Abdominal Support Reference List

compiled by Ginny McGill, PT, DPT, CNT, NTMTC, 11/6/2026

Abdallah SJ, Chan DS, Glicksman R, et al. Abdominal binding improves neuromuscular efficiency of the human diaphragm during exercise. *Front Physiol*. 2017; 8: 345.

American Thoracic Society/European Respiratory Society. ATS/ERS Statement on respiratory muscle testing. Am J Respir Crit Care Med 2002;166:518–624.

Apostel HJCL, Duval ELIM, De Dooy J, et al. Respiratory support in the absence of abdominal muscles: A case study of ventilatory management in prune belly syndrome. *Paediatr Respir Rev*. 2021; 37: 44–47.

Baaleman DF, Wegh CA, de Leeuw TJ, van Etten–Jamaludin FS, Vaughan EE, Schoterman MH, Belzer C, Smidt H, Tabbers MM, Benninga MA, Koppen IJ. What are normal defecation patterns in healthy children up to four years of age? A systematic review and meta-analysis. The Journal of Pediatrics. 2023 Oct 1;261:113559.

Barba E, Burri E, Accarino A, Cisternas D, Quiroga S, Monclus E, et al. Abdominothoracic Mechanisms of Functional Abdominal Distension and Correction by Biofeedback. Gastroenterology 2015;148:732–9.

Braun NM, Arora NS, Rochester DF. Force-length relationship of the normal human diaphragm. J Appl Physiol 1982.

Brunherotti MAA, Martinez FE. Response of oxygen saturation in preterm infants receiving rib cage stabilization with an elastic band in two body positions: a randomized clinical trial. Braz J Phys Ther 2013; 17:105–11.

Brunherotti MAA, Bezerra PP, Bachur CK, Jacometti CR. Inspiratory Muscle Training in a Newborn With Anoxia Who Was Chronically Ventilated. Phys Ther 2012;92:865–71.

Bruschettini M, Brattström P, Russo C, Onland W, Davis PG, Soll R. Caffeine dosing regimens in preterm infants with or at risk for apnea of prematurity. Cochrane Database Syst Rev 2021.

Burchard PR, Lay R, Ruffolo LI, Ramazani SN, Walton JM, Livingston MH. Glycerin Suppositories and Enemas in Premature Infants: A Meta-analysis. Pediatrics. 2022 Apr 1;149(4):e2021053413. doi: 10.1542/peds.2021-053413. PMID: 35332357.

Chen C-Y, Chou A-K, Chen Y-L, Chou H-C, Tsao P-N, Hsieh W-S. Quality Improvement of Nasal Continuous Positive Airway Pressure Therapy in Neonatal Intensive Care Unit. Pediatr Neonatol 2017;58:229–35.

Choi I-R, Lee J-H. Effect of kinesiology tape application direction on quadriceps strength. Medicine (Baltimore) 2018;97:e11038.

Components of the human respiratory system | Britannica n.d. https://www.britannica.com/summary/human-respiratory-system (accessed January 23, 2022).

Dassios T, Dixon P, Greenough A. Ventilation Efficiency and Respiratory Muscle Function at Different Levels of CPAP in Intubated Prematurely Born Infants. Respir Care 2019;64:285–91.

Dassios T, Kaltsogianni O, Greenough A. Relaxation Rate of the Respiratory Muscles and Prediction of Extubation Outcome in Prematurely Born Infants. Neonatology 2017;112:251–7.

Dassios T, Vervenioti A, Dimitriou G. Respiratory muscle function in the newborn: a narrative review. Pediatr Res 2021:1–9.

Davis GM, Coates AL, Papageorgiou A, Bureau MA. Direct measurement of static chest wall compliance in animal and human neonates. J Appl Physiol Bethesda Md 1985 1988;65:1093–8.

Devlieger H, Daniels H, Marchal G, Moerman P, Casaer P, Eggermont E. The diaphragm of the newborn infant: anatomical and ultrasonographic studies. J Dev Physiol 1991;16:321–9.

De Troyer A, Estenne M, Ninane V, Van Gansbeke D, Gorini M. Transversus abdominis muscle function in humans. J Appl Physiol 1990;68:1010–6.

De Troyer A. The Respiratory Muscles in Health and Disease. In: Bittar EE, editor. Pulm. Biol. Health Dis., New York: Springer; 2004, p. 141–62.

De Troyer A, Estenne M. Functional anatomy of the respiratory muscles. Clin Chest Med 1988;9:175–93.

Dres M, Demoule A. Diaphragm dysfunction during weaning from mechanical ventilation: an underestimated phenomenon with clinical implications. Crit Care 2018;22:73.

