



Encyclopedia of Obesity

Low Birth Weight

Contributors: David P. Adams

Edited by: Kathleen Keller

Book Title: Encyclopedia of Obesity

Chapter Title: "Low Birth Weight"

Pub. Date: 2008

Access Date: December 11, 2015

Publishing Company: SAGE Publications, Inc.

City: Thousand Oaks

Print ISBN: 9781412952385

Online ISBN: 9781412963862

DOI: <http://dx.doi.org/10.4135/9781412963862.n279>

Print page: 434

©2008 SAGE Publications, Inc.. All Rights Reserved.

This PDF has been generated from SAGE Knowledge. Please note that the pagination of the online version will vary from the pagination of the print book.

Newborns who weigh less than 5 pounds, 8 ounces, are classified as being of low-birth weight (LBW). (A related category, small for gestational age [SGA], is sex specific and includes children who are less than the 10th percentile for birth weight and gestational age.) LBW, a marker for fetal underdevelopment, has been linked to a variety of causes, for example, maternal tobacco and alcohol use, maternal age, poor maternal nutrition, lower socioeconomic status, and so forth. Moreover, LBW newborns face significant health risks as adults, the most significant of these risks include comorbidities associated with adult obesity. Numerous studies, ranging from animal-based models to diverse population-based cohort studies that encompass decades, have addressed the health impacts of LBW throughout the life cycle.

Recent research has associated LBW-related obesity with several causes. Animal-based studies have highlighted the role of maternal nutritional and hormonal levels on predisposing factors such as tumor necrosis factor- α upon appetite levels and metabolic efficiency among offspring. Investigators have also examined the impact of caregiver practice among LBW infants. Healthcare professionals, significant others, and caregivers may overfeed LBW (or SGA) children to help him or her to achieve a normal developmental trajectory. Accelerated postnatal development, existing research suggests, increases subsequent risk for central obesity, dyslipidemia, Type 2 diabetