

Évaluation d'un programme de réadaptation respiratoire

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Propriétés d'une mesure



MCID : Minimal clinically important change
= différence minimal cliniquement significative

MDC = Minimal detectable change
→ Fruit de la variabilité

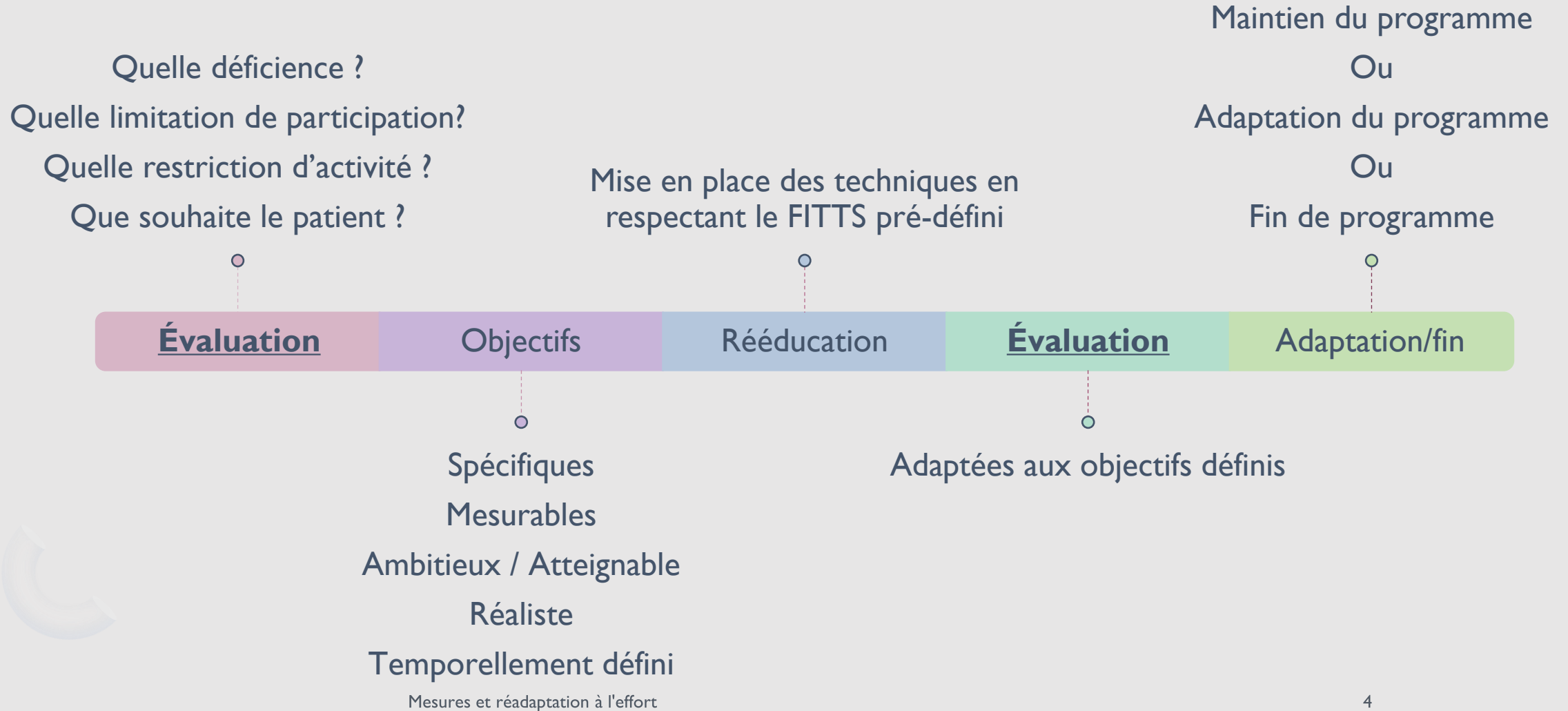
Pas de
changement

Changement pertinent ?

Changement réel et perçu

Pourquoi est ce important ?

