



# Revue clinique

NAVA, VNI NAVA  
et monitoring de l'Edi pour  
les patients néonataux et  
pédiatriques



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# Meta-analyses & revues systématiques

| Année | Titre de l'article                                                                                                                                                                                                                     | Auteur       | Patients                   | No  | Modes            | Lien                                                                                  |
|-------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------|----------------------------|-----|------------------|---------------------------------------------------------------------------------------|
| 2026  | Comparison of non-invasive neurally adjusted ventilatory assist and non-invasive ventilation modalities for preterm infants with respiratory distress syndrome: a systematic review and meta-analysis of randomized controlled trials. | Paopongsawan | Preterm neonatal           | 336 | NIV NAVA         |    |
| 2025  | Neurally adjusted ventilatory assist (NAVA) in neonatal and pediatric critical care. A scoping review of randomized controlled trials.                                                                                                 | Kuitunen     | Neonatal and pediatric     | 433 | NAVA             |    |
| 2025  | Non-invasive neurally adjusted ventilatory assist versus nasal continuous positive airway pressure for premature infants: a systematic review and meta-analysis.                                                                       | Yuan         | Premature infants          | 326 | NIV NAVA         |    |
| 2024  | Non-invasive neurally-adjusted ventilatory assist in preterm infants: a systematic review and metaanalysis.                                                                                                                            | Minamitani   | Preterm neonatal           | 279 | NIV NAVA         |    |
| 2024  | Non-invasive neurally adjusted ventilatory assist (NIV-NAVA) reduces extubation failures in preterm neonates-A systematic review and meta-analysis.                                                                                    | Kuitunen     | Preterm neonatal           | 183 | NIV NAVA         |    |
| 2024  | Neurally adjusted ventilatory assist in pediatric intensive care units: a systematic review and meta-analysis.                                                                                                                         | Cai          | Pediatric                  | 224 | NAVA<br>NIV NAVA |    |
| 2024  | Neurally adjusted ventilatory assist in preterm infants: A systematic review and meta-analysis.                                                                                                                                        | Lefevere     | Preterm neonatal           | 191 | NAVA             |    |
| 2022  | Outcomes of noninvasive neurally adjusted ventilatory assist and nasal continuous positive airway pressure in preterm infants: a systematic review and meta-analysis.                                                                  | Xu           | Preterm neonatal           | 173 | NIV NAVA         |    |
| 2021  | Neurally Adjusted Ventilator Assist in Infants With Acute Respiratory Failure: A Literature Scoping Review.                                                                                                                            | Harris       | Neonatal and pediatric ARF | 407 | NAVA             |  |
| 2021  | Neurally-Adjusted Ventilatory Assist (NAVA) versus Pneumatically Synchronized Ventilation Modes in Children Admitted to PICU.                                                                                                          | Sugunan      | Pediatric                  | 285 | NAVA             |  |
| 2020  | Diaphragm-triggered non-invasive respiratory support in preterm infants.                                                                                                                                                               | Goel         | Preterm neonatal           | 23  | NIV NAVA         |  |
| 2019  | Clinical Application of Neurally Adjusted Ventilatory Assist in Neonates with Respiratory Distress: A Systematic Review.                                                                                                               | Kadivar      | Mixed neonatal RDS         | 186 | NAVA<br>NIV NAVA |  |
| 2017  | Neurally adjusted ventilatory assist compared to other forms of triggered ventilation for neonatal respiratory support.                                                                                                                | Rossor       | Term & preterm neonatal    | 60  | NAVA             |  |
| 2016  | Neurally-adjusted ventilatory assist (NAVA) in children: a systematic review.                                                                                                                                                          | Beck         | Neonatal and pediatric     | 457 | NAVA<br>NIV NAVA |  |



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| Année | Titre de l'article                                                                                                                  | Auteur           | Patients         | No  | Modes            | Lien                                                                                  |
|-------|-------------------------------------------------------------------------------------------------------------------------------------|------------------|------------------|-----|------------------|---------------------------------------------------------------------------------------|
| 2025  | Optimizing synchronized non-invasive support: Clinical management guidelines for non-invasive neurally adjusted ventilatory assist. | Firestone        | Neonatal         | N/A | NAVA<br>NIV NAVA |    |
| 2023  | Neurally adjusted ventilatory assist in infants: A review article.                                                                  | Fang             | Preterm neonates | 134 | NAVA<br>NIV NAVA |    |
| 2022  | The use of neurally-adjusted ventilatory assist (NAVA) for infants with congenital diaphragmatic hernia (CDH).                      | Poole            | Neonatal         | N/A | NAVA             |    |
| 2021  | Neurally Adjusted Ventilatory Assist in Newborns.                                                                                   | Beck             | Neonatal         | –   | NAVA<br>NIV NAVA |    |
| 2021  | Proportional assist and neurally adjusted ventilation: Clinical knowledge and future trials in newborn infants.                     | Sindelar         | Neonatal         | –   | NAVA<br>NIV NAVA |    |
| 2021  | A narrative review of advanced ventilator modes in the pediatric intensive care unit.                                               | Miller           | Pediatric        | –   | NAVA             |    |
| 2019  | Neurally adjusted ventilatory assist versus conventional ventilation in the pediatric population: Are there benefits?               | Karikari         | Pediatric        | –   | NAVA<br>NIV NAVA |    |
| 2017  | Neurally adjusted ventilatory assist in pediatrics: why, when, and how?                                                             | Andrade          | Mixed pediatric  | 278 | NAVA             |   |
| 2016  | Neurally adjusted ventilator assist in very low birthweight infants: Current status.                                                | Narchi           | VLBW neonatal    | 41  | NAVA<br>NIV NAVA |  |
| 2016  | Non-invasive ventilation with neurally adjusted ventilatory assist in newborns.                                                     | Stein            | Neonatal         | –   | NIV NAVA         |  |
| 2013  | Interest of Monitoring Diaphragmatic Electrical Activity in the Pediatric Intensive Care Unit.                                      | Ducharme-Crevier | Pediatric        | –   | Edi mon          |  |



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# Études rétrospectives

| Année | Titre de l'article                                                                                                                                              | Auteur    | Patients                  | No  | Modes            | Lien                                                                                  |
|-------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------|---------------------------|-----|------------------|---------------------------------------------------------------------------------------|
| 2026  | Neurally Adjusted Ventilatory Assist Compared with Volume-Targeted and Pressure-Controlled Modes in Preterm Infants with Respiratory Distress Syndrome.         | Park      | Preterm neonatal RDS      | 79  | NAVA             |    |
| 2026  | A survey of parental experiences and perceptions of NAVA in neonatal intensive care.                                                                            | Tolentino | Neonatal                  | 32  | NAVA<br>NIV NAVA |    |
| 2025  | Impact of Neurally Adjusted Ventilatory Assist Management on Neurodevelopmental Outcomes in Extremely Preterm Infants.                                          | Saito     | ELBW neonatal             | 44  | NAVA             |    |
| 2025  | Efficacy of Noninvasive Neurally Adjusted Ventilatory Assist (NIV-NAVA) for Neonates With Transient Tachypnea of the Newborn: A Retrospective Analysis.         | Saito     | Preterm and term neonates | 183 | NIV NAVA         |    |
| 2025  | Neurally adjusted ventilatory assist decreases the requirement of corticosteroids.                                                                              | Araki     | Preterm neonatal BPD      | 64  | NAVA             |    |
| 2024  | Comparison of NAVA and SIMV in preterm infants after patent ductus arteriosus ligation: a retrospective study.                                                  | Lin       | Preterm infants PDAL      | 50  | NAVA             |    |
| 2024  | Neurally adjusted ventilatory assist improves survival, and its early application accelerates weaning in preterm infants.                                       | Lee       | VLBW neonatal             | 122 | NAVA             |    |
| 2024  | Non-invasive neurally adjusted ventilatory assist (NIV-NAVA) in the neonatal intensive care unit (NICU): an Australian NICU experience.                         | Cheng     | Premature infants         | 122 | NIV NAVA         |   |
| 2023  | Is neurally adjusted ventilatory assist feasible and safe in the extremely preterm infant?                                                                      | Lefevre   | ELBW neonatal             | 9   | NAVA             |  |
| 2022  | Implementation of neurally adjusted ventilatory assist and high flow nasal cannula in very preterm infants in a tertiary level NICU.                            | Piatek    | Preterm infants           | 193 | NAVA<br>NIV NAVA |  |
| 2021  | Implementation of noninvasive neurally adjusted ventilatory assist in pediatric acute respiratory failure: a controlled before-after quality improvement study. | Chidini   | Pediatric AHRF            | 64  | NIV NAVA         |  |
| 2021  | Is noninvasive neurally adjusted ventilatory assistance (NIV-NAVA) an alternative to NCPAP in preventing extubation failure in preterm infants?                 | Yagui     | Preterm neonatal          | 49  | NIV NAVA         |  |
| 2021  | Neurally adjusted ventilatory assist (NAVA) in very preterm infants: A single tertiary neonatal unit's experience.                                              | Shetty    | Preterm neonates          | 54  | NAVA<br>NIV NAVA |  |



