

## Low birthweight and macrosomia: Balancing the scale.

Caroline Jones\*

Department of Obstetrics and Gynecology, USC/Keck School of Medicine, Los Angeles, USA

### Introduction

Low birthweight and macrosomia are two distinct but equally important considerations in neonatal health. Low birthweight (LBW) is when a baby is born with a weight less than 2,500 grams (approximately 5.5 pounds), while macrosomia refers to newborns with a birth weight of 4,000 grams (approximately 8.8 pounds) or more. These conditions represent opposite ends of the birth weight spectrum and each carries its own set of challenges and implications for both the newborn and the mother. Low birthweight (LBW) can result from a variety of factors, with prematurity being the most common cause. Premature birth, defined as birth occurring before the 37th week of pregnancy, often leads to lower birth weights as the infant has less time to grow and develop in the womb. Inadequate maternal nutrition is another contributor to LBW. A mother's diet during pregnancy significantly affects the baby's birth weight, and insufficient intake of essential nutrients can lead to underweight newborns. Additionally, multiple gestation pregnancies, such as twins or triplets, can result in lower birthweights, as the infants must share available nutrients [1].

Low birthweight infants are at a greater risk of several health issues and complications. They often experience respiratory distress syndrome due to underdeveloped lungs, which can necessitate medical interventions such as mechanical ventilation. These babies also have a weaker immune system, making them more susceptible to infections like respiratory infections and sepsis. Maintaining normal blood sugar levels can be challenging for LBW infants, leading to hypoglycemia, which, if severe, can result in seizures or other neurological problems. Temperature regulation issues can lead to hypothermia, necessitating the use of incubators or warmers [2]. Developmental delays, both physical and cognitive, may be observed in LBW infants, requiring early intervention services to address them. Moreover, low birthweight is associated with an increased risk of long-term health issues, including diabetes, cardiovascular disease, and cognitive impairments later in life. Managing low birthweight often involves close monitoring and specialized care in a neonatal intensive care unit (NICU) if necessary. Neonatal experts provide the necessary medical support to help these babies thrive and catch up on growth and development [3].

In contrast to low birthweight, macrosomia is characterized by newborns with birth weights significantly higher than the average, typically weighing 4,000 grams (approximately 8.8

pounds) or more. Maternal diabetes, specifically gestational diabetes, is one of the most common causes of macrosomia. When a mother has diabetes during pregnancy, it can lead to excessive fetal growth and result in a larger baby. Genetics also play a role in macrosomia, as a family history of larger newborns can increase the likelihood of having a macrosomic infant. Additionally, maternal obesity and excessive weight gain during pregnancy can contribute to macrosomia. It's essential to note that a combination of factors can lead to this condition [4].

Macrosomic infants can face their own set of challenges and health risks. The most immediate concern is the increased likelihood of birth injuries for both the baby and the mother during delivery. A larger baby can lead to more prolonged or difficult labor, increasing the risk of birth trauma. For the baby, conditions like shoulder dystocia, where the baby's head passes through the birth canal but the shoulders become stuck, can be a significant concern. This may result in brachial plexus injuries or fractured bones. For the mother, giving birth to a macrosomic baby can result in vaginal tearing or the need for assisted delivery methods like forceps or vacuum extraction. Macrosomia can also have long-term health implications. These babies are at a higher risk of obesity and metabolic issues later in life. They may be more likely to develop type 2 diabetes, cardiovascular problems, and other health concerns. Therefore, it is essential to monitor and address these risks as the child grows [5].

### Conclusion

In conclusion, low birthweight and macrosomia represent two distinct ends of the spectrum concerning newborn weight, each with its set of causes and implications for both the infant and the mother. Low birthweight, typically resulting from prematurity or inadequate maternal nutrition, poses risks such as respiratory distress syndrome, infections, hypoglycemia, and developmental delays. Macrosomia, often caused by maternal diabetes or genetics, can result in birth injuries during delivery and a higher risk of long-term health issues. Appropriate medical care and monitoring are crucial in managing these conditions and ensuring the well-being of both mother and baby.

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\*Corresponding Author: Caroline Jones, Department of Obstetrics and Gynecology, USC/Keck School of Medicine, Los Angeles, USA. Email: [jonesc56@med.usc.edu](mailto:jonesc56@med.usc.edu)

Received: 21-Aug-2023, Manuscript No. AAJPHN-23-117948; Editor assigned: 23-Aug-2023, PreQC No. AAJPHN-23-117948 (PQ); Reviewed: 09-Sep-2023, QC No. AAJPHN-23-117948; Revised: 11-Sep-2023, Manuscript No. AAJPHN-23-117948 (R); Published: 19-Sep-2023, DOI:10.35841/aaiphn-6.5.171

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