



# HI-FLOW Oxygen therapy



## HFOT saves the patient the trauma and dangers of intubation

### Some interesting facts and thoughts

HFOT is a method of respiratory support, that delivers high flow oxygenated gas, to the patient, to wash out the upper airways. The patients gas exchange is impacted, because the high flow washes out the dead space, filling it with oxygen enriched gas, thus increasing oxygenation and meeting total respiratory demand. HFOT is better started sooner rather than later.

Only 3 settings are required, **FLOW** of up to 70 LPM: **O2** of up to 100% and **Pmax**.

The HFOT unit blends and humidifies a mixture of oxygen and room air and delivers this to the patient at flows of up to 70LPM.

Medical gas is **anhydrous**, meaning it contains no water.

Cold, dry gas irritates the respiratory mucosa and increases metabolic demand by cooling the body, not ideal in ill patients.

A Humidifier is a vital component in HFOT by: -

Heating the inspiratory gas to match the normal body temperature of  $\pm 37^{\circ}\text{C}$

Delivering gas that is humidified to match the ideal **body saturation vapour pressure**, facilitating clearance of secretions.

HFOT is useful in acute and chronic respiratory disease.

It is generally used in spontaneously breathing patients who have an increased WOB (work of breathing)

This mode of ventilation is comfortable for the patient and does not cause claustrophobia, the patient generally feels better as soon as the treatment is started as they don't feel a sense of suffocation anymore.

The use of HFOT reduces the need for intubation by at least 15% and reduces hospital stay generally to less than a week – this is a cost saving benefit in hospitals.

HFOT is the ideal mode of therapy for many different diseases including ARDS: COPD: Bronchiolitis: Pneumonia: CCF: Respiratory failure: Asthma exacerbation: Sleep apnoea:

Seriously ill COVID patients develop ARDS and become hypoxic from pneumonia.

Their alveoli fill up with water, causing the lungs to become stiff and non-compliant and very difficult to inflate.

This necessitates ventilation, because they are unable to exchange Oxygen and washout CO2

Whilst it hasn't been proven, it seems as if the lung recruitment responsible for the increase in gas exchange can be measured as follows: -

For every 10 LPM FLOW delivered, the PEEP seems to increase by 1 mmHg so if 70 LPM Flow is delivered, the result seems to be about 7mmHg PEEP.

This increased PEEP is basic lung recruitment, which opens the alveoli and reduces atelectasis, this improves gas exchange and increases oxygenation.

HFOT is child friendly and is useful in many childhood respiratory diseases such as Asthma, Bronchitis, Pneumonia and Croup.

HFOT is invaluable in newborns with infant distress syndrome, preventing invasive ventilation and its many risks, allowing for safe respiratory management.

FiO2 levels remain lower, thus reducing the risks of retinopathy and oxygen toxicity.

Supporting neonates in this way allows the baby to spend more energy on other life support activities, resulting in faster weight gain and a reduced hospital stay.

Proning patients 2 hourly Left / Back/ Right: front helps patients, as it allows the alveoli to open and allows oxygenated gas into different areas of the lung. This practice has proven to be very effective in increasing oxygen levels

Many Drs using HFOT in treating COVID patients have noticed a lower mortality rate than those being sedated and ventilated on an ICU ventilator.