

# NZ COPD GUIDELINES

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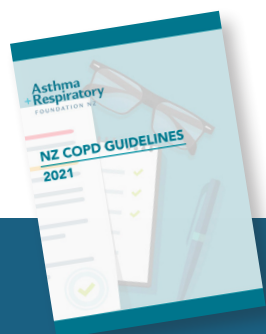
## Quick reference guide

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The content of this quick reference guide is sourced from the 'New Zealand COPD Guidelines 2021' which can be found at [www.nzrespiratoryguidelines.co.nz](http://www.nzrespiratoryguidelines.co.nz)

# COPD SYMPTOMS

COPD should be considered in anyone over the age of 40 with any of the following ongoing symptoms:

- Chronic cough
- Chronic sputum production
- Wheeze
- Shortness of breath

*NB: There is usually a history of cigarette smoking or exposure to smoke or other noxious substances with most diagnoses. There is also a higher risk for those of Māori and/or Pasifika descent.*

## COPD DIAGNOSIS USING SPIROMETRY

The diagnosis of COPD should be confirmed by spirometry. Spirometry may be done both before and after bronchodilator to assess reversibility\*, but the diagnosis and severity are determined by *post-bronchodilator* measurements.

### Diagnosis

- Irreversible airflow obstruction is diagnosed if post-bronchodilator  $FEV_1/FVC$  ratio is  $< 0.70^*$
- If there is partial reversibility and a substantial ( $>400ml$ ) improvement in  $FEV_1$  post-bronchodilator, then asthma or Asthma-COPD Overlap is likely

### Assess severity

The severity of the obstruction is diagnosed using the post-bronchodilator  $FEV_1$  as a % of the predicted value\*\*

Mild	Moderate	Severe
$FEV_1 \approx 60-80\%$ predicted	$FEV_1 \approx 40-59\%$ predicted	$FEV_1 < 40\%$ predicted

\* For more information on the criteria for airflow obstruction and reversibility testing see p.4 in the NZ COPD Guidelines full document at [nzrespiratoryguidelines.co.nz](http://nzrespiratoryguidelines.co.nz).

\*\* Predicted values are determined on the basis of age, height, sex, and ethnicity.

# ASSESSING COPD SEVERITY

Spirometry should be used in conjunction with overall severity.

## Symptoms to assess

Mild	Moderate	Severe
Breathless on moderate exertion	Breathless walking on level ground	Breathless on minimal exertion
Little or no effect on daily activities	Increasing limitation on daily activities	Daily activities severely curtailed
Few symptoms	Exacerbations requiring oral corticosteroids and/or antibiotics	Exacerbations of increasing frequency and severity
Cough and sputum production	Recurrent chest infections	

## Modified Medical Research Council (mMRC) Dyspnoea Scale

Grade	Symptom complex
0	I only get breathless with strenuous exercise
1	I get short of breath when hurrying on level ground or walking up a slight hill
2	On level ground, I walk slower than people of the same age because of breathlessness, or I have to stop for breath when walking at my own pace on the level
3	I stop for breath after walking about 100 metres or after a few minutes on level ground
4	I am too breathless to leave the house or I am breathless when dressing or undressing

The **COPD Assessment Test (CAT)** can measure the impact of COPD and response to treatment, visit: [www.catestonline.org](http://www.catestonline.org)

# NON-PHARMACOLOGICAL MANAGEMENT OF COPD

## Smoking cessation

Smoking cessation is the most important component of COPD management and every patient who is still smoking should be offered support to quit. Referral to a local smoking cessation support service is recommended.

## Exercise

Promote 20-30 minutes per day of “huff and puff” exercise, or exercise which causes the patient to feel breathless. Muscle strengthening activities at least twice a week.

