



1° Congreso Argentino de Medicina Interna Pediátrica

2, 3 y 4 de noviembre de 2016



Mesa redonda: **Asistencia Domiciliaria**

Lic. Mariana Silva

Hospital de niños Pedro Elizalde

Hospital de alta complejidad El Cruce

Avances y nuevas perspectivas

s Protocol

Open Long-term non-invasive ventilation therapies in children: a scoping review protocol

Maria L Castro Codesal,^{1,2} Robin Featherstone,^{1,3} Carmen Martinez Carrasco,⁴ Sherri L Katz,⁵ Elaine Y Chan,⁶ Glenda N Bendiak,⁷ Fernanda R Almeida,⁸ Rochelle Young,² Deborah Olmstead,² Karen A Waters,⁹ Collin Sullivan,⁹ Vicki Woolf,¹⁰ Lisa Hartling,^{1,3} Joanna E MacLean^{1,2}

AMERICAN THORACIC SOCIETY STATEMENTS

American Thoracic Society Clinical Practice Guideline: Chronic Home Invasive Ventilation

Joseph M. Collaco, Christopher D. Baker, John L. Carroll, Girish D. Sharma, Jan L. Brozek, Veda L. Ackerman, Raanan Arens, Deborah S. Boroughs, Jodi Carter, Karen L. Daigle, David Gozal, Katharine Kevill, Richard M. Kravitz, Tony Kriseman, Ian MacLusky, Miroslav Poljaric, Alvaro J. Tori, Thomas Ferkol, and Ann C. Halbower; on behalf of the ATS Pediatric Invasive Ventilation Workgroup

CLINICAL PRACTICE GUIDELINE OF THE AMERICAN THORACIC SOCIETY (ATS) WAS APPROVED BY THE ATS BOARD OF DIRECTORS, JANUARY 2016

An Pediatr (Barc). 2013;78(4):227-233



ANALES DE PEDIATRÍA

www.elsevier.es/anpediatr

ORIGINAL

Ventilación mecánica domiciliar en niños: estudio multicéntrico español

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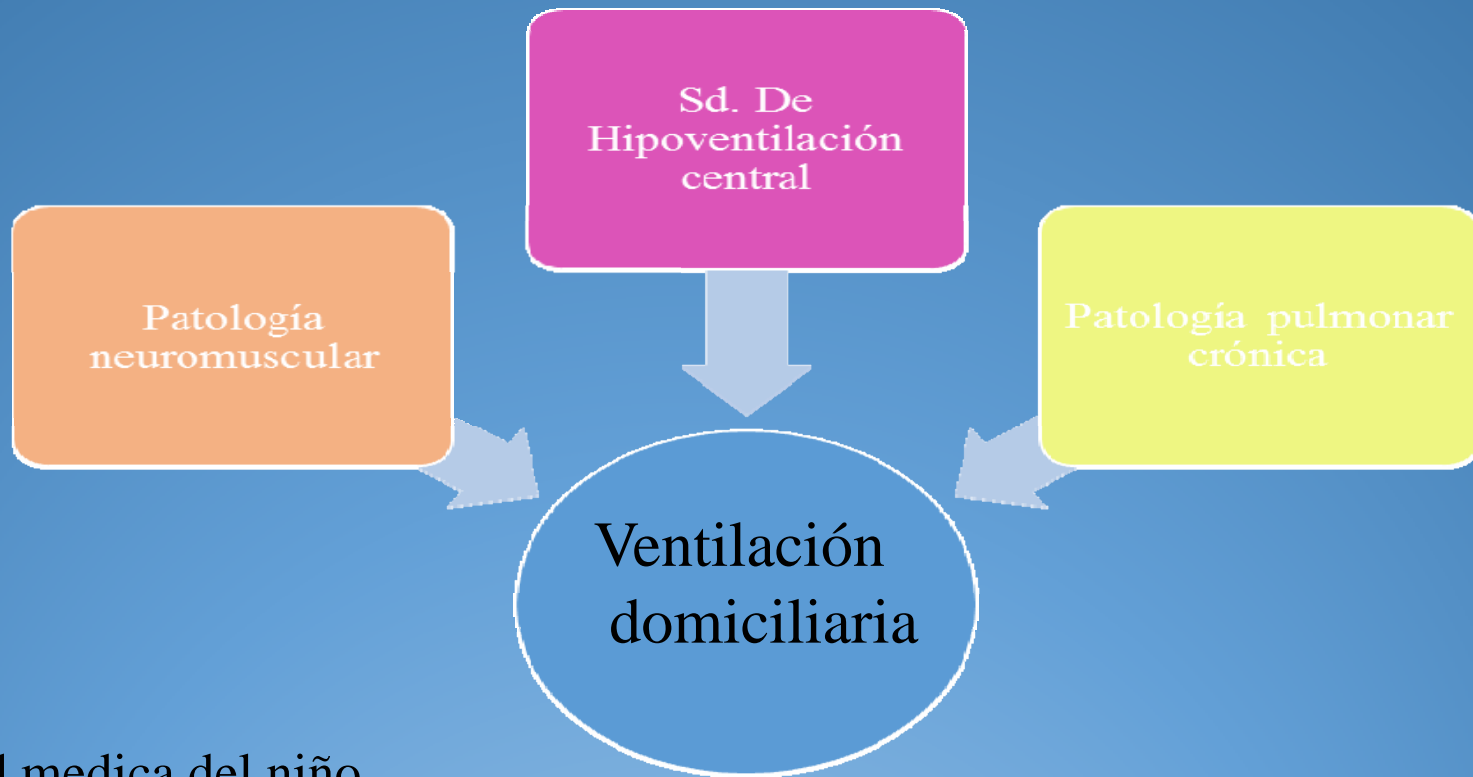
RESEARCH ARTICLE