Dubé B-P, Dres M, Mayaux J, Demiri S, Similowski T, Demoule A. Ultrasound evaluation of diaphragm function in mechanically ventilated patients: comparison to phrenic stimulation and prognostic implications. Thorax 2017;72:811–8.

Fang S. Prediction of early tolerance to enteral feeding in preterm infants by measurement of superior mesenteric artery blood flow velocity. Arch Dis Child - Fetal Neonatal Ed 2001;85:42F – 45.

Fleming MA, Grabski DF, Abebrese EL, Levin DE, Rasmussen SK, McGahren ED, Gander JW. Clinical regression of inguinal hernias in premature infants without surgical repair. Pediatric Surgery International. 2021 Sep;37:1295- 301.

Fleming PJ, Muller NL, Bryan MH, Bryan AC. The Effects of Abdominal Loading on Rib Cage Distortion in Premature Infants. Pediatrics 1979;64:425–8.

Gaultier C. Respiratory muscle function in infants. Eur Respir J 1995;8:150–3.

Gaultier C, Praud JP, Canet E, Delaperche MF, D'Allest AM. Paradoxical inward rib cage motion during rapid eye movement sleep in infants and young children. J Dev Physiol 1987;9:391–7.

Gu H, Seekins J, Ritter V, et al. Characterizing continuous positive airway pressure (CPAP) belly syndrome in preterm infants in the neonatal intensive care unit (NICU). *J Perinatol*. 2024; 44(9): 1269–1275.

Gursen C, Kaya Kara O, Kaya S, Akbayrak T, Kerem Günel M, Baltaci G. The effects of Kinesio Taping and connective tissue manipulation on chronic constipation in children with cerebral palsy. Dev Med Child Neurol 2016;56.

Harrison GR. The Anatomy and Physiology of the Diaphragm. In: Fielding JWL, Hallissey MT, editors. Up. Gastrointest. Surg., London: Springer; 2005, p. 45–58.

Havranek T, Thompson Z, Carver JD. Factors that influence mesenteric artery blood flow velocity in newborn preterm infants. J Perinatol 2006;26:493–7.

Hershenson MB, Colin AA, Wohl MEB, Stark AR. Changes in the Contribution of the Rib Cage to Tidal Breathing during Infancy. Am Rev Respir Dis 1990;141:922–5.

Hossain N, Buu M, Mark JD. Altered Thoracic Mechanics Leading to Acute Respiratory Failure and Recurrent Atelectasis in an Infant with Prune Belly Syndrome. C50 BRONCHOPULMONARY DYSPLASIA Congenit. LUNG LESIONS II, American Thoracic Society; 2020, p. A5374–A5374.

Jadcherla SR. ADVANCES WITH NEONATAL AERODIGESTIVE SCIENCE IN THE PURSUIT OF SAFE SWALLOWING IN INFANTS: INVITED REVIEW. Dysphagia 2017;32:15–26.

Jaile JC, Levin T, Wung JT, Abramson SJ, Ruzal-Shapiro C, Berdon WE. Benign gaseous distension of the bowel in premature infants treated with nasal continuous airway pressure: a study of contributing factors. Am J Roentgenol 1992;158:125–7.

Khan FA, Jancelewicz T, Kieran K, Islam S. Assessment and Management of Inguinal Hernias in Children. Pediatrics. 2023 Jul 1;152(1):e2023062510.

Kim J. "Blowing Up" the CPAP Belly Myth. Medela n.d. https://www.medela.us/breastfeeding- professionals/blog/blowing-up-the-cpap-belly-myth (accessed January 23, 2022).

Kim WY, Suh HJ, Hong S-B, Koh Y, Lim C-M. Diaphragm dysfunction assessed by ultrasonography: Influence on weaning from mechanical ventilation*. Crit Care Med 2011;39:2627–30.

Koo P, Gartman EJ, Sethi JM, McCool FD. Physiology in Medicine: physiological basis of diaphragmatic dysfunction with abdominal hernias–implications for therapy. J Appl Physiol 2015;118:142–7.

Korsten MA, Fajardo NR, Rosman AS, Creasey GH, Spungen AM, Bauman WA. Difficulty with evacuation after spinal cord injury: Colonic motility during sleep and effects of abdominal wall stimulation. J Rehabil Res Dev 2004;41:95.

Kraaijenga JV, de Waal CG, Hutten GJ, de Jongh FH, van Kaam AH. Diaphragmatic activity during weaning from respiratory support in preterm infants. Archives of Disease in Childhood-Fetal and Neonatal Edition. 2017 Jul 1;102(4):F307-11.

Kusari A, Han AM, Virgen CA, Matiz C, Rasmussen M, Friedlander SF, et al. Evidence-based skin care in preterm infants. Pediatr Dermatol 2019;36:16–23. Ranger M, Grunau RE. Early repetitive pain in preterm infants in relation to the developing brain. Pain Manag 2014;4:57–67.

