

*Toux chronique: des causes
classiques au syndrome
d'hypersensibilité à la toux*

Ligue Pulmonaire du Jura

28 novembre 2019

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Plan

- chronologie de la toux aiguë, subaiguë, chronique
- toux aiguë: un plaidoyer contre les antibiotiques
- toux chronique: le bon vieux temps des 99%
- critères d'alarme à ne pas manquer
- nouveau paradigme unifié et controverses
- syndr. d'hypersensibilité à la toux (SHT)/ cough hypersensitivity syndr. (CHS): réflexe/volonté
- hétérogénéité des voies/mécanismes selon entités
- messages en 2019

Likely Etiologies of Cough Based on Duration

Acute (<3 weeks)

explications, autres facteurs? sirop simple, miel, si très gênante dextrometorphane (effets sec.)

Acute viral upper respiratory tract infection (common cold)

bronchite aiguë peut durer jusqu'à 6 semaines

Subacute (3-8 weeks)

Post-viral (post-infectious) (probable hypersensibilité transitoire des récepteurs de la toux)

Bordetella pertussis (whooping cough)

Chronic (>8 weeks)*

(triade: asthme, syndr. de toux d'origine des voies aériennes sup. (STOVAS), RGO)

Upper airway cough syndrome (postnasal drip syndrome; rhinitis)

Conditions associated with eosinophilic airway inflammation

Asthma

Non-asthmatic eosinophilic bronchitis

Gastroesophageal reflux disease (GERD)

Acid reflux

Non-acid, or weakly-acid, reflux

Occupational/Environmental

Unexplained

Classification of Cough as a Symptom in Adults and Management Algorithms

CHEST Guideline and Expert Panel Report

CHEST 2018; 153(1):196-209

*in patients who are not smokers, have no active pulmonary disease evident on radiographic imaging, and not currently receiving angiotensin converting-enzyme (ACE) inhibitors.

Current Opinion in Pharmacology 2015; 22: 24-28

ACUTE UNCOMPLICATED BRONCHITIS

Acute uncomplicated bronchitis is defined as a self-limited inflammation of the large airways (bronchi) with a cough lasting up to 6 weeks. The cough may or may not be productive (24) and is often accompanied by mild constitutional symptoms. Acute bronchitis is among the most common adult outpatient diagnoses, with about 100 million (10%) ambulatory care visits in the United States per year (8), more than 70% of which result in a prescription for antibiotics (25, 26). Acute bronchitis leads to more inappropriate antibiotic prescribing than any other ARTI syndrome in adults (8).

Pas d'AB dans bronchite aiguë sauf exceptions (à envisager chez patient âgé et multimorbide)

Table 4 | Protective effect of antibiotics for common respiratory tract infections and number needed to treat to prevent one complication

Infection/adverse outcome (age group)	Adjusted odds ratio* (95% CI)	Number needed to treat (95% CI)	P value
URTI/pneumonia (all ages)	0.68 (0.58 to 0.79)	4407 (2905 to 9126)	<0.001
Otitis media/mastoiditis (all ages)	0.56 (0.37 to 0.86)	4064 (2393 to 13 456)	0.008
Sore throat/quinsy (all ages)	0.84 (0.73 to 0.97)	4300 (2522 to 14 586)	0.021
Chest infection/pneumonia (significant interaction between prescribing and age):			
0-4 years	0.22 (0.17 to 0.27)	101 (85 to 125)	<0.001
5-15 years	0.18 (0.13 to 0.24)	96 (73 to 137)	<0.001
16-64 years	0.27 (0.23 to 0.32)	119 (105 to 136)	<0.001
≥65 years	0.35 (0.33 to 0.38)	39 (36 to 42)	<0.001

URTI=upper respiratory tract infection.

*Adjusted for age, sex, and social deprivation.

BMJ 2007; 335 (7627): 982

High-Value Care Advice 1

Clinicians should not perform testing or initiate antibiotic therapy in patients with bronchitis unless pneumonia is suspected.

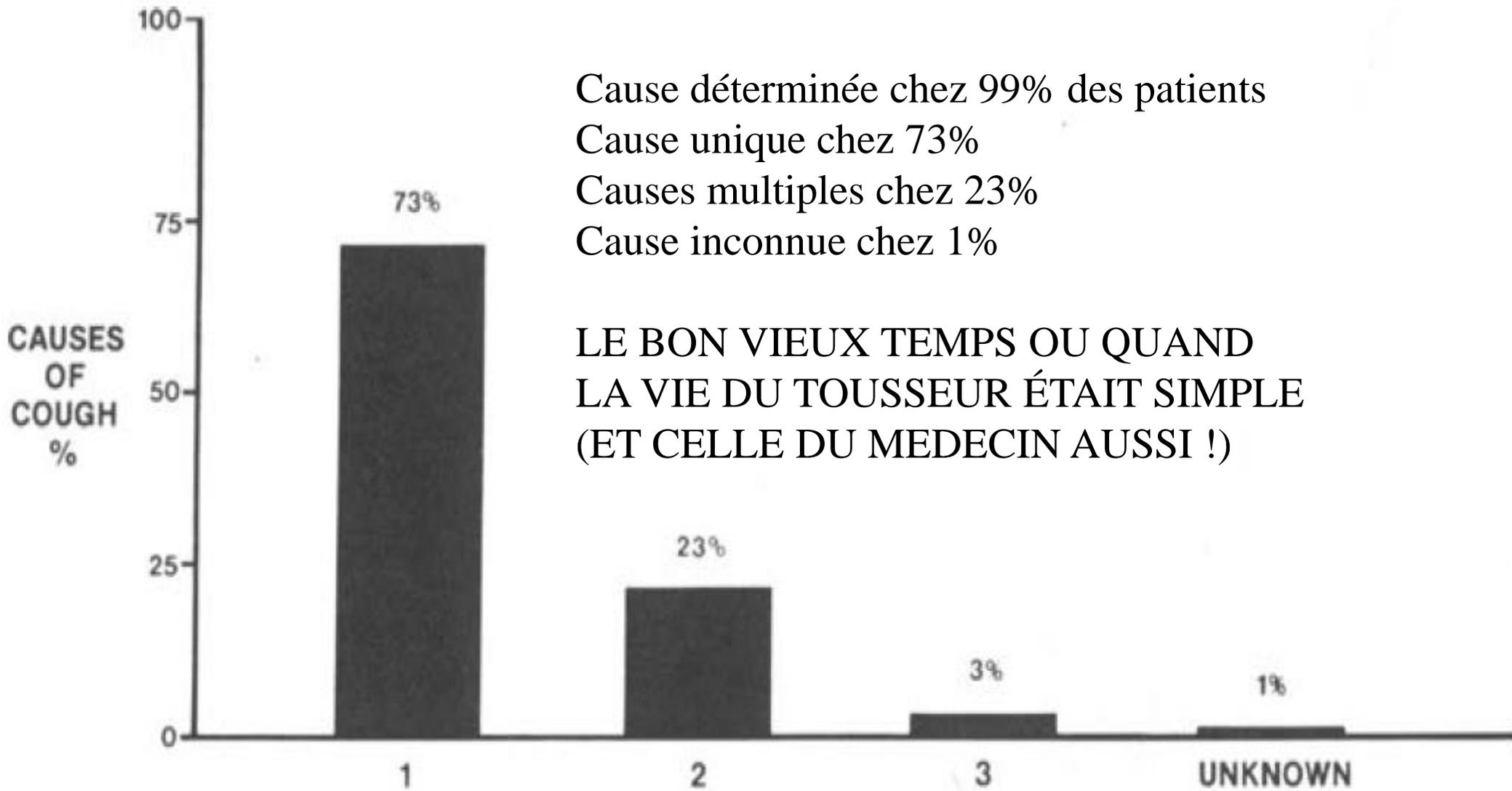
Ann Intern Med 2016; 19.01.2016

Chronic Cough

The Spectrum and Frequency of Causes, Key Components of the Diagnostic Evaluation, and Outcome of Specific Therapy¹⁻³

RICHARD S. IRWIN, FREDERICK J. CURLEY, and CYNTHIA L. FRENCH

Am Rev Respir Dis 1990; 141: 640-647



Cause déterminée chez 99% des patients
Cause unique chez 73%
Causes multiples chez 23%
Cause inconnue chez 1%

LE BON VIEUX TEMPS OU QUAND
LA VIE DU TOUSSEUR ÉTAIT SIMPLE
(ET CELLE DU MEDECIN AUSSI !)

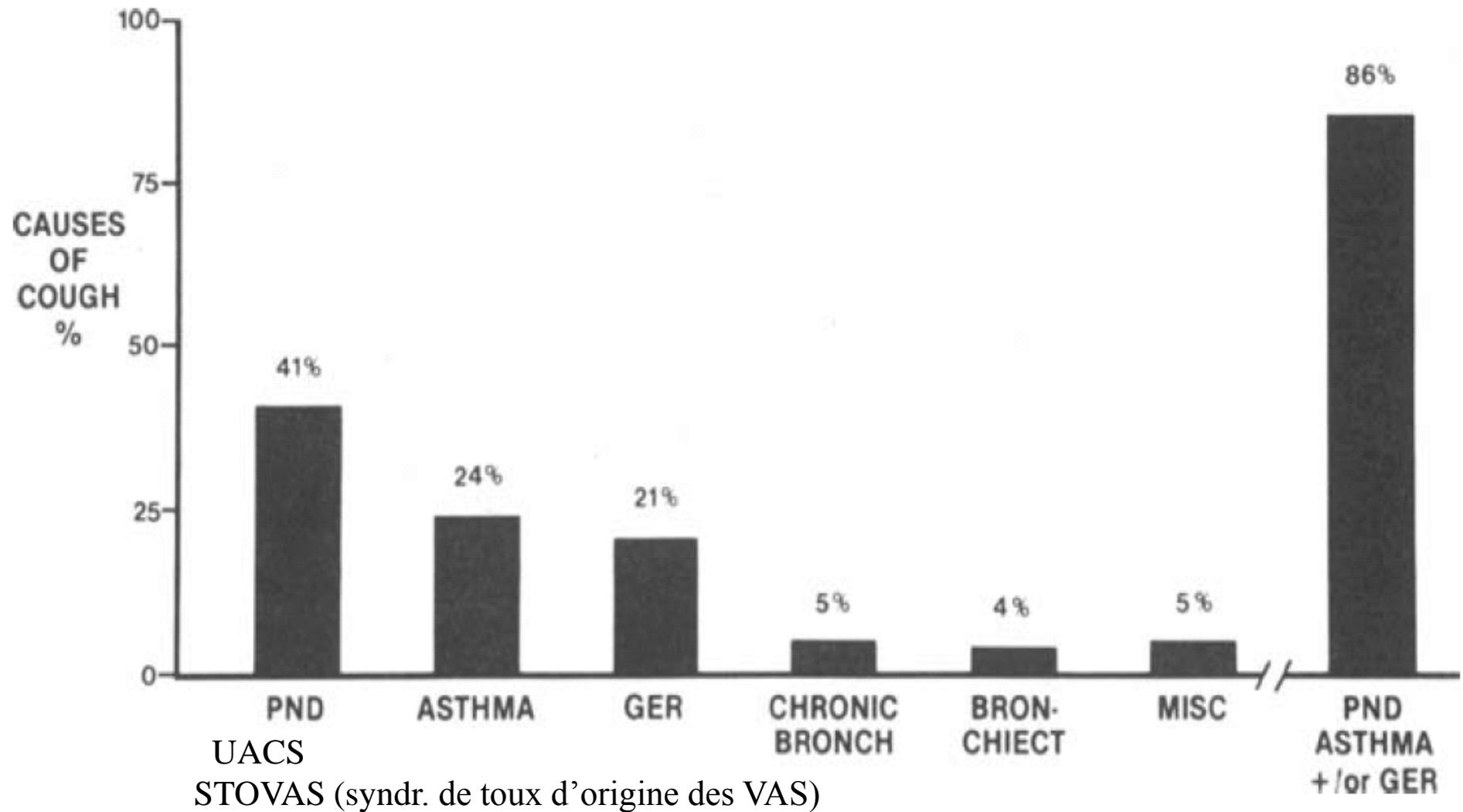


Fig. 1. The causes of chronic cough. *Top panel.* The cause was determined in 99% of patients; it was due to a single condition in 73% of patients and to multiple disorders in 26%. *Bottom panel.* The spectrum and frequency of the 131 causes (PND = postnasal drip syndrome; GER = gastroesophageal reflux; Bronch = bronchitis; bronchiect = bronchiectasis; misc = miscellaneous).

