



## NPHVA Request Form and Admission Criteria for Pediatric Patients Formulaire de Demande et Critères d'Admission Pédiatrique pour le PNAVD

<b>Name / Nom</b>			
<b>Address / Adresse</b>			
<b>City / Ville</b>			
<b>Postal Code / C P</b>		<b>Telephone / Téléphone</b>	
<b>Residence / Lieu Résidentiel</b>			
<b>Medicare / No. Assurance Maladie</b>		<b>Weight / Poids</b>	
<b>Expiration</b>		<b>Height / Taille</b>	
<b>DOB / DDN</b>			
<b>Mother's Maiden Name</b> Nom de la mère			
<b>Father's Name</b> Nom du père			
<b>Referring Center</b> Centre référant		<b>Telephone</b> Téléphone	
<b>Following Respirologist</b> Pneumologue du patient		<b>Telephone</b> Téléphone	
<b>Fax</b> Télécopieur		<b>Email</b> Courriel	

**Check off the  
admissible  
NPHVA  
diagnosis  
category**

Cocher la  
catégorie du  
diagnostic  
admissible au  
PNAVD/

- Neuromuscular Disease / Maladie neuromusculaire**
- Kyphoscoliosis / Cyphoscoliose**
- Spinal Injury / Blessé médullaire**
- Central Apnea with Hypoventilation / Apnée centrale avec hypoventilation**
- Obesity Hypoventilation / Obésité-Hypoventilation**
- Cystic Fibrosis / Fibrose Kystique**
- Severe Obstructive Sleep Apnea with Hypoventilation / Apnée obstructive sévère avec hypoventilation**
- Other: Chronic Idiopathic Hypoventilation / Autre : hypoventilation chronique idiopathique**

**Specific  
Diagnosis /  
Préciser le  
diagnostic**

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**Other known illnesses/conditions**

Autres maladies/conditions connues

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**Additional Information**

Informations  
complémentaires

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**Diagnostic data required for admission to NPHVA / Données diagnostiques nécessaires à l'admission au PNAVD**

- Patient's medical history / Anamnèse du patient**
- List of medications / Liste de médicaments**

**Please refer to the annexed list to determine required documents for each eligible diagnosis.**

Veillez vous référer à notre liste en annexe de ce formulaire pour joindre les documents requis à chacun des diagnostics admissibles.

**For informational purposes, please select the hypoventilation signs and symptoms that are applicable to the patient.**

À titre informatif, veuillez cocher les signes et symptômes d'hypoventilation présents chez ce patient.

- Dyspnea / Dyspnée**
- Weight loss / Perte de poids**
- Fatigue**
- Trouble at school / Épreuve des difficultés scolaires**
- Repetitive hospitalization for decompensation / Hospitalisations répétitives pour décompensation respiratoire**
- Morning headaches / Céphalées matinales**
- Asymptomatic / Asymptomatique**

**Has this patient ever received positive pressure ventilation (Bipap or CPAP)?**

Le patient a-t-il déjà reçu une ventilation via pression positive (BIPAP ou CPAP)?

**Yes**  
Oui

**No**  
Non

**Please include the completed prescription form (annexed to this document).**

Assurez-vous de joindre la Rx ventilatoire dûment complétée en annexe de ce formulaire.

**Identify the type of interface (mask) used by the patient if known (model, nasal, facial, size).**

Préciser le type d'interface qui a été utilisé par le patient (modèle, nasal, facial, grandeur) si connu.

## IMPORTANT

**Only requests with all the required information will be treated. A letter confirming the reception of your request as well as the admissibility of the patient will be sent to you.**

Seules les demandes de consultation contenant toutes les informations nécessaires seront traitées.  
Une lettre confirmant la réception de votre demande ainsi que l'admissibilité de votre patient vous sera envoyée.

**Please email your request and required documents to: [pnavd@muhc.mcgill.ca](mailto:pnavd@muhc.mcgill.ca)  
or fax to: 514-843-2077. For more information contact 514-934-1934, ext: 32111**

Veillez envoyer votre demande ainsi que les documents requis à l'adresse courriel suivant: [pnavd@muhc.mcgill.ca](mailto:pnavd@muhc.mcgill.ca)  
ou au numéro de fax: 514-843-2077. Si vous avez des questions contacter le 514-934-1934, poste : 32111.

## SPECIFIC ADMISSION CRITERIA PEDIATRIC PATIENTS

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### SPECIFIC REQUIREMENTS ACCORDING TO THE FOLLOWING DIAGNOSIS:

#### Neuromuscular Disease and Kyphoscoliosis

→ Presence of at least *one* of the following symptoms:

- Proof of daytime alveolar hypoventilation with a  $PCO_2 \geq 45$  mmHg (capillary or arterial blood gas,  $EtCO_2$  or transcutaneous  $PCO_2$  (Ptc $CO_2$ ));
- Proof of nocturnal hypoventilation shown via oximetry, nocturnal Ptc $CO_2$  or polysomnography (PSG);
- Patients with a progressive neuromuscular disease and who have short term nocturnal ventilation (Ex: DMD, spinal amyotrophy, etc.). For this particular patient category, sleep disorders can present itself as a simple obstructive phenomenon, but can, in the short term, lead to hypoventilation syndrome.

→ Required information for this diagnosis:

- Neuromuscular disease or kyphoscoliosis;
- Nocturnal study demonstrating hypoventilation;
- Measured daytime  $CO_2$  (capillary or arterial blood gas,  $EtCO_2$  or Ptc $CO_2$ );
- Spirometry if > 6 years old and whose tests can adequately be performed, if available;
- Mention if recent weight loss.

#### Spinal Injury

- Patients requiring ventilation as a result of a spinal injury;
- Spirometry, if available.

#### Central Apnea with Hypoventilation

→ Presence of at least one of the following symptoms:

- Diagnosis of central congenital hypoventilation syndrome;
- Presence of alveolar nocturnal hypoventilation demonstrated on a polysomnography (PSG), associated exclusively or predominately with central apnea/hypopnea.

→ Required information for this diagnosis:

- Results of a PSG that shows a central nocturnal hypoventilation;
- Proof that CPAP treatment with adequate pressures is insufficient for patients with predominant obstructive apnea;  
\*\*\*see criteria on page 5.
- Proof of daytime alveolar hypoventilation with a  $PCO_2 \geq 45$  mmHg (capillary or arterial blood gas,  $EtCO_2$  or Ptc $CO_2$ ) if available.

*\* Please note that this information is not required for the diagnosis of central congenital hypoventilation syndrome.*

### **Cystic Fibrosis**

→ Required information for this diagnosis:

- Confirmation that the patient is on the transplant list;  
OR
- Hospitalization summaries which report hospital admission due to hypercapnic respiratory failure ( $\text{PCO}_2 \geq 50$  mmHg : arterial, capillary,  $\text{EtCO}_2$  or  $\text{TcPCO}_2$ ) who responded favourably to non-invasive ventilation during their hospitalization.

### **Obesity-Hypoventilation**

→ Required information for this diagnosis:

- BMI demonstrating obesity:  $\geq 95^{\text{th}}$  percentile growth curve;
- Recent PSG results showing that even with adequate pressures, treatment cannot be sufficiently corrected by CPAP \*\*\* (see page 5) as demonstrated by a significant nocturnal hypoventilation (increase in  $\text{PaCO}_2$  greater than 10 mmHg compared to values obtained while awake) or  $>25\%$  total sleep time with a  $\text{PCO}_2 \geq 50$  mmHg<sup>1</sup> or nocturnal oxygen desaturation ( $\text{SaO}_2$  inferior to 92% for at least 5 consecutive minutes)<sup>2</sup>;
- Daytime  $\text{CO}_2$  measure (capillary or arterial blood gas,  $\text{EtCO}_2$  or  $\text{PtcCO}_2$ ).

### **Severe Obstructive Apnea with Hypoventilation**

Presence of severe obstructive apnea associated with one or more co-morbidities for which surgery will not significantly improve its evolution in the short or medium term (ex: Pierre-Robin syndrome, vocal cord paralysis or Down syndrome).

→ Required information for this diagnosis:

- Recent PSG results showing that CPAP treatment is inefficient \*\*\* (see page 5) as demonstrated by a significant nocturnal hypoventilation (increase in  $\text{PaCO}_2$  greater than 10 mmHg compared to values obtained while awake) or nocturnal oxygen desaturation ( $\text{SaO}_2$  inferior to 92% for at least 5 consecutive minutes);
- Nocturnal oximetry demonstrating a significant nocturnal hypoventilation with nocturnal oxygen desaturation ( $\text{SaO}_2$  inferior to 92% for at least 5 consecutive minutes);
- Daytime  $\text{CO}_2$  measure (capillary or arterial blood gas,  $\text{EtCO}_2$  or  $\text{PtcCO}_2$ ).

### **Other: Chronic Idiopathic Hypoventilation:**

→ Required information for this diagnosis:

- Proof of daytime alveolar hypoventilation with a  $\text{PCO}_2 \geq 45$  mmHg (capillary or arterial blood gas,  $\text{EtCO}_2$  or  $\text{PtcCO}_2$ );  
OR
- Recent PSG results;
- Nocturnal oximetry demonstrating nocturnal oxygen desaturation ( $\text{SaO}_2$  inferior to 92% for at least 5 consecutive minutes).

**\*\*\*CPAP failure demonstrated by one of the following criteria:**

**Observed on the sleep polysomnography (PSG):**

- a. Increase in PaCO<sub>2</sub> greater than 10 mmHg compared to values obtained while awake<sup>1</sup>;
- b. Nocturnal oxygen desaturation (SaO<sub>2</sub> inferior to 92% for at least 5 consecutive minutes)<sup>2</sup>;
- c. ≥25% total sleep time with a PCO<sub>2</sub> ≥ 50 mmHg;
- d. Mixed or obstructive AHI index > 5 with persistent clinical obstructive sleep apnea signs.

Here are the recommended CPAP pressures for the following age category:

- 5 cmH<sub>2</sub>O until 1 year old;
- 8 cmH<sub>2</sub>O until 12 years old;
- 10 cmH<sub>2</sub>O for teenagers.

If you have difficulty obtaining a permanent resource for a sleep polysomnography (PSG), the following criterion can be considered as eligible:

- a. Presence of these 2 nocturnal oximetry criterion<sup>3</sup>:
  - A minimum of 3 grouped desaturations (grouped desaturation = minimum of 5 desaturations with a 4% drop over a 30-minute period);
  - A minimum of 3 desaturations under 90%;
- b. A CO<sub>2</sub> level:
  - ≥ 50 mmHg while sleeping with a CPAP;
  - OR
  - Greater than 10 mmHg increase compared to values obtained while awake;
- c. Proof of daytime alveolar hypoventilation with a PCO<sub>2</sub> ≥ 45 mmHg (capillary or arterial blood gas, EtCO<sub>2</sub> or TPCO<sub>2</sub>), after the use of a CPAP at night. This measure must be done during the day and not when waking up.

**IMPORTANT:**

When the above-mentioned criterion are not met, the referring physician can decide to start the child on BiPAP treatment, even though the child is not admissible to the NPHVA.

<sup>1</sup> Berry et al.; Rules for scoring respiratory events in sleep: update of the 2007 AASM Manual for the Scoring of Sleep and Associated Events. Deliberations of the Sleep Apnea Definitions Task Force of the American Academy of Sleep Medicine; J Clin Sleep Med 2012 (8) 567–619.

<sup>2</sup> Modified for Pediatrics by NPHVA Consensus based on:  
Clinical indications for non-invasive positive pressure ventilation in chronic respiratory failure due to restrictive lung disease, COPD, and nocturnal hypoventilation—a consensus conference report; Chest 1999 (116) 521–534

<sup>3</sup> Modified by NPHVA consensus based on:  
Kaditis A, Kheirandish-Gozal L, Gozal D. Pediatric OSAS: Oximetry can provide answers when polysomnography is not available. Sleep Med Rev. 2016 Jun; 27:96–105