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| Année | Titre de l'article                                                                                                                                                                                         | Auteur  | Patients                   | No  | Modes    | Lien |
|-------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------|----------------------------|-----|----------|------|
| 2024  | Non-Invasive Ventilation with NAVA improves extubation outcomes in extremely low birth-weight infants.                                                                                                     | Louie   | ELBW neonatal              | 60  | NIV NAVA |      |
| 2024  | The Diaphragmatic Initiated Ventilatory Assist (DIVA) trial: study protocol for a randomized controlled trial (incl preliminary data).                                                                     | Matlock | ELBW neonatal              | 79  | NIV NAVA |      |
| 2023  | Neurally adjusted ventilatory assist for rapid weaning in preterm infants.                                                                                                                                 | Fang    | Preterm neonatal           | 53  | NAVA     |      |
| 2022  | NIV-NAVA versus NCPAP immediately after birth in premature infants: A randomized controlled trial.                                                                                                         | Lee     | Preterm neonatal           | 20  | NIV NAVA |      |
| 2022  | Noninvasive Neurally Adjusted Ventilation in Postextubation Stabilization of Preterm Infants: A Randomized Controlled Study.                                                                               | Shin    | Preterm neonatal <30 weeks | 78  | NIV NAVA |      |
| 2020  | Comparison of extubation success using noninvasive positive pressure ventilation (NIPPV) versus noninvasive neurally adjusted ventilatory assist (NI-NAVA).                                                | Makker  | Preterm neonatal           | 30  | NIV NAVA |      |
| 2019  | Nasal continuous positive airway pressure (NCPAP) or noninvasive neurally adjusted ventilatory assist (NIV-NAVA) for preterm infants with respiratory distress after birth: A randomized controlled trial. | Yagui   | Neonatal VLBW              | 123 | NIV NAVA |      |
| 2019  | NIV NAVA versus Nasal CPAP in Premature Infants: A Randomized Clinical Trial.                                                                                                                              | Kallio  | Preterm neonatal           | 40  | NIV NAVA |      |
| 2016  | Early Noninvasive Neurally Adjusted Ventilatory Assist Versus Noninvasive Flow-Triggered Pressure Support Ventilation in Pediatric Acute Respiratory Failure: A Physiologic Randomized Controlled Trial.   | Chidini | Pediatric ARF              | 18  | NIV NAVA |      |
| 2016  | Neurally adjusted ventilatory assist (NAVA) in preterm newborn infants with respiratory distress syndrome – a randomized controlled trial.                                                                 | Kallio  | Preterm neonatal RDS       | 60  | NAVA     |      |
| 2015  | Neurally adjusted ventilatory assist (NAVA) in pediatric intensive care – a randomized controlled trial.                                                                                                   | Kallio  | Mixed pediatric            | 170 | NAVA     |      |
| 2014  | Neurally adjusted ventilatory assist vs pressure support ventilation in infants recovering from severe acute respiratory distress syndrome: nested study.                                                  | Piastra | Mixed pediatric ARDS       | 30  | NAVA     |      |



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| Année | Titre de l'article                                                                                                                          | Auteur       | Patients             | No | Modes            | Lien                 |
|-------|---------------------------------------------------------------------------------------------------------------------------------------------|--------------|----------------------|----|------------------|----------------------|
| 2026  | A survey of parental experiences and perceptions of NAVA in neonatal intensive care.                                                        | Tolentino    | Neonatal             | 32 | NAVA<br>NIV NAVA | <a href="#">Lien</a> |
| 2022  | Improved respiratory parameters with skin-to-skin contact in premature infants with bronchopulmonary dysplasia on NIV-NAVA.                 | Serrano-Llop | Preterm neonatal BPD | 12 | NIV<br>NAVA      | <a href="#">Lien</a> |
| 2021  | Parent-infant skin-to-skin contact reduces the electrical activity of the diaphragm and stabilizes respiratory function in preterm infants. | Lee          | Preterm neonatal     | 17 | Edi mon          | <a href="#">Lien</a> |
| 2021  | Effects of skin-to-skin care on electrical activity of the diaphragm in preterm infants during neurally adjusted ventilatory assist.        | Kato         | Preterm neonatal     | 14 | Edi mon          | <a href="#">Lien</a> |
| 2014  | The effects of skin-to-skin care on the diaphragmatic electrical activity in preterm infants.                                               | Soukka       | Preterm neonatal     | 17 | Edi mon          | <a href="#">Lien</a> |



# Niveaux d'Edi & modèle respiratoire neural

## Tableau 1/2

| Année | Titre de l'article                                                                                                                                                     | Auteur       | Patients                  | No | Modes               | Lien |
|-------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------|---------------------------|----|---------------------|------|
| 2026  | Electrical Activity of the Diaphragm (Edi) metrics in premature infants receiving invasive mechanical ventilation versus non-invasive respiratory support.             | Fleishaker   | Preterm neonatal          | 29 | Edi mon             |      |
| 2025  | Inspiratory Effort and Dynamic Transpulmonary Driving Pressure in Extremely Preterm Infants.                                                                           | De Luca      | ELBW neonatal BPD and RDS | 40 | NIV NAVA<br>Edi mon |      |
| 2025  | Breathing Effort in Preterm Infants Comparing NIV NAVA and CPAP-A Randomised Crossover Study- Brenne.                                                                  | Brenne       | Preterm neonatal          | 20 | NIV NAVA            |      |
| 2023  | Respiratory physiology during NAVA ventilation in neonates born with CDH: The "NAVA-diaph" pilot study.                                                                | Dreyfus      | Neonatal CDH              | 8  | NAVA                |      |
| 2022  | Reference Values For Diaphragm Electrical Activity (Edi) In Newborn Infants.                                                                                           | Gurumahan    | Neonatal                  | 24 | Edi mon             |      |
| 2021  | Neurally adjusted ventilatory assist in neonates with congenital diaphragmatic hernia.                                                                                 | Kurland      | Neonatal CDH              | 16 | NAVA                |      |
| 2021  | Backup ventilation during neurally adjusted ventilatory assist in preterm infants.                                                                                     | Lee          | Preterm neonatal          | 18 | NAVA<br>NIV NAVA    |      |
| 2021  | Non-invasive neurally adjusted ventilatory assist in preterm infants with RDS: effect of changing NAVA levels.                                                         | Lefevre      | Preterm neonatal          | 12 | Edi mon             |      |
| 2020  | Can visual inspection of the electrical activity of the diaphragm improve the detection of patient-ventilator asynchronies by pediatric critical care physicians?      | Di Nardo     | Mixed pediatric           | 10 | Edi mon             |      |
| 2019  | Electrical Activity of the Diaphragm in a Small Cohort of Preterm Infants on Noninvasive Neurally Adjusted Ventilatory Assist and Continuous Positive Airway Pressure. | Gupta        | Preterm neonatal          | 10 | Edi mon             |      |
| 2018  | A Randomised Cross-Over Study Showed No Difference in Diaphragm Activity During Weaning From Respiratory Support.                                                      | Brenne       | Preterm neonatal          | 21 | Edi mon             |      |
| 2018  | Neural breathing patterns in preterm newborns supported with non-invasive neurally adjusted ventilatory assist.                                                        | Garcia-Munoz | Preterm neonatal          | 19 | Edi mon<br>NIV NAVA |      |
| 2018  | Neural Breathing Pattern and Patient-Ventilator Interaction During Neurally Adjusted Ventilatory Assist and Conventional Ventilation in Newborns.                      | Mally        | Preterm and term neonatal | 23 | Edi mon<br>NIV NAVA |      |
| 2018  | Rapid respiratory transition at birth as evaluated by electrical activity of the diaphragm in very preterm infants supported by nasal CPAP.                            | Oda          | Preterm neonatal          | 8  | Edi mon             |      |

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# Niveaux d'Edi & modèle respiratoire neural

## Tableau 2/2

| Année | Titre de l'article                                                                                                                                      | Auteur   | Patients                          | No | Modes                       | Lien |
|-------|---------------------------------------------------------------------------------------------------------------------------------------------------------|----------|-----------------------------------|----|-----------------------------|------|
| 2018  | Neurally adjusted ventilatory assist in extremely low-birthweight infants.                                                                              | Oda      | ELBW neonatal                     | 8  | NAVA                        |      |
| 2017  | Neural breathing pattern in newborn infants pre- and post extubation.                                                                                   | Iyer     | Preterm neonatal                  | 25 | Edi mon                     |      |
| 2017  | Patient-ventilator asynchrony during conventional mechanical ventilation in children.                                                                   | Mortamet | Mixed pediatric                   | 52 | Edi mon                     |      |
| 2016  | Impact of feeding method on diaphragm electrical activity and central apnea in preterm infants (FEAdi study).                                           | Ng       | VLBW Neonatal                     | 10 | Edi mon                     |      |
| 2015  | The effect of caffeine citrate on neural breathing pattern in preterm infants.                                                                          | Parikka  | Preterm neonatal                  | 17 | Edi mon                     |      |
| 2015  | Electrical activity of the diaphragm during neurally adjusted ventilatory assist in pediatric patients.                                                 | Kallio   | Mixed pediatric                   | 81 | Edi mon<br>NAVA             |      |
| 2015  | Tonic diaphragmatic activity in critically ill children with and without ventilatory support.                                                           | Larouche | Mixed pediatric                   | 55 | Edi mon                     |      |
| 2015  | High-flow nasal cannulae are associated with increased diaphragm activation compared with nasal continuous positive airway pressure in preterm infants. | Nasef    | VLBW neonatal                     | 10 | Edi mon                     |      |
| 2014  | Evolution of inspiratory diaphragm activity in children over the course of the PICU stay.                                                               | Emeriaud | Mixed pediatric                   | 55 | Edi mon                     |      |
| 2013  | Electrical activity of the diaphragm (Edi) values and Edi catheter placement in non-ventilated preterm neonates.                                        | Stein    | Preterm neonatal (non-ventilated) | 17 | Edi mon                     |      |
| 2012  | Synchronized mechanical ventilation using electrical activity of the diaphragm in neonates.                                                             | Stein    | Term neonatal                     | 3  | Edi mon                     |      |
| 2011  | Characterization of Neural Breathing Pattern in Spontaneously Breathing Preterm Infants.                                                                | Beck     | Preterm neonatal                  | 10 | Edi mon                     |      |
| 2009  | Patient-Ventilator Interaction During Neurally Adjusted Ventilatory Assist in Very Low Birth Weight.                                                    | Beck     | LBW neonatal                      | 7  | Edi mon<br>NAVA<br>NIV NAVA |      |
| 2006  | Diaphragm electrical activity during expiration in mechanically ventilated infants.                                                                     | Emeriaud | Ready-to-wean pediatric           | 16 | Edi mon                     |      |

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| Année | Titre de l'article                                                                                                                                            | Auteur    | Patients              | No     | Modes    | Lien              |
|-------|---------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------|-----------------------|--------|----------|-------------------|
| 2023  | Evaluation of NAVA-PAP in premature neonates with apnea of prematurity: minimal backup ventilation and clinically significant events.                         | Protain   | Preterm neonatal      | 28     | NIV NAVA | <a href="#">📄</a> |
| 2021  | Effect of electrical activity of the diaphragm waveform patterns on SpO2 for extremely preterm infants ventilated with neurally adjusted ventilatory assist.  | Araki     | Preterm infants       | (105h) | NAVA     | <a href="#">📄</a> |
| 2020  | Nasal continuous positive airway pressure versus noninvasive NAVA in preterm neonates with apnea of prematurity: a pilot study with a novel approach.         | Firestone | Preterm neonatal      | 17     | NIV NAVA | <a href="#">📄</a> |
| 2019  | NAVA-synchronized compared to nonsynchronized noninvasive ventilation for apnea, bradycardia, and desaturation events in VLBW infants.                        | Tabacuru  | VLBW neonatal         | 108    | NIV NAVA | <a href="#">📄</a> |
| 2018  | Neural Breathing Pattern and Patient-Ventilator Interaction During Neurally Adjusted Ventilatory Assist and Conventional Ventilation in Newborns.             | Mally     | Preterm neonatal      | 23     | NAVA     | <a href="#">📄</a> |
| 2018  | Non-invasive neurally adjusted ventilatory assist versus nasal intermittent positive-pressure ventilation in preterm infants born before 30 weeks' gestation. | Yonehara  | Preterm neonatal      | 34     | NIV NAVA | <a href="#">📄</a> |
| 2017  | Feasibility and physiological effects of noninvasive neurally adjusted ventilatory assist in preterm infants.                                                 | Gibu      | Preterm neonatal      | 8      | NIV NAVA | <a href="#">📄</a> |
| 2015  | The effect of caffeine citrate on neural breathing pattern in preterm infants.                                                                                | Parikka   | Preterm neonatal      | 17     | Edi mon  | <a href="#">📄</a> |
| 2014  | Neurally adjusted ventilatory assist in preterm neonates with acute respiratory failure.                                                                      | Longhini  | Preterm neonatal      | 12     | NAVA     | <a href="#">📄</a> |
| 2014  | The effects of skin-to-skin care on the diaphragmatic electrical activity in preterm infants.                                                                 | Soukka    | Preterm neonatal      | 17     | Edi mon  | <a href="#">📄</a> |
| 2013  | Neurally adjusted ventilatory assist (NAVA) mode as an adjunct diagnostic tool in congenital central hypoventilation syndrome.                                | Rahmani   | CCHS preterm neonatal | 1      | Edi mon  | <a href="#">📄</a> |
| 2013  | Monitoring diaphragm electrical activity and the detection of congenital central hypoventilation syndrome in a newborn.                                       | Szczapa   | CCHS term neonate     | 1      | Edi mon  | <a href="#">📄</a> |



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| Année | Titre de l'article                                                                                                                                        | Auteur      | Patients                         | No  | Modes            | Lien                 |
|-------|-----------------------------------------------------------------------------------------------------------------------------------------------------------|-------------|----------------------------------|-----|------------------|----------------------|
| 2023  | Weaning in neurally adjusted ventilatory assist: a prospective interventional study in neonates.                                                          | Cosi        | Neonatal                         | 34  | NAVA             | <a href="#">Lien</a> |
| 2021  | Brain growth in extremely preterm infants before and after implementing NAVA ventilation.                                                                 | Soukka      | Preterm neonatal                 | 136 | NAVA             | <a href="#">Lien</a> |
| 2018  | Comparison of neurally-adjusted ventilator assist in infants before and after extubation.                                                                 | Longhini    | Term neonatal                    | 10  | NAVA<br>NIV NAVA | <a href="#">Lien</a> |
| 2018  | Neurally adjusted ventilatory assist in extremely low-birthweight infants.                                                                                | Oda         | ELBW neonatal                    | 35  | NAVA             | <a href="#">Lien</a> |
| 2017  | Neurally adjusted ventilatory assist for infants under prolonged ventilation.                                                                             | Lee         | Preterm neonatal<br>Prolonged MV | 14  | NAVA             | <a href="#">Lien</a> |
| 2016  | Neurally adjusted ventilatory assist (NAVA) in preterm newborn infants with respiratory distress syndrome-a randomized controlled trial.                  | Kallio      | Preterm neonatal RDS             | 60  | NAVA             | <a href="#">Lien</a> |
| 2015  | Effects of propofol on diaphragmatic electrical activity in mechanically ventilated pediatric patients.                                                   | Amigoni     | Mixed pediatric                  | 20  | Edi mon<br>NAVA  | <a href="#">Lien</a> |
| 2015  | Electrical activity of the diaphragm during neurally adjusted ventilatory assist in pediatric patients.                                                   | Kallio      | Mixed pediatric                  | 81  | Edi mon<br>NAVA  | <a href="#">Lien</a> |
| 2015  | Neurally adjusted ventilatory assist (NAVA) in pediatric intensive care—a randomized controlled trial.                                                    | Kallio      | Mixed pediatric                  | 170 | NAVA             | <a href="#">Lien</a> |
| 2015  | Neurally adjusted ventilatory assist in preterm neonates with acute respiratory failure.                                                                  | Longhini    | Preterm neonatal ARF             | 14  | NAVA             | <a href="#">Lien</a> |
| 2014  | Neurally adjusted ventilatory assist vs pressure support ventilation in infants recovering from severe acute respiratory distress syndrome: nested study. | Piastra     | Pediatric ARDS                   | 30  | NAVA             | <a href="#">Lien</a> |
| 2013  | Neurally adjusted ventilatory assist: assessing the comfort and feasibility of use in neonates and children.                                              | Duynham     | Mixed neonatal & pediatric       | 21  | NAVA             | <a href="#">Lien</a> |
| 2012  | Asynchrony, neural drive, ventilatory variability and COMFORT: NAVA versus pressure support in pediatric patients. A non-randomized cross-over trial.     | de la Oliva | Mixed pediatric                  | 12  | NAVA             | <a href="#">Lien</a> |