Box 2 Red flags: alarm symptoms and findings in chronic cough⁶⁵

- Hemoptysis
- Smoker with >20 pack year smoking history
- Smoker over 45 years of age with a new cough, altered cough, or cough with voice disturbance
- Prominent dyspnea, especially at rest or at night
- Substantial sputum production: more than one tablespoon a day
- Hoarseness

Box 2 | Red flags: alarm symptoms and findings in chronic cough⁶⁵

- Systemic symptoms: fever, weight loss
- Complicated gastroesophageal reflux disease (GORD) symptoms associated with weight loss, anemia, overt gastrointestinal bleeding (hematemesis or melena), severe symptoms, dysphagia, odynophagia, or failure of empiric treatment for GORD
- Recurrent pneumonia
- Abnormal clinical respiratory examination
- Abnormal chest radiograph

BMJ 2015; 351: h5590

Box 3 | Remediable conditions and conditions not to be missed in patients with chronic cough⁶⁵

Serious cough related conditions

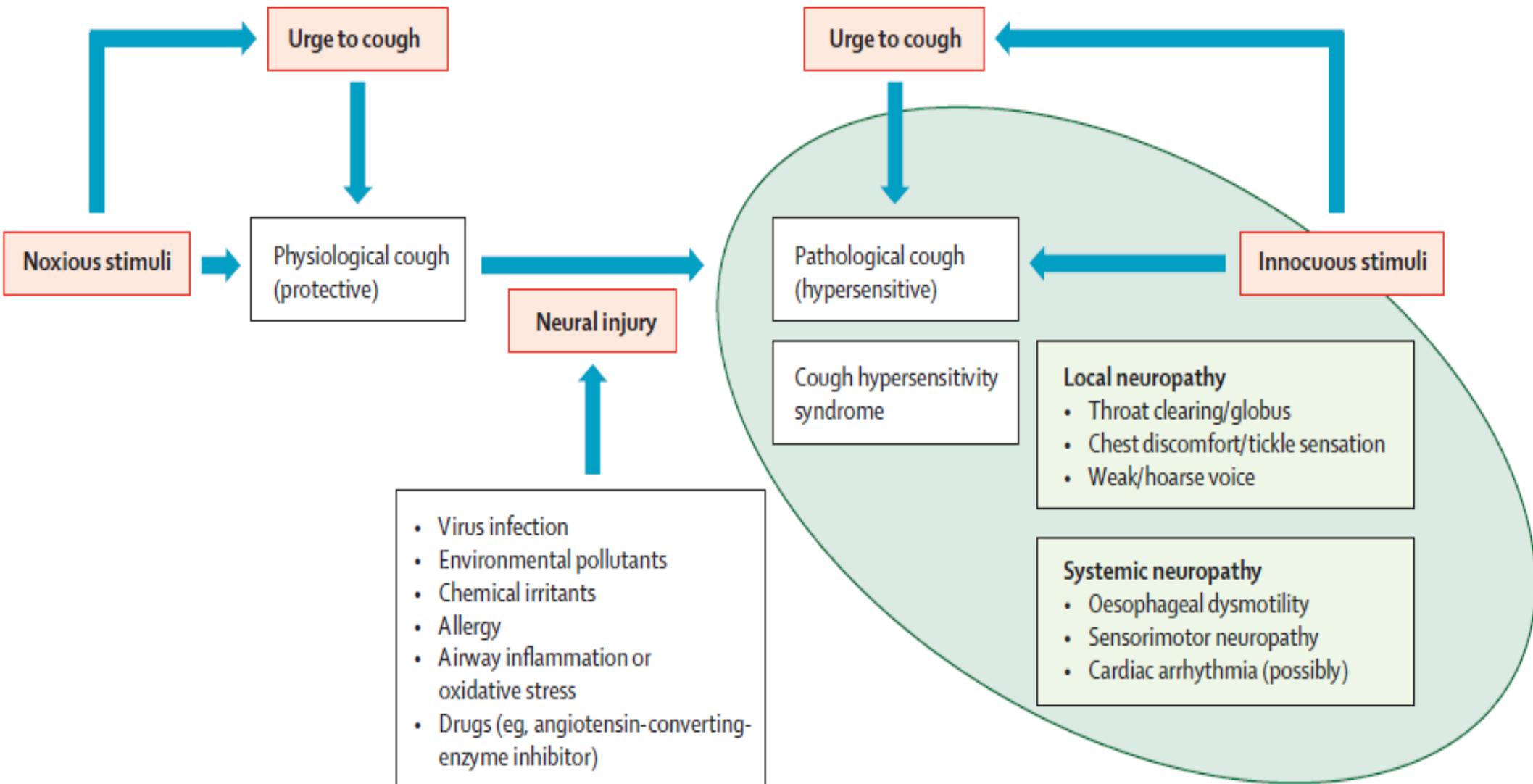
Cancer of the larynx, bronchus, or lung

Parenchymal lung disease: chronic obstructive pulmonary disease, interstitial pulmonary fibrosis, bronchiectasis, sarcoidosis, pneumothorax

Cardiovascular disease: left ventricular failure, pulmonary embolism, aortic aneurysm

Infection: tuberculosis, lung abscess, pertussis

LA TOUX CHRONIQUE: UNE NEUROPATHIE SENSITIVE?



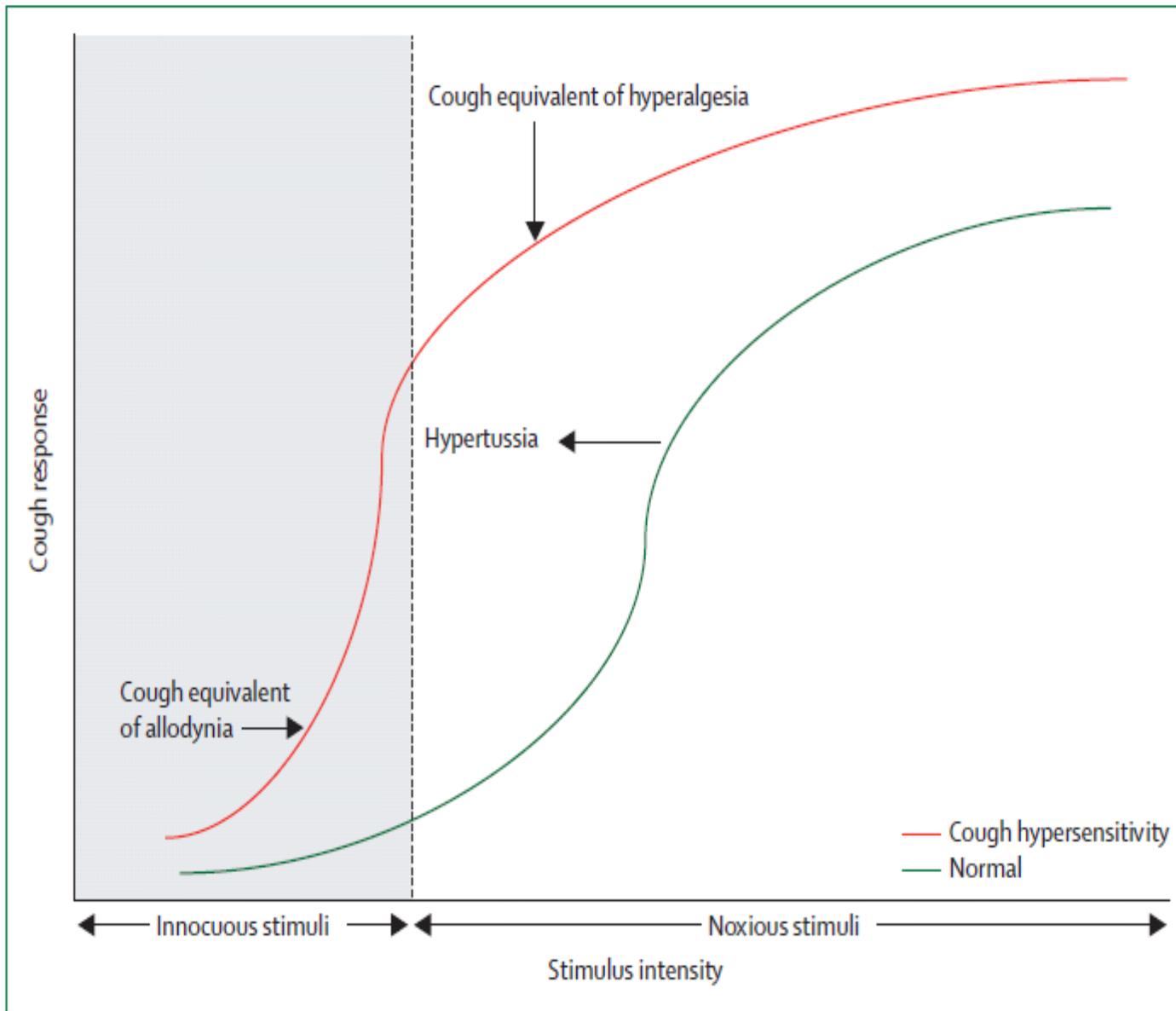
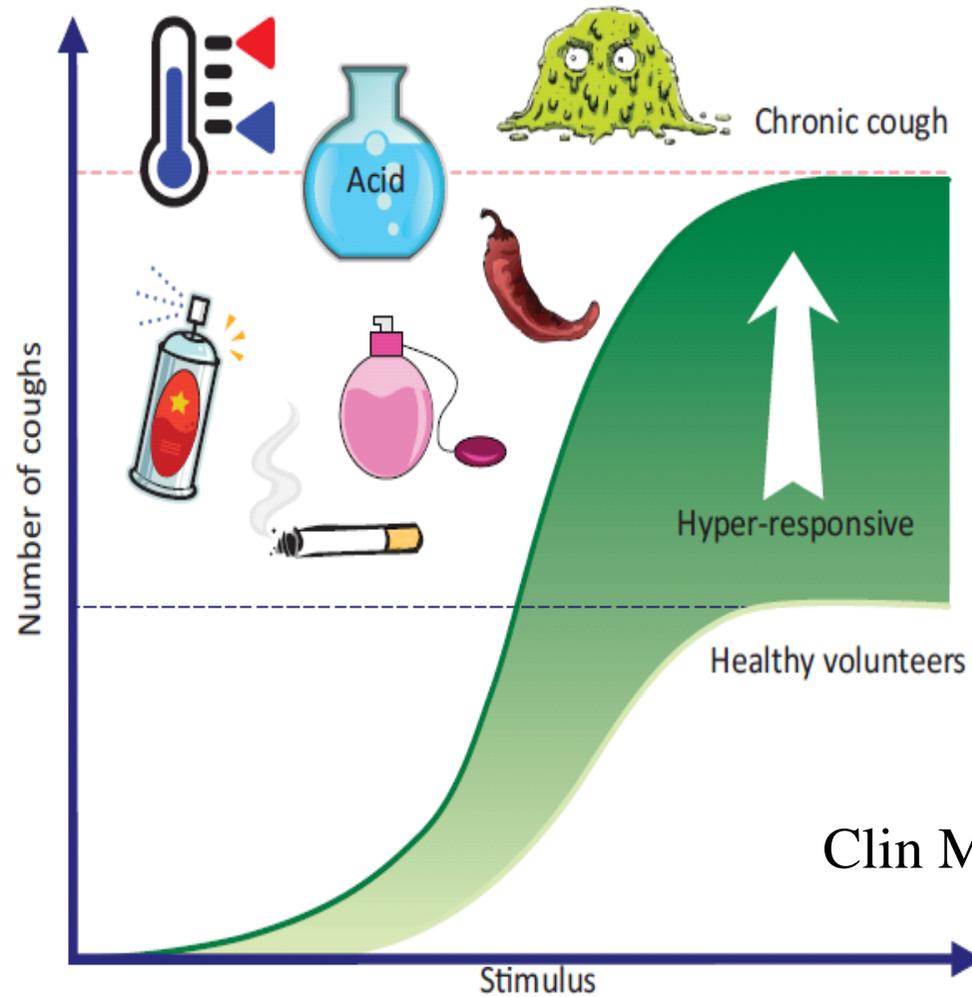


Figure 4: Relation between stimulus intensity and cough response in cough hypersensitivity, and parallel with abnormal pain states

Cough hypersensitivity results in cough in response to innocuous stimuli, as in allodynia.



