pulmonary rehabilitation has no direct effect on the physiologic derangements in lung function, it provides the greatest improvements in dyspnea, exercise tolerance, and health-related quality of life of any intervention available for patients with chronic respiratory disease

Spruit M. et al. An official ATS/ERS statement: Key concepts and advances in pulmonary rehabilitation. AJRCCM.2013

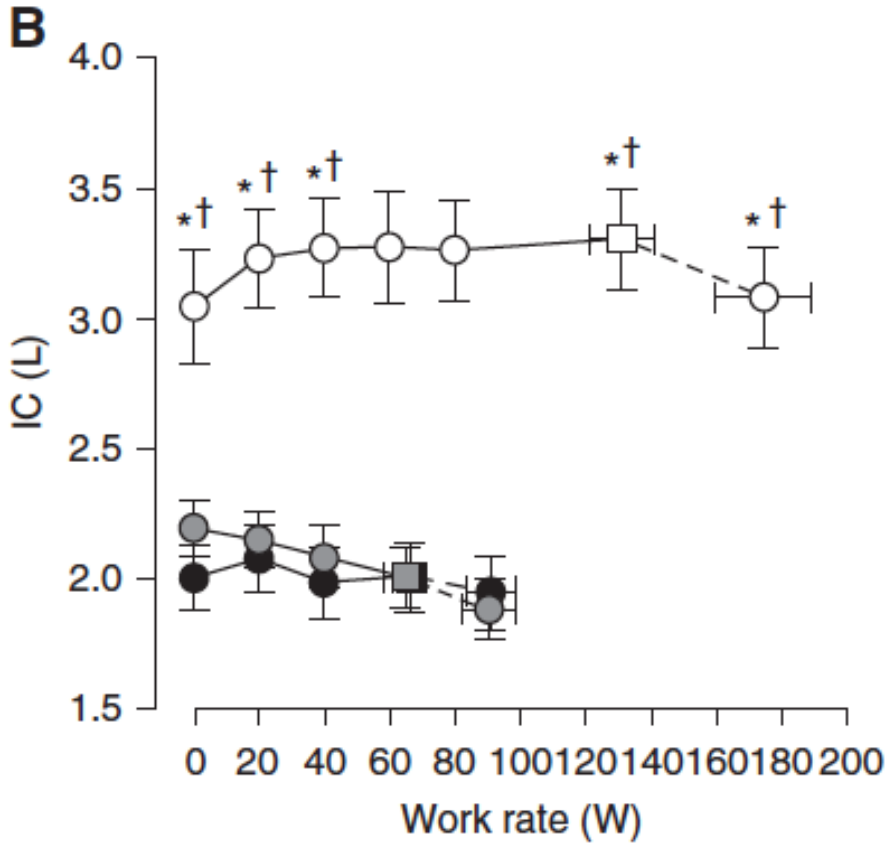
Common Mechanisms of Dyspnea in Chronic Interstitial and Obstructive Lung Disorders

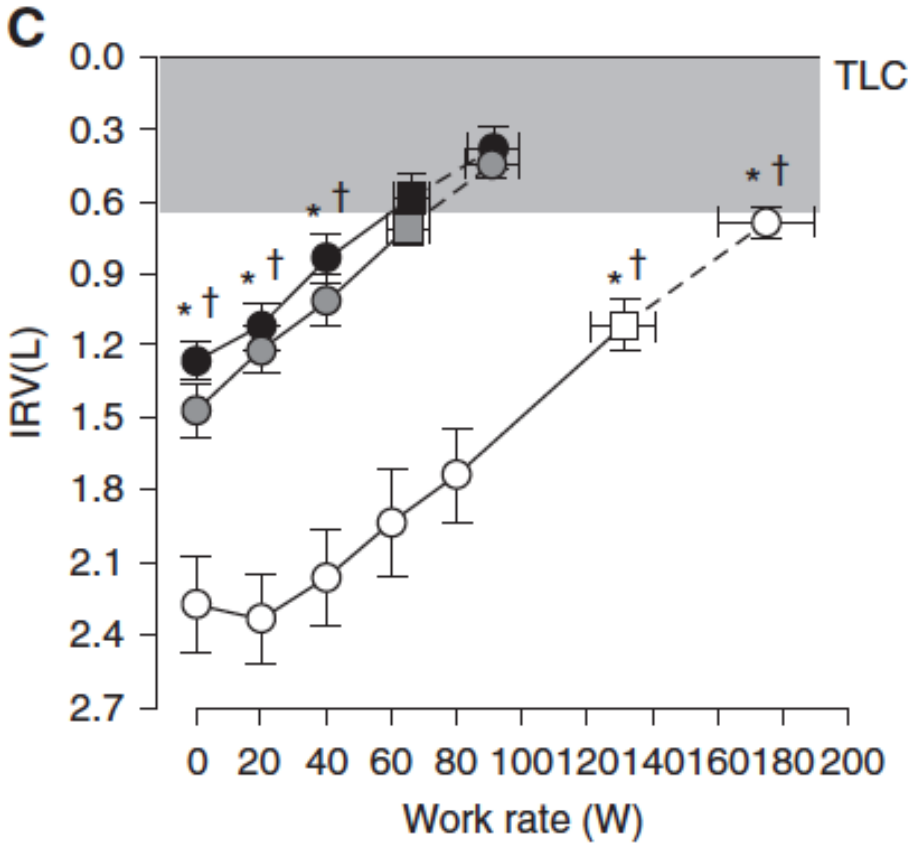
Azmy Faisal[1,2], Bader J. Alghamdi[1,3], Casey E. Ciavaglia[1], Amany F. Elbehairy[1,4], Katherine A. Webb[1], Josuel Ora[1], J. Alberto Neder[1], and Denis E. O'Donnell[1]





Faizal A.et al.Common mechanisms of dyspnea in chronic interstitial and obstructive lung disorders. AJRCCM.2016





Faizal A.et al.Common mechanisms of dyspnea in chronic interstitial and obstructive lung disorders. AJRCCM.2016

Impact of Pulmonary Rehabilitation on the Major Dimensions of Dyspnea in COPD

Karin Wadell,[1,2] Katherine A. Webb,[1] Megan E. Preston,[1] Naparat Amornputtisathaporn,[1,3] Lorelei Samis,[4] Jennifer Patelli,[4] Jordan A. Guenette,[1] and Denis E. O'Donnell[1]