# Amélioration de la synchronisation

## Tableau 1/2

| Année | Titre de l'article                                                                                                                                                                                       | Auteur           | Patients                         | No  | Modes         | Lien                 |
|-------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------|----------------------------------|-----|---------------|----------------------|
| 2025  | Effect of neurally adjusted ventilator assist versus pressure support ventilation on asynchronies and cardiac function in pediatric liver transplantation.                                               | Chiussolo        | Pediatric liver transplant       | 21  | NAVA          | <a href="#">Lien</a> |
| 2022  | Patient-Ventilator Synchrony in Extremely Premature Neonates during NIV-NAVA or SNIPV: A Randomized Crossover Pilot Trial.                                                                               | Treussart        | ELBW neonatal                    | 14  | NIV NAVA      | <a href="#">Lien</a> |
| 2022  | Neurally Adjusted Ventilatory Assist vs. Conventional Mechanical Ventilation in Adults and Children With Acute Respiratory Failure.                                                                      | Wu               | Pediatric and adult              | 926 | NIV NAVA NAVA | <a href="#">Lien</a> |
| 2021  | Can visual inspection of the electrical activity of the diaphragm improve the detection of patient-ventilator asynchronies by pediatric critical care physicians?                                        | Di Nardo         | Pediatric                        | 10  | Edi mon       | <a href="#">Lien</a> |
| 2021  | Application of neurally adjusted ventilatory assist in ventilator weaning of infants ventilator weaning.                                                                                                 | Xiao             | Pediatric                        | 25  | NAVA          | <a href="#">Lien</a> |
| 2020  | Work of Breathing in Premature Neonates: Noninvasive Neurally-Adjusted Ventilatory Assist versus Noninvasive Ventilation.                                                                                | Matlock          | Preterm neonates                 | 15  | NIV NAVA NAVA | <a href="#">Lien</a> |
| 2020  | Pressure Support Ventilation (PSV) versus Neurally Adjusted Ventilatory Assist (NAVA) in difficult to wean pediatric ARDS patients: a physiologic crossover study.                                       | Spinazzola       | Pediatric ARDS Difficult to wean | 12  | NAVA          | <a href="#">Lien</a> |
| 2018  | Neural Breathing Pattern and Patient-Ventilator Interaction During Neurally Adjusted Ventilatory Assist and Conventional Ventilation in Newborns.                                                        | Mally            | Preterm neonatal                 | 23  | NAVA          | <a href="#">Lien</a> |
| 2016  | Early Noninvasive Neurally Adjusted Ventilatory Assist Versus Noninvasive Flow-Triggered Pressure Support Ventilation in Pediatric Acute Respiratory Failure: A Physiologic Randomized Controlled Trial. | Chidini          | Pediatric ARF                    | 18  | NIV NAVA      | <a href="#">Lien</a> |
| 2015  | Neurally adjusted ventilatory assist (NAVA) allows patient-ventilator synchrony during pediatric noninvasive ventilation: a crossover physiological study.                                               | Ducharme-Crevier | Mixed pediatric                  | 13  | NIV NAVA      | <a href="#">Lien</a> |
| 2015  | Non-invasive neurally adjusted ventilatory assist in preterm infants: a randomised phase II crossover trial.                                                                                             | Lee              | Preterm infants                  | 15  | NIV NAVA      | <a href="#">Lien</a> |
| 2015  | Neurally adjusted ventilatory assist in preterm neonates with acute respiratory failure.                                                                                                                 | Longhini         | Preterm neonatal ARF             | 14  | NIV NAVA      | <a href="#">Lien</a> |

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| Année | Titre de l'article                                                                                                                                    | Auteur      | Patients        | No | Modes    | Lien |
|-------|-------------------------------------------------------------------------------------------------------------------------------------------------------|-------------|-----------------|----|----------|------|
| 2013  | Optimizing patient-ventilator synchrony during invasive ventilator assist in children and infants remains a difficult task.                           | Vignaux     | Mixed pediatric | 19 | NAVA     |      |
| 2013  | Patient-ventilator asynchrony during noninvasive pressure support ventilation and neurally adjusted ventilatory assist in infants and children.       | Vignaux     | Mixed pediatric | 6  | NIV NAVA |      |
| 2012  | Neurally adjusted ventilatory assist improves patient – ventilator interaction in infants as compared with conventional ventilation.                  | Bordessoule | Mixed pediatric | 10 | NAVA     |      |
| 2012  | Asynchrony, neural drive, ventilatory variability and COMFORT: NAVA versus pressure support in pediatric patients. A non-randomized cross-over trial. | de la Oliva | Mixed pediatric | 12 | NAVA     |      |
| 2011  | Comparison of pressure-, flow-, and NAVA-triggering in pediatric and neonatal ventilatory care.                                                       | Ålander     | Mixed pediatric | 18 | NAVA     |      |

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| Année | Titre de l'article                                                                                                                                                                 | Auteur     | Patients                         | No  | Modes            | Lien                 |
|-------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------|----------------------------------|-----|------------------|----------------------|
| 2026  | Randomised crossover trial of Neurally Adjusted Ventilatory Assist (NAVA) for Neonates with Congenital diaphragmatic hernias.                                                      | Shetty     | Neonatal CDH                     | 11  | NAVA             | <a href="#">Lien</a> |
| 2025  | The Effect of Body Position on Oxygenation, Ventilation, and Diaphragmatic Workload in Infants Born Premature on Noninvasive Neurally Adjusted Ventilatory Assist.                 | Darwish    | Preterm neonatal                 | 30  | NIV NAVA         | <a href="#">Lien</a> |
| 2021  | Neurally adjusted ventilatory assist in ventilated very preterm infants: A crossover study.                                                                                        | Oda        | Preterm infants                  | 19  | NAVA             | <a href="#">Lien</a> |
| 2021  | The using of a neurally adjusted ventilatory assist in premature infants.                                                                                                          | Anuriev    | Preterm infants                  | 46  | NAVA             | <a href="#">Lien</a> |
| 2020  | Proportional Assist Ventilation (PAV) Versus Neurally Adjusted Ventilator Assist (NAVA): Effect on Oxygenation in Infants With Evolving or Established Bronchopulmonary Dysplasia. | Hunt       | Preterm neonatal BPD             | 18  | NAVA             | <a href="#">Lien</a> |
| 2020  | Pressure Support Ventilation (PSV) versus Neurally Adjusted Ventilatory Assist (NAVA) in difficult to wean pediatric ARDS patients: a physiologic crossover study.                 | Spinazzola | Pediatric ARDS Difficult to wean | 12  | NAVA             | <a href="#">Lien</a> |
| 2019  | When the Children Control the Ventilator, They Adopt an Appropriate Ventilation with a Strict Control of Blood pH.                                                                 | Veillet    | Pediatric                        | 52  | NAVA             | <a href="#">Lien</a> |
| 2019  | NAVA-synchronized compared to nonsynchronized noninvasive ventilation for apnea, bradycardia, and desaturation events in VLBW infants.                                             | Tabacuru   | VLBW neonatal                    | 108 | NIV NAVA         | <a href="#">Lien</a> |
| 2018  | Neurally Adjusted Ventilatory Assist After Pediatric Cardiac Surgery: Clinical Experience and Impact on Ventilation Pressures.                                                     | Crulli     | Post-op cardiac pediatric        | 28  | NAVA<br>NIV NAVA | <a href="#">Lien</a> |
| 2017  | Feasibility and physiological effects of noninvasive neurally adjusted ventilatory assist in preterm infants.                                                                      | Gibu       | Preterm neonatal                 | 11  | NAVA             | <a href="#">Lien</a> |
| 2017  | Crossover study of assist control ventilation and neurally adjusted ventilatory assist.                                                                                            | Shetty     | Preterm neonatal BPD / ARDS      | 9   | NAVA             | <a href="#">Lien</a> |
| 2016  | Early Noninvasive Neurally Adjusted Ventilatory Assist Versus Noninvasive Flow-Triggered Pressure Support Ventilation in Pediatric Acute Respiratory Failure.                      | Chidini    | Pediatric ARF                    | 18  | NAVA             | <a href="#">Lien</a> |
| 2016  | Neurally Adjusted Ventilatory Assist in Preterm Infants With Established or Evolving Bronchopulmonary Dysplasia on High-Intensity Mechanical Ventilatory Support.                  | Jung       | Preterm neonatal BPD / RDS       | 29  | NAVA             | <a href="#">Lien</a> |



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| Année | Titre de l'article                                                                                                                                                      | Auteur    | Patients                    | No | Modes    | Lien                 |
|-------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------|-----------------------------|----|----------|----------------------|
| 2016  | Physiological effects of invasive ventilation with neurally adjusted ventilatory assist (NAVA) in a crossover study.                                                    | Liet      | Post-op cardiac pediatric   | 6  | NAVA     | <a href="#">Lien</a> |
| 2016  | Mechanical Ventilation After Bidirectional Superior Cavopulmonary Anastomosis for Single-Ventricle Physiology: A Comparison of PSV and NAVA.                            | Zhu       | Post-op BCPA pediatric      | 21 | NAVA     | <a href="#">Lien</a> |
| 2015  | Neurally adjusted ventilator assist (NAVA) reduces asynchrony during non-invasive ventilation for severe bronchiolitis.                                                 | Baudin    | Post-op BCPA pediatric      | 11 | NIV NAVA | <a href="#">Lien</a> |
| 2013  | Neurally adjusted ventilatory assist in weaning of neonates affected by congenital diaphragmatic hernia.                                                                | Gentili   | Neonatal CDH                | 12 | NAVA     | <a href="#">Lien</a> |
| 2012  | Neurally adjusted ventilatory assist in neonates weighing <1500 grams: a retrospective analysis.                                                                        | Stein     | Neonatal CDH                | 52 | NAVA     | <a href="#">Lien</a> |
| 2012  | Randomized crossover study of neurally adjusted ventilatory assist in preterm infants.                                                                                  | Lee       | Preterm neonatal            | 26 | NAVA     | <a href="#">Lien</a> |
| 2012  | Synchronized mechanical ventilation using electrical activity of the diaphragm in neonates.                                                                             | Stein     | Preterm neonatal            | 5  | NAVA     | <a href="#">Lien</a> |
| 2011  | Neurally adjusted ventilatory assist mode used in congenital diaphragmatic hernia.                                                                                      | Durrani   | Term neonatal               | 1  | NAVA     | <a href="#">Lien</a> |
| 2011  | Comparison of pressure-, flow-, and NAVA-triggering in pediatric and neonatal ventilatory care.                                                                         | Ålander   | Mixed pediatric             | 18 | NAVA     | <a href="#">Lien</a> |
| 2010  | A prospective crossover comparison of neurally adjusted ventilatory assist and pressure-support ventilation in a pediatric and neonatal intensive care unit population. | Breatnach | Mixed neonatal & pediatric  | 16 | NAVA     | <a href="#">Lien</a> |
| 2017  | Crossover study of assist control ventilation and neurally adjusted ventilatory assist.                                                                                 | Shetty    | Preterm neonatal BPD / ARDS | 9  | NAVA     |                      |
| 2016  | Early Noninvasive Neurally Adjusted Ventilatory Assist Versus Noninvasive Flow-Triggered Pressure Support Ventilation in Pediatric Acute Respiratory Failure.           | Chidini   | Pediatric ARF               | 18 | NAVA     |                      |
| 2016  | Neurally Adjusted Ventilatory Assist in Preterm Infants With Established or Evolving Bronchopulmonary Dysplasia on High-Intensity Mechanical Ventilatory Support.       | Jung      | Preterm neonatal BPD / RDS  | 29 | NAVA     |                      |



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| Année | Titre de l'article                                                                                                                                                 | Auteur     | Patients                            | No | Modes            | Lien                 |
|-------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------|-------------------------------------|----|------------------|----------------------|
| 2026  | Effect of changing NAVA levels on tidal ventilation in extremely preterm infants supported with NIV-NAVA.                                                          | Lefevre    | ELBW neonatal                       | 16 | NIV NAVA         | <a href="#">Lien</a> |
| 2021  | Application of neurally adjusted ventilatory assist in ventilator weaning of infants ventilator weaning.                                                           | Xiao       | Pediatric                           | 25 | NAVA             | <a href="#">Lien</a> |
| 2020  | Pressure Support Ventilation (PSV) versus Neurally Adjusted Ventilatory Assist (NAVA) in difficult to wean pediatric ARDS patients: a physiologic crossover study. | Spinazzola | Pediatric ARDS<br>Difficult to wean | 12 | NAVA             | <a href="#">Lien</a> |
| 2018  | Neurally Adjusted Ventilatory Assist After Pediatric Cardiac Surgery: Clinical Experience and Impact on Ventilation Pressures.                                     | Crulli     | Post-op cardiac pediatric           | 28 | NAVA<br>NIV NAVA | <a href="#">Lien</a> |
| 2018  | Neurally adjusted ventilatory assist in extremely low-birthweight infants.                                                                                         | Oda        | ELBW neonatal                       | 35 | NAVA             | <a href="#">Lien</a> |
| 2018  | The impact of neurally adjusted ventilatory assist mode on respiratory severity score and energy expenditure in infants: a randomized crossover trial.             | Rosterman  | Mixed neonatal                      | 24 | NAVA             | <a href="#">Lien</a> |
| 2017  | Feasibility and physiological effects of noninvasive neurally adjusted ventilatory assist in preterm infants.                                                      | Gibu       | Preterm neonatal                    | 11 | NIV NAVA         | <a href="#">Lien</a> |
| 2017  | Crossover study of assist control ventilation and neurally adjusted ventilatory assist.                                                                            | Shetty     | Preterm neonatal<br>BPD / ARDS      | 9  | NAVA             | <a href="#">Lien</a> |
| 2016  | Early Noninvasive Neurally Adjusted Ventilatory Assist Versus Noninvasive Flow-Triggered Pressure Support Ventilation in Pediatric Acute Respiratory Failure.      | Chidini    | Pediatric ARF                       | 18 | NIV NAVA         | <a href="#">Lien</a> |
| 2016  | Neurally adjusted ventilatory assist (NAVA) in preterm newborn infants with respiratory distress syndrome-a randomized controlled trial.                           | Kallio     | Preterm neonatal RDS                | 60 | NAVA             | <a href="#">Lien</a> |
| 2016  | Neurally Adjusted Ventilatory Assist in Preterm Infants With Established or Evolving Bronchopulmonary Dysplasia on High-Intensity Mechanical Ventilatory Support.  | Jung       | Preterm neonatal<br>BPD / RDS       | 29 | NAVA             | <a href="#">Lien</a> |
| 2016  | Physiological effects of invasive ventilation with neurally adjusted ventilatory assist (NAVA) in a crossover study.                                               | Liet       | Post-op cardiac pediatric           | 6  | NAVA             | <a href="#">Lien</a> |



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| Année | Titre de l'article                                                                                                                                                      | Auteur    | Patients                   | No  | Modes            | Lien                 |
|-------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------|----------------------------|-----|------------------|----------------------|
| 2016  | Comparing changing neurally adjusted ventilatory assist (NAVA) levels in intubated and recently extubated neonates.                                                     | LoVerde   | Preterm neonatal           | 15  | NAVA<br>NIV NAVA | <a href="#">Lien</a> |
| 2016  | Mechanical Ventilation After Bidirectional Superior Cavopulmonary Anastomosis for Single-Ventricle Physiology: A Comparison of PSV and NAVA.                            | Zhu       | Post-op BCPA pediatric     | 21  | NAVA             | <a href="#">Lien</a> |
| 2015  | Non-invasive neurally adjusted ventilatory assist in preterm infants: a randomised phase II crossover trial.                                                            | Lee       | Preterm infants            | 15  | NIV NAVA         | <a href="#">Lien</a> |
| 2015  | Effect of changing NAVA levels on peak inspiratory pressures and electrical activity of the diaphragm in premature neonates.                                            | Firestone | Preterm neonates NICU      | 21  | NAVA<br>NIV NAVA | <a href="#">Lien</a> |
| 2015  | Neurally adjusted ventilatory assist (NAVA) in pediatric intensive care—a randomized controlled trial.                                                                  | Kallio    | Mixed pediatric            | 170 | NAVA             | <a href="#">Lien</a> |
| 2015  | Neurally adjusted ventilatory assist in preterm neonates with acute respiratory failure.                                                                                | Longhini  | Preterm neonatal ARF       | 14  | NAVA             | <a href="#">Lien</a> |
| 2014  | Neurally adjusted ventilatory assist vs pressure support ventilation in infants recovering from severe acute respiratory distress syndrome: nested study.               | Piastra   | Pediatric ARDS             | 30  | NAVA             | <a href="#">Lien</a> |
| 2013  | Neurally adjusted ventilatory assist: assessing the comfort and feasibility of use in neonates and children.                                                            | Duyndam   | Mixed neonatal & pediatric | 21  | NAVA             | <a href="#">Lien</a> |
| 2013  | Neurally adjusted ventilatory assist in weaning of neonates affected by congenital diaphragmatic hernia.                                                                | Gentili   | Neonatal CDH               | 12  | NAVA             | <a href="#">Lien</a> |
| 2013  | Prospective crossover comparison between NAVA and pressure control ventilation in premature neonates less than 1500 grams.                                              | Stein     | VLBW neonatal              | 5   | NAVA             | <a href="#">Lien</a> |
| 2012  | Randomized crossover study of neurally adjusted ventilatory assist in preterm infants.                                                                                  | Lee       | Preterm neonatal           | 26  | NAVA             | <a href="#">Lien</a> |
| 2012  | Neurally adjusted ventilatory assist in neonates weighing <1500 grams: a retrospective analysis.                                                                        | Stein     | Neonatal VLBW              | 52  | NAVA             | <a href="#">Lien</a> |
| 2010  | Neurally adjusted ventilatory assist in children: an observational study.                                                                                               | Bengtsson | Mixed neonatal & pediatric | 21  | NAVA             | <a href="#">Lien</a> |
| 2010  | A prospective crossover comparison of neurally adjusted ventilatory assist and pressure-support ventilation in a pediatric and neonatal intensive care unit population. | Breatnach | Mixed neonatal & pediatric | 16  | NAVA             | <a href="#">Lien</a> |



# Amélioration de la variabilité respiratoire & de l'hémodynamique

| Année | Titre de l'article                                                                                                                                    | Auteur         | Patients                     | No  | Modes            | Lien              |
|-------|-------------------------------------------------------------------------------------------------------------------------------------------------------|----------------|------------------------------|-----|------------------|-------------------|
| 2026  | A physiologic Comparison of Continuous Neurally Adjusted Ventilation (NeuroPAP) versus NAVA in Infants With Respiratory Failure                       | Plante         | Preterm neonatal             | 23  | NIV NAVA         | <a href="#">📄</a> |
| 2025  | Changes in respiratory patterns from PC ventilation to NAVA assessed by Electrical Impedance Tomography                                               | Rahtu          | Preterm infants              | 16  | NAVA             | <a href="#">📄</a> |
| 2022  | Comparing ventilation modes by electrical impedance segmentography in ventilated children.                                                            | Brandt         | Pediatric                    | 8   | NAVA             | <a href="#">📄</a> |
| 2021  | Cardiorespiratory effects of NIV-NAVA, NIPPV, and NCPAP shortly after extubation in extremely preterm infants: A randomized crossover trial.          | Latremouille   | Preterm neonatal             | 23  | NIV NAVA         | <a href="#">📄</a> |
| 2020  | Effects of NAVA Compared to SIMV Ventilation on Cardiac Function in Preterm Neonates.                                                                 | Hovespyan      | Preterm neonatal             | 14  | NAVA             | <a href="#">📄</a> |
| 2019  | Utilization of Neurally Adjusted Ventilatory Assist (NAVA) Mode in Infants and Children Undergoing Congenital Heart Surgery: A Retrospective Review.  | Baez-Hernandez | CDH post-op pediatric        | 81  | NAVA<br>NIV NAVA | <a href="#">📄</a> |
| 2019  | Neurally Adjusted Ventilatory Assist Mode of Mechanical Ventilation in Neonates with Hypoxic-Ischemic Encephalopathy.                                 | Surkov         | Term neonatal<br>Acute HIE   | 16  | NAVA             | <a href="#">📄</a> |
| 2019  | NAVA-synchronized compared to nonsynchronized noninvasive ventilation for apnea, bradycardia, and desaturation events in VLBW infants.                | Tabacuru       | VLBW neonatal                | 108 | NIV NAVA         | <a href="#">📄</a> |
| 2016  | Physiological effects of invasive ventilation with neurally adjusted ventilatory assist (NAVA) in a crossover study.                                  | Liet           | Post-op cardiac<br>pediatric | 6   | NAVA             | <a href="#">📄</a> |
| 2016  | Mechanical Ventilation After Bidirectional Superior Cavopulmonary Anastomosis for Single-Ventricle Physiology.                                        | Zhu            | Post-op BCPA<br>pediatric    | 21  | NAVA             | <a href="#">📄</a> |
| 2014  | Impact of Ventilatory Modes on the Breathing Variability in Mechanically Ventilated Infants.                                                          | Baudin         | Mixed pediatric              | 11  | NAVA             | <a href="#">📄</a> |
| 2012  | Neurally adjusted ventilatory assist improves patient-ventilator interaction in infants as compared with conventional ventilation.                    | Bordessoule    | Mixed pediatric              | 10  | NAVA             | <a href="#">📄</a> |
| 2012  | Asynchrony, neural drive, ventilatory variability and COMFORT: NAVA versus pressure support in pediatric patients. A non-randomized cross-over trial. | de la Oliva    | Mixed pediatric              | 12  | NAVA             | <a href="#">📄</a> |
| 2009  | Application of neurally adjusted ventilatory assist in infants who underwent cardiac surgery for congenital heart disease.                            | Zhu            | Post-op CDH<br>neonatal      | 21  | NAVA             | <a href="#">📄</a> |

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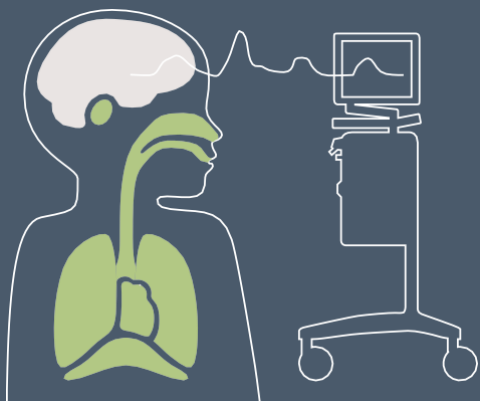
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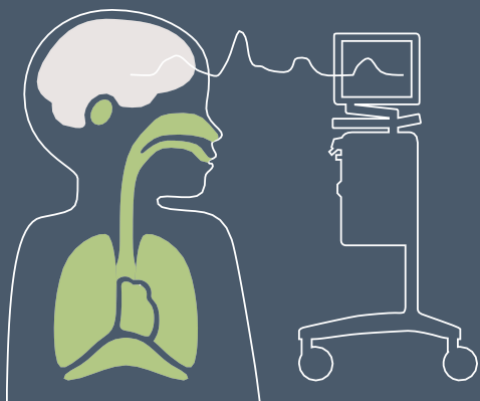
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| Year | Article title                                                                                                                                                                                                  | Author    | Patients               | No   | Modes         | Link                 |
|------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------|------------------------|------|---------------|----------------------|
| 2023 | Weaning in neurally adjusted ventilatory assist: a prospective interventional study in neonates.                                                                                                               | Cosi      | Neonatal               | 34   | NAVA          | <a href="#">Link</a> |
| 2022 | Ultrasonographic assessment of diaphragmatic function in preterm infants on non-invasive neurally adjusted ventilatory assist (NIV-NAVA) compared to nasal intermittent positive-pressure ventilation (NIPPV). | Elkhouli  | Preterm neonatal       | 40   | NIV NAVA      | <a href="#">Link</a> |
| 2022 | Diaphragm electrical activity during weaning of nasal high-flow therapy in preterm infants.                                                                                                                    | Naples    | Preterm neonatal       | 40   | Edi mon       | <a href="#">Link</a> |
| 2021 | Implementation of noninvasive neurally adjusted ventilatory assist in pediatric acute respiratory failure: a controlled before-after quality improvement study.                                                | Chidini   | Pediatric AHRF         | 64   | NIV NAVA      | <a href="#">Link</a> |
| 2021 | Is noninvasive neurally adjusted ventilatory assistance (NIV-NAVA) an alternative to NCPAP in preventing extubation failure in preterm infants?                                                                | Yagui     | Preterm neonatal       | 49   | NIV NAVA      | <a href="#">Link</a> |
| 2020 | Neurally-Adjusted Ventilatory Assist Can Facilitate Extubation in Neonates With Congenital Diaphragmatic Hernia.                                                                                               | Meinen    | Neonatal CDH           | 10   | NAVA NIV NAVA | <a href="#">Link</a> |
| 2019 | Neurally adjusted ventilatory assist mitigates ventilator-induced diaphragm injury in rabbits.                                                                                                                 | Shimatani | Rabbits 2.4–2.9 kg     | (20) | NAVA          | <a href="#">Link</a> |
| 2019 | Feasibility of Non-invasive Neurally Adjusted Ventilator Assist After Congenital Diaphragmatic Hernia Repair.                                                                                                  | Amin      | CDH post-op neonatal   | 7    | NIV NAVA      | <a href="#">Link</a> |
| 2019 | Neurally adjusted ventilatory assist decreases work of breathing during non-invasive ventilation in infants with severe bronchiolitis.                                                                         | Baudin    | Neonatal Bronchiolitis | 7    | NIV NAVA      | <a href="#">Link</a> |
| 2019 | Comparison of NIV-NAVA and NCPAP in facilitating extubation for very preterm infants.                                                                                                                          | Lee       | Preterm neonatal       | 30   | NIV NAVA      | <a href="#">Link</a> |



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| Année | Titre de l'article                                                                                                                                            | Auteur       | Patients                     | No | Modes           | Lien                                                                                  |
|-------|---------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------|------------------------------|----|-----------------|---------------------------------------------------------------------------------------|
| 2018  | Neurally adjusted ventilatory assist can be used to wean infants with congenital diaphragmatic hernias off respiratory support.                               | Oda          | Neonatal CDH                 | 14 | NAVA<br>Edi mon |    |
| 2018  | Does Diaphragmatic Electrical Activity in Preterm Infants Predict Extubation Success?                                                                         | Singh        | Preterm neonatal RDS         | 21 | Edi mon         |    |
| 2018  | Non-invasive neurally adjusted ventilatory assist versus nasal intermittent positive-pressure ventilation in preterm infants born before 30 weeks' gestation. | Yonehara     | Preterm neonatal             | 34 | NIV NAVA        |    |
| 2017  | Neural breathing pattern in newborn infants pre- and postextubation.                                                                                          | Iyer         | Preterm neonatal             | 25 | Edi mon         |    |
| 2017  | Patient-ventilator asynchrony during conventional mechanical ventilation in children.                                                                         | Mortamet     | Mixed pediatric              | 52 | Edi mon         |    |
| 2017  | Noninvasive Neurally Adjusted Ventilatory Assist in Premature Infants Postextubation.                                                                         | Colaizy      | VLBW neonatal                | 24 | NIV NAVA        |    |
| 2015  | Feasibility Study on Neurally Adjusted Ventilatory Assist in Noninvasive Ventilation After Cardiac Surgery in Infants.                                        | Houtekie     | Post-op cardiac pediatric    | 10 | NIV NAVA        |    |
| 2015  | The Effect of High Flow Nasal Cannula Therapy on the Work of Breathing in Infants with Bronchiolitis.                                                         | Pham         | Neonatal CHD /Bronchiolitis  | 28 | Edi mon         |  |
| 2013  | Neurally adjusted ventilatory assist in weaning of neonates affected by congenital diaphragmatic hernia.                                                      | Gentili      | Neonatal CDH                 | 12 | NAVA            |  |
| 2012  | Mechanisms of ventilator dependence in children with neuromuscular and respiratory control disorders identified by monitoring diaphragm electrical activity.  | Fine-Goulden | Pediatric NMD                | 6  | Edi mon         |  |
| 2011  | Electrical activity of the diaphragm during extubation readiness testing in critically ill children.                                                          | Wolf         | Mixed pediatric (during ERT) | 20 | Edi mon         |  |



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| Année | Titre de l'article                                                                                                                                                                 | Auteur       | Patients                    | No  | Modes            | Lien                 |
|-------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------|-----------------------------|-----|------------------|----------------------|
| 2025  | Respiratory physiological changes post initiation of neurally adjusted ventilatory assist in preterm infants with evolving or established bronchopulmonary dysplasia.              | Mohamed      | Preterm neonatal BPD        | 88  | NAVA             | <a href="#">Lien</a> |
| 2025  | Neurally adjusted ventilatory assist decreases the requirement of corticosteroids.                                                                                                 | Araki        | Preterm neonatal BPD        | 64  | NAVA             | <a href="#">Lien</a> |
| 2024  | Trends in the Incidence of Bronchopulmonary Dysplasia after the Introduction of Neurally Adjusted Ventilatory Assist (NAVA).                                                       | Mehra        | VLBW neonatal               | 100 | NAVA             | <a href="#">Lien</a> |
| 2022  | Improved respiratory parameters with skin-to-skin contact in premature infants with bronchopulmonary dysplasia on NIV-NAVA.                                                        | Serrano-Llop | Preterm neonatal BPD        | 12  | NIV<br>NAVA      | <a href="#">Lien</a> |
| 2021  | Neurally Adjusted Ventilatory Assist in Very Prematurely Born Infants with Evolving/Established Bronchopulmonary Dysplasia.                                                        | Shetty       | Preterm neonatal BPD        | 54  | NAVA<br>NIV NAVA | <a href="#">Lien</a> |
| 2020  | Proportional Assist Ventilation (PAV) Versus Neurally Adjusted Ventilator Assist (NAVA): Effect on Oxygenation in Infants With Evolving or Established Bronchopulmonary Dysplasia. | Hunt         | Preterm neonatal BPD        | 18  | NAVA             | <a href="#">Lien</a> |
| 2020  | Multicenter Experience with Neurally Adjusted Ventilatory Assist in Infants with Severe Bronchopulmonary Dysplasia.                                                                | McKinney     | Neonatal BPD                | 112 | NAVA             | <a href="#">Lien</a> |
| 2020  | Application of Neurally Adjusted Ventilatory Assist in Premature Neonates Less Than 1,500 Grams With Established or Evolving Bronchopulmonary Dysplasia.                           | Rong         | VLBW neonatal BPD           | 30  | NAVA<br>NIV NAVA | <a href="#">Lien</a> |
| 2017  | Crossover study of assist control ventilation and neurally adjusted ventilatory assist.                                                                                            | Shetty       | Preterm neonatal BPD / ARDS | 9   | NAVA             | <a href="#">Lien</a> |
| 2016  | Neurally Adjusted Ventilatory Assist in Preterm Infants With Established or Evolving Bronchopulmonary Dysplasia on High-Intensity Mechanical Ventilatory Support.                  | Jung         | Preterm neonatal BPD / RDS  | 29  | NAVA             | <a href="#">Lien</a> |



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| Année | Titre de l'article                                                                                                               | Auteur         | Patients                    | No | Modes    | Lien                 |
|-------|----------------------------------------------------------------------------------------------------------------------------------|----------------|-----------------------------|----|----------|----------------------|
| 2026  | Interaction of PEEP and Neurally-Adjusted Ventilatory Assist in Infants With Acute Viral Bronchiolitis                           | Harris         | Neonatal bronchiolitis      | 13 | NAVA     | <a href="#">Lien</a> |
| 2025  | Effect of Morphine on Respiratory Drive in Infants With Acute Viral Bronchiolitis Receiving Neurally Adjusted Ventilatory Assist | Harris         | Neonatal bronchiolitis      | 13 | NAVA     | <a href="#">Lien</a> |
| 2024  | A descriptive study of niv-nava utilization in children with bronchiolitis admitted to the picu.                                 | Sivakumar      | Pediatric bronchiolitis     | 42 | NIV NAVA | <a href="#">Lien</a> |
| 2024  | Total face mask with neurally adjusted ventilatory assist as a rescue therapy in infants with severe bronchiolitis.              | Cousin         | Pediatric bronchiolitis     | 10 | NIV NAVA | <a href="#">Lien</a> |
| 2023  | Noninvasive NAVA in Infants With Bronchiolitis: Respiratory Outcomes in a Single-Center, Retrospective Cohort, 2016-2018.        | Lepage-Farrell | Pediatric bronchiolitis     | 64 | NIV NAVA | <a href="#">Lien</a> |
| 2021  | Non-invasive Neurally Adjusted Ventilatory Assist (NAVA) in the pediatric ICU: assessing optimal Edi compliance.                 | Lamsal         | Pediatric bronchiolitis     | 63 | NIV NAVA | <a href="#">Lien</a> |
| 2015  | Neurally adjusted ventilator assist (NAVA) reduces asynchrony during non-invasive ventilation for severe bronchiolitis.          | Baudin         | Pediatric RSV bronchiolitis | 11 | NIV NAVA | <a href="#">Lien</a> |
| 2015  | The Effect of High Flow Nasal Cannula Therapy on the Work of Breathing in Infants with Bronchiolitis.                            | Pham           | Neonatal CHD /Bronchiolitis | 28 | Edi mon  | <a href="#">Lien</a> |
| 2011  | Neurally triggered breaths reduce trigger delay and improve ventilator response times in ventilated infants with bronchiolitis.  | Clement        | Pediatric bronchiolitis     | 23 | NAVA     | <a href="#">Lien</a> |
| 2011  | Respiratory support by neurally adjusted ventilatory assist (NAVA) in severe RSV-related bronchiolitis: a case series report.    | Liet           | Pediatric RSV bronchiolitis | 3  | NAVA     | <a href="#">Lien</a> |



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| Année | Titre de l'article                                                                                                                                                                                                                           | Auteur              | Patients                  | No | Modes            | Lien |
|-------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------|---------------------------|----|------------------|------|
| 2026  | Positioning of Diaphragm Electrical Activity Catheter in Premature Infants (PIPI Trial)                                                                                                                                                      | Beck                | Preterm neonatal          | 67 | Edi mon          |      |
| 2025  | Transition from high-frequency oscillation ventilation to neurally adjusted ventilatory assist in extremely preterm infants.                                                                                                                 | Ikushima            | ELBW neonatal             | 23 | NAVA             |      |
| 2025  | Effect of caffeine citrate on diaphragmatic electrical activity in pre-term newborns.                                                                                                                                                        | Zidan               | Preterm neonatal          | 36 | Edi mon          |      |
| 2022  | Diaphragmatic Electrical Activity in Preterm Infants on Non-Invasive High Frequency Oscillatory Ventilation (DEAP-NHFO Study).                                                                                                               | Wong                | Preterm neonatal          | 20 | Edi mon          |      |
| 2022  | Spontaneous breathing during high-frequency oscillation revealed by diaphragm electrical activity.                                                                                                                                           | Takahashi           | Preterm neonatal          | 2  | Edi mon          |      |
| 2022  | Improved nutritional outcomes with neurally adjusted ventilatory assist (NAVA) in premature infants: a single tertiary neonatal unit's experience.                                                                                           | Benn                | Preterm neonatal          | 54 | NAVA NIV NAVA    |      |
| 2022  | Effect of doxapram on the electrical activity of the diaphragm waveform pattern of preterm infants.                                                                                                                                          | Araki               | Preterm neonatal          | 10 | Edi mon NAVA     |      |
| 2021  | Effects of heliox and non-invasive neurally adjusted ventilatory assist (NIV-NAVA) in preterm infants.                                                                                                                                       | Neumann-Klimasinska | Neonatal preterm          | 23 | Edi mon NIV NAVA |      |
| 2019  | Neurally adjusted ventilatory assist for children on veno-venous ECMO.                                                                                                                                                                       | Assy                | Pediatric ARF/Trauma      | 6  | NAVA Edi mon     |      |
| 2019  | Physiological Effect of Prone Position in Children with Severe Bronchiolitis: A Randomized Cross-Over Study (BRONCHIO-DV).                                                                                                                   | Baudin              | Preterm and term neonatal | 14 | Edi mon          |      |
| 2019  | The evaluation of the efficacy and safety of non-invasive neurally adjusted ventilatory assist in combination with INTubation-SURfactant-Extubation technique for infants at 28 to 33 weeks of gestation with respiratory distress syndrome. | Miyahara            | Preterm neonatal          | 15 | NIV NAVA         |      |
| 2015  | The effect of caffeine citrate on neural breathing pattern in preterm infants.                                                                                                                                                               | Parikka             | Preterm neonatal          | 17 | Edi mon          |      |
| 2010  | Effect of prone or spine position on mechanically ventilated neonates after cardiac surgery with acute lung injury.                                                                                                                          | Zhu                 | Post-op cardiac neonatal  | 15 | NAVA             |      |



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| Année | Titre de l'article                                                                                                                                                                             | Auteur     | Patients               | No | Modes    | Lien                 |
|-------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------|------------------------|----|----------|----------------------|
| 2024  | Neurally Adjusted Ventilatory Assist to Monitor Diaphragmatic Activity in Infantile Botulism.                                                                                                  | Darwish    | Neonatal botulism      | 1  | NAVA     | <a href="#">Lien</a> |
| 2023  | Neurally adjusted ventilatory assist for congenital lobar emphysema in an infant.                                                                                                              | Nakajima   | Neonatal CLE           | 1  | NAVA     | <a href="#">Lien</a> |
| 2022  | Respiratory and Gastrointestinal Management of an Infant with a Birth Weight of 258 Grams.                                                                                                     | Itoshima   | Preterm neonate        | 1  | NIV NAVA | <a href="#">Lien</a> |
| 2020  | Effective neurally-adjusted ventilatory assist weaning off mechanical ventilation in separated conjoined thoraco-omphalopagus twins with sternal MEDPOR implant patch.                         | Rossetti   | Conjoined twins        | 1  | NAVA     | <a href="#">Lien</a> |
| 2018  | Predicting extubation readiness by monitoring the electrical activity of the diaphragm after prolonged mechanical ventilation: a pediatric case report.                                        | Naito      | Pediatric Prolonged MV | 1  | NAVA     | <a href="#">Lien</a> |
| 2017  | Combined use of Neurally Adjusted Ventilatory Assist (NAVA) and Vertical Expandable Prosthetic Titanium Rib (VEPTR) in a patient with Spondylocostal dysostosis and associated bronchomalacia. | Pons-Odena | Pediatric JLS          | 1  | NAVA     | <a href="#">Lien</a> |
| 2010  | Neurally adjusted ventilatory assist and lung transplant in a child: A case report.                                                                                                            | Vitale     | Pediatric CF           | 1  | NAVA     | <a href="#">Lien</a> |



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# Abréviations

| Abréviation | Signification                                                      |
|-------------|--------------------------------------------------------------------|
| SDRA        | Syndrome de détresse respiratoire aigüe                            |
| BCPA        | Anastomose cavopulmonaire supérieure bidirectionnelle              |
| DBP         | Dysplasie bronchopulmonaire                                        |
| CHS         | Syndrome d'hypoventilation centrale                                |
| CDH         | Maladie cardiaque congénitale                                      |
| CF          | Mucoviscidose                                                      |
| Edi         | Activité électrique du diaphragme                                  |
| Edi mon     | Monitoring de l'Edi                                                |
| ELBW        | Poids extrêmement faible à la naissance, inférieur à 1 000 g       |
| HIE         | Encéphalopathie hypoxique-ischémique                               |
| NAVA        | Neuro-Asservissement de la Ventilation Assistée                    |
| NIV         | Ventilation non-invasive                                           |
| NIV NAVA    | NAVA non-invasive                                                  |
| NMD         | Trouble neuromusculaire                                            |
| PSV         | Ventilation à pression assistée                                    |
| RDS         | Syndrome de détresse respiratoire                                  |
| RSV         | Virus respiratoire syncytial                                       |
| VLBW        | Très faible poids à la naissance, c'est-à-dire inférieur à 1 500 g |



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