Guideline recommendations for the use of Nasal High Flow (NHF) for acute respiratory support in adults are supported by a body of peer-reviewed and published evidence.

In a recent Fisher & Paykel Healthcare review of controlled studies using NHF as respiratory support in acute adult patients, the vast majority of the studies were found to have used Fisher & Paykel Healthcare (F&P) Optiflow systems with flow settings of 45 - 60 L/min* (see the link on the next page for more detail).

A number of respiratory support devices, such as the Philips V60 Plus**, provide NHF as a therapy option, making them suitable as independent flow generators that can be combined with F&P products to form vent-driven Optiflow systems.

The following figure demonstrates what is required to enable your NHF-capable mechanical ventilator to form part of a vent-driven Optiflow system.

![Vent-driven Optiflow system diagram]

---

### System settings

<table>
<thead>
<tr>
<th>Flow driver</th>
<th>Humidifier</th>
<th>Tube and chamber kit</th>
<th>Interface</th>
<th>System settings</th>
</tr>
</thead>
<tbody>
<tr>
<td>NHF-capable mechanical ventilator†</td>
<td>F&amp;P 850 System‡ set to invasive mode</td>
<td>Adult Bi-level / CPAP circuit kit (e.g. RT219)</td>
<td>F&amp;P Optiflow interface</td>
<td>37 °C ✓ 10 - 80 L/min§, 21 - 100% FiO₂</td>
</tr>
</tbody>
</table>

* The review is detailed in edition 11 of Flow Matters which is available from [https://resources.fphcare.com/content/optiflow-flow-matters-newsletter-edition-11-pm-621178.pdf](https://resources.fphcare.com/content/optiflow-flow-matters-newsletter-edition-11-pm-621178.pdf)

** Philips is a registered trademark of Koninklijke Philips NV.

† A mechanical ventilator with a NHF mode and able to to as an independent flow driver for delivering NHF therapy.

‡ The F&P 850 System includes the following: MR850 respiratory humidifier (e.g. MR850JHU), temperature probe (e.g. 900MR869), heater-wire adapter (e.g. 900MR805), mounting bracket (e.g. 900MR087) and waterbag pole (e.g. 900MR290).

§ Flow rate limits based on internal F&P testing with the Philips V60 Plus set to high flow mode and a range of Optiflow interfaces: OPT942: 10 - 70 L/min, OPT944/6: 10 - 80 L/min, OPT1042: 10 - 60 L/min, OPT1044/6: 10 - 80 L/min. Flow rate limits may depend on the clinical application and flow source used.
Guideline recommendations for the use of Nasal High Flow (NHF), aka High Flow Nasal Cannula (HFNC), are supported by analyzed data from research investigating the effect of NHF on clinical outcomes, such as the reduced need for tracheal intubation. When selecting an NHF system, it is important to ensure the entire system, including design and device limits, can provide the therapy proven to deliver the expected outcomes.

### Summary
- The National Institutes of Health (NIH)*, the Australia and New Zealand Intensive Care Society (ANZICS) and the Surviving Sepsis Campaign (SSC)** recommend NHF for use in COVID-19 related hypoxemia.1-3
- These recommendations are supported by findings from five systematic reviews with meta analysis.4-8
- A review conducted by Fisher & Paykel Healthcare (F&P) showed that the flow rates used in the controlled published studies9-30 (analyzed by the five meta-analyses) ranged from 10 L/min to 60 L/min and 82% of the studies required flows ≥ 45 L/min.
- When this review was repeated on the 52 acute adult NHF controlled studies (with subjects n > 39), found using a systematic search of the PubMed database, it was again shown that the flow rates used ranged from 10 L/min to 60 L/min and that 85% of the studies required flows ≥ 45 L/min.
- F&P Optiflow systems (including F&P Optiflow interfaces) and humidity settings of 37 oC were widely used.

### NHF recommendations from NIH COVID-19 Treatment Guidelines, the ANZICS COVID-19 guidelines, and the SSC Guidelines on the Management of Critically Ill Adults with Coronavirus Disease 2019 (COVID-19) are supported by the following systematic reviews with meta analysis: Zhao et al. 2017, Ou et al. 2017, Ni et al. 2018, Rochwerg et al. 2019 and Agarwal et al. 2020.1-8

### Analyzed published studies
- These five reviews analyzed data from 22 published studies (mostly RCTs) and one presentation.9-31 The studies represent various NHF applications, including primary respiratory support, pre-oxygenation prior to intubation and post extubation respiratory support. The studies reported the NHF systems and settings that were used.

### Systems and settings
- The reported flow rates ranged between 10 L/min and 60 L/min with the majority requiring flows at the higher end of the range.
- Of the 22 published and analyzed studies, 20 (91%) used F&P Optiflow systems, including a F&P Optiflow patient interface and a F&P humidity delivery system with humidity setting of 37 oC.

---

* An integrated flow source and humidifier to deliver NHF therapy across the hospital, independent of medical air supply.

* Provided an oxygen flow meter is available to deliver supplemental oxygen.