## Pulmonary rehabilitation

Offer pulmonary rehabilitation to all patients. If this cannot be accessed, an in-home exercise programme should be considered. Patients may also benefit from local support groups. A list of groups can be found here: [www.asthmafoundation.org.nz/about-us/support-groups](http://www.asthmafoundation.org.nz/about-us/support-groups)

## Breathlessness management

Individual breathlessness plans (see p.10 for resources), including hand-held fan therapy, diaphragmatic breathing, and pursed lips breathing exercises can help manage symptoms. Some patients will benefit from review by a respiratory physiotherapist and breathing exercises.

## Sputum management

Patients with chronic sputum production may benefit from seeing a physiotherapist for an individualised chest clearance plan.

## Nutrition

Malnutrition and obesity contribute to morbidity and mortality in COPD. Consider referral to a dietician, or high-calorie nutritional supplements, for those who are malnourished, and weight loss advice for those who are obese.

## Housing

A smoke-free, warm, dry home environment is likely to improve COPD control.

# PHARMACOLOGICAL MANAGEMENT OF COPD

## Inhaled medication for COPD

Inhaler technique, device suitability, and adherence should be reviewed regularly. Incorrect inhaler technique and poor adherence are common reasons why inhalers don't work. Review these before deciding to change to a different inhaler.

- **SABAs** and **SAMAs** can be used for symptom relief
- **LAMAs** are the first-line long-acting bronchodilator, both for breathlessness and reduction of exacerbation risk
- Escalate to a **LABA/LAMA** if LAMA alone does not control breathlessness/exacerbations
- **ICS** are to prevent exacerbations in patients with frequent exacerbations
- **Higher blood eosinophils** are associated with a greater response to ICS and may identify patients who should receive **ICS/LABA** in preference to LABA/LAMA
- **Asthma/COPD overlap** patients should receive **ICS** irrespective of blood eosinophils, lung function and exacerbation frequency, preferably as combination **ICS/LABA**

### Practice points:

- Choice of treatment should be guided by patient preferences for inhaler device. Treatment can be escalated more quickly for patients with severe COPD or frequent exacerbations
- Provide all patients with a written/electronic personalised COPD action plan (see resources p.10)

## Simplified maintenance inhaler management of COPD

When treating	Start with	If needed, move on to
COPD <b>without</b> frequent exacerbations	LAMA	LABA/LAMA
COPD <b>with</b> frequent exacerbations	LAMA	LABA/LAMA (consider ICS/LABA if eosinophilia) then LABA/LAMA/ICS
Asthma/COPD <b>overlap</b>	ICS/LABA	ICS/LABA plus LAMA

### Remember

- Do not routinely prescribe a SAMA to patients on a LAMA
- Try to avoid long-term oral corticosteroids
- Do not routinely prescribe theophylline
- Do not use short-term response to bronchodilator to predict benefit from long-term bronchodilator therapy
- Do not routinely prescribe nebulisers for stable COPD

### ICS withdrawal

Withdraw ICS if there is no evidence of benefit, the patient develops pneumonia or other adverse affects, or if the patient is stable. However, *do not withdraw* ICS in patients with asthma/COPD overlap or raised blood eosinophils. Review patient 4-6 weeks after ICS withdrawal.

# OXYGEN THERAPY FOR COPD

**Note:** There is a fire risk associated with oxygen use and smoking or other flammable sources such as gas appliances, open flames, and vaping devices. Current smoking, use of heated tobacco, e-cigarettes, or vaping devices are absolute contra-indications to O<sub>2</sub> supply.

Evaluation of the patient and consideration for long-term oxygen therapy supply should be done by a specialist respiratory service. Oxygen does not reduce the sensation of breathlessness in patients who are not hypoxic. Oxygen may not improve breathlessness even in those who are hypoxic.