Leduc D, De Troyer A. Impact of acute ascites on the action of the canine abdominal muscles. J Appl Physiol 2008;104:1568–73.

Maguire C, Sieben JM, Scheidhauer H, Romkes J, Suica Z, de Bie RA. The effect of crutches, an orthosis TheraTogs, and no walking aids on the recovery of gait in a patient with delayed healing post hip fracture: A

case report. Physiother Theory Pract 2016;32:69–81.

Massery M. Chest Development as a Component of Normal Motor Development: Implications for Pediatric Physical Therapists. Pediatr Phys Ther 1991;3:3–8.

McGill VE. Neonatal abdominal support to address CPAP belly: Two cases report and literature review. Journal of Neonatal-Perinatal Medicine. 2022 Aug 26(Preprint):1-6.

Meldere I, Urtans V, Petersons A, Abola Z. Measurement of abdominal circumference in preterm infants. BMC Res Notes 2015;8:725. Walor D, Berdon W, Anderson N, Holt PD, Fox M. Gaseous distention of the hypopharynx and cervical esophagus with nasal CPAP: a mimicker of pharyngeal perforation and esophageal atresia. Pediatr Radiol 2005;35:1196–8.

Miller AG, Bartle RM, Rehder KJ. High-Frequency Jet Ventilation in Neonatal and Pediatric Subjects: A Narrative Review. Respir Care 2021;66:845–56.

Nguyen TT, Gayton E, Norell C, Kramer K, Cornet MC, Gu H. External abdominal support intervention for preterm infants receiving non-invasive positive pressure support: A case series. J Neonatal Perinatal Med. 2026 Nov 5:19345798261506983. doi: 10.1177/19345798261506983. Epub ahead of print. PMID: 42986197.

O'Doherty N. "Prune-belly" syndrome. Br Med J 1969;4:368–9.

Papastamelos C, Panitch HB, England SE, Allen JL. Developmental changes in chest wall compliance in infancy and early childhood. J Appl Physiol 1995;78:179–84.

Permall DL, Pasha AB, Chen X. Current insights in non-invasive ventilation for the treatment of neonatal respiratory disease. Ital J Pediatr 2019;45:105.

Praud JP, Egreteau L, Benlabed M, Curzi-Dascalova L, Nedelcoux H, Gaultier C. Abdominal muscle activity during CO2 rebreathing in sleeping neonates. J Appl Physiol 1991;70:1344–50.

Priyadarshi A, Hinder M, Badawi N, Luig M, Tracy M. Continuous Positive Airway Pressure Belly Syndrome: Challenges of a Changing Paradigm. Int J Clin Pediatr 2020;9:9–15.

Priyadarshi A, Rogerson S, Hinder M, Tracy M. Neonatologist performed point-of-care bowel ultrasound: Is the time right? Australas J Ultrasound Med 2019;22:15–25.

Rehan VK, Laiprasert J, Nakashima JM, Wallach M, McCool FD. Effects of Continuous Positive Airway Pressure on Diaphragm Dimensions in Preterm Infants. J Perinatol 2001;21:521–4.

Robel-Tillig E, KnÜpfer M, Pulzer F, Vogtmann C. Blood flow parameters of the superior mesenteric artery as an early predictor of intestinal dysmotility in preterm infants. Pediatr Radiol 2004;34:958–62.

Sharp JT, Goldberg NB, Druz WS, Danon J. Relative contributions of rib cage and abdomen to breathing in normal subjects. J Appl Physiol 1975;39:608–18.

Setruk H, Nogué E, Desenfants A, Prodhomme O, Filleron A, Nagot N, et al. Reference Values for Abdominal Circumference in Premature Infants. Front Pediatr 2020;8.

Wellington A, Perlman JM. Infant-driven feeding in premature infants: a quality improvement project. Arch Dis

Child Fetal Neonatal Ed. 2015 Nov;100(6):F495-500. doi: 10.1136/archdischild-2015-308296. Epub 2015 Jun 11. PMID: 26066763.

West CR, Campbell IG, Shave RE, Romer LM. Effects of abdominal binding on cardiorespiratory function in cervical spinal cord injury. Respir Physiol Neurobiol 2012;180:275–82.

Yasukawa A, Martin T, Kase, Kenzo. KINESIO TAPING® IN PEDIATRICS. Orthopedic Physical Therapy and Rehabilitation Products; 2006.

Zhang HY, Liu D, Tang H, Sun SJ, Ai SM, Yang WQ, Jiang DP, Zhang LY. The effect of different types of abdominal binders on intra-abdominal pressure. Saudi Med J. 2016 Jan;37(1):66-72. doi: 10.15537/smj.2016.1.12865. PMID: 26739977; PMCID: PMC4724682.