Clin Med 2016; 16: s92-s97

Fig 3. Schematic diagram representing cough hyper-responsiveness to airway stimuli displayed by chronic cough patients. Compared with healthy volunteers, patients with chronic cough predominantly exhibit heightened cough responses to airway stimuli, such as inhaled capsaicin and citric acid, in cough challenge test and report coughing triggered by changes in temperature, perfumes, aerosols, smoke and to small volumes of mucus.

Table 3 Characteristics of cough hypersensitivity syndrome

1. Irritation in the throat or upper chest: laryngeal/pharyngeal/upper airway paresthesiae
2. Cough triggered by non-tussive stimulus eg talking, laughing: allotussia
3. Increased cough sensitivity to inhaled stimuli and number of triggers: hypertussia
4. Cough paroxysms that are difficult to control
5. Triggers:
 - Singing, talking, laughing, deep breath: mechanical activation
 - Changes in temperature, cold air: thermoactivation
 - Aerosols, scents, odors: chemoactivation
 - Lying supine
 - Eating
 - Exercise

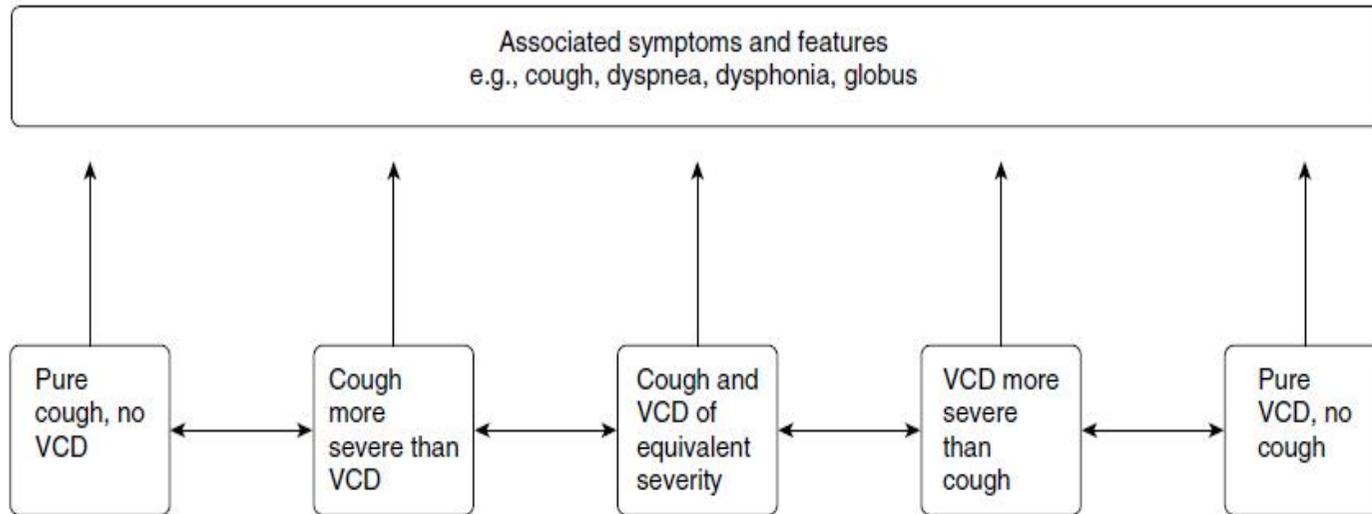
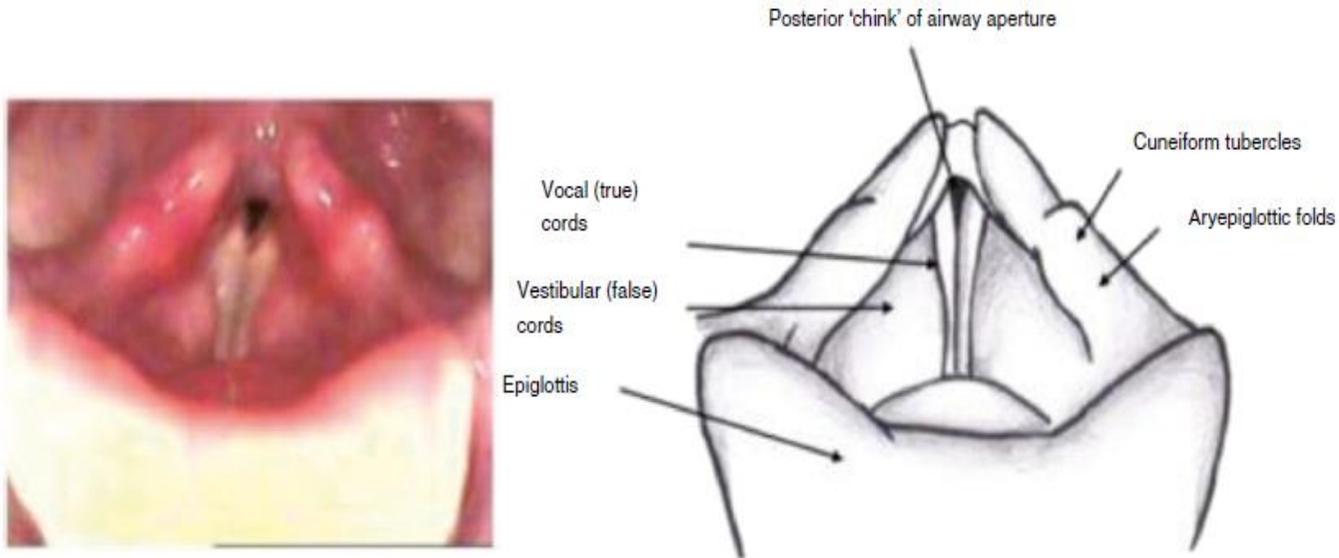
A**B**

Figure 1. (A) Overlapping manifestations of laryngeal dysfunction (modified by permission from Reference 93). (B) Pictorial (*left*) and schematic (*right*) representation of classic vocal cord closure (reproduced by permission from Reference 94). VCD = vocal cord dysfunction.

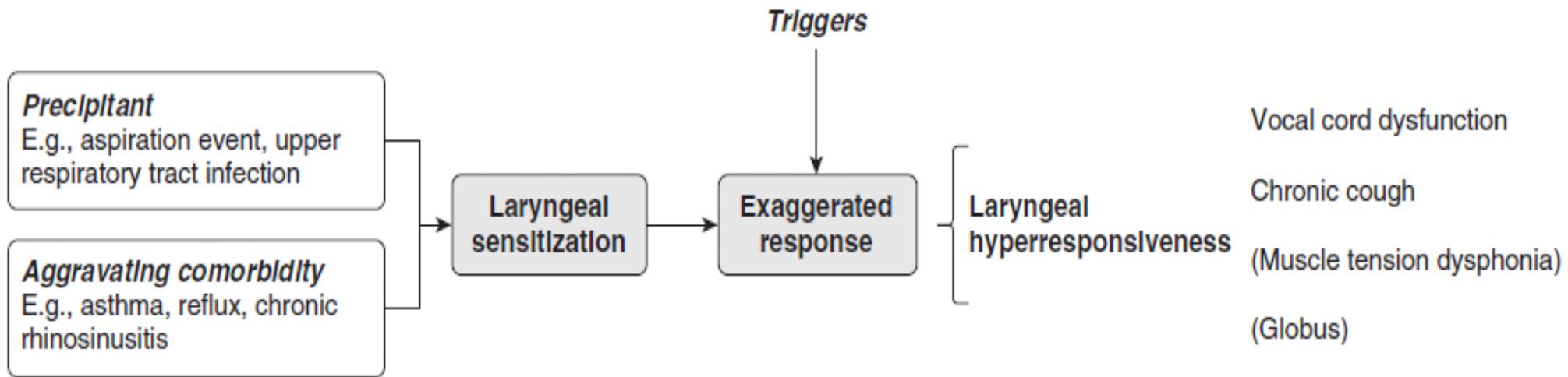
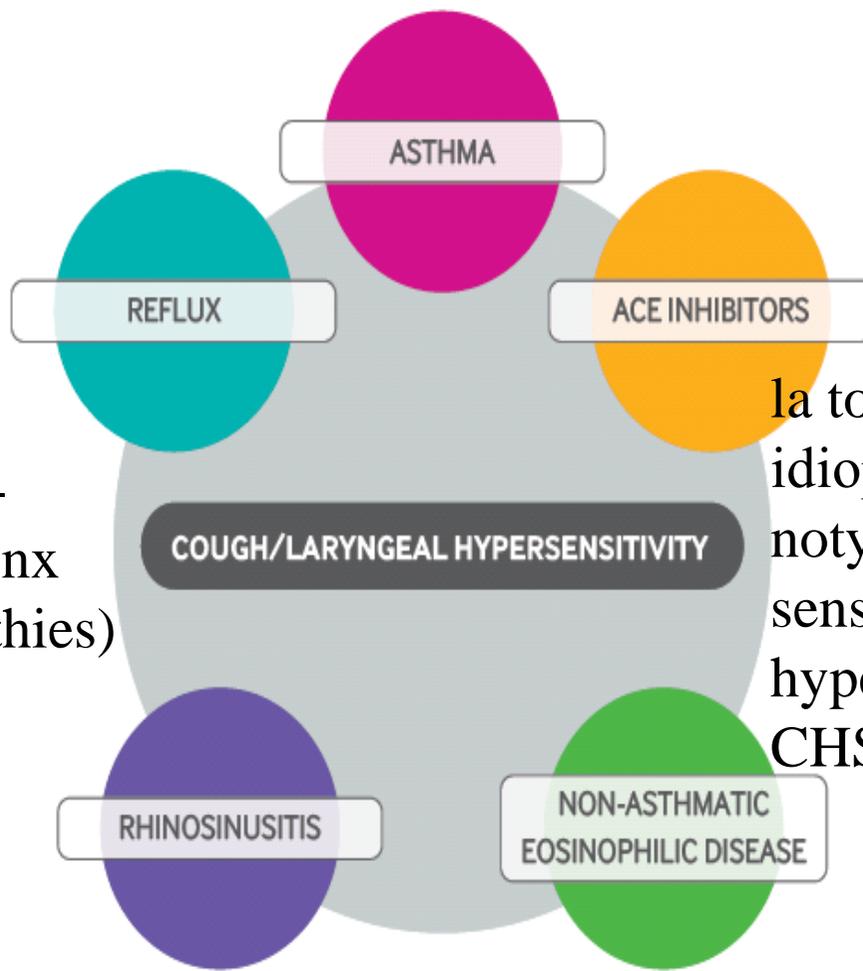


Figure 2. Schematic outlining the proposed relationship between etiological factors, hypersensitivity, triggers, and hyperreactivity.