## Key points on oxygen therapy

- Oxygen is a drug and should not be used unless it is prescribed
- Oxygen is a treatment for hypoxia, not dyspnoea
- Long-term oxygen therapy is only beneficial if it is used for at least 16 hours a day

## Criteria for supply of long-term oxygen therapy

- Assess when the patient is stable, at least six weeks after hospital discharge or an acute respiratory illness
- PaO<sub>2</sub> (measured by arterial blood gas) less than 7.3kPa (55mmHg) indicates the need for long-term oxygen (oxygen saturation usually < 88%).
- PaO<sub>2</sub> <8.0kPa (60mmHg) (oxygen saturation up to 91%) may be an indication for long-term oxygen if there is evidence of polycythaemia (haematocrit > 0.55) and/or cor pulmonale/right heart failure

## Criteria for oxygen in palliative care

- Terminal illness with a life expectancy less than 3 months
- Oxygen saturation SpO<sub>2</sub> <90%
- Dyspnoea not adequately controlled by optimal treatment for dyspnoea and pain (physiotherapy, narcotics, anxiolytics)

# ACUTE COPD EXACERBATIONS

COPD exacerbations are characterised by an acute change in the patient's baseline dyspnoea, cough and/or sputum beyond normal day-to-day variations.

## Key symptoms

- Increased shortness of breath
- Sputum purulence and volume increased
- Increased cough and wheeze

## Notes

- COPD exacerbations are associated with accelerated loss of lung function
- Prolonged exacerbations are associated with worse health status and more frequent future exacerbations.
- Early diagnosis and management of exacerbations may prevent functional deterioration and reduce hospital admissions.

## Assessment of COPD exacerbation severity

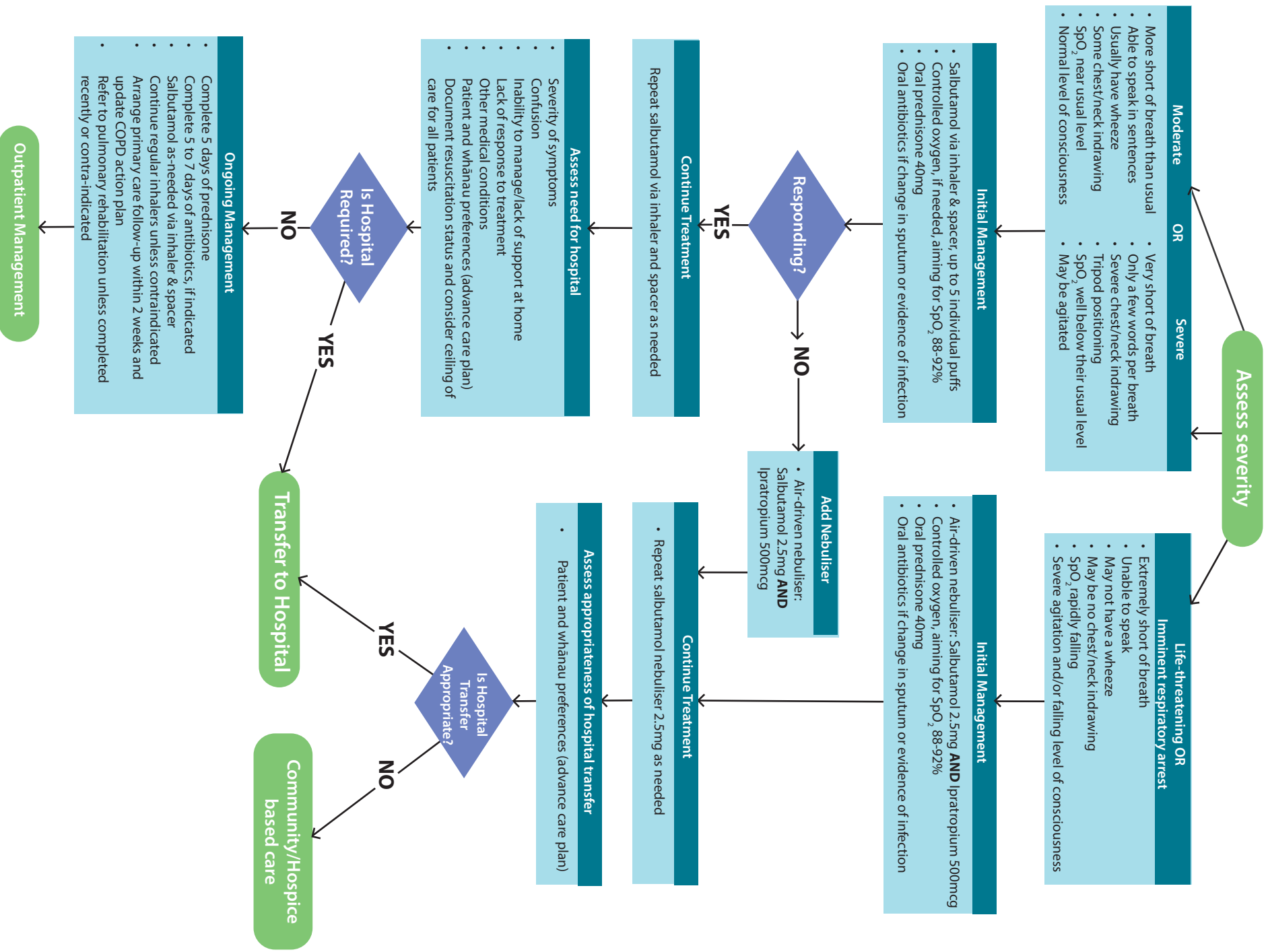
Mild to moderate	Severe	Life-threatening /imminent respiratory arrest
More short of breath than usual	Very short of breath	Extremely short of breath
Able to speak in sentences	Only a few words per breath	Unable to speak
Usually have wheeze	May not have wheeze	May not have wheeze
Some chest/neck indrawing	Severe neck/chest indrawing	May be no chest/neck indrawing
	Tripod positioning	
SpO <sub>2</sub> near usual level	SpO <sub>2</sub> well below their usual level	SpO <sub>2</sub> rapidly falling
Normal level of consciousness	May be agitated	Severe agitation and/or falling level of consciousness

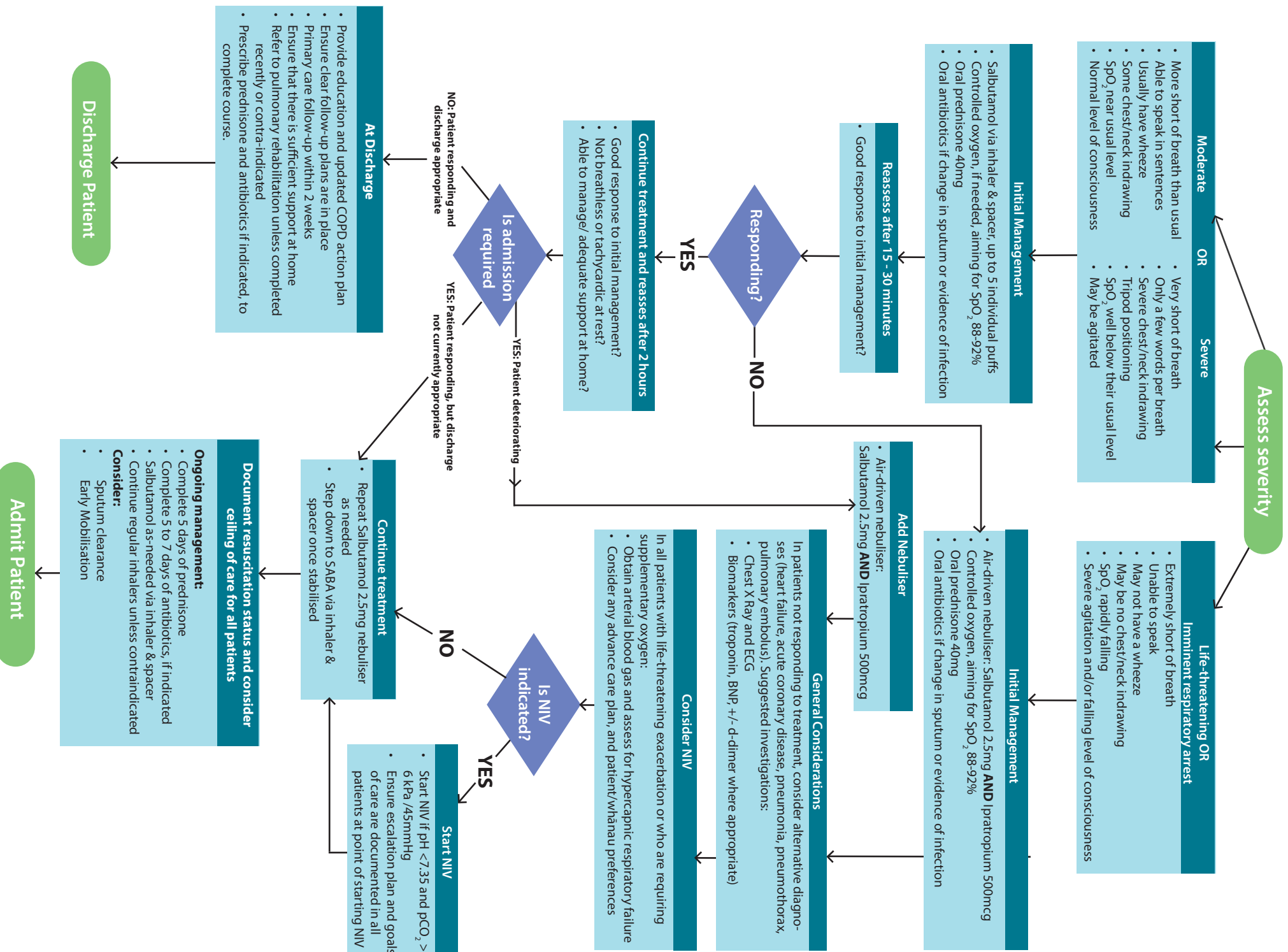
## Key messages for exacerbation management

- Most exacerbations can be managed at home
- SABA with or without SAMA are the first-line bronchodilator to treat an acute exacerbation
- Give short course oral corticosteroids e.g. prednisone 40mg once daily for 5 days
- Give short-course antibiotics, for purulent sputum and/or other evidence of infection
- Titrate oxygen to target saturations of 88 to 92%
- Non-invasive ventilation (NIV) reduces mortality in patients with hypercapnic respiratory failure due to an exacerbation
- Careful discharge planning and referral to pulmonary rehabilitation may reduce the risk of future exacerbations and admissions



# PRE-HOSPITAL MANAGEMENT OF ACUTE EXACERBATION OF COPD





# 4-STEP COPD CONSULTATION\*

## 1 Assess COPD control and exacerbation risk

- Review history of COPD exacerbations in last 12 months (requiring oral corticosteroids or antibiotics)
- Complete CAT score\*\*
- Complete mMRC Dyspnoea Scale with patient\*\*\* (Breathlessness score)
- Review last spirometry result
- Assess current status:
  - a) Breathlessness
  - b) Exercise tolerance
  - c) Sputum volume
  - d) Sputum colour
  - e) Oxygen saturations
  - f) Flu vaccine
  - g) Weight

## 2 Consider other relevant clinical issues

- Assess the patient's knowledge of their personal signs and symptoms of an exacerbation
- Ask about adherence with maintenance treatment
- Check frequency of using reliever medication
- Check inhaler technique
- Review smoking status and cessation strategies
- Assess whether the patient is coping with ADLs
- Consider a nutritional assessment
- Consider further specialist review if symptoms and presentation don't correlate
- Review for any co-morbid conditions

## 3 Decide whether treatment plan needs to change

- Consider if additional drug treatment is required if COPD is not adequately controlled, such as increasing breathlessness or recent exacerbation
- Consider withdrawal of ICS if patient is stable and there is no evidence of benefit or recent pneumonia. If ICS is withdrawn, review patient in 4-6 weeks
- Consider if a home supply of antibiotics and oral corticosteroid is required
- Discuss an exercise plan and/or refer to pulmonary rehabilitation and/or physiotherapy
- Recommend annual flu vaccine and consider pneumococcal vaccine
- Refer for assessment for domiciliary oxygen if resting oxygen saturations <88% on room air when well and smoke free
- Refer for support services/ specialist review if appropriate

## 4 Complete a COPD Action Plan

- Complete the front page of the patient's plan
- Review the signs and symptoms of worsening COPD and of a chest infection (e.g unwell, very unwell and extremely unwell)
- Remind the patient what to do when unwell:
  - a) breathing control techniques
  - b) correct inhaler technique
  - c) chest clearance (if required)
  - d) energy conservation techniques
- Enter the antibiotic type and length of course for an exacerbation (usually 5-7 days)
- Enter the prednisone regimen (usually 40mg daily for 5 days)
- Set a time for clinical review after starting home supply of prednisone and antibiotics (if applicable)
- Enter additional instructions in the steps to manage breathlessness section
- Give the patient a copy of the plan and save on the patient record

\*Please note, the 4-step consultation will likely take more than one visit

\*\*The COPD Assessment test (CAT) can be accessed at [www.catestonline.org](http://www.catestonline.org)

\*\*\*The mMRC Dyspnoea Scale can be found on p.2

# FURTHER COPD RESOURCES AND TOOLS

**Asthma + Respiratory FOUNDATION NZ**

## COPD

(Chronic Obstructive Pulmonary Disease)

### Action Plan

This COPD Action Plan belongs to:

Better Breathing, Better Living

**Asthma + Respiratory FOUNDATION NZ**

## COPD

(Chronic Obstructive Pulmonary Disease)

### Mahere Mahi

Ko tēnei te Mahere Mahi COPD a:

Kia pai ake te whakangā, kia pai ake te oranga

**Asthma + Respiratory FOUNDATION NZ**

## COPD

(Chronic Obstructive Pulmonary Disease)

### Fuafuaga mo Gaioga Faatino

O le Fuafuaga mo Gaioga Faatino a le COPD e faasino ia:

A Lelai le Mānava, Ua Lelai le Soifua

呼吸更顺畅, 生活更美好

**Asthma + Respiratory FOUNDATION NZ**

## COPD

(慢性阻塞性肺病)

### 行动计划

本行动计划属于:

呼吸更顺畅, 生活更美好

**BREATHLESSNESS STRATEGIES FOR COPD**

Breathlessness is a major symptom in COPD. It can often seem to come on for no apparent reason or with very little exertion. This can cause people to feel frightened, out of control and anxious

**COMMON ACTIVITIES THAT CAN CAUSE BREATHLESSNESS**

Many activities can cause breathlessness such as, walking, bending down, showering, getting dressed, going to the toilet, vacuuming, hanging out washing, and lifting things.

Eating can be challenging as it can require effort to prepare food and then it is difficult to eat food due to breathlessness. Eating a large portion can also cause breathlessness.

**MANAGING BREATHLESSNESS**

These strategies can help manage chronic breathlessness in stable lung disease. If your breathlessness becomes out of control and unmanageable rapidly, please seek medical attention.

- 1 CONSERVE YOUR ENERGY & PACE YOURSELF**  
People who are breathless often rush to get tasks done. This is not a useful strategy. Learning to pace yourself helps keep control of your breathing so that you can manage independently for longer.
  - Plan your day: Don't try to fit too much in—allow plenty of time to carry out tasks. Cut bigger tasks down into smaller manageable parts and Allow for plenty of rest periods between each task.
  - Prioritise tasks: Which tasks can wait until you feel less breathless?
  - Adapt tasks: Can you sit down to complete the task? Is there a simpler way to complete the task?
  - Delegate: Can someone help you with the task?
- 2 USE A FAN**  
A fan can help control breathlessness. Hand-held fans are a great option because they are cheap, quiet and easily portable. A free-standing fan, a desktop fan or the breeze through an open door or window can also help.
 

To use the fan: Hold the fan about 15 centimetres from your face so you can feel the air on your top lip. Slowly move the fan from side to side so that the breeze covers the bottom half of your face

**Asthma + Respiratory FOUNDATION NZ**

## NEW ZEALAND COPD GUIDELINES 2020

**Asthma + Respiratory FOUNDATION NZ**

## BREATHLESSNESS QUICK REFERENCE

**Tips for managing breathlessness at home**

<p><b>CONSERVE YOUR ENERGY &amp; PACE YOURSELF</b></p> <p>Plan your day: Will I have time for a break?</p> <p>Prioritise tasks: What's most important?</p> <p>Adapt tasks: Can it be done easier?</p> <p>Delegate: Can someone else help?</p>	<p><b>USE A FAN</b></p> <p>Use either a hand-held fan, free-standing fan, a desktop fan, or the breeze through an open door or window. Hold the fan about 15 centimetres from your face so you can feel the air on your top lip.</p>
<p><b>CHANGE YOUR POSITION</b></p> <ul style="list-style-type: none"> <li>Lean forward with arms resting on your knees or the sides of a chair and position knees slightly apart.</li> <li>Lean forward over a table or surface resting on your arms up on some pillows or similar.</li> <li>Lean forward with arms resting on a surface eg supermarket trolley, or back of a chair. Alternatively rest standing with your back against a wall.</li> </ul>	<p><b>BREATHING TECHNIQUES</b></p> <ul style="list-style-type: none"> <li><b>Breathing Control/Tummy Control:</b> Place hands on tummy, breathe in (tummy goes out), breathe out (tummy goes in)</li> <li><b>Pursed-Lip Breathing:</b> Breathe in through your nose, breathe out like through a straw</li> <li><b>Blow as you Go:</b> Breathe in before exerting effort, breathe out while making the effort</li> <li><b>Paced Breathing:</b> Breathe in for a few counts, breathe out for a few counts</li> <li><b>Breathe around the rectangle</b></li> </ul>
<p><b>DISTRACTION &amp; MEDITATION</b></p> <p>Focus on things that bring you pleasure or calmness, such as mindfulness or meditation.</p> <p><b>EXERCISE</b></p> <p>Regular activity should be done in moderation. Ask to be referred to your local pulmonary rehabilitation program.</p>	<p><b>TAKE YOUR MEDICATION</b></p> <p>Use your prescribed medication as directed. If you have difficulty managing your breathlessness, talk to your healthcare professional as there may be other medications that may help.</p>

**WHEN FEELING BREATHLESS...**

STOP → Rest your position → Use your fan → Start your breathing technique

**Asthma + Respiratory FOUNDATION NZ**

## BREATHLESSNESS QUICK REFERENCE

**Tips for managing breathlessness at home**

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**WHEN FEELING BREATHLESS...**

STOP → Rest your position → Use your fan → Start your breathing technique

Resources available to order or download at

[shop.asthmaandrespiratory.org.nz](http://shop.asthmaandrespiratory.org.nz)

- Full Asthma and COPD Guidelines
- Asthma and COPD Action Plans
- Interactive PDFs
- Educational Booklets
- Breathlessness guides





# Asthma & COPD Fundamentals

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## Abbreviations used throughout this guide:

<b>ADLs</b>	Activities of daily living
<b>BNP</b>	Brain natriuretic peptide
<b>COPD</b>	Chronic obstructive pulmonary disease
<b>FEV<sub>1</sub></b>	Forced expiratory volume in one second
<b>FEV<sub>6</sub></b>	Forced expiratory volume in six seconds
<b>FVC</b>	Forced vital capacity
<b>ICS</b>	Inhaled corticosteroid
<b>IV</b>	Intravenous
<b>LABA</b>	Long-acting beta agonist
<b>LAMA</b>	Long-acting muscarinic antagonist
<b>mMRC</b>	Modified Medical Research Council
<b>NIV</b>	Non-invasive ventilation
<b>PaCO<sub>2</sub></b>	Arterial carbon dioxide tension
<b>PaO<sub>2</sub></b>	Arterial oxygen tension
<b>SABA</b>	Short-acting beta agonist
<b>SAMA</b>	Short-acting muscarinic antagonist
<b>SPO<sub>2</sub></b>	Oxygen saturation by pulse oximetry