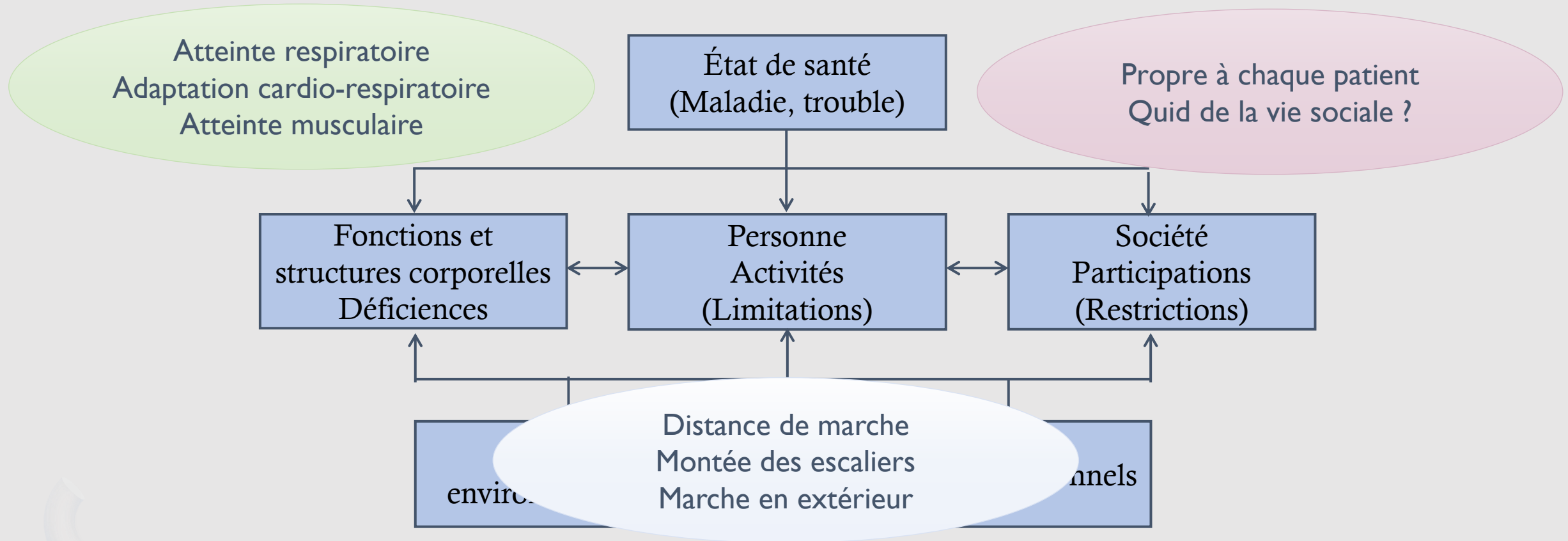
Conception d'un programme de rééducation



Quelles évaluations proposer ?



Que doit on évaluer ?



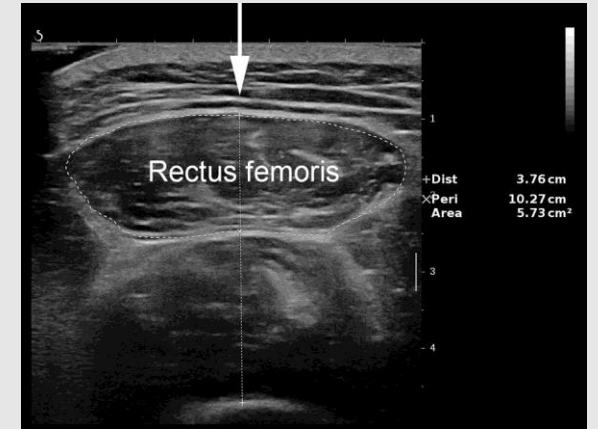
Évaluation de la force musculaire

- Mesure quadricipitale

- Force statique avec dynamomètre
- Mesure échographique trophicité musculaire



MDP = 7,5 Nm



- Handgrip ?

