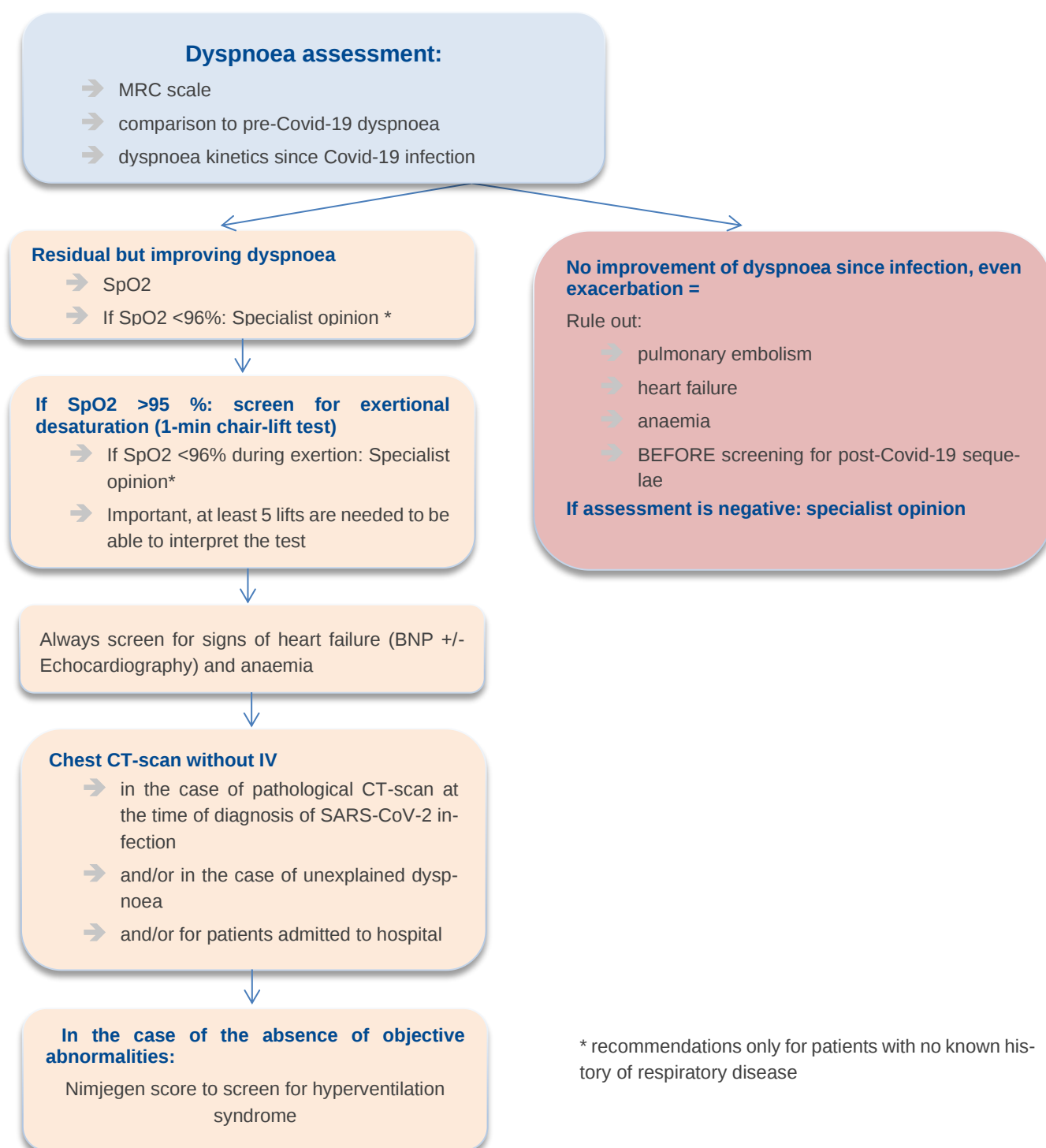


**TOOLKIT
GUIDE**

Dyspnoea in the context of long-term Covid-19 symptoms

Validated by the HAS Board on 10 February 2021



As a general rule, dyspnoea is often underdiagnosed and is considered by patients to be linked with fatigue or asthenia ++, this contributes to delayed diagnosis and therapeutic pulmonary management.

An initial dyspnoea assessment can be carried out by any doctor.

It is based on:

1. The assessment of dyspnoea at the time of consultation:
 - Screen for restriction of activities due to dyspnoea (or change), for example using the mMRC scale (Appendix 1) or due to a change in dyspnoea compared to the pre-infection health state using a visual analogue scale between 0 and 10 (see SPLF follow-up guide).
 - Assess dyspnoea kinetics: residual dyspnoea from the acute episode may persist but should slowly improve; otherwise, it is necessary to rule out thromboembolic disease or cardiac overload before discussing the diagnosis of a post-Covid-19 complication.

