Reference (include title, author, journal title, year of publication, volume and issue, pages)	Evidence level (I-VII)	Key findings, outcomes or recommendations
Yamamoto, J. M., Kallas-Koeman, M. M., Butalia, S., Lodha, A. K., & Donovan, L. E. (2017). Large-for-gestational-age (LGA) neonate predicts a 2.5-fold increased odds of neonatal hypoglycaemia in women with type 1 diabetes. *Diabetes Metab Res Rev;* 33, 1-7. DOI: 10.1002/dmrr.2824	VI	This retrospective cohort study evaluated pregnancies in 161 women with type 1 diabetes mellitus at a large urban centre between 2006 and 2010. • This study of women with type 1 diabetes in pregnancy confirmed the high occurrence of neonatal hypoglycaemia and LGA • It also demonstrated that LGA was a strong predictor of neonatal hypoglycaemia, more so than glycaemic control. This study suggests that LGA neonates of women with type 1 diabetes should prompt increased surveillance for neonatal hypoglycaemia and that the presence of optimum maternal glycaemic control should not reduce this surveillance.
Ogunyemi, D., Friedman, P., Betcher, K., Whitten, A., Sugiyama, N., Qu, L., & Paul, H. (2017). Obstetrical correlates and perinatal consequences of neonatal hypoglycemia in term infants. *J Matern Fetal Neonatal Med*, 2017; 30(11): 1372–1377. DOI: 10.1080/14767058.2016.1214127	VI	This is a retrospective cohort study from the Beaumont Health System's electronic clinical database of women with singleton pregnancies at term (437 completed weeks of gestation) and their newborns that delivered from 1 January 2013 to 31 December 2013. • Macrosomia, caesarean section, decreasing gestational age, treatment for chorioamnionitis and SGA seem to be the most consistent independent risk factors of neonatal hypoglycaemia in this obstetric population. • Macrosomic infants have higher concentrations of free insulin, which correlates with birth weight and neonatal hypoglycaemia • Small for gestational age was the most significant independent factor in the prenatal factors analysis with a 6.8-fold increased risk for neonatal hypoglycaemia. ○ SGA infants and early gestational-aged neonates have decreased stores of glycogen (hepatic and muscle) and decreased production of glucose which all predispose them to neonatal hypoglycaemia

Hawdon, J. M. (2016). Postnatal metabolic adaptation and neonatal hypoglycaemia*. Paediatrics and Child Health*. 26(4), 135-139. DOI: https://doi.org/10.1016/j.paed.2015.12.001	VII	**Causes and risk factors of neonatal hypoglycaemia**
		• Insufficient availability of glucose and alternative fuels
		  ○ Preterm - low glucose stores
		  ○ IUGR- as per preterm
		  ○ inborn errors of metabolism- insufficiencies
		  ○ Starvation, nil feeds
		• Increased metabolism of glucose
		  ○ infection- increased glucose consumption
		  ○ encephalopathy
		  ○ hypothermic

		• Maternal diabetes mellitus - high glucose transmission→ high fetal insulin • BWS- hyperinsulineamia is common • Iatrogenic **Metabolic changes at birth** ○ Fetus receives all substrates required for growth ○ Deposition of stores essential for after birth ○ Abruptly discontinued- Neonate must be **able to adapt** ○ Change in energy source (fat released from adipose tissues, and ingested with milk) ○ Insulin falls, catecholamine's and glucagon are released ○ **Glycogenolysis for gluconeogenesis, lipolysis and ketogenesis** ○ Low BGL are commonly found in healthy, appropriate weight for gestation, however these infants have high ketone body levels when BGL are low. Likely that these alternative fuels protect them from neurological injury
Harding, J. E., Harris, d. L., Hegarty, J. E., Alsweiler, J. M., & McKinlay, C. JD. (2017) An emerging evidence base for the management of neonatal hypoglycaemia. *Early Human Development*. 104, 51-56.	VII	• Intrauterine life- continuous supply of glucose ○ Readily crosses the placenta ○ Cord cut- glucose concentration decreases and insulin secretion also decreases • Hormones aim to balance the appropriate amount of glucose such as glucagon • These encourages fetal endogenous production of glucose • Can take up to 3 days before normal blood sugars are reached • FAILURE: can lead to hypoglycaemia ○ Most commonly occur in the first day of life ○ Transient hypo ○ May have hyperinsulinaemia which will persist and require interventions ○ Main focus is to reduce brain injury ○ Main source of energy
Safer Care Victoria, May 2022, *Hypoglycaemia in Neonates*, https://www.safercare.vic.gov.au/clinical-guidance/neonatal/hypoglycaemia-in-neonates		Simplified Clinical Signs of neonatal hypoglyaemia event Aligning treatment protocols with current best practice standards in Victoria using most recent SCV flowcharts (September 2022) on hypoglycaemia care in NICU.
Sweet, C. B., Grayson, S., & Polak, M. (2013). Management Strategies for Neonatal Hypoglycemia, *J Pediatr Pharmacol Ther*. 2013 Jul-Sep; 18(3): 199–208.		Initial glucose infusion rates generally used for full-term infants are 4 to 6 mg/kg/min, while rates for premature infants may be 6 to 8 mg/kg/min.[6] An isotope tracer study noted that the glucose production rate of the liver in a single-term neonate was approximately 5

		mg/kg/min.[20] Glucose infusion rates should be titrated to achieve euglycemia, and hypoglycemic infants may require considerably higher rates.
Ainsworth, S (2022). **Neonatal Formulary**: Drug Use in Pregnancy and the First Year of Life. **8th Edition.**		Glucogon infusion and administration information