- Mesure d'endurance → test de lever de chaise

- Test de lever de chaise sur une minute

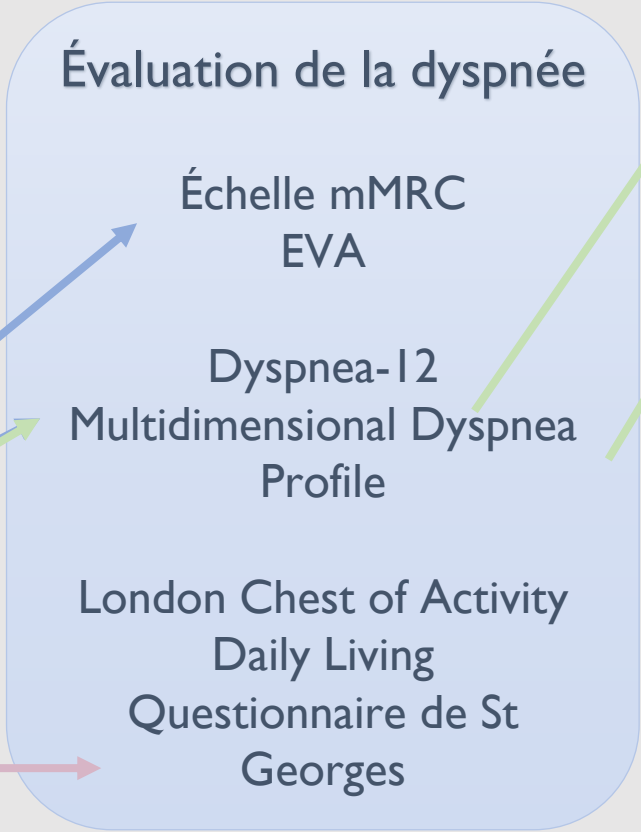
+ 5 répétitions = HR mortalité 0,58



« Best Protocol for the Sit-to-Stand Test in Subjects With COPD » Morita AA, Bisca GW, Machado FVC, Respie. Care. 2018 May 22
« One minute sit-to-stand test is an alternative to 6MWT to measure functional exercise performance in COPD patients ». Reychler G, Boucard E, Peran L. Clin Respir J. 2018 Mar;12(3):1247-1256
« Simple functional performance tests and mortality in COPD ». Puhan MA, Siebeling L, Zoller M. Eur Respir J 2013;42(4):956-963.
“Handgrip Strength as a Reflection of General Muscle Strength in Chronic Obstructive Pulmonary Disease” Fonseca J, COPD 2021 Jun;18(3):299-306
“Determining the minimally important difference in quadriceps strength in individuals with COPD using a fixed dynamometer” Vaidya T Int J Chron Obstruct Pulmon Dis 2018 Aug 30;13:2685-2693
“Ultrasound assessment of the rectus femoris in patients with chronic obstructive pulmonary disease predicts poor exercise tolerance: an exploratory study” Deng M BMC Pulm Med 2021 sept 25;21(1):304

Évaluation de la fonction respiratoire

- EFR ?
- PI et PEMax ?
- Ampliation thoracique ?
- Questionnaire de dyspnée
 - Quantitatif et qualitatif (sensoriel)
 - Affectif (quel inconfort?)
 - Conséquences (retentissement fonctionnel, QDV)



MCID ≈ 3

MCID ≈ 1

DYSPNEA-12 traduction française

Ce questionnaire est conçu pour nous aider à comprendre comment votre essoufflement vous dérange.
Veuillez s'il vous plaît lire chaque item puis cocher la case qui correspond le mieux à votre essoufflement ces jours-ci. Si vous ne ressentez pas un item, cochez la case « aucunement ». Veuillez s'il vous plaît répondre à tous les items.

