The Hierarchy of Evidence

**The Hierarchy of evidence is based on summaries from the National Health and Medical Research Council (2009), the Oxford Centre for Evidence-based Medicine Levels of Evidence (2011) and Melynyk and Fineout-Overholt (2011).**

Ι Evidence obtained from a systematic review of all relevant randomised control trials.

ΙΙ Evidence obtained from at least one well designed randomised control trial.

ΙΙΙ Evidence obtained from well-designed controlled trials without randomisation.

IV Evidence obtained from well designed cohort studies, case control studies, interrupted time series with a control group, historically controlled studies, interrupted time series without a control group or with case- series

V Evidence obtained from systematic reviews of descriptive and qualitative studies

VI Evidence obtained from single descriptive and qualitative studies

VII Expert opinion from clinicians, authorities and/or reports of expert committees or based on physiology

Melynyk, B. & Fineout-Overholt, E. (2011). Evidence-based practice in nursing & healthcare: A guide to best practice (2nd ed.). Philadelphia: Wolters Kluwer, Lippincott Williams & Wilkins.

National Health and Medical Research Council (2009). NHMRC levels of evidence and grades for recommendations for developers of guidelines (2009). Australian Government: NHMRC. http://www.nhmrc.gov.au/\_files\_nhmrc/file/guidelines/evidence\_statement\_form.pdf

OCEBM Levels of Evidence Working Group Oxford (2011).The Oxford 2011 Levels of Evidence. Oxford Centre for Evidence-Based Medicine. http://www.cebm.net/index.aspx?o=1025

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| Databases searched: | X | CINAHL (Ebsco) |   | Medline (Ebsco) | X | Pubmed (NLM) | ☐ | Nursing (Ovid) | ☐ | Emcare (Ovid)  | ☐ | OtherList: \_\_\_\_\_\_\_\_\_\_ |
| Keywords used: | NICU, neonate, fluids, intravenous, fluid homeostasis, electrolyte management, acid base |
| Search limits: |  |
| Other search comments: |  |

Guideline Title:

Author(s):

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| **Reference (include title, author, journal title, year of publication, volume and issue, pages)** | **Evidence level****(I-VII)** | **Key findings, outcomes or recommendations** |
| Rennie, J. (2012). Rennie & roberton’s textbook of neonatology (5th Edition). Churchill Livingstone: United Kingdom | VII | Neonatology textbook – Chapter 18: Fluid & Electrolyte Balance Discusses postnatal alterations in total body water, insensible water loss and the impact of this on the neonates fluid balance including nursing/medical considerations, fluid goals within the first few days after delivery, determinants of fluid balance in the neonate and monitoring parameters as well as common clinical problems. |
| Gomella, T., Cunningham M., & Eyal, F. (2017). Neonatology: Management, procedures, on-call problems, diseases and drugs (7th Edition). McGraw-Hill Education: United States of America. | VII | Neonatology textbook – Chapter 7: Fluid & Electrolytes A step by step guide to fluid and electrolyte balance in the first few days of life and neonatal period, fluid therapy including goals of treatment, fluid calculations and determinants of alterations in fluid and electrolyte requirements. |
| Gardner, S., Carter, B., Enzam-Hines, M., & Hernandez, J. (2021). Merenstein & gardner’s handbook of neonatal intensive care (9th Edition). Elsevier: St Louis, Missouri | VII | Neonatology textbook – Unit 3: (Chapter 14 – Fluid & Electrolyte Management) & (Chapter 16 – Total Parenteral Nutrition) Discussion of the physiology of neonatal fluid and electrolyte management including the first few days of life and the etiology and prevention of common neonatal fluid and electrolyte disturbances. |
| Auckland District Health Board – Newborn Guidelines. Retrieved from: http://www.adhb.govt.nz/newborn/Guidelines.htm  | I-VII | Multiple clinical practice guidelines with references on fluid and electrolyte management in the neonate, particularly in relation to the preterm neonate. |
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| King Edward Memorial Hospital – Neonatal Critical Care Unit Retrieved from: http://www.kemh.health.wa.gov.au/services/nccu/guidelines/  | I-VII | Multiple clinical practice guidelines with references on fluid and electrolyte management in the neonate incorporating the surgical neonate and resuscitation practices. |
| Bhatia, J. (2006). Fluid and electrolyte management in the very low birth weight neonate. Journal of Perinatology, 26. DOI:10.1038/sj.jp.7211466  | VII | Discussion of the importance of appropriate fluid and electrolyte management in the very low birth weight neonate with emphasis on the importance of insensible water losses in the physiology of preterm neonates. Provides some brief management guidelines. |
| O’Brien, F., & Walker, I. (2014). Fluid homeostasis in the neonate. Pediatric Anaesthesia, 24 (1). pp 49 – 59. | VII | Thorough academic piece on fluid homeostasis in the neonate with supportive evidence from various research including randomised controlled trials. Discusses the importance of understanding fluid physiology within the first few days of life during transition from intrauterine life. |
| Bell EF, Acarregui MJ. Restricted versus liberal water intake for preventing morbidity and mortality in preterm infants. Cochrane Database of Systematic Reviews 2001, Issue 3. Art. No.: CD000503. DOI: 10.1002/14651858.CD000503.  | I | Cochrane review on fluid restriction in the preterm neonate. Overall author’s consensus of careful restriction that meets physiological need whilst avoiding significant dehydration. |
| Management of Hyperbilirubinemia in the Newborn Infant 35 or More Weeks of gestation. AAP Guideline. Paediatrics 2004;114;297  | VII | Discusses the management of hyperbilirubinemia in the neonate ≥ 35 weeks gestation including monitoring hydration status during the use of phototherapy. |
| Bolisetty S, Osborn D, Sinn J et al. Standardised neonatal parenteral nutrition formulations – an Australasian group consensus 2012. BMC. 2014; 14:48; doi: 10.1186/1471-2431-14-48  | I | Identifies an Australian group consensus on standardization of total parenteral nutrition formulations and as such improvements in nutritional intakes, quality control and reduced errors.  |