Following by screening for an objective item:

2. Resting SpO₂ measurement. Testing is required in cases of SpO₂ < 96% in patients with no known history of respiratory disease.
3. Screening for exertional desaturation, for example with the 1-minute chair-lift test:
 - in terms of number of chair lifts, the lower norm is 11 changes from standing to sitting, and under 5 lifts, the test is deemed not fit for use.
 - Make sure to obtain a good signal for interpretation.
 - Be mindful of nail varnish, cold extremities which are associated with frequently uninterpretable values.
 - further testing is required in cases of saturation less than or equal to 95% during this exertion in a patient with no known history of respiratory disease.
4. Screening for signs of heart failure and screening for anaemia.

To be envisaged before specialist referral:

5. Chest CT-scan without IV to be specified, in particularly in the case of pathological CT-scan at the time of diagnosis of SARS-CoV-2 infection and/or in the case of unexplained dyspnoea and/or for patients admitted to hospital for SARS-CoV-2 infection (not before M3).
6. Heart ultrasound

And in the case of the absence of objective abnormalities

7. Nimjegen score to screen for hyperventilation syndrome.

When should a patient be referred to a pulmonologist?

1. Patients with SpO₂ < 96% in ambient air at a distance from the initial episode, in the absence of known respiratory disease, should be referred to a pulmonologist.
2. In cases of unexplained exertional desaturation (desaturation of 95% or under during chair-lift test).
3. If dyspnoea is exacerbated (significance of dyspnoea kinetics).

4. In cases of dyspnoea and previous history of hospital admission for SARS-CoV-2 infection whether in a general ward or in intensive care, to conduct at least one LFT-TOC test and 6-minute walk test.
5. In cases of negative findings from the minimum testing performed by the Primary Care Physician.

Therapeutic management:

1. No indication of nebulised or inhaled corticosteroid therapy among patients presenting with persistent symptoms of cough and/or dyspnoea besides any documented respiratory disease or diagnosis of bronchial hyperreactivity.
2. In cases where there is a strong suspicion of bronchial hyperreactivity syndrome:
 - The means to establish a diagnosis must be set up (pulmonology consultation with LFT, beta2-adrenergic agonist test and optionally metacholine challenge test), this test must be carried out after cessation for at least 3 weeks.
 - After this testing, inhaled corticosteroid therapy may be initiated. It should not be continued if ineffective.
 - A short-acting bronchodilator may also be proposed.
 - The treatment should be reviewed within 3 months with the lung function test results and the progression of the symptoms under treatment.
3. The indications of oxygen therapy are the same as those for routine practice (see GAV O2-SPLF guide).
4. Respiratory rehabilitation if the patient remains symptomatic after specialist respiratory assessment, regardless of the spirometry and CT-scan data.
5. In a patient with hyperventilation syndrome, treatment provided by a physiotherapist trained on hyperventilation syndrome rehabilitation.
6. Prescribing corticosteroids or antifibrotics cannot be envisaged without specialist pulmonology assessment and a multidisciplinary review meeting (see SPLF guides for the follow-up and management of respiratory sequelae).

Main causes of dyspnoea encountered in the context of long-term Covid-19 symptoms

In the absence of clear pulmonary parenchymal sequelae, the causes of chronic dyspnoea detected to date among patients having had SARS-CoV-2 infection are no different from those of any chronic dyspnoea: asthma/bronchial hyperreactivity, COPD, deconditioning, obesity, interstitial lung disease, pulmonary embolism, heart failure, hyperventilation syndrome.

Sometimes these conditions were undiagnosed and have been exacerbated by the viral episode or the effects of bed rest.

Appendix 1: mMRC (modified Medical Research Council) dyspnoea scale

- **Grade 0** = Not troubled with breathlessness, except on strenuous exercise
- **Grade 1** = Shortness of breath when hurrying on level ground or walking up a slight hill
- **Grade 2** = Walks slower than people of same age on level ground because of breathlessness or has to stop to catch breath when walking at their own pace on level ground.
- **Grade 3** = Stops for breath after walking 100 metres or after few minutes of walking on level ground.
- **Grade 4** = Too breathless to leave the house, or breathless when dressing or undressing

Bibliographic references

1. Andrejak C, Blanc FX, Costes F, Crestani B, Debieuvre D, Perez T, et al. Guide pour le suivi respiratoire des patients ayant présenté une pneumonie à SARS-CoV-2. Propositions de prise en charge élaborées par la Société de pneumologie de langue française. Version du 10 mai 2020. Rev Mal Respir 2020;37(6):505-10. <http://dx.doi.org/10.1016/j.rmr.2020.05.001>
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