	Aucunement	Légèrement	Modérément	Sévèrement
Je n'arrive pas à respirer à fond				
Ma respiration me 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 mine				
Ma respiration m'angoisse				
Ma respiration me rend très nerveux				
Ma respiration me rend irritable				

“Measurement of chest wall motion using a motion capture system with the one-pitch phase analysis method” H Tamiya *Sci Rep.* 2021; 11: 21497

“Reliability of Chest Wall Mobility and Its Correlation with Lung Functions in Healthy Nonsmokers, Healthy Smokers, and Patients with COPD.” Reddy RS *Can Respir J.* 2019 Feb 25;2019:5175949

“Functionally relevant threshold of inspiratory muscle strength in patients with chronic obstructive pulmonary disease” M Iwakura *Respir Med* 2021 Nov; 188:106625

“Dyspnoea-12 and Multidimensional Dyspnea Profile: Systematic Review of Use and Properties” Williams MT *J Pain Symptom Manage* 2022 Jan;63(1):e75-e87

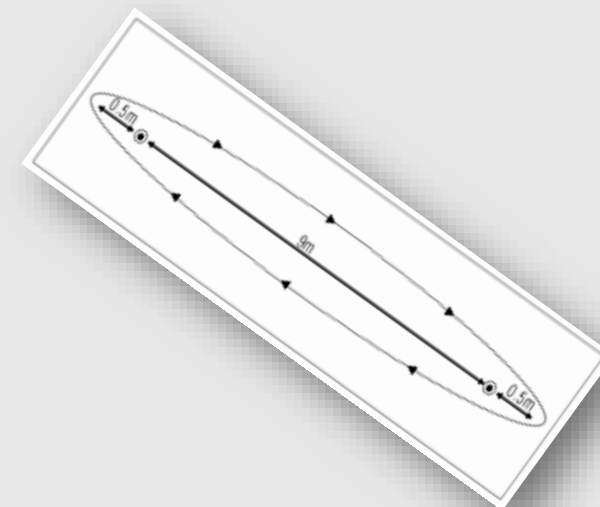
« Validation of the French version of the London Chest Activity of Daily Living scale and the Dyspnea-12 questionnaire ». Beaumont M, Couturaud F, Jégo F. *Int J Chron Obstruct Pulmon Dis* 2018, Apr :

Adaptation cardio-respiratoire

- EFX avec mesure des échanges gazeux

- Test navette (ISWT)

MCID = 47,5m



- Test d'endurance

MCID = 100s ou + 33%

- Test navette (ESWT)

MID = 61s ou 82m

« An official European Respiratory Society/American Thoracic Society Technical Standard: field walking tests in chronic respiratory disease ». Holland AE, Spruit MA, Troosters T, Eur Respir J 2014;44:1428–1446.

« Prospective validation of the endurance shuttle walking test in the context of bronchodilation in COPD ». Borel B, Pepin V, Mahier DA. Eur Respir J 2014 Nov;44(5):1166-76

« The 4-metre gait speed in COPD: responsiveness and minimal clinically important difference ». Kon SSC, Canavan JL, Nolan CM Eur Respir J 2014;43:1298–1305.

« Clinical relevance of constant power exercise duration changes in COPD. » Puente-Maestu L, Villar F, De Miquel J. Eur Respir J 2009 Aug;34(2):340-5

Évaluation de la marche

- Test de 6 minutes de marche
 - Attention effet d'apprentissage 24-29m

MCID 25 à 33m



- Evaluation de l'équilibre ++++

- TUG

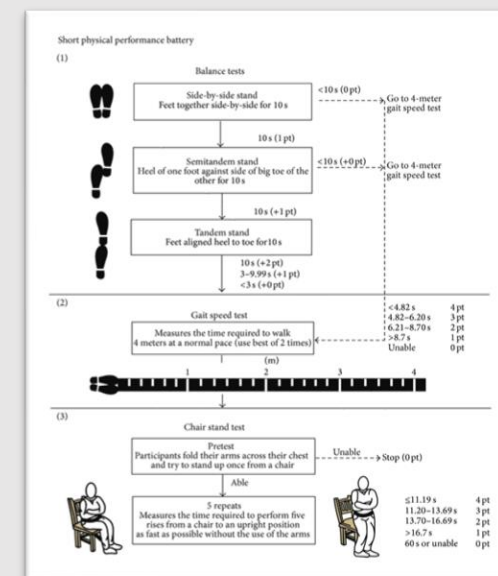
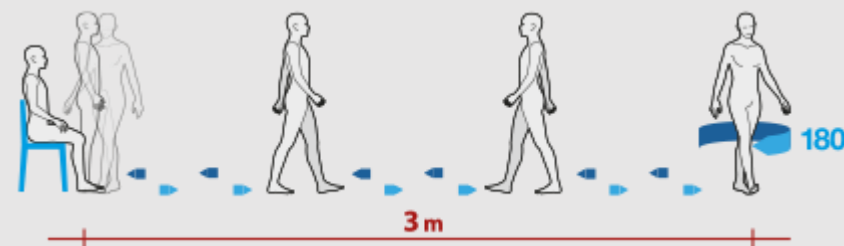
MDC 31,84s

