



GUIDELINES COVID-19

RESPIRATORY THERAPY

CLEARING SECRETIONS

TUTORIAL FOR CAREGIVERS

The goal of respiratory physiotherapy is to ensure a **respiration of good quality** allowing thus proper blood oxygenation and release of carbon dioxide. To this end, one needs to keep:

- ▶▶ all airways free from any accumulation of mucus generated by over-abundant secretions that the patient cannot expel by himself/herself,
- ▶▶ and secure a good chest expansion.

This document aims at **facilitating the clearance of bronchial secretions** when performed at home by caregivers. It reviews the manual and instrumental techniques already known by the patient and caregivers as well as the aspiration techniques.

The objective of the document is not to encourage alternative techniques other than those previously recommended by the attending physician and/or the neuromuscular referral center.

General recommendations for the caregiver

Before getting started

- ✓ Wash oneself hands with water and soap in the bathroom or in toilets, and dry them with a disposable pad (or, if not applicable, with a clean towel that should then be discarded).
- ✓ Wear a mask (recommended), an over-blouse or a large clean shirt.

While assisting for clearing secretions

- ✓ Do not use one's cell phone or landline telephone (or wash one's hands again thereafter).
- ✓ Wash one's hands (or rub them with an hydro-alcoholic solution) before and after having touched the patient, any other medical equipment or technical devices (wheelchair, patient-lifter, electric bed...).
- ✓ Use disposable gloves for endotracheal aspirations.

After clearing secretions

- ✓ Remove one's disposable gloves, if applicable.
- ✓ Wash one's hands with water and soap.

▶▶ To know more about hygiene of hands

[How do I wash my hands properly ?](#)

2 recommendations

1. An appropriate installation of the patient is key. It is directed by his/her comfort and security. During the clearance of secretions, most patients lay in a half-seated position in most cases and but some prefer a lying position. If this manoeuver is performed while seating in a wheelchair, check brakes are on and ensure it cannot tilt backwards.
2. Reach out to the attending physician, or emergency services (if applicable), in case of overabundant secretions, major breathing difficulties or high temperature.

CLEARING SECRETIONS WITH MANUAL COMPRESSION

What is the objective?

- Assist the patient in having his/her secretions cleared by pressing his/her chest wall and his abdomen when breathing out.
- In case of sticky, thickened, difficult to move upwards, secretions, check whether the patient benefits from adequate humidification. It is possible to use some physiological serum provided the patient does not show signs of hyperreactivity to this product. Using instrumental devices can be helpful for clearing secretions (see further down).

In which position?

▶▶ For the patient:

A comfortable, stable position is recommended. In most cases a half-seated one. If the patient is wheelchair bound, ensure the chair is not at risk of tilting during the maneuver.

▶▶ For caregivers:

- Standing position, one hand on the mid-thorax or laterally, medium finger pointing to the navel, and one hand on the abdomen close to the navel (picture 1). Both hands are placed in a flat position without clutching fingers.



Picture 1

- For the sake of comfort and efficacy, some patients prefer both hands to be placed on the thorax (picture 2) or on the abdomen (picture 3).



Picture 2



Picture 3

How to achieve the maneuver?

▶▶ For the patient:

1. Breath in profoundly and cough as much as possible in order to clear secretions in the upper airways.
2. Breath in profoundly and breath out, mouth half shut just like blowing an anniversary candle. Perform the exercise five times.
3. Breath in profoundly and breathe out strongly, mouth-open in order to produce condensation or hot air on a glass (or a pocket mirror for instance). Perform the exercise five times.
4. Once secretions reach upper airways, breath in profoundly and cough as much as possible.

▶▶ For caregivers:

- Give oral recommendations during maneuvers: « *breath in!* » (picture 4), « *breath out with your mouth slightly shut* », « *breath out with your mouth open* », « *cough hard* » (picture 5).
- Press the thorax and the abdomen while the patient is breathing out or coughing. Pressure must be significant and sustained in order to remain non-painful.
- Aspirating secretions once they reach the mouth or the cannula (in case of tracheostomy). Endotracheal aspirations are taken care by caregivers adequately trained for this technique.

3 advices

1. Always ensure the patient is correctly ventilated, by asking his/her about it, or by using a pulse oximeter if available.
2. Consider regular breaks and split the session if necessary according to the patient's feeling.
3. If the patient is already ventilated, the caregiver can press both the thorax and the abdomen during the expiratory phase of the ventilatory cycle.



Picture 4



Picture 5

CLEARING SECRETIONS WITH INSTRUMENTAL DEVICES

When the patient cannot drag his/her secretions upward with the sole manual pressure maneuvers

1. With an intermittent positive pressure device (Alpha 300, 200...)



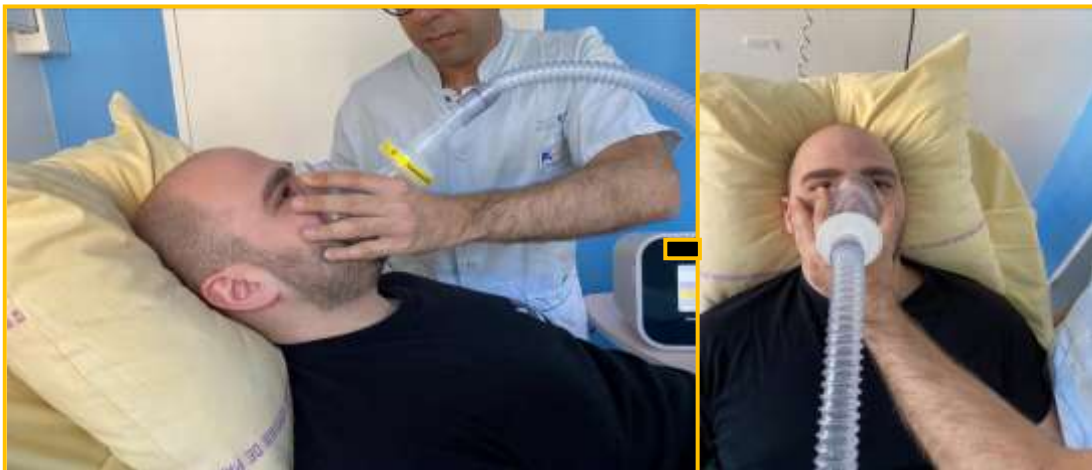
►► It is advised to use these techniques to load more air (during one hyperinsufflation) before breathing out or coughing, in accordance with the protocol set by the physiotherapist or the attending physician :

- for patients already mastering techniques of hyperinsufflation with an intermittent positive pressure device (Alpha 300 or 200...);
- for ventilated patients, provided they master the technique, use the « *air stacking* » maneuver (gulp several air volumes before breathing out);
- for others, and if they master it, use the glosso-pharyngeal breathing.

►► The same recommendations as those mentioned in the section « clearing secretions by manual pressure » may be combined during the maneuver.

2. With an in-exsufflator device (Cough-Assist®, Pegaso®, Clearway®, Comfort Cough®, Eove70®)

- ▶▶ A session with a CoughAssist® may be achieved by caregivers.
- ▶▶ The in-exsufflator device must be set on the « automatic » mode. Apply the mask firmly on the patient's face (mouth and nose) (picture 6) without tightening it. One session is made of 4 to 5 cycles of insufflation-exsufflation, followed by a break. These 4 to 5 cycles can be repeated 4 to 5 times, taking into account the fatigue of the patient and the efficacy of clearance.
- ▶▶ It is possible (as shown on picture 8) to press the chest wall or the abdomen of the patient while coughing.



Picture 6



Picture 7



Picture 8

ENDOTRACHEAL ASPIRATION

▶▶ Endotracheal aspirations must be performed by trained individuals wearing a mask, disposable gloves and if possible, an over-blouse.

THORACIC MOBILIZATION

▶▶ Should sessions of thoracic mobilization by an intermittent positive pressure device be prescribed, they must be sustained during roughly 20 minutes daily.

Warning

This practical note was designed in the exceptional context of the Covid-19 pandemics. The information contained inside it does not substitute to the regular recommendations made by your physiotherapist, attending physician or neuromuscular multidisciplinary team.

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