Long Term Non-Invasive Ventilation in Children: Impact on Survival and Transition to Adult Care

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- Mantener la seguridad médica del niño.
- Prevenir y minimizar las complicaciones.
- Maximizar la calidad de vida del niño.
- Maximizar el potencial rehabilitable.
- Volver al niño a su grupo familiar.



les tempranas

or edad de inicio de VMD

or tiempo de uso diario

plicaciones: decanulación accidental y
rucción de la vía aérea.



Creciente evidencia de su eficacia

Mejoría en la tecnología de los respiradores

Diseño de interfaces pediátricas

Mayor conocimiento público y profesional

Determinantes para la elección del tipo de respirador

Many factors may determine the practitioner's choice of ventilator type. The most important are:

Underlying pathophysiology
Severity and degree of ventilator dependency
Patient convenience
Patient comfort
Individual needs and preference of the patient
Presence of artificial airway
Chest wall and compliance of the patient
Intrinsic PEEP
Patient stability
Necessary supplies
Patient anatomy
Patient stability
Staff expertise
Staff familiarity

Categorías según la dependencia de ventilación:

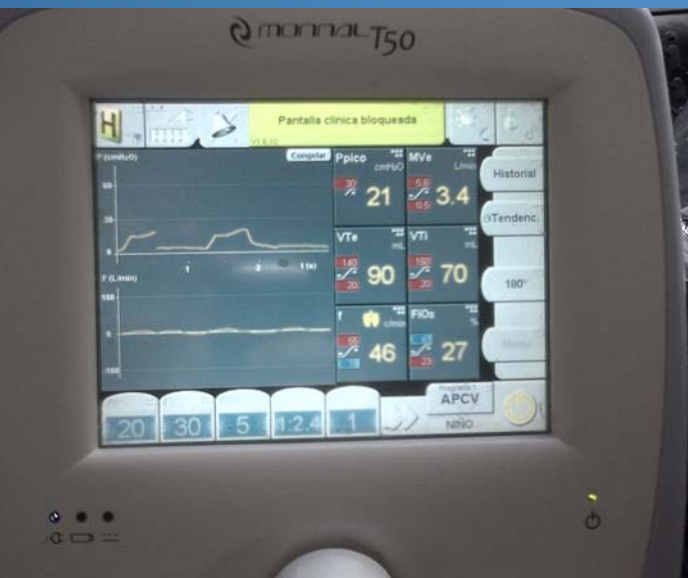
- Solamente durante el sueño,
- Durante el sueño y algunas horas del día ,
- > a 18- 20 hs diarias

Choice of ventilator types, modes, and settings for long-term ventilation

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Monitoreo respiratorio en ventilación domiciliar



Percepción del paciente

Monitoreo respiratorio en ventilación domiciliaria: evidencias

The pulse oximeter alarm should be used at all times during sleep and when a ventilator-dependent patient is not being observed.

4a. For children requiring chronic home invasive ventilation, we suggest monitoring, especially when the child is asleep or unobserved, with a pulse oximeter rather than use of a cardiorespiratory monitor or sole use of the ventilator alarms.	Conditional	Very low	Small indirect studies and the experience of the Workgroup suggest that ventilator alarms may not always function correctly. Furthermore, hypoxemia is most likely to be the first indicator of a serious issue in a child with respiratory disease. The workgroup believes pulse oximetry is the preferred method for monitoring patients on home mechanical ventilation. This recommendation places a high value on the safety of the child and low value on the possible increase in caregiver burden secondary to ventilator alarms.
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pected,^{22,38} pulse oximetry was the preferred monitoring modality at home, during non-invasive and invasive ventilation, particularly for children with neuromuscular disorders. This approach is in agreement with the regimen for managing acute and chronic neuromuscular respiratory failure at home described by Bach and colleagues.²⁴

Destete de la ventilación domiciliaria

Trabaja con el niño y la familia como
socios activos del equipo,
ayuda al niño de ventilación mecánica y
optimizar la forma menos restrictiva e
de ventilación,
evitar / minimizar las complicaciones
secundarias,
mejorar las interacciones entre la familia
y el equipo,
promover el crecimiento y desarrollo de

Components
of a pediatric
ventilation
weaning
program

Multidisciplinary Evaluation team should include: physician (including physiatrist), nurse, pulmonary specialist, registered physical therapist, occupational therapist, speech/language pathologist, child life/therapeutic recreation specialist, education specialist, psychologist, pharmacist, social worker
to facilitate the weaning process

Readiness to wean: Initial evaluation tailored to the child's underlying conditions and comorbidities
Evaluation tests should include: chest films, blood gas (correlate with SaO₂, ETCO₂), tracheostomy culture, pulmonary function tests, secretion management evaluation, airway clearance capacity, bronchoscopy, and function of muscles involved in inspiration and exhalation, posture analysis

Establishment of a therapy program designed to meet the goals of the patient, the family, and the rehabilitation team
•Program should accomplish the following: Initiate rehabilitation interventions to increase inspiratory/expiratory strength and endurance, increase chest wall movement, maximize skeletal muscle strength and endurance, improve mobility, decrease spasticity, increase independence in activities of daily living, enhance vocal quality and communication skills, improve oropharyngeal function, improve communication skills (verbal and nonverbal), promote cognitive development
•Manage anxiety and compliance with therapy program and weaning from ventilation
•Maximize nutritional status
•Manage secretion and airway clearance through positioning, bronchodilators, chest physiotherapy, breathing exercises, suctioning, assistive cough, mechanical insufflation-exsufflation, oscillatory devices, speaking valves
•Establish a patient-driven weaning process that considers the energy expended for breathing and exercise, the child's physiologic and psychologic response to weaning, decreases support by either increasing the level of spontaneous breathing off of the ventilator or gradually decreasing the pressure or number of assisted breaths.
•Plan for discharge and community reintegration.

Adapted from MacIntyre NR, Epstein SK, Carson S, et al. Management of patients requiring prolonged mechanical ventilation: Report of a consensus conference. *Chest* 2005;128:3937-3954

Rehabilitation Considerations for Children Dependent on Long-Term Mechanical Ventilation

Helene M. Dumas

TABLE 3: General rehabilitation goals and projected outcomes for children dependent on long-term mechanical ventilation.

General goals	<ul style="list-style-type: none"> Appropriate positioning for functional activity such as feeding, play, and fine motor activity Activity tolerance/cardiorespiratory response adequate for activity Developmental motor milestone achievement Improved functional mobility Maintenance or improvement of skin integrity and musculoskeletal alignment Provision of adequate equipment (e.g., ADL equipment, seating and positioning, orthotics) Functional communication Adequate nutrition for health Caregiver education
Intended rehabilitation outcomes	
Clinical outcomes	<ul style="list-style-type: none"> Developmental skill attainment Mobility independence Independence with activities of daily living Communication commensurate with cognitive ability Health promotion to minimize dependence on ventilator and caregivers
Prevention outcomes	<ul style="list-style-type: none"> Reduction in need for additional intervention Reduction in risk of impairment or impairment progression Reduction in risk of re-hospitalization
Child/family satisfaction outcomes	<ul style="list-style-type: none"> Clinical proficiency of rehabilitation staff Coordination of care is demonstrated Access and availability of services acceptable



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Gracias por su atención

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