- Berg balance scale

MDC 3,5 à 6,2 ?

- Short performance battery

MCID 1,2 ?



« An official European Respiratory Society/American Thoracic Society Technical Standard: field walking tests in chronic respiratory disease ». Holland AE, Spruit MA, Troosters T, Eur Respir J 2014;44:1428-1446.

« Balance impairment in patients with COPD ». Crişan AF, Oancea C, Timar B. PLoS One 2015;10:e0120573.

« Association between disease-related factors and balance and falls among the elderly with COPD: a cross-sectional study. » Ozalevil S, Ilgin D, Narin S. Aging Clin Exp Res 2011;23:372-377.

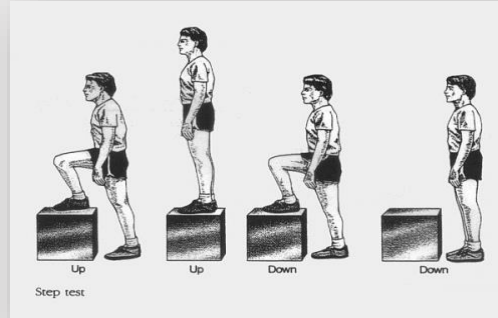
« An evaluation of the short physical performance battery following pulmonary rehabilitation in patients with chronic obstructive pulmonary disease ». Larsson P, Borge CR, Nygren-Bonnier M. BMC Res Notes. 2018 Jun 4;11(1):34

Pratique des escaliers

- Stepper test

- 3 min
- 6 min

MDC = 11 marches



- Montée d'escaliers

- Stair climb power test
- 18 marches
- Libre



« Paced-walk and step tests to assess exertional dyspnea in COPD ». Perrault H, Baril J, Henophy S, Rycroft A COPD 2009;6:330–339.

« Reproducibility of cadence-free 6-minute step test in subjects with COPD ». da Costa JNF, Arcuri JF, Gonçalves IL Respir Care 2014;59:538–542.

« Associations of the stair climb power test with muscle strength and functional performance in people with chronic obstructive pulmonary disease: a cross-sectional study ». Roig M, Eng JJ, MacIntyre DL Phys Ther 2010;90:1774–1782

« Associations between isokinetic muscle strength, high-level functional performance, and physiological parameters in patients with chronic obstructive pulmonary disease ». Butcher SJ, Pikaluk BJ, Chura RL Int J Chron Obstruct Pulmon Dis 2012;7:537–542.

« Stair-Climbing Capacity as a Marker of Improvement Following Pulmonary Rehabilitation ». Dubé BP, Houle-Péloquin M, Sauvageau B. J Cardiopulm Rehabi Pre 2017 Mai :37(3) :229-233

Et les membres supérieurs??!!