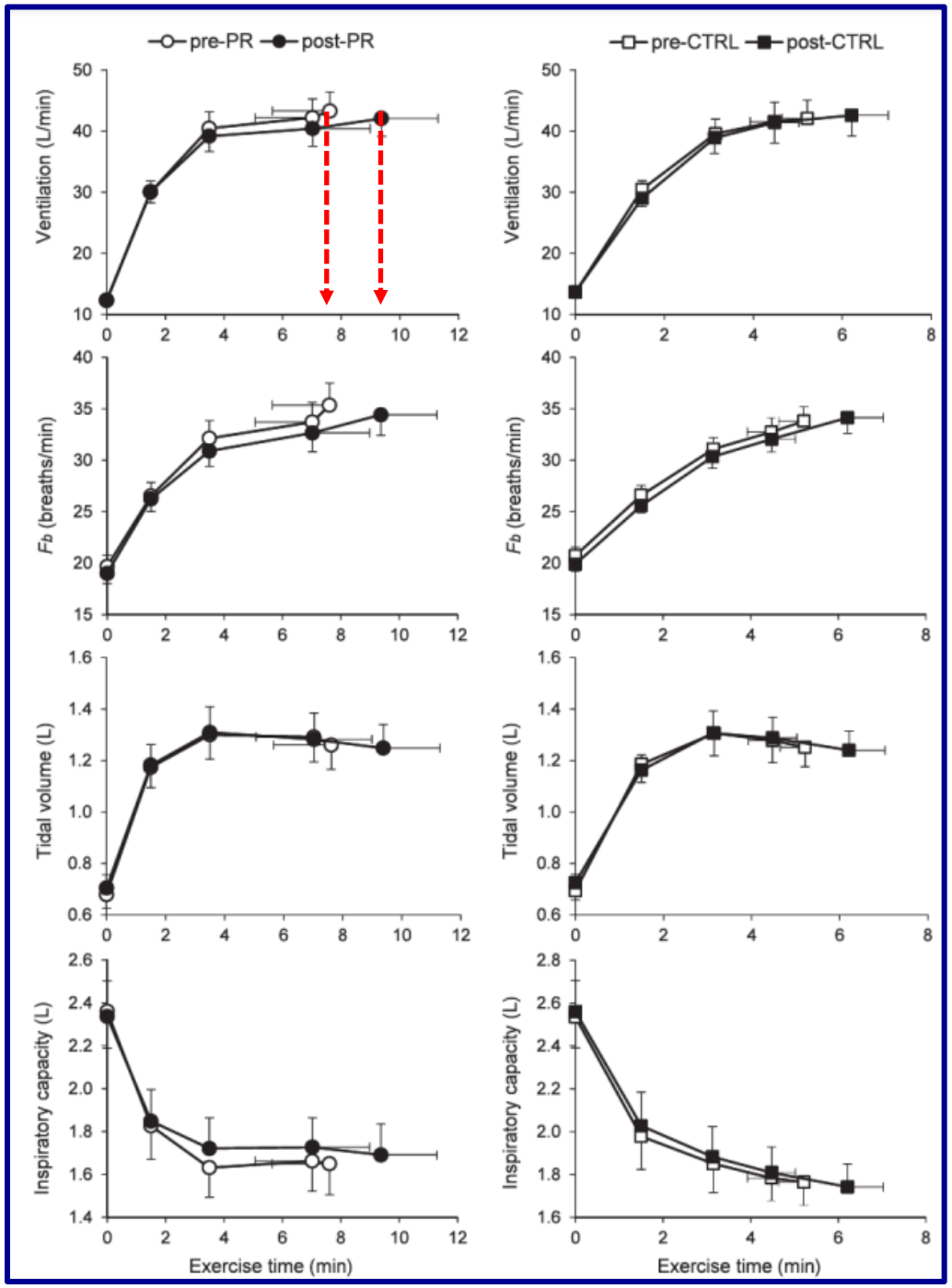
	CTRL (n = 28)	PR (n = 20)	*p*-value*
Sex, M:F (% male)	16:12 (57)	11:9 (55)	0.883
Age, years	66 ± 7	68 ± 6	0.386
Height, cm	170 ± 11	167 ± 8	0.257
Weight, kg	83.8 ± 16.1	75.6 ± 18.5	0.111
Body mass index, kg/m^2	28.9 ± 4.3	26.7 ± 4.9	0.114
Smoking pack-years	57 ± 29	61 ± 42	0.675
Smoking status, %current	21%	10%	0.295
BDI, focal score	5.9 ± 1.4	6.3 ± 1.2	0.300
Peak incremental work rate, watts	68 ± 29	71 ± 31	0.721
Peak incremental VO_2, L/min	1.21 ± 0.49	1.12 ± 0.48	0.529
Peak incremental VO_2, % predicted maximum	64 ± 21	66 ± 18	0.508
Peak incremental V_E, L/min	41.5 ± 10.2	41.7 ± 14.6	0.969
Reason for stopping exercise, %:			0.971
Breathing	39	35	
Legs	25	30	
Both breathing and legs	32	30	
Other	4	5	
FEV_1/FVC, %	42 ± 10	41 ± 11	0.581
FEV_1, L	1.23 ± 0.52	1.16 ± 0.40	0.752
FEV_1, % predicted	48 ± 19	48 ± 12	0.801
FRC, % predicted	151 ± 34	148 ± 39	0.860

	CTRL (n = 24)		PR (n = 17)	
	Pre	Post	Pre	Post
MRC dyspnea scale, 1-5	2.9 ± 1.0	3.0 ± 1.0	2.9 ± 0.8	2.2 ± 0.6 *†
6-min walk self-efficacy	42 ± 22	44 ± 22	42 ± 20	61 ± 24 *†
6-minute walk test:				
Distance, m	449 ± 101	448 ± 97	451 ± 83	469 ± 92 *†
Dyspnea, Borg	3.8 ± 1.8	3.8 ± 1.6	3.7 ± 1.8	3.8 ± 1.9
Leg discomfort, Borg	3.1 ± 2.0	3.0 ± 1.8	3.6 ± 2.9	2.7 ± 2.4 *
Endurance shuttle walk test:				
Distance, m	487 ± 417	578 ± 537	406 ± 240	662 ± 462 *
Dyspnea, Borg	4.0 ± 1.5	4.3 ± 1.5	5.2 ± 2.3	4.9 ± 2.6
Leg discomfort, Borg	3.4 ± 2.1	3.5 ± 1.8	4.5 ± 3.0	3.8 ± 2.6
CWR cycle test:				
Endurance time, s	314 ± 168	372 ± 240	457 ± 484	562 ± 475 *
Dyspnea, Borg	6.1 ± 2.4	5.8 ± 1.9	6.1 ± 2.4	6.2 ± 2.9
Leg discomfort, Borg	5.9 ± 2.8	6.0 ± 2.5	6.5 ± 3.2	5.8 ± 3.1
Quadriceps strength, kg	30 ± 12	31 ± 13	28 ± 14	31 ± 14*

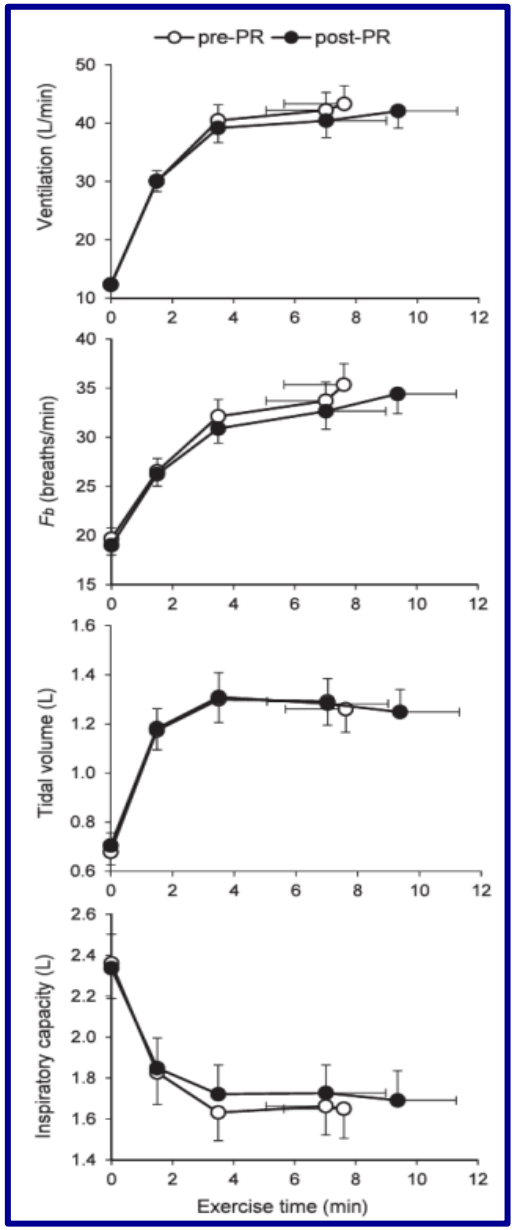
Dyspnée et Impact en dehors du laboratoire