UN NOUVEAU PARADIGME UNIFIE

rôle central de l'hypersensibilité à la toux et du larynx (parenté avec les neuropathies)



la toux chronique réfractaire idiopathique est l'un des phénotypes : syndrome d'hypersensibilité à la toux (cough hypersensitivity syndrome ou CHS)

Fig 1 | Proposed association between cough hypersensitivity syndrome, laryngeal hypersensitivity syndrome, and related diseases; ACE=angiotensin converting enzyme

Table 1 | Comparison of features of chronic pain and chronic refractory cough⁴⁶**Neuropathic pain**

Concept	Definition/description	Example
Paresthesia	Abnormal sensation	Tingling sensation in the skin
Hyperalgesia	Increased response to a stimulus that is normally painful but at a reduced threshold	Increased pain response to a needle prick
Allodynia	Pain in response to a stimulus that does not normally produce pain, such as a mechanical or thermal stimulus	Pain in response to touch

Neuropathic cough

Concept	Definition/description	Example
Laryngeal paresthesia or hypersensitivity	Abnormal sensation in the throat	Tickle or itch in throat
Hypertussia	Increased cough response to a tussigenic stimulus	Fumes, smoke, aspirate
Allotussia	Cough in response to a non-tussigenic stimulus	Thermal, vocalisation, exercise

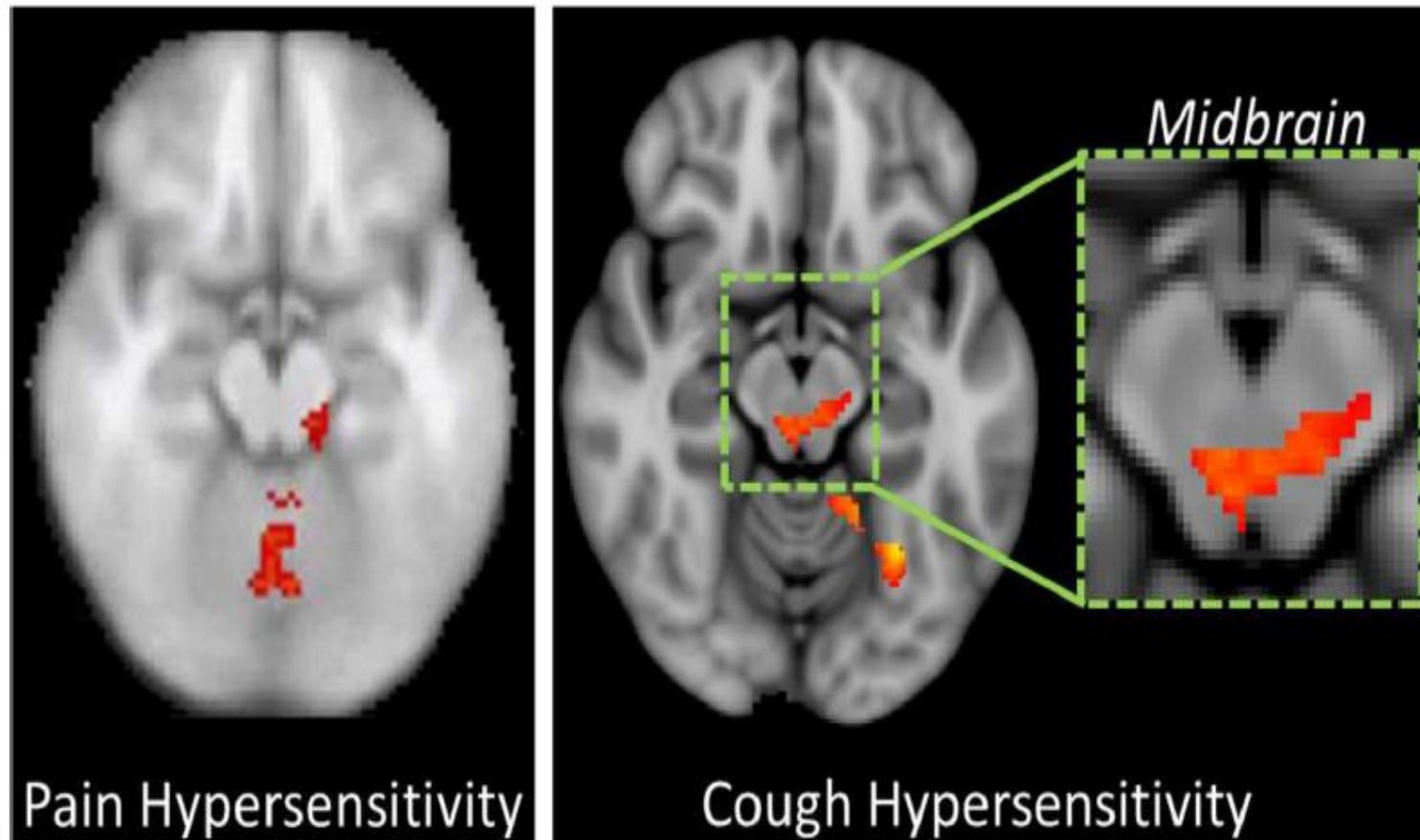


Fig. 2. A common mechanism of central sensitisation in pain and cough: functional brain imaging studies in humans. Left panel, Subjects were treated unilaterally on the right lower leg with a combination of heat and capsaicin to induce hyperalgesia. Subsequent mechanical stimulation of the area evoked increased pain sensations which were associated with unilateral increased neural activity in the midbrain nucleus cuneiformis (reproduced with permission from Ref. [83]). Right Panel, Comparable activations in the midbrain nucleus cuneiformis extending into the periaqueductal grey (PAG) in subjects with chronic cough hypersensitivity exposed to inhaled capsaicin challenges (data adapted from Ref. [3]). Not shown is an absence of midbrain activity in control subjects, consistent with the midbrain playing a specific role in the development or maintenance of hypersensitivity.

Table 2 | Effects of neuromodulator drugs on cough quality of life*

Study	Tool used	Drug	Change in score from baseline (points)
Jeyakumar et al ⁵³	CQLQ	Amitriptyline	24.53
		Guaifenesin-codeine	2.92
Morice et al ⁵²	LCQ†	Morphine	3.2
		Placebo	1.2
Ryan et al ⁴⁹	LCQ†	Gabapentin	2.5
		Placebo	1.1
Vertigan et al ⁵¹	LCQ†	Pregabalin‡	6.6
		Placebo‡	3.3

Abbreviations: CQLQ=cough quality of life questionnaire; LCQ=Leicester cough questionnaire.

*Adapted from American College of Chest Physicians guideline.²⁰

†Minimally important dose is 2.

‡Treatment given simultaneously with speech pathology treatment.



Early View

Task Force Report

ERS guidelines on the diagnosis and treatment of chronic cough in adults and children

Alyn H. Morice, Eva Millqvist, Kristina Bieksiene, Surinder S. Biring, Peter Dicpinigaitis, Christian Domingo Ribas, Michele Hilton Boon, Ahmad Kantar, Kefang Lai, Lorcan McGarvey, David Rigau, Imran Satia, Jacky Smith, Woo-Jung Song, Thomy Tonia, Jan W. K. van den Berg, Mirjam J. G. van Manen, Angela Zacharasiewicz

Please cite this article as: Morice AH, Millqvist E, Bieksiene K, *et al.* ERS guidelines on the diagnosis and treatment of chronic cough in adults and children. *Eur Respir J* 2019; in press (<https://doi.org/10.1183/13993003.01136-2019>).

Cough assessment in adults

History taking and physical examination on presentation

- Cough duration
- Cough impact and triggers
- Family history
- Cough score (using VAS or verbal out of 10)
- HARQ HULL AIRWAY REFLUX QUESTIONNAIRE ou RSI
- Associated symptoms: throat, chest, GI
- Risk factors: ACE inhibitor, smoking, sleep apnoea
- Physical examination: throat, chest, ear

Routine evaluation

- Chest X-ray
- Pulmonary function test
- ?FeNO
- ?Blood count for eosinophils

Initial management

- Stop risk factors
- Initiate corticosteroids (oral or inhaled) or LTRA, particularly when FeNO or blood eosinophils high (2-4 sem)
- Initiate PPI only when peptic symptoms or evidence of acid reflux are present

Please cite this article as: Morice AH, Millqvist E, Bieksiene K, *et al.* ERS guidelines on the diagnosis and treatment of chronic cough in adults and children. *Eur Respir J* 2019; in press (<https://doi.org/10.1183/13993003.01136-2019>).

Fractional exhaled nitric oxide as a predictor of response to inhaled corticosteroids in patients with non-specific respiratory symptoms and insignificant bronchodilator reversibility: a randomised controlled trial

Lancet Respir Med 2018;
6: 29–39

Published Online
November 3, 2017

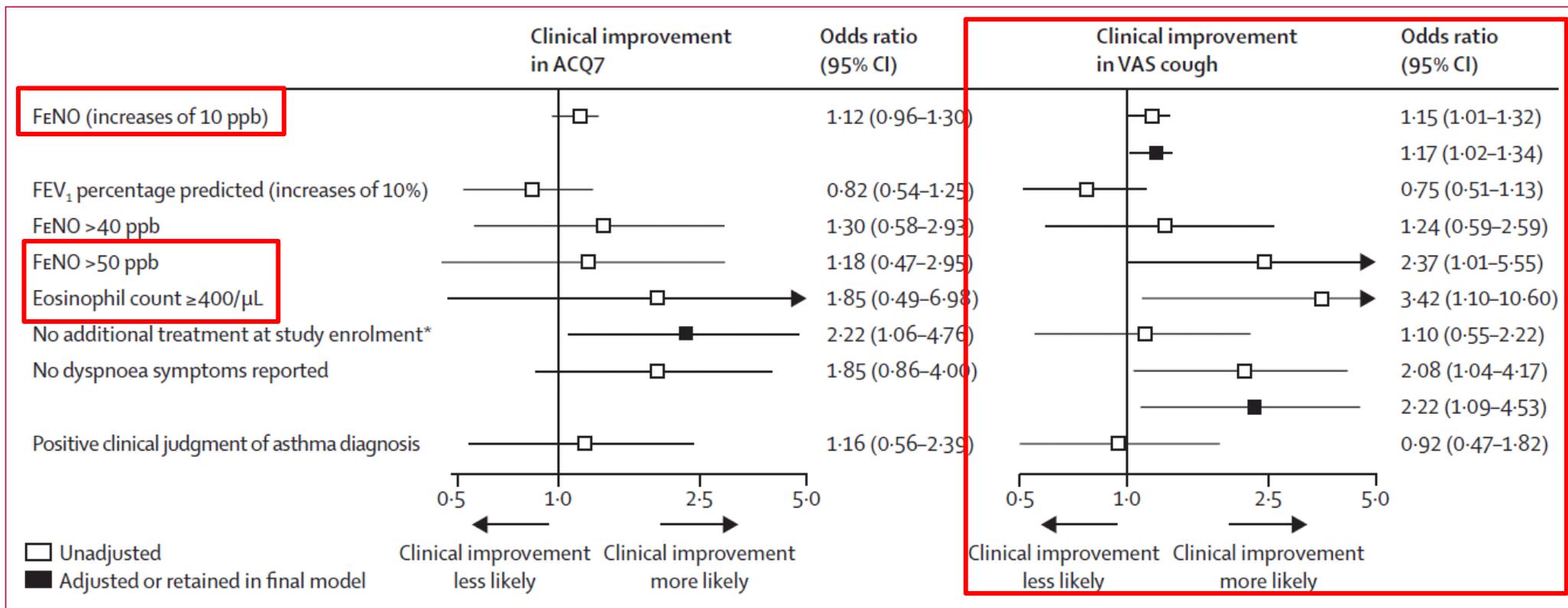
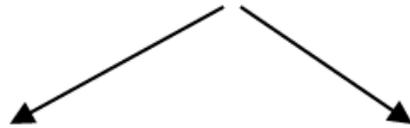


Figure 2: Baseline predictors of clinical response in ACQ7 and VAS cough, in the extrafine inhaled corticosteroids group of the exploratory analysis population (n=137)

Follow up assessment for cough

- Cough score (using VAS or 0 – 10)
- Associated symptoms



Improvement

- Continue for 3/12 and attempt withdrawal

No improvement

- consider low dose opiate
- consider promotility agent
- consider gabapentin
- consider pregabalin
- consider cough control therapy

Additional evaluation where indicated

- High resolution oesophageal manometry
- Induced sputum for eosinophils
- Sputum AAFB
- Laryngoscope
- Methacholine challenge
- Chest CT
- Bronchoscopy

Please cite this article as: Morice AH, Millqvist E, Bieksiene K, *et al.* ERS guidelines on the diagnosis and treatment of chronic cough in adults and children. *Eur Respir J* 2019; in press (<https://doi.org/10.1183/13993003.01136-2019>).