- Handgrip

+ 5 Kg = HR mortalité 0,84

- 6 min pegboard and ring test (6PBRT)

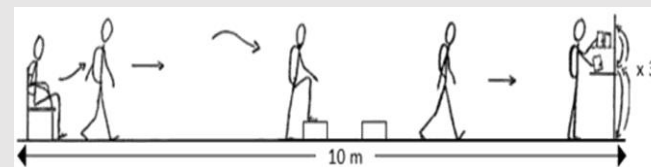


- Unsupported Upper-Limb Exercise Test (UULEX)

- Grocery Shelving test



- Glittre Activities of daily living test



« Relationship and responsiveness of three upper-limb tests in patients with chronic obstructive pulmonary disease ». Janaudis-Ferreira T, Hill K, Goldstein RS *Physiother Can* 2013;65:40–43

« Measurement of functional activity in chronic obstructive pulmonary disease: the grocery shelving task ». Hill CJ, Denehy L, Holland AE *J Cardiopulm Rehabil Prev* 2008;28:402–409.

How should we measure arm exercise capacity in patients with COPD? A systematic review. Janaudis-Ferreira T, Beauchamp MK, Goldstein RS. *Chest* 2012 Jan ;141(1):111-120. doi: 10.1378/chest.11-0475. Epub 2011 Jun 9

Replacement of the 6-Min Walk Test With Glittre ADL Test and Scores From the PFSDQ-M and HAP Questionnaires in the BODE Index. Moreira FBRn De Fuccio MB, Ribeiro-Samora GA. *J Cardiopulm Rehabil Prev*. 2018 May;38(3):193-197

« The Glittre-ADL Test Cut-Off Point to Discriminate Abnormal Functional Capacity in Patients with COPD ». Gulart AA, Munari AB, Klein SR. *COPD* 2018 Feb ;15(1) :73-78.

Qualité de vie

- Questionnaire de saint Georges
- COPD assessment test (CAT)
- VQ II
- Clinical COPD questionnaire

MCID = 4

MCID = 2

MCID = - 2

MCID = 0,4

The Clinical COPD questionnaire is a form with a title bar and a table of questions. The table has 10 columns: 'On average, during the past week, how often do you have the following problem?', 'never', 'a few times', 'several times', 'every day', 'I don't know', and 'I don't know'. The questions are numbered 1 to 10. The form also includes a section for 'In general, during the past week, how much do you have the following problem?' and a section for 'On average, during the past week, how often do you have the following problem?'. The form is titled 'Clinical COPD questionnaire' and includes a patient number field.

The CAT (COPD Assessment Test) form is a questionnaire for patients with COPD. It includes a header with the CAT logo and the title 'How is your COPD? Take the COPD Assessment Test™ (CAT)'. The form contains 10 questions, each with a 5-point scale from 0 to 4. The questions are: 1. I never cough, 2. I cough all the time, 3. I have no phlegm (mucus) in my chest at all, 4. My chest is completely full of phlegm (mucus), 5. My chest does not feel tight at all, 6. My chest feels very tight, 7. When I walk up a hill or some flights of stairs I am not breathless, 8. When I walk up a hill or some flights of stairs I am very breathless, 9. I am not limited doing any activities at home, 10. I am very limited doing activities at home, 11. I am confident leaving my home despite my lung condition, 12. I am not at all confident leaving my home because of my lung condition, 13. I sleep soundly, 14. I don't sleep soundly because of my lung condition, 15. I have lots of energy, 16. I have no energy at all. The form also includes a 'TOTAL SCORE' field at the bottom.



« Systematic review of the association between exercise tests and patient-reported outcomes in patients with chronic obstructive pulmonary disease ». Punekar YS, Riley JH, Lloyd E, Int J Chron Obstruct Pulmon Dis, 2017 Aug 22;12:2487-2506.

« Development and first validation of the COPD Assessment Test ». Jones PW, Harding G, Berry P. Eur Respir J 2009 Sep ;34(3) :648-54.

« Assessing patient-reported outcomes in asthma and COPD patients: which can be recommended in clinical practice? » Kocks JWH, Seys SF, Van Duin TS Curr Opin Pulm Med. 2018 Jan;24(1):18-23.

Récapitulatif

Faites votre composition!

La notre :

- *Mesure de FMV quadriceps*
- *STSI min*
- *Test de 6 minutes de marches*
- *Test d'endurance à 80%*
- *Stair power climb test*
- *UULEX*
- *CAT*
- *Dyspnea-12*

A vous de jouer!

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