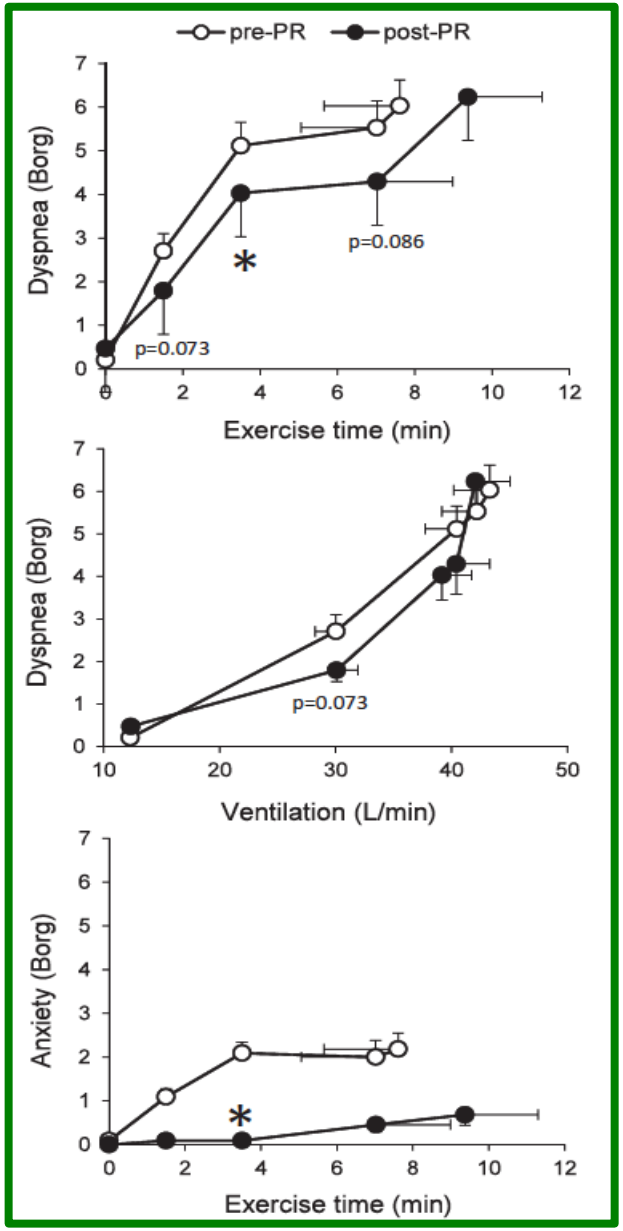
	CTRL (n = 24)		PR (n = 17)	
	Pre	Post	Pre	Post
MRC dyspnea scale, 1-5	2.9 ± 1.0	3.0 ± 1.0	2.9 ± 0.8	2.2 ± 0.6 *†
BDI:				
Focal score	6.0 ± 1.5	6.0 ± 2.1	6.1 ± 1.1	7.9 ± 1.5*†
Functional impairment	2.1 ± 1.0	2.1 ± 0.9	2.3 ± 0.6	2.9 ± 0.7*†
Magnitude of effort	2.0 ± 0.7	2.2 ± 0.8	2.1 ± 0.7	2.6 ± 0.8*
Magnitude of task	1.8 ± 0.5	1.8 ± 0.5	1.8 ± 0.4	2.3 ± 0.6*†
TDI:				
Focal score	n/a	0.3 ± 2.1	n/a	3.8 ± 2.3 †
Functional impairment		0.0 ± 0.7		1.1 ± 1.1 †
Magnitude of effort		0.3 ± 1.2		1.5 ± 1.1 †
Magnitude of task		0.0 ± 0.7		1.4 ± 0.8 †
CRQ:				
Total	18.3 ± 4.1	18.0 ± 3.5	16.9 ± 3.2	19.8 ± 3.9*†
Dyspnea	3.4 ± 1.2	3.4 ± 1.4	2.7 ± 0.7	3.9 ± 1.0 *†
Fatigue	4.5 ± 1.3	4.2 ± 1.2	4.0 ± 1.3	5.0 ± 1.0 *†
Emotion	5.1 ± 1.1	5.2 ± 1.1	5.0 ± 1.0	5.4 ± 1.0
Mastery	5.3 ± 1.3	5.3 ± 1.3	5.1 ± 1.1	5.5 ± 1.4
SGRQ:				
Total	47 ± 14	45 ± 13	50 ± 15	42 ± 17 *
Symptom	61 ± 23	53 ± 20 *	60 ± 21	55 ± 22
Activity	66 ± 17	65 ± 19	67 ± 16	55 ± 18 *†
Impact	32 ± 14	31 ± 14	37 ± 17	30 ± 22
HADS anxiety score	4.5 ± 2.8	4.8 ± 3.2	5.8 ± 3.5	4.1 ± 3.2 *†
HADS depression score	4.2 ± 2.9	4.7 ± 2.9	5.1 ± 3.3	3.0 ± 2.2 *†
COPD Self-Efficacy Scale	109 ± 23	112 ± 22	102 ± 18	122 ± 25 *†

Endurance Cycle



Dyspnée de laboratoire





In conclusion, clinically meaningful improvements in the affective and impact domains of dyspnea occurred in response to PR in the absence of consistent physiological training effects.

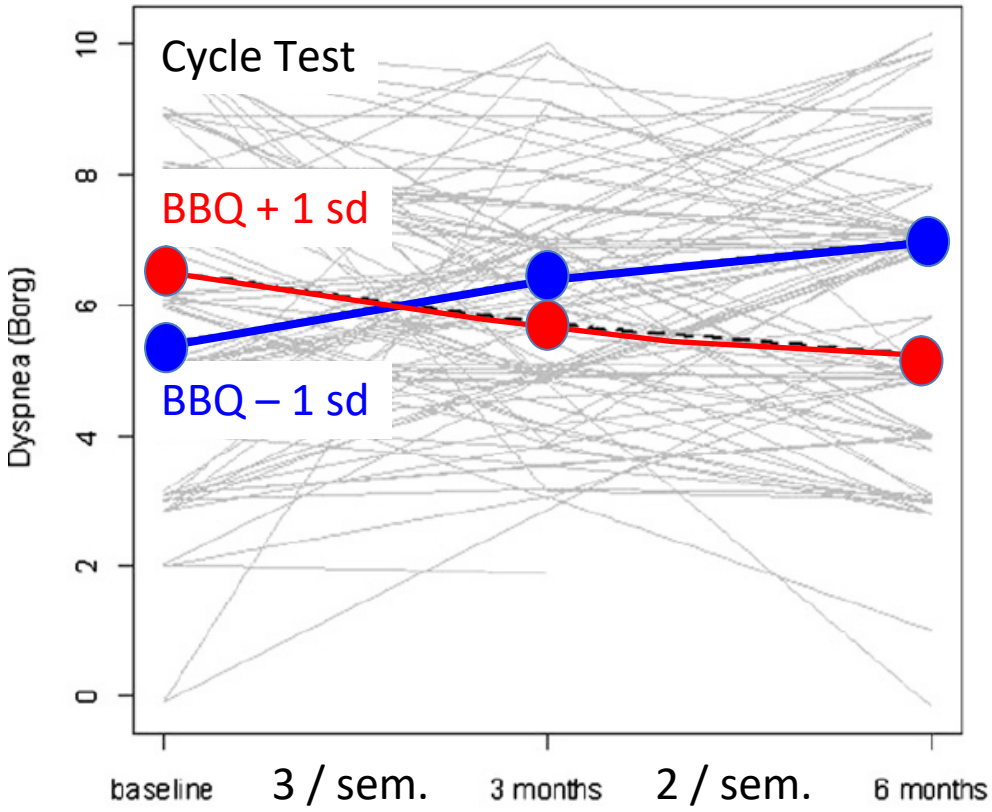
Dyspnea Perception in COPD

Association Between Anxiety, Dyspnea-Related Fear, and Dyspnea in a Pulmonary Rehabilitation Program

Thomas Janssens, MA; Steven De Peuter, PhD; Linda Stans, MA; Geert Verleden, MD, PhD; Thierry Troosters, PhD; Marc Decramer, MD, PhD; and Omer Van den Bergh, PhD

Exercise in pulmonary rehabilitation in people with higher baseline dyspnea-related fear may act as a correction of excessive symptom reports through exposure to dyspneic situations.