Eur Respir J 2010; 35: 368–372

DOI: 10.1183/09031936.00110409

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Chronic cough in patients with sleep-disordered breathing

Chronic cough is prevalent in patients with SDB and is associated with female sex, symptoms of nocturnal heartburn and rhinitis. Further studies are required to investigate the impact of continuous positive airway pressure therapy on cough associated with SDB to explore the mechanism of this association.

RESEARCH

Open Access

A longitudinal study of CPAP therapy for patients with chronic cough and obstructive sleep apnoea

Conclusion: OSA is significantly prevalent in chronic cough patients. Subjects with chronic cough and OSA tend to be older and obese. Treatment of OSA in chronic cough patients yields significant improvement in their health status.

Chronic Cough

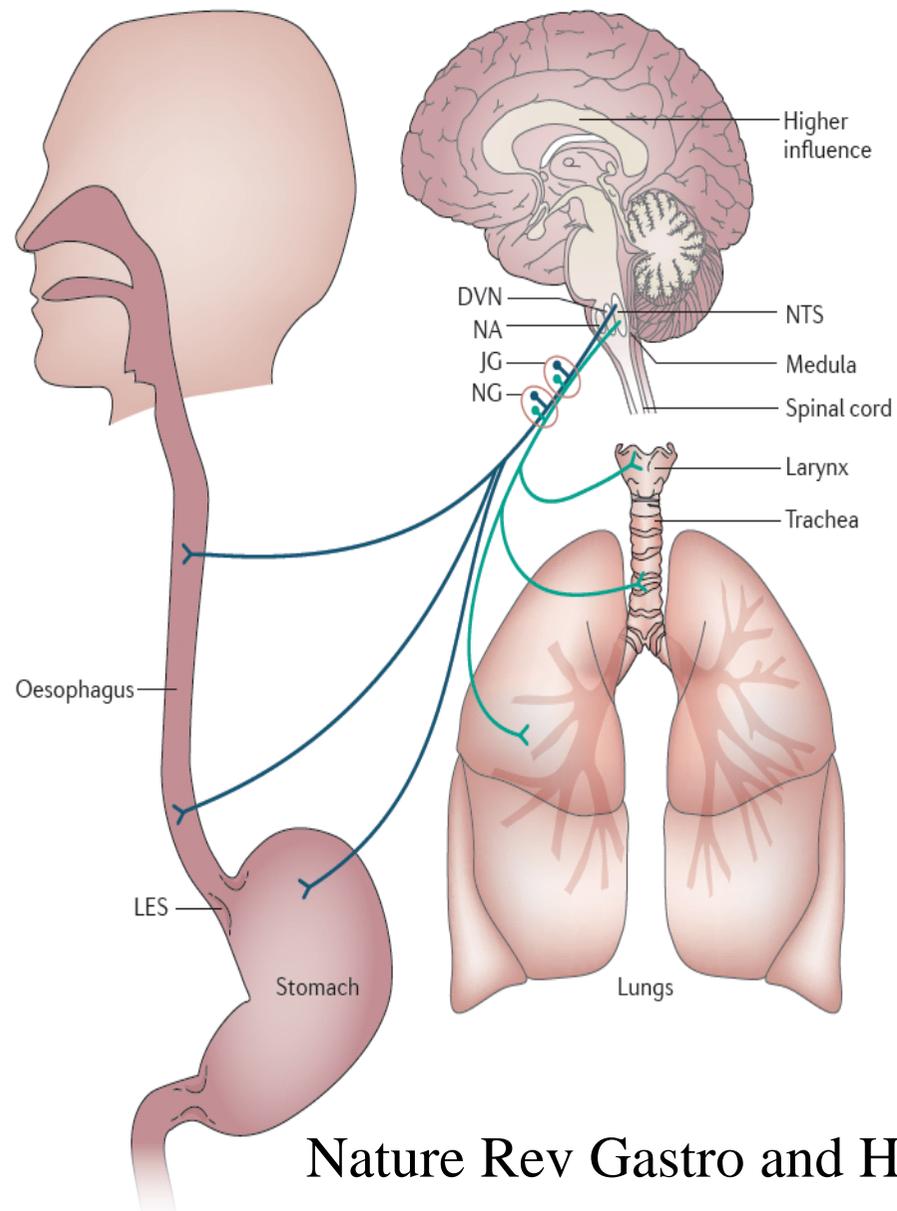
Relationship Between Microaspiration, Gastroesophageal Reflux, and Cough Frequency

Conclusions: Proximal gastroesophageal reflux and microaspiration into the airways have limited roles in provoking chronic cough. Indeed, coughing appears to be protective, reducing pepsin concentration in the larger airways of patients with chronic cough.

Trial registry: ISRCTN Register; No.: ISRCTN62337037; URL: www.isrctn.org

CHEST 2012; 142(4):958–964

gastroesophageal
reflex?



Nature Rev Gastro and Hep 2016; 13; 445-460

Figure 1 | **Diagram showing the shared neuronal innervation of the oesophagus, stomach and airways.** Pulmonary afferents (green) and oesophageal afferents (dark blue) both run in the vagus nerve and have cell bodies in the nodose ganglia (NG) and jugular ganglia (JG), and terminate in the nucleus tractus solarii (NTS). DVN, dorsal vagal nucleus; LES, lower oesophageal sphincter; NA, nucleus ambiguus.

2. In adult patients with chronic cough suspected to be due to reflux-cough syndrome, we recommend that treatment include (1) diet modification to promote weight loss in overweight or obese patients; (2) head of bed elevation and avoiding meals within 3 hours of bedtime; and (3) in patients who report heartburn and regurgitation, proton pump inhibitors (PPIs), H₂-receptor antagonists, alginate, or antacid therapy sufficient to control these symptoms (Grade 1C).

3. In adult patients with suspected chronic cough due to reflux-cough syndrome, but without heartburn or regurgitation, we recommend against using PPI therapy alone because it is unlikely to be effective in resolving the cough (Grade 1C).

Chest 2016; 150: 1341-1360

Airway reflux as a cause of respiratory disease

Airway reflux consists of a mainly gaseous non-acid mist which, when deposited in the upper and lower airways leads to inflammation, fibrosis, bronchoconstriction and cough.

Alyn H. Morice

Breathe | June 2013 | Volume 9 | No 4

HULL AIRWAY REFLUX QUESTIONNAIRE

Au cours du mois écoulé, avec quelle intensité avez-vous éprouvé les problèmes suivants ? Coter de 0 = jamais à 5 = souvent (difficulté sévère)						
Voix rauque ou autre problème de voix	0	1	2	3	4	5
Râchement de gorge	0	1	2	3	4	5
Sensation d'encombrement au niveau de la gorge (mucus), ou d'écoulement nasal postérieur	0	1	2	3	4	5
Hauts-le-cœur ou vomissement lors de la toux	0	1	2	3	4	5
Toux en vous couchant ou en vous penchant en avant	0	1	2	3	4	5
Sensation d'oppression thoracique ou présence de sifflements dans la poitrine lors de la toux	0	1	2	3	4	5
Brûles d'estomac, difficultés à digérer, impression de reflux d'acide provenant de l'estomac (si vous prenez des médicaments pour cela, cochez "5")	0	1	2	3	4	5
Sensation de chatouillement dans la gorge, ou de boule dans la gorge	0	1	2	3	4	5
Toux provoquée par l'alimentation (pendant les repas ou juste après)	0	1	2	3	4	5
Toux provoquée par certains aliments	0	1	2	3	4	5
Toux lors du lever du lit, le matin	0	1	2	3	4	5
Toux provoquée par le chant, ou par la parole (par exemple au téléphone)	0	1	2	3	4	5
Toux durant la journée, plutôt que pendant la nuit	0	1	2	3	4	5
Goût bizarre dans la bouche	0	1	2	3	4	5

positif > 13 points

Reflux Symptom Index (RSI)

positif > 13 points

0 = aucun
problème ;
5 = problème
important

Au cours du dernier mois, comment ces différents symptômes vous ont ils affectés ?

Voix enrouée et/ou problème de voix

0 1 2 3 4 5

Raclage de gorge

0 1 2 3 4 5

Excès de sécrétions dans la gorge ou sensation d'écoulements à l'arrière du nez

0 1 2 3 4 5

Difficulté d'avaler des aliments solides, liquides, ou des gélules

0 1 2 3 4 5

Toux après avoir mangé ou après être resté(e) couché(e)

0 1 2 3 4 5

Difficultés respiratoires ou épisodes d'étouffement

0 1 2 3 4 5

Toux gênante ou ennuyeuse

0 1 2 3 4 5

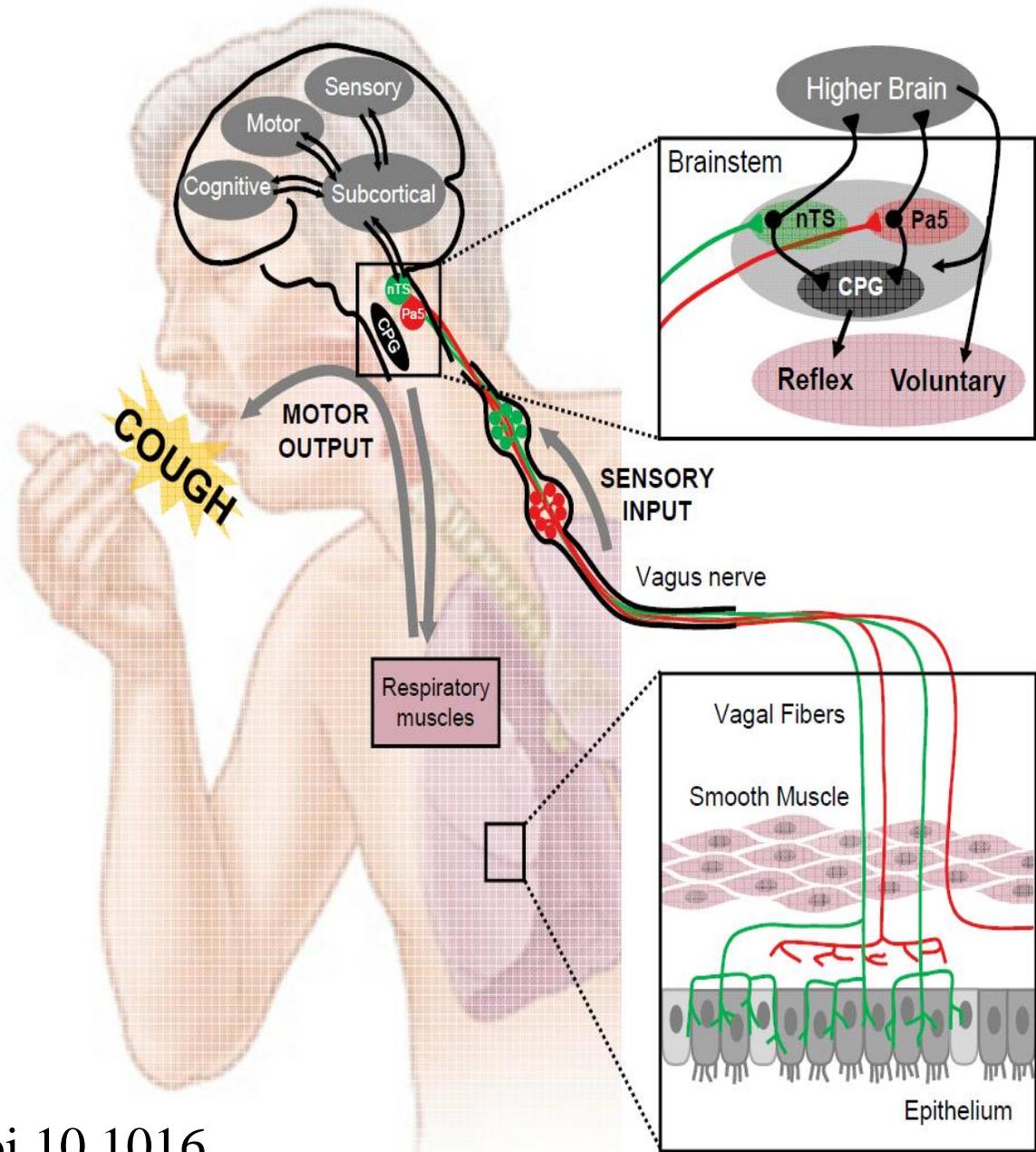
Sensation d'avoir une grosseur ou quelque chose de coincé dans la gorge

