

**3<sup>rd</sup> INTERNATIONAL PEDIATRIC**

**NONINVASIVE VENTILATION  
CONFERENCE**

**Necker university hospital**

Paris - France

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# NIV and CPAP devices in children

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# Classification of NIV/CPAP devices

	<b>Standard CPAP/NIV</b>	<b>Intermediate</b>	<b>Life Support</b>
<b>Battery</b>	X	✓	✓
<b>Alarms</b>	X	✓	✓
<b>Integrated humidifier</b>	✓	✓	X
<b>In-built software</b>	✓	✓	✓
<b>Ventilatory settings</b>	CPAP/NIV	CPAP/NIV	CPAP/NIV (also IV)

# CPAP/NIV devices



## Standard CPAP/NIV

### Advantages:

- \* Small size
- \* Integrated humidifier

### Disadvantages:

- \* No internal battery
- \* Flow detection > 30 Kg
- \* Inaccurate data < 30 Kg
- \* Autoset CPAP > 30Kg
- \* No alarms (for CPAP devices)



## Life support

### Advantages:

- \* Battery: about 8 h
- \* Flow detection > 5 Kg
- \* Alarms

### Disadvantages:

- \* Heavy/cumbersome
- \* External humidifier



## Intermediate devices

### Advantages:

- \* Medium size
- \* Integrated humidifier
- \* Battery: about 2-6 h (+external)
- \* Alarms
- \* Options (ex. Smart Start)

### Disadvantages:

- \* Flow detection > 10-13 Kg
- \* Inaccurate data < 10-13 Kg



# Choice of the device

Devices		CPAP/AutoCPAP	Bilevel PAP	Min weight
<b>ResMed</b>				
Airsense 10	(std)	yes	no	30kg
Lumis	(std)	Constant CPAP	yes	13kg / 30kg (iVAPS)
Stellar	(interm)	Constant CPAP	yes	13kg / 13kg (iVAPS)
Astral	(LS)	Constant CPAP	yes	5kg
<b>Philips Respironics</b>				
DreamStation	(std)	yes	no	30kg
BIPAP AVAPS	(std)	Constant CPAP	yes	10kg / 20kg (AVAPS)
BIPAP A40	(interm)	Constant CPAP	yes	10kg / 20kg (AVAPS)
Trilogy	(LS)	Constant CPAP	yes	5kg
<b>F &amp; P</b>				
Icon	(std)	yes	no	30kg
<b>Lowenstein</b>				
Prisma 20	(std)	yes	no	30kg
PrismaVent 40	(interm)	Constant CPAP	yes	10kg
PrismaVent 50	(LS)	Constant CPAP	yes	10kg

# Choice of the device - CPAP

Weight

3 - 5 kg

5 - 20 kg

>20 kg

Spontaneous  
ventilation < 12  
hours per day

Spontaneous  
ventilation < 12  
hours per day

yes

no

yes

no

Life support ventilator

Intermediate

Standard CPAP

# Choice of the device - NIV

Weight

3 - 10 kg

10 - 30 kg

>30 kg

Spontaneous ventilation < 12 hours per day

Spontaneous ventilation < 12 hours per day

yes

no

yes

no

Life support ventilator

Intermediate

Standard NIV

# Choice of the device

Other factors to consider:

- **Underlying disease** (progressive respiratory insufficiency)
- **Need for multiple programs** (within the same device): day/night, MPV, chest physiotherapy
- **Ergonomy** of the ventilator, humidifier, battery
- **Patient's and parents' preferences**
- **Economical** considerations
- In-built software
- *Integrated SpO<sub>2</sub>, PtcCO<sub>2</sub>, telemonitoring*