BBQ : Breathnessless Belief Questionnaire



Plus l'anxiété et la peur de la dyspnée sont élevés :

- plus la dyspnée sur cyclo est importante au début de la RHB
- plus la RHB est efficace sur la dyspnée-cyclo

Treating breathlessness *via* the brain: changes in brain activity over a course of pulmonary rehabilitation

Eur Respir J 2017

Mari Herigstad[1,2,5], Olivia K. Faull[1], Anja Hayen[1,3], Eleanor Evans[1], F. Maxine Hardinge[4], Katja Wiech[1] and Kyle T.S. Pattinson[1,4,5]

Pré-requis :

1- Over-perception
2- RHB améliore dyspnée sans améliorer la fonction
3- Les associations sensorielles et cognitives acquises influencent les mécanismes cérébraux de la perception sensorielle en la découplant.

Hypothèse : Le bénéfice de la dyspnée au décours de la PR peut être expliqué par un changement de l'influence des expériences antérieures « Priors ».

CORTEX 95 (2017) 211–221

Available online at www.sciencedirect.com

ScienceDirect

Journal homepage: www.elsevier.com/locate/cortex

Note

Breathlessness and the body: Neuroimaging clues for the inferential leap

Olivia K. Faull [a,b,*], *Anja Hayen* [a,b,c] *and Kyle T.S. Pattinson* [a,b]

Treating breathlessness *via* the brain: changes in brain activity over a course of pulmonary rehabilitation

Eur Respir J 2017

Mari Herigstad[1,2,5], Olivia K. Faull[1], Anja Hayen[1,3], Eleanor Evans[1], F. Maxine Hardinge[4], Katja Wiech[1] and Kyle T.S. Pattinson[1,4,5]

Réponse cérébrales RMN après mentalisation de l'ANXIETE et DYSPNEE ressentie à partir d'un panel de 29 situations.

Contents lists available at ScienceDirect

Respiratory Physiology & Neurobiology

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

Development of a dyspnoea word cue set for studies of emotional processing in COPD

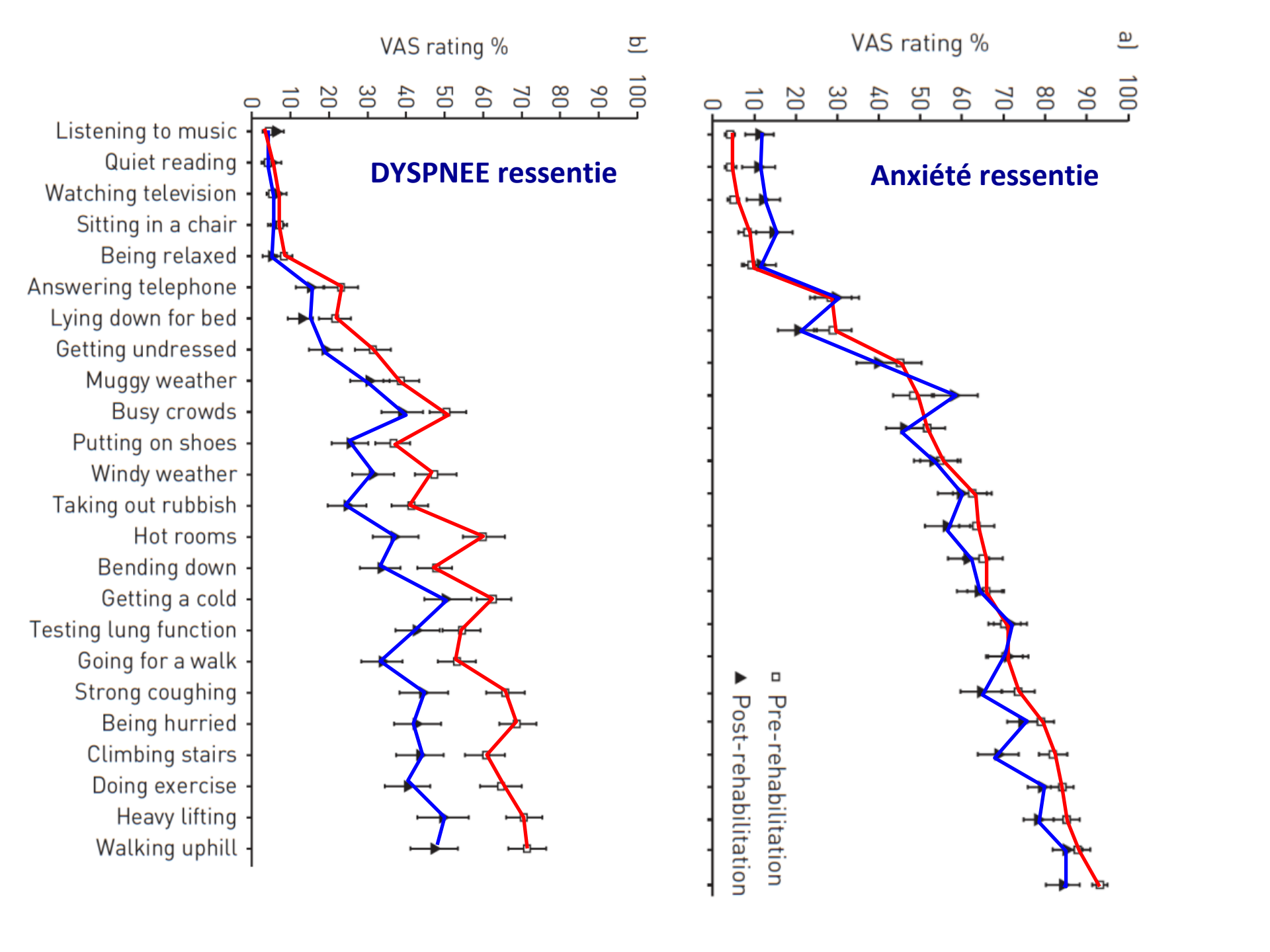
Mari Herigstad[a,b,*], Anja Hayen[a,c], Andrea Reinecke[d], Kyle T.S. Pattinson[a]

Convergence with validated questionnaires.

Questionnaires		Dyspnoea VAS ratings		Anxiety VAS ratings	
		r	*P*	*r*	*P*
Dyspnoea-12	Total	0.51	0.002	0.54	0.001
	Physical	0.50	0.003	0.52	0.002
	Affective	0.47	0.005	0.51	0.002
SGRQ	Total	0.80	<0.0001	0.76	<0.0001
	Symptom	0.41	0.015 (NS)	0.42	0.014 (NS)
	Activity	0.70	<0.0001	0.61	<0.0001
	Impact	0.73	<0.0001	0.75	<0.0001

	Pre-rehabilitation	Post-rehabilitation	p-value
MRC score	2.9±0.8	2.7±0.9	0.231
Dyspnoea-12	12.0±9.2	7.9±6.4	0.009
SGRQ	49.9±17.4	42.7±14.2	0.001
Catastrophic Thinking Scale	12.1±10.3	7.2±5.4	0.022
Awareness and Vigilance Scale	40.5±13.0	39.0±14.2	0.514
Fatigue Severity Scale	41.4±11.3	32.6±11.6	0.001
CES-D	13.3±8.9	11.8±7.3	0.375
State anxiety	35.1±9.1	32.3±9.4	0.150
Trait anxiety	35.8±9.1	31.9±8.8	0.010
BIS/BAS	54.0±7.4	53.9±7.2	0.906
ISWT m	342±199	426±212	0.000001

Data are presented as mean±SD, unless otherwise stated. Behavioural measurements pre- and post-pulmonary rehabilitation (n=31). MRC: Medical Research Council breathlessness scale; SGRQ: St George's Respiratory Questionnaire; CES-D: Center for Epidemiologic Studies Depression Scale; BIS/BAS: Behavioural Inhibition System/Behavioural Activation System scale; ISWT: incremental shuttle walk test.


a)
VAS rating %
0
10
20
30
40
50
60
70
80
90
100
Anxiété ressentie
Pre-rehabilitation
Post-rehabilitation
b)
VAS rating %
0
10
20
30
40
50
60
70
80
90
100
DYSPNEE ressentie
Listening to music
Quiet reading
Watching television
Sitting in a chair
Being relaxed
Answering telephone
Lying down for bed
Getting undressed
Muggy weather
Busy crowds
Putting on shoes
Windy weather
Taking out rubbish
Hot rooms
Bending down
Getting a cold
Testing lung function
Going for a walk
Strong coughing
Being hurried
Climbing stairs
Doing exercise
Heavy lifting
Walking uphill

Dyspnea 12

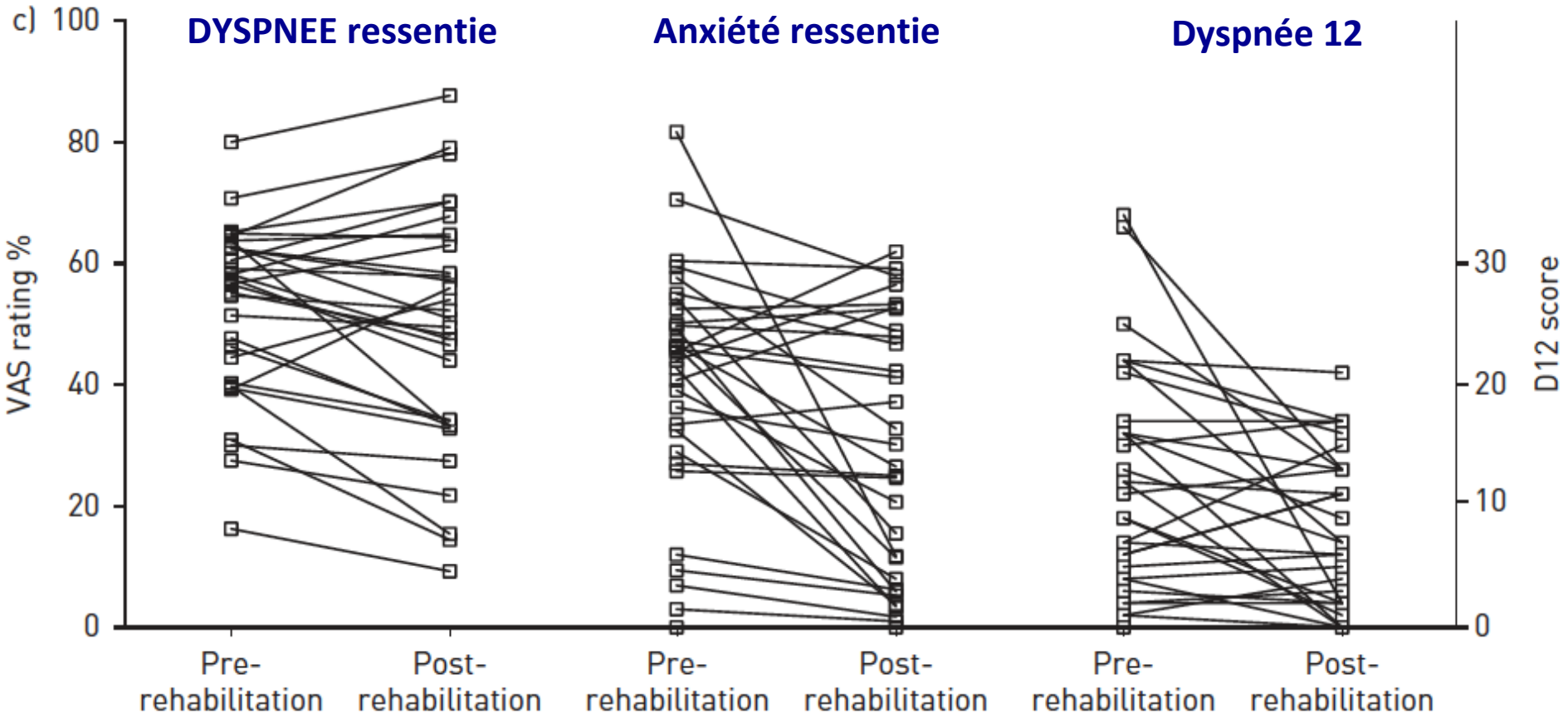
Quantitatif

Qualitatif

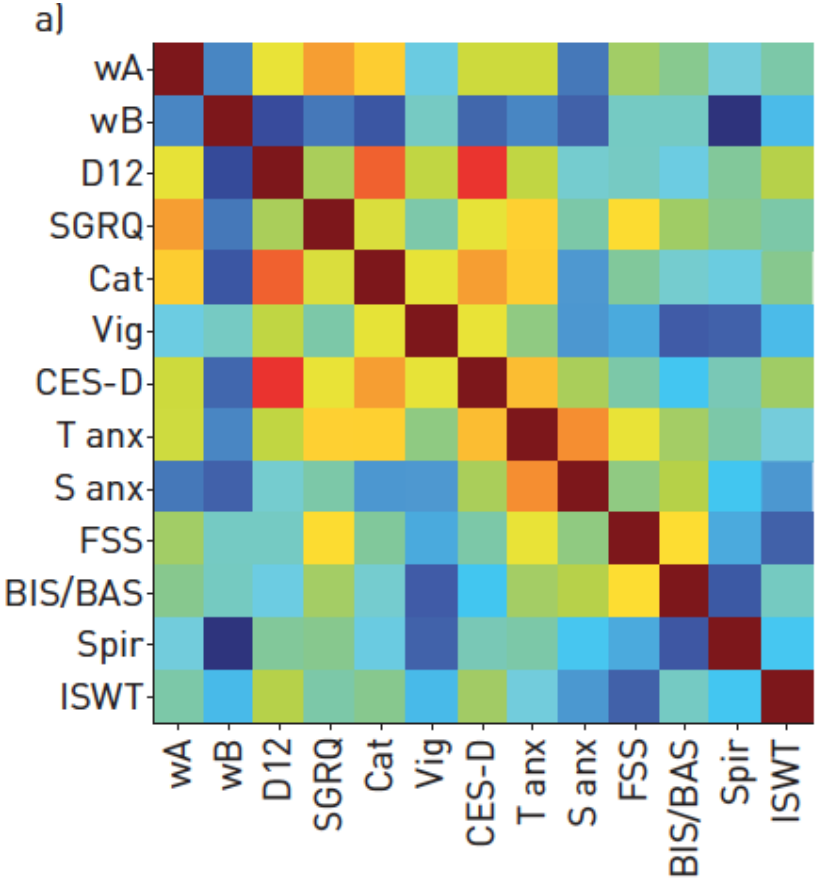
Affect

	non	léger	modéré	sévère
Ma respiration ne va pas jusqu'au bout				
Ma respiration demande plus d'effort				
J'ai l'impression d'avoir le souffle court				
J'ai du mal à reprendre mon souffle				
Je n'arrive pas à avoir assez d'air				
Ma respiration est inconfortable				
Ma respiration est épuisante				
Ma respiration me déprime				
Ma respiration me rend misérable				
Je me sens diminué à cause de ma respiration				
Ma respiration est éprouvante				
Ma respiration me rend nerveux/agité				
Ma respiration me rend irritable				

Yorke et al. Thorax 2010;65(1):21

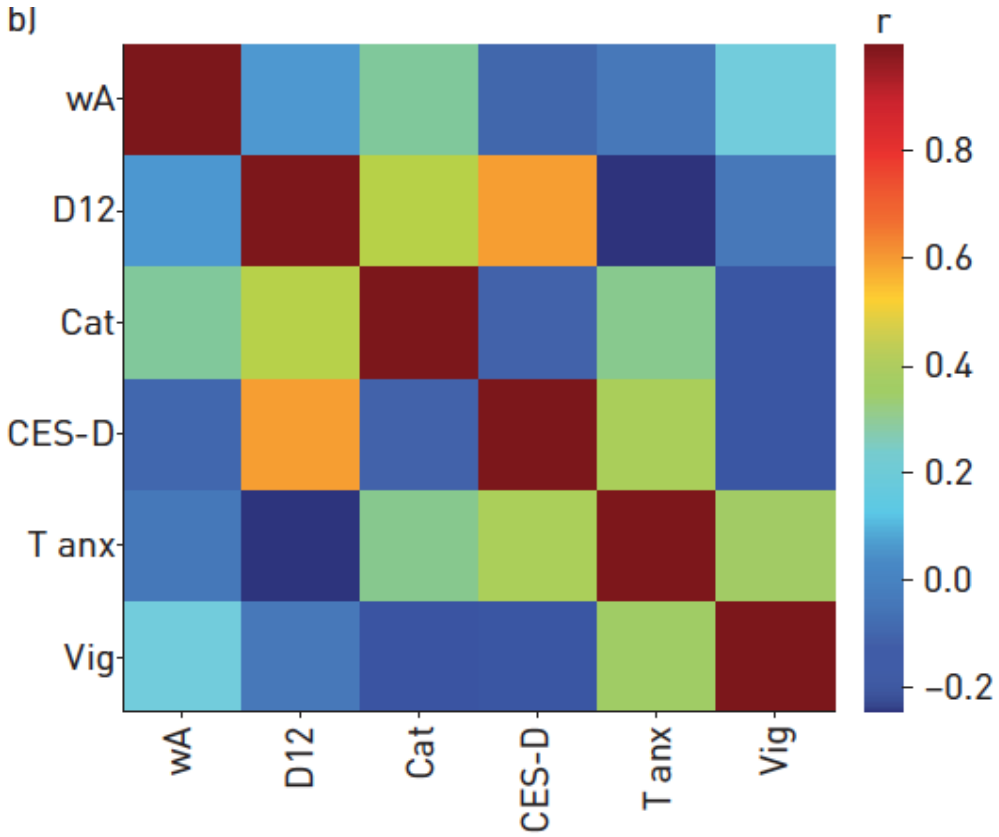

c)
DYSPNEE ressentie
Anxiété ressentie
Dyspnée 12
VAS rating %
D12 score
100
80
60
40
20
0
30
20
10
0
Pre-rehabilitation
Post-rehabilitation
Pre-rehabilitation
Post-rehabilitation
Pre-rehabilitation
Post-rehabilitation

Matrice de corrélation
entre les variables « comportementales »



Matrice partiel de corrélation entre les variables « comportementales » corrélées avec D12

Toutes les dimensions sont ± corrélées entre elles

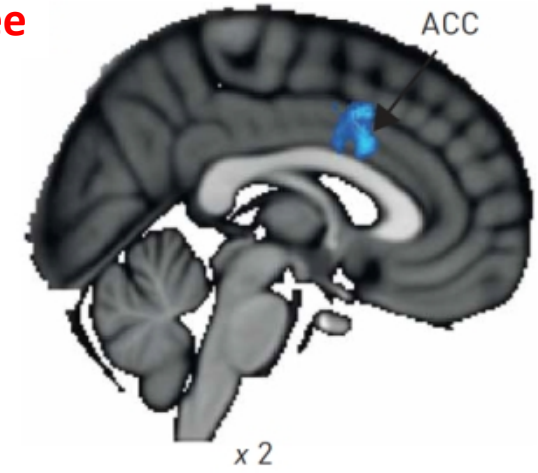


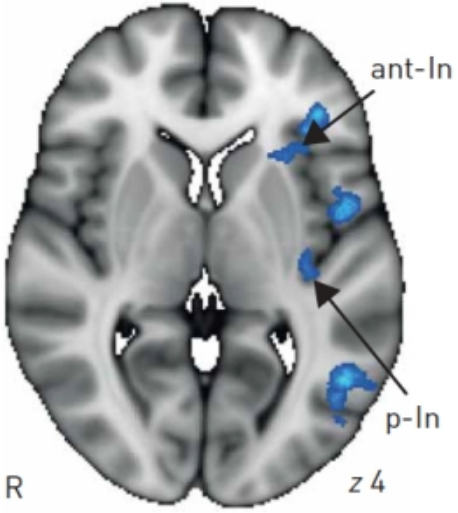
Changement pré-post RHB de l'intensité du signal RMN en cas d'exposition au panel de situations dyspnéisantes ou anxiogène

Cortex cingulaire ant.

Insula Ant. et Post

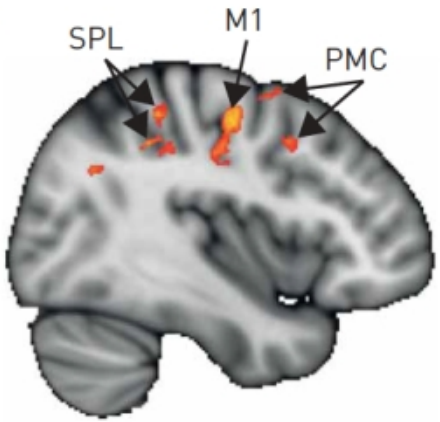
Dyspnée

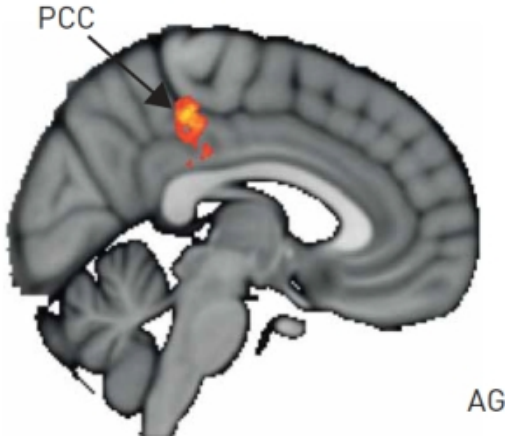




Réseau
Processus
Interoceptifs
Conscients

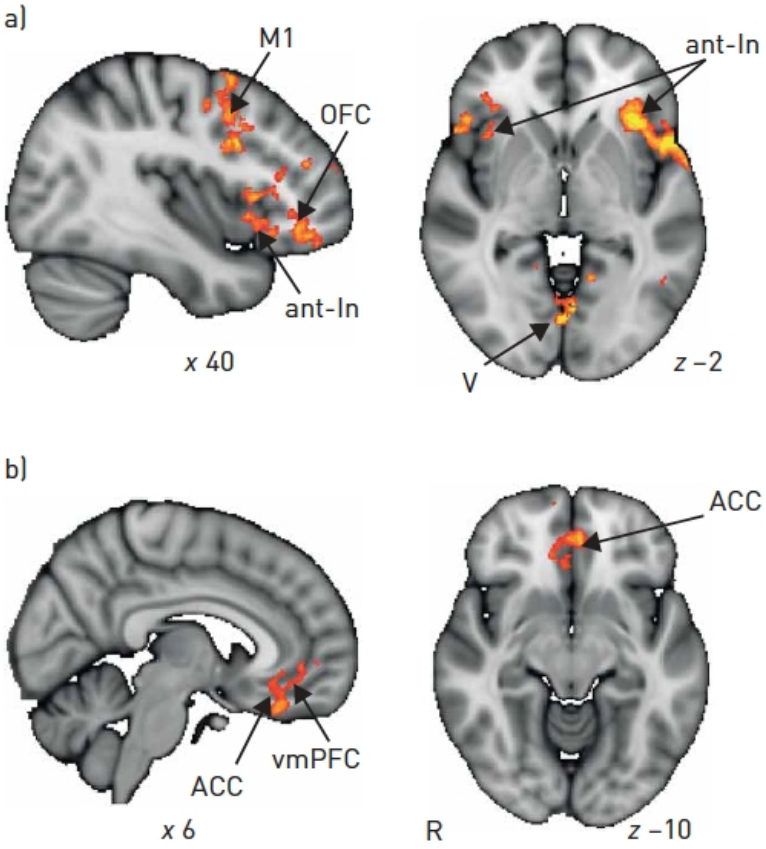
Anxiété

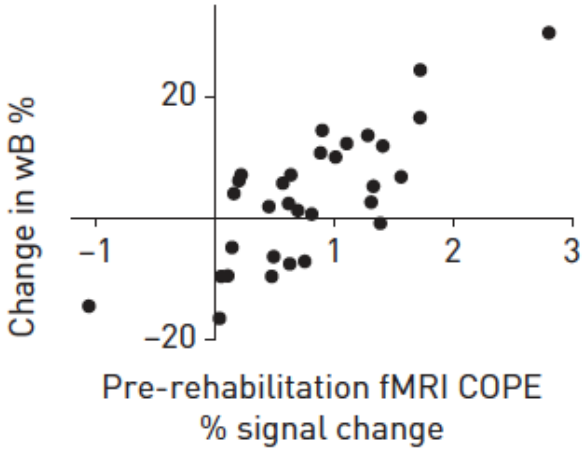


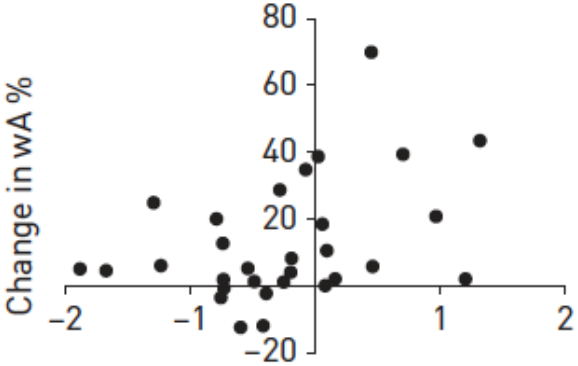


Relation entre activité pré-RHB du signal RMN et le changement des scores de dyspnée et anxiété ressentie sur présentation du panel de 29 situations

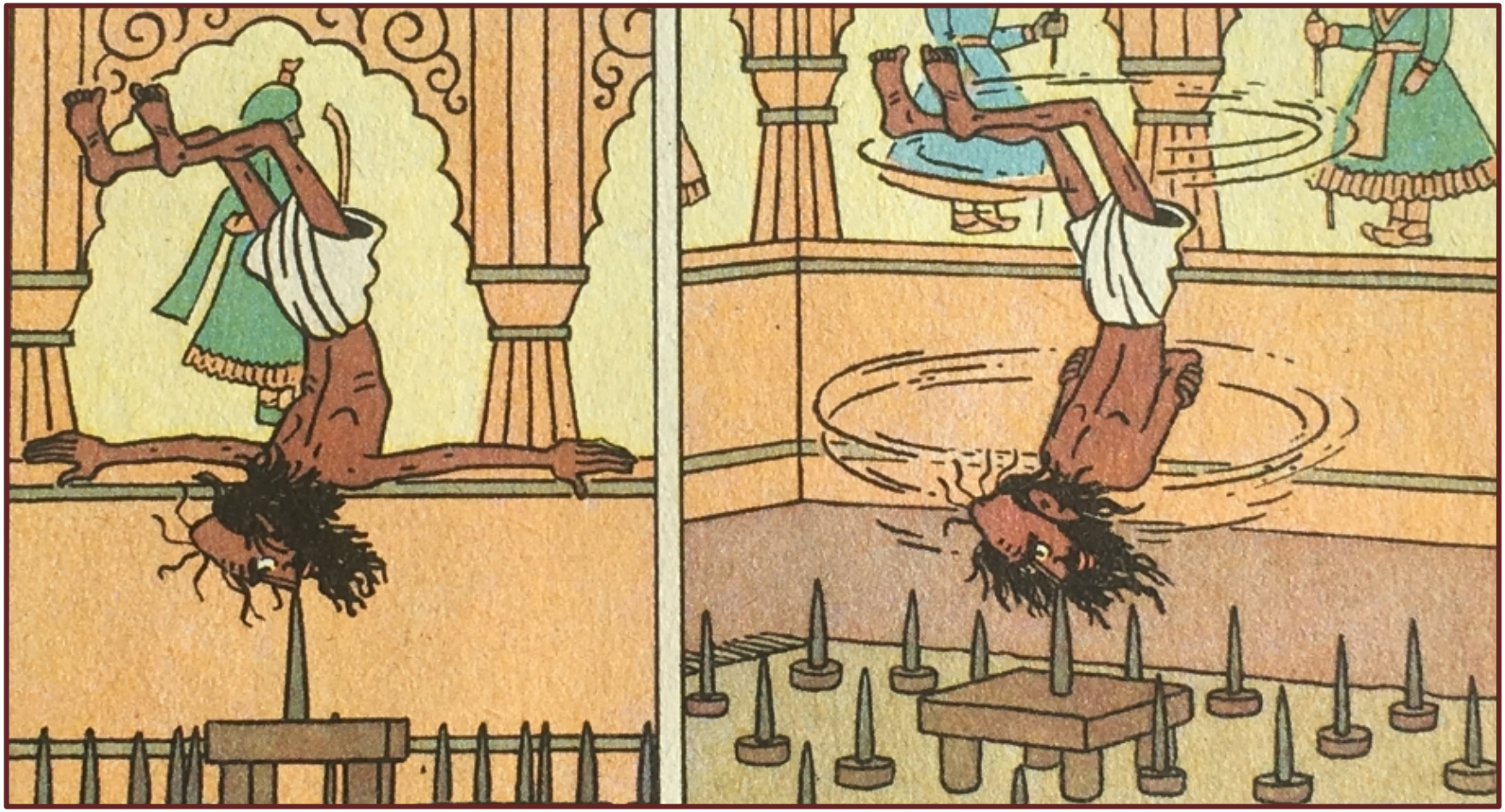
Plus la réactivité basale est importante plus la RHB est efficace sur la dyspnée







« L’expérience est l’autorité suprême » Carl Rogers




Voilà. Prenez place...
Merci.
?
AÏE!
?


Lao-Tzeu l'a dit : " Il faut trouver la voie ! " Moi, je l'ai trouvée. Il faut donc que vous la trouviez aussi...
Ah oui ?...
Je vais d'abord vous couper la tête. Ensuite, vous connaîtrez la vérité !
?


Lao-Tzeu l'a dit : "Il faut trouver la voie !" Moi, je l'ai trouvée. Il faut donc que vous la trouviez aussi...
Ah oui ?...
Je vais d'abord explorer votre cerveau. Ensuite vous connaitrez la vérité !
?

Chronic breathlessness: re-thinking the symptom

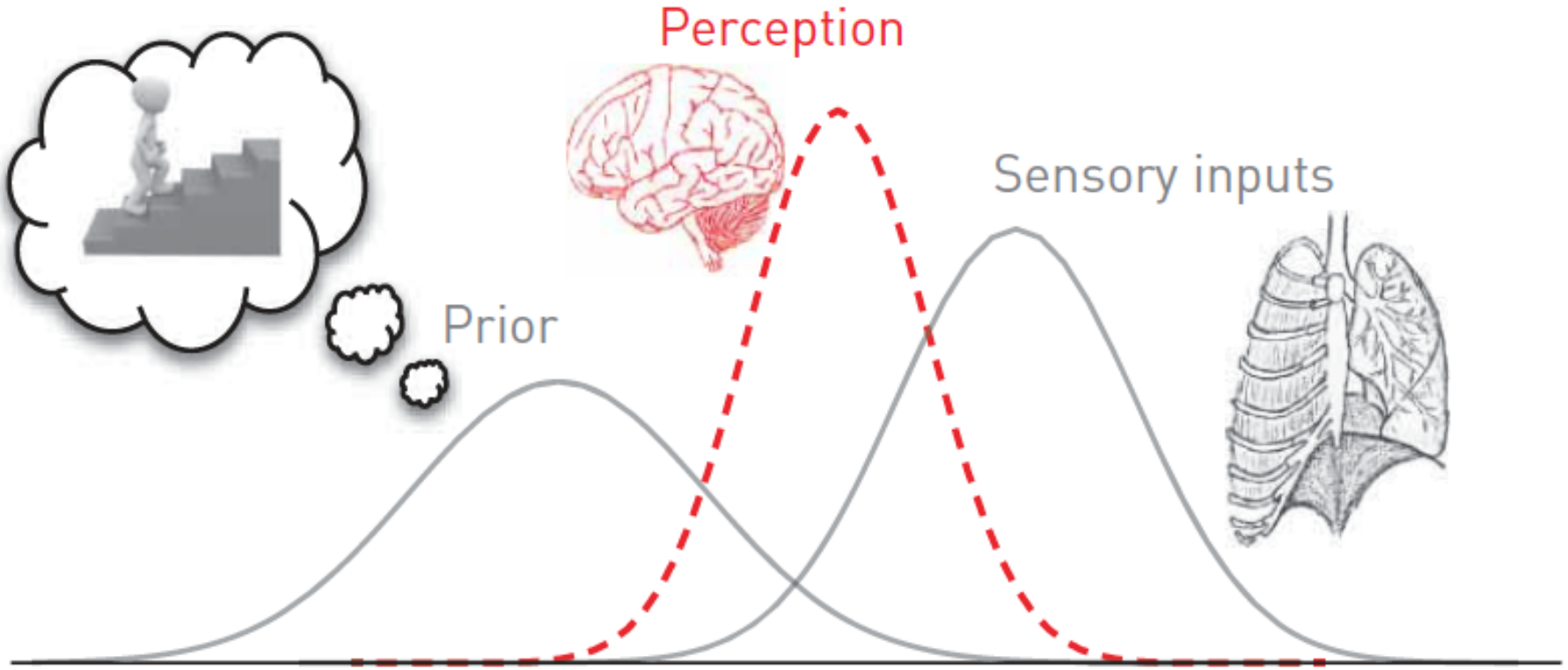
Eur Resp J 2018

5 discussions pour penser le concept de dyspnée chronique

1 Johnson MJ, Yorke J, Hansen-Flaschen J, *et al.* Towards an expert consensus to delineate a clinical syndrome of chronic breathlessness. *Eur Respir J* 2017; 49: 1602277.
2 Johnson MJ, Yorke J, Hansen-Flaschen J, *et al.* Breathlessness despite optimal pathophysiological treatment: on the relevance of being chronic. *Eur Respir J* 2017; 50: 1701297.
3 Calverley PMA. Breathlessness despite optimal pathophysiological treatment: on the relevance of being chronic. *Eur Respir J* 2017; 50: 1701376.
4 Morélot-Panzini C, Adler D, Aguilaniu B, *et al.* Breathlessness despite optimal pathophysiological treatment: on the relevance of being chronic. *Eur Respir J* 2017; 50: 1701159.
5 Calverley PMA. Chronic breathlessness: symptom or syndrome? *Eur Respir J* 2017; 49: 1700366.

Chronic breathlessness: re-thinking the symptom

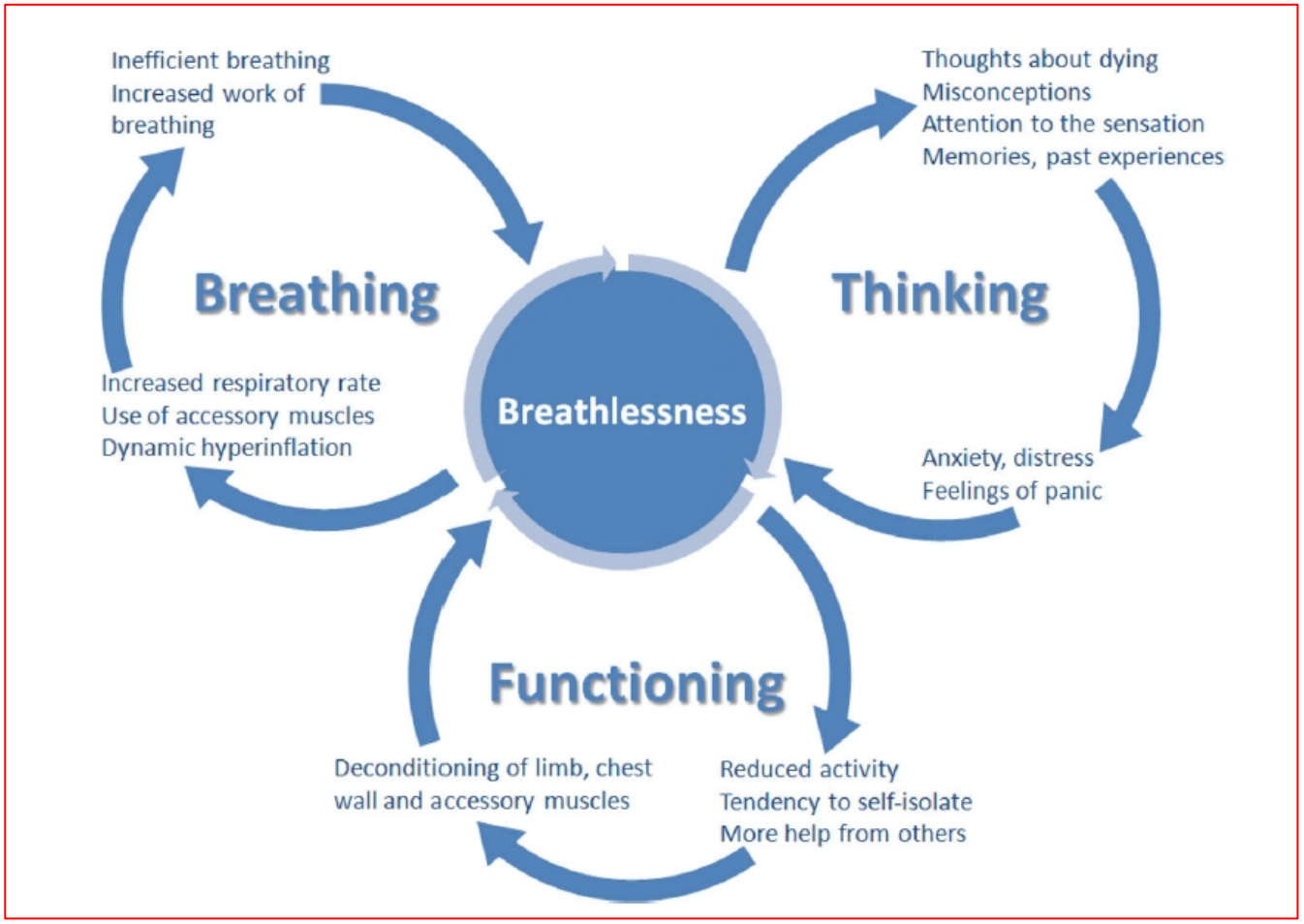
Eur Resp J 2018



The Breathing, Thinking, Functioning clinical model: a proposal to facilitate evidence-based breathlessness management in chronic respiratory disease

Primary Care Respir. Med 2017

Anna Spathis[1,2], Sara Booth[2], Catherine Moffat[1], Rhys Hurst[1], Richella Ryan[2], Chloe Chin[1] and Julie Burkin[1]



Tolérer la Dyspnée

CPLF 2013