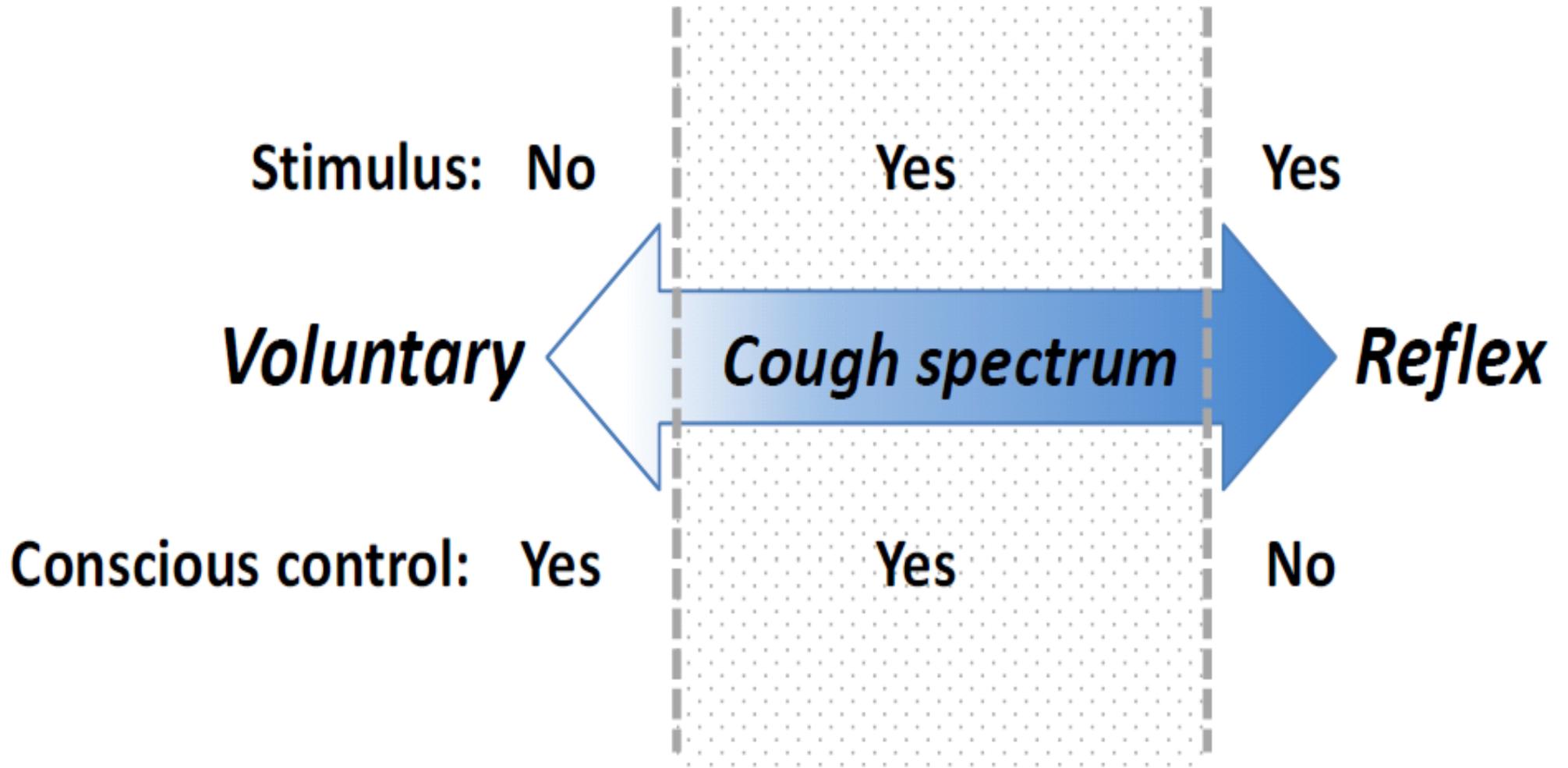
0 1 2 3 4 5

Brûlures d'estomac, douleurs dans la poitrine, mauvaise digestion, ou remontées acides

0 1 2 3 4 5

Total (*à compléter par le médecin*)





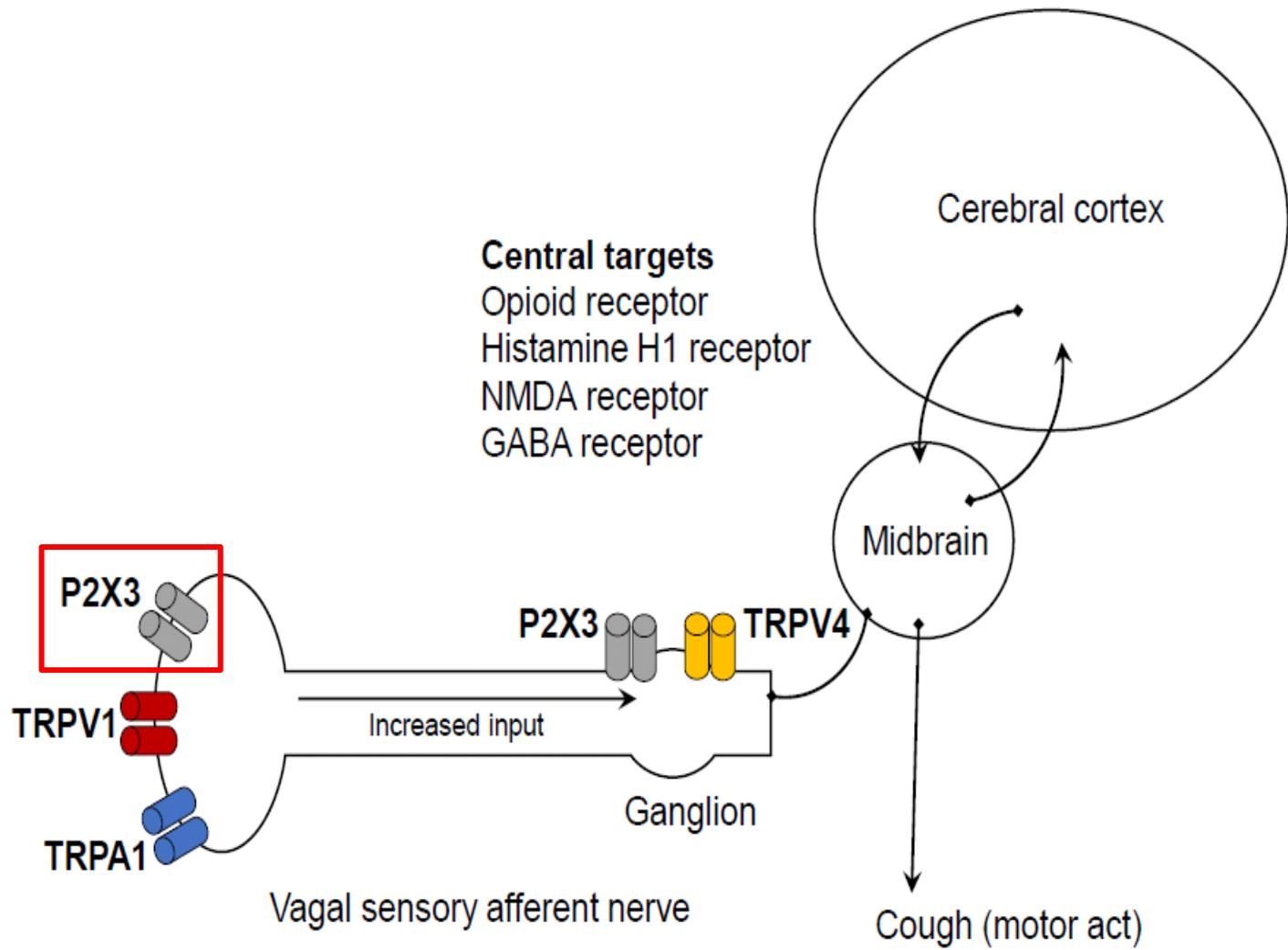


Fig. 2. Current potential therapeutic targets in cough hypersensitivity syndrome.

P2X3 receptor antagonist (AF-219) in refractory chronic cough: a randomised, double-blind, placebo-controlled phase 2 study

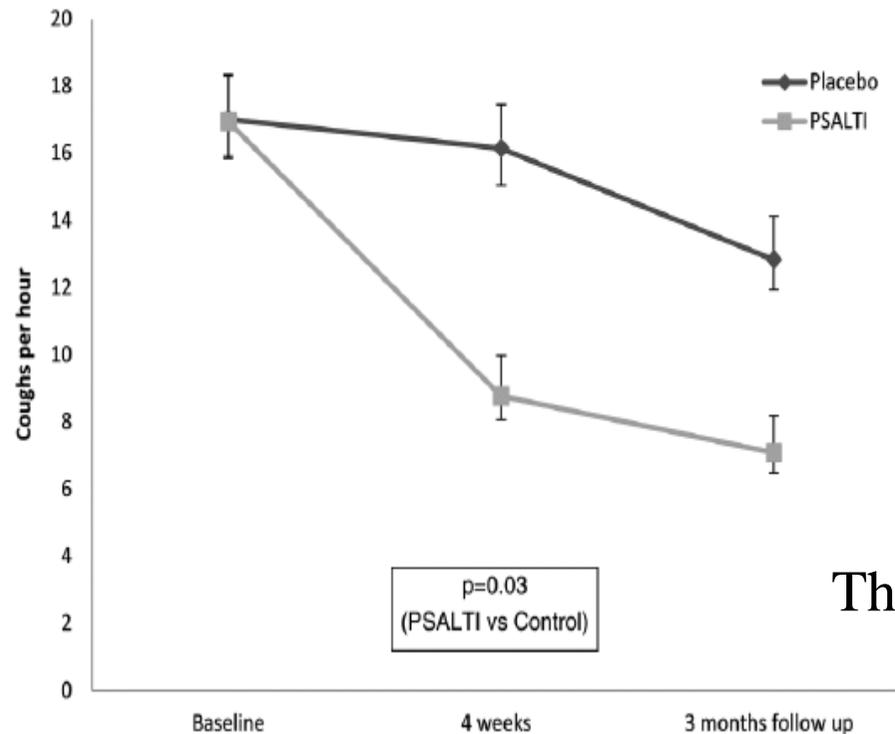
gefapixant

Lancet 2015; 385: 1198-1205

Findings Of 34 individuals assessed between Sept 22, 2011, and Nov 29, 2012, we randomly assigned 24 patients (mean age 54·5 years; SD 11·1). In the observed case analysis, cough frequency was reduced by 75% when patients were allocated to AF-219 compared when allocated to placebo ($p=0\cdot0003$). Daytime cough frequency fell from a mean 37 coughs per h (SD 32) to 11 (8) coughs per h after AF-219 treatment versus 65 (163) coughs per h to 44 (51) coughs per h after placebo. Six patients withdrew before the end of the study because of taste disturbances which were reported by all patients taking AF-219.

Interpretation P2X3 receptors seem to have a key role in mediation of cough neuronal hypersensitivity. Antagonists of P2X3 receptors such as AF-219 are a promising new group of antitussives.

Physiotherapy, and speech and language therapy intervention for patients with refractory chronic cough: a multicentre randomised control trial



Thorax 2017; 72: 129-136

Data presented as Geometric Mean (log 95%CI) coughs per hour. PSALTI: physiotherapy speech and language therapy intervention.

Figure 2 Change in objective cough frequency in physiotherapy, and speech and language therapy intervention (PSALTI) and control groups.

Table 1 PSALTI components

PSALTI component	Technique
Education	Educate patients on the cough reflex, chronic cough and cough reflex hypersensitivity. Explain the negative effects of repeated coughing. Educate patients on voluntary control of cough.
Laryngeal hygiene and hydration	Increase frequency and volume of water and non-caffeinated drinks. Reduce caffeine and alcohol intake. Promote nasal breathing.
Cough control	Teach patients to identify their cough triggers. Teach patients to use cough suppression or distraction techniques at the first sign or sensation of the need or urge to cough. These cough-suppression/distraction techniques include: forced swallowing, sipping water and sucking sweets. Teach patients breathing exercises: breathing pattern re-education promoting relaxed abdominal breathing pattern technique; pursed lip breathing to use to control cough.
Psychoeducational counselling	Motivate patients, reiterate the techniques and the aims of therapy. Behaviour modification: to try to reduce over-awareness of the need to cough. Stress and anxiety management

Pregabalin and Speech Pathology Combination Therapy for Refractory Chronic Cough

A Randomized Controlled Trial

300 mg/j de pregabaline

CONCLUSIONS: Combined SPT and pregabalin reduces symptoms and improves QOL compared with SPT alone in patients with CRC. CHEST 2016; 149(3):639-648

Gabapentin for refractory chronic cough: a randomised, double-blind, placebo-controlled trial

Lancet 2012; 380: 1583–89

Findings 62 patients were randomly assigned to gabapentin (n=32) or placebo (n=30) and ten patients withdrew before the study end. Gabapentin significantly improved cough-specific quality of life compared with placebo (between-group difference in LCQ score during treatment period 1·80, 95% CI 0·56–3·04; p=0·004; number needed to treat of 3·58). Side-effects occurred in ten patients (31%) given gabapentin (the most common being nausea and fatigue) and three (10%) given placebo.

A novel formulation of inhaled sodium cromoglicate (PA101) in idiopathic pulmonary fibrosis and chronic cough: a randomised, double-blind, proof-of-concept, phase 2 trial

***Lancet Respir Med* 2017;
5: 806–15**

**Published Online
September 8, 2017**

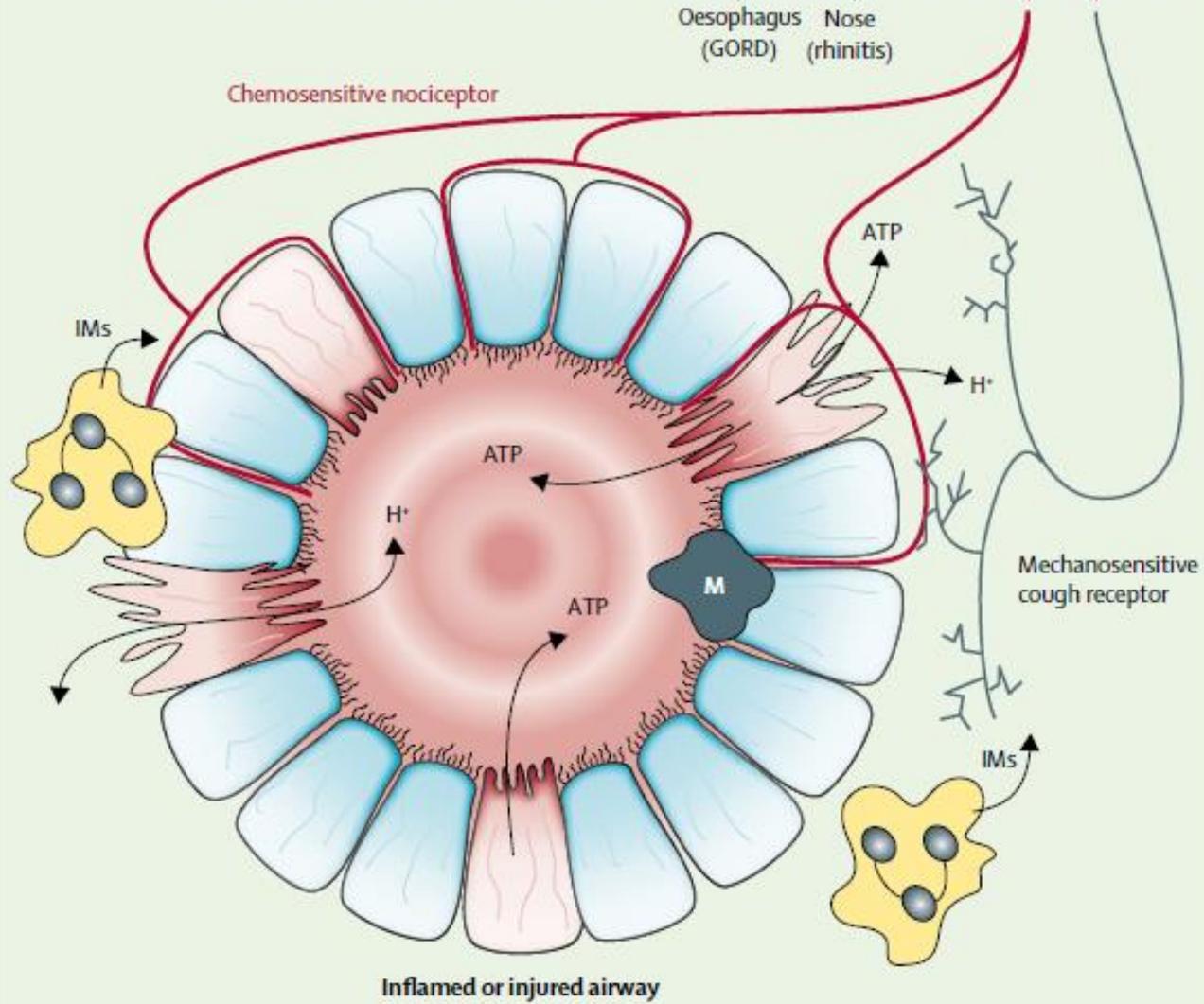
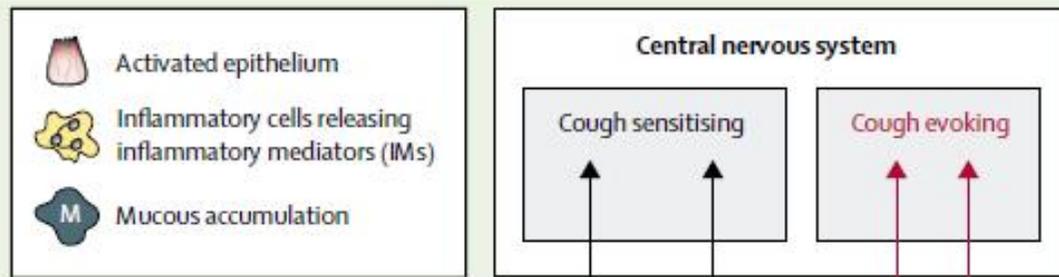
The heterogeneity of chronic cough: a case for endotypes of cough hypersensitivity

Lancet Respir Med 2018;
6: 636–46

Published Online
June 15, 2018

[http://dx.doi.org/10.1016/
S2213-2600\(18\)30150-4](http://dx.doi.org/10.1016/S2213-2600(18)30150-4)

A



Current

Centrally acting neuromodulatory therapies

eg, opioid receptor agonists, gabapentin, amitriptyline, speech and language therapy

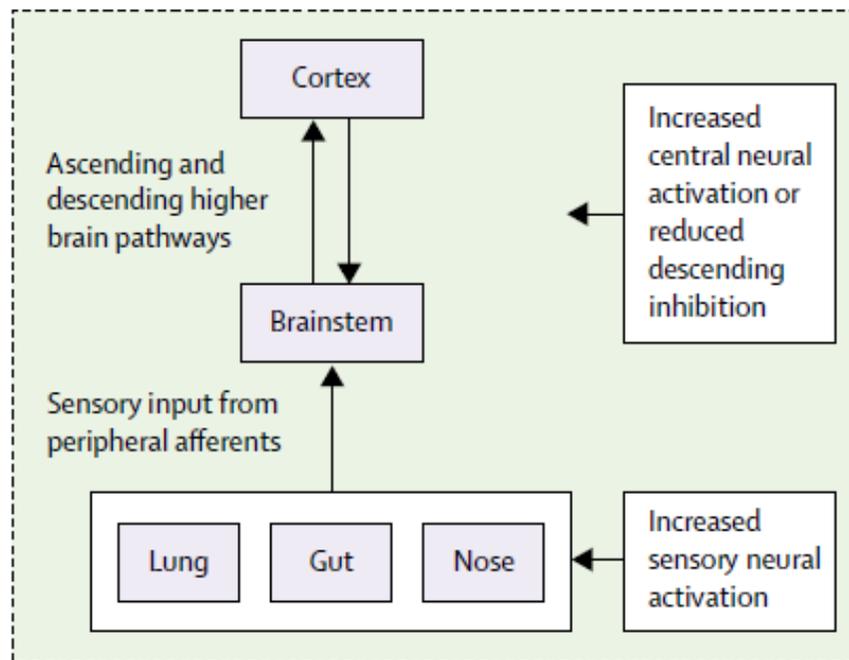
Peripherally acting neuromodulatory therapies

eg, local anaesthetics, P2X3 receptor antagonists*

Disease-specific therapies

eg, steroids (asthma, rhinitis), proton-pump inhibitors (GORD)

Cough hypersensitivity syndrome



Future

Improve understanding of pathways: cough neurobiology and dysfunction

Identify response biomarkers

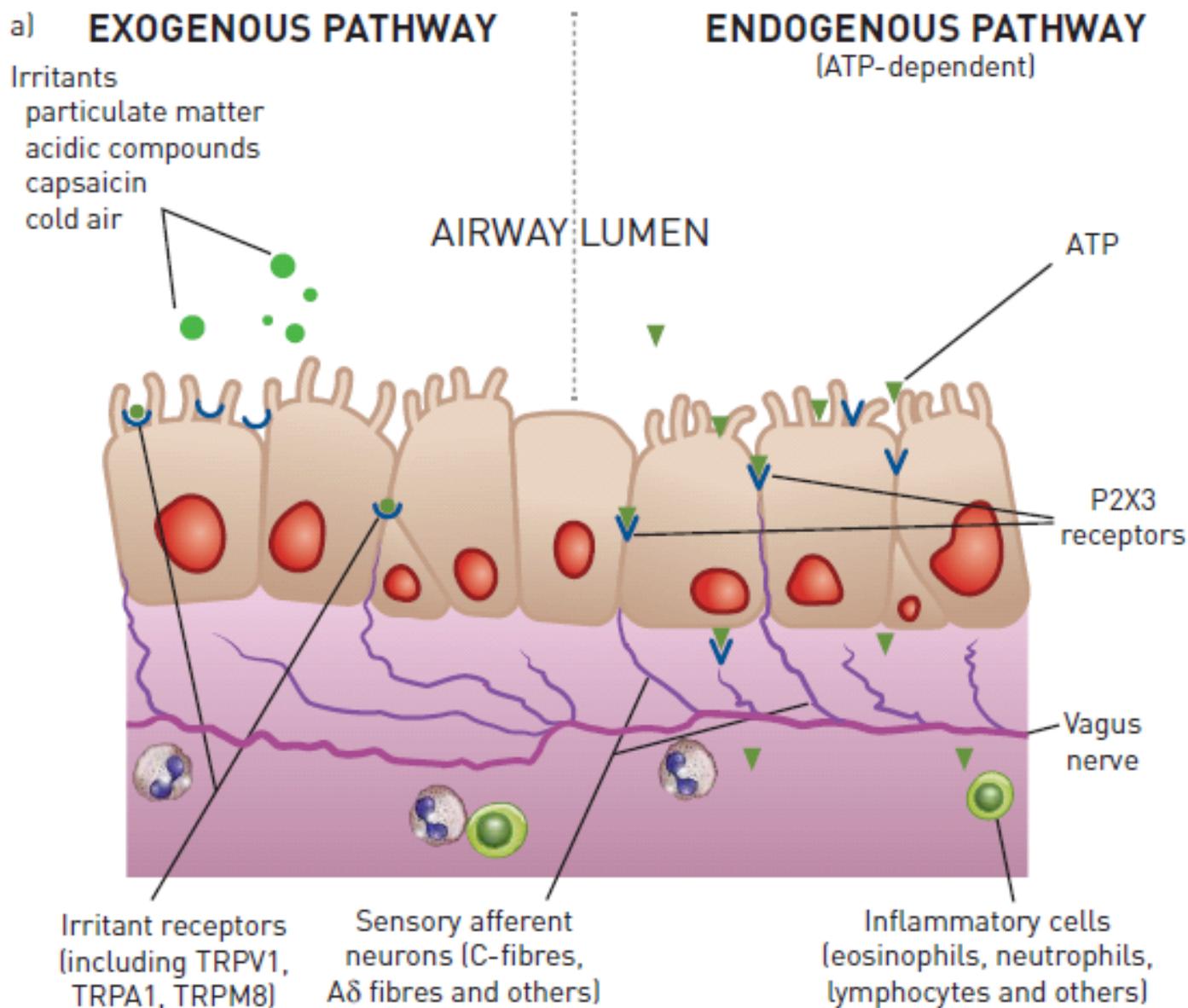
Develop targeted therapies

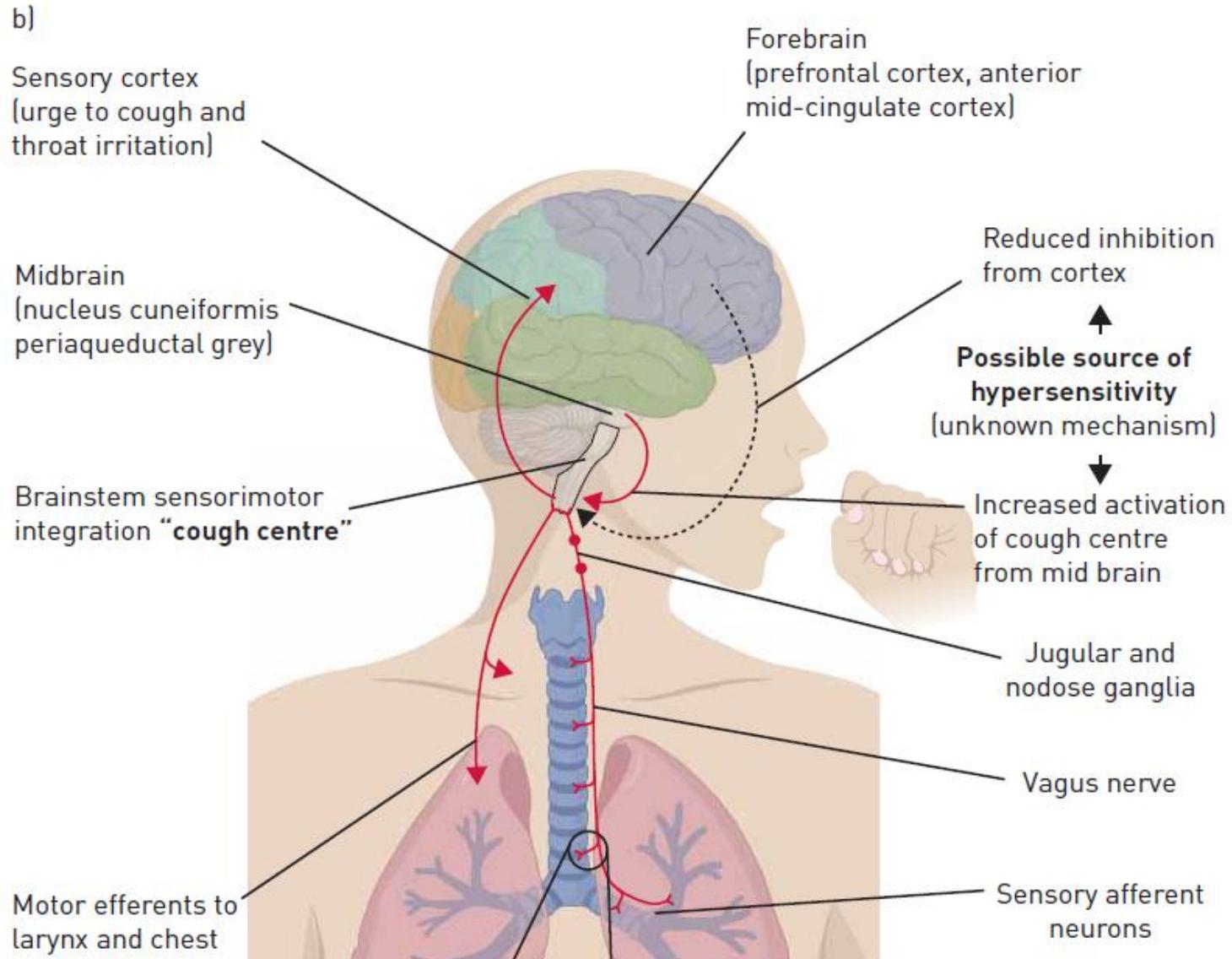
Precision medicine approach

Improved understanding of disease-specific endotypes in cough hypersensitivity syndrome

Figure 2: Existing and future approaches to the management of cough hypersensitivity syndrome

GORD=gastro-oesophageal reflux disease. *Still in clinical trial.²⁴





Altered neural activity in brain cough suppression networks in cigarette smokers

@ERSpublications

Smokers are less sensitive to inhaled cough-evoking stimuli due to increased activity in brain circuits that inhibit coughing. Smoking history influences the nature of the inhibitory process engaged to reduce sensitivity to cough stimuli. <http://bit.ly/2ZBTKlo>

Cite this article as: Ando A, Mazzone SB, Farrell MJ. Altered neural activity in brain cough suppression networks in cigarette smokers. *Eur Respir J* 2019; 54: 1900362 [<https://doi.org/10.1183/13993003.00362-2019>].

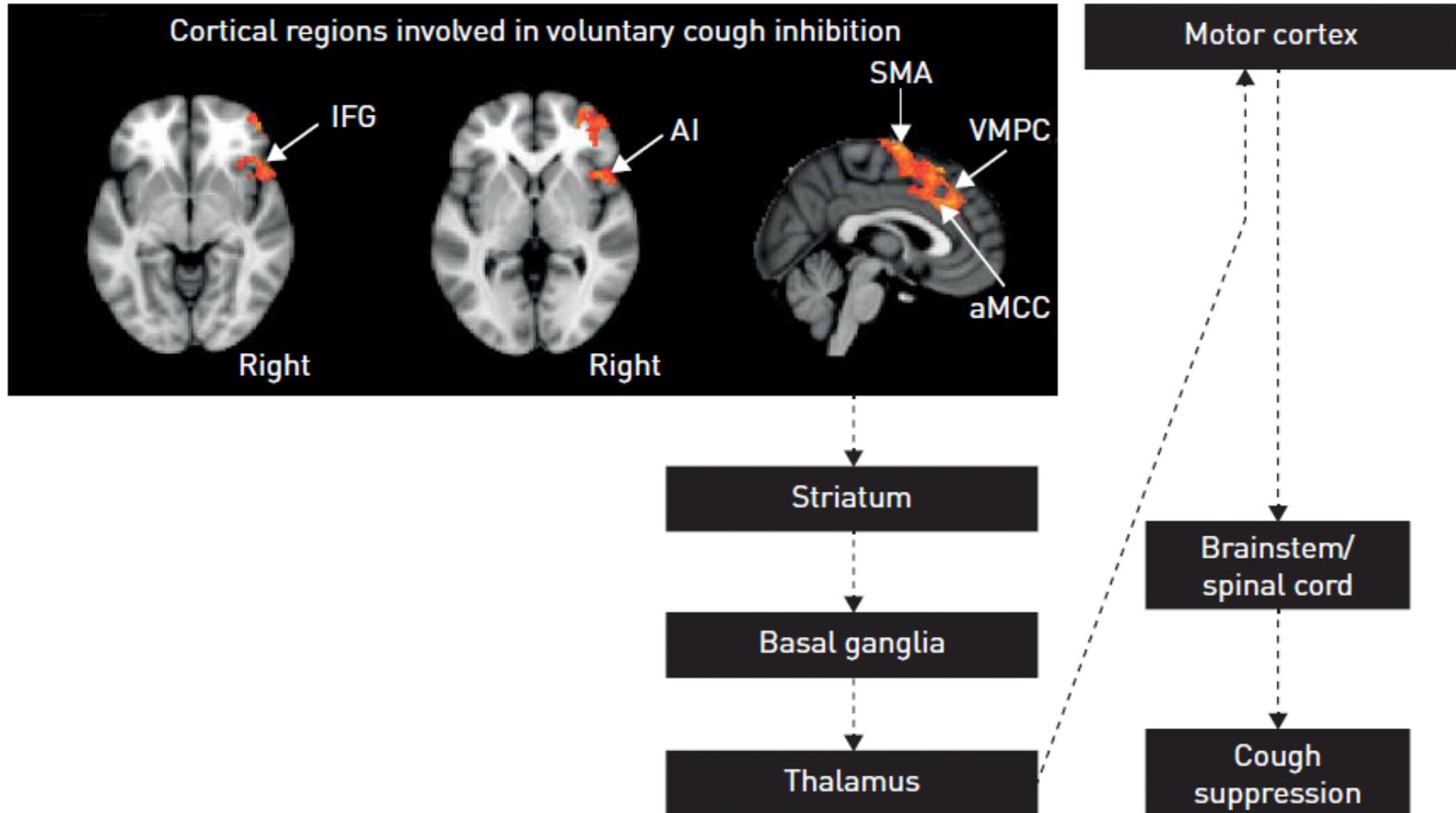
Chronic cough: a disorder of response inhibition?

@ERSpublications

The findings of Cho and co-workers suggest that chronic cough involves an imbalance between the level of peripheral drives that induce cough and the central mechanisms that are engaged to suppress cough <http://ow.ly/tU1w30o9vBT>

Cite this article as: Mazzone SB. Chronic cough: a disorder of response inhibition? *Eur Respir J* 2019; 53: 1900254 [<https://doi.org/10.1183/13993003.00254-2019>].

Chronic cough: a disorder of response inhibition?



Messages à retenir en 2019

- pas d'AB pour bronchite aiguë sauf exceptions
- symptômes peuvent durer 6-8 sem: patience!
- antitussif central: Dextrometorphane
- toux chronique: DD d'une neuropathie
- importance de l'anamnèse et des associations
- syndrome d'hypersensibilité à la toux (SHT)
- ttt non pharmacol. et neuromodulateur pour SHT