

Quick Reference Guide

USE OF PAEDIATRIC VIRAL FILTERS (Filter) AND COMBINED HEAT MOISTURE EXCHANGE / FILTER (HME/F) DURING THE COVID-19 PANDEMIC

Key Points

- Do not use a Filter or HME/F in newborns due to dead space concerns.
- Remove a Filter or HME/F if ventilation is suboptimal for infants and children
- Choose the smallest available dead-space filter for weight range if one is required
- If ventilation with this equipment continues beyond initial rescue, the CO₂ should be checked to ensure it is not too high, and the filter may be removed if there is a need to reduce dead-space

Background

- Airborne precautions must be used for aerosol-generating procedures and treatments for patients with suspected or confirmed COVID-19. This includes isolation in a negative-pressure or single room and personal protective equipment (PPE)
- Measures to reduce spread of aerosols include use of filters, cuffed endotracheal tubes and modified intubation techniques as well as rigorous training, planning and teamwork.


DO NOT USE a viral filter or Heat Moisture Exchanger/Filter in newborns [Link to Safety Notice 006/20](#)

REMOVE a viral filter or Heat Moisture Exchanger/Filter if ventilation is suboptimal for infants and children

Assessment

- Brands of viral filters and HME/Fs differ in dead space volume, direction of flow and filtering capacity limited by minimum and maximum tidal volumes and flows. Match patient needs with equipment recommendations.
- For ventilator circuits
 - Follow manufacturer instructions for correct placement of bacterial/viral filters, flow and ETCO₂ sensors. (Most devices have a side port for sidestream ETCO₂ monitoring)
 - Use a viral filter in a humidified (“wet”) ventilator circuit instead of a HME/F.

Examples of viral filters (If a filter is recommended and is safe to use):

Type	Filter or HME maximum volume	Examples
Self-inflating bag 240mL (young infant <6kg)	10mL	Medtronic DAR™ Infant – Pediatric Electrostatic Filter HME Koala Infant HME/F
Self-inflating bag 500mL (paediatric ≈4-25kg)	15mL	Medisize Hygrovent Child HMEF Medtronic DAR™ Infant - Pediatric Electrostatic Filter HME Small
Self-inflating bag 1500mL (“Adult” >25kg)	50mL	PALL Ultipor® 25 Filter / HME Koala Adult HME/F Medisize Barr-vent S Filter (Only – NO HME) Medtronic DAR™ Adult – Pediatric Electrostatic Filter HME (Small)
Infant T-piece Resuscitators (e.g. Neopuff™)	10mL (use only if required)	Medtronic DAR™ Infant–Pediatric Electrostatic Filter HME SMALL Koala Infant HME/F
Nitrous Circuit		Link to Procedural sedation in the ED 

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HME/F EXAMPLES

Neonatal Ventilator Circuit <10kg

Self-inflating bag 240mL (Neonatal 2-6kg)

T-piece resuscitator (e.g. Neopuff™)

8 to 10mL dead space or smaller bi-flow viral filter (examples below)

KOALA INFANT HMEF



Medtronic DAR™ Infant – Pediatric Electrostatic Filter HME 355U5427



Paediatric Ventilator Circuit 10-30kg

Self-inflating bag 500mL (Paediatric 4-25kg)

15mL dead space or smaller bi-flow viral filter (examples below)

MEDISIZE HYGROVENT CHILD HME/F
Straight or angled



Medtronic DAR™ Infant - Pediatric Electrostatic Filter HME Small 355U5430 (available with removable elbow)



Older Child/Adult >30kg

Self-inflating bag 1500mL (Adult >25kg)

50mL dead space or smaller bi-flow viral filter (examples below)

PALL Ultipor® 25
Filter / HME



KOALA Adult HME/Filter



MEDISIZE Barr-vent S
(Filter only, not HME)
Code 300 400 000



Medtronic DAR™ Adult – Pediatric
Electrostatic Filter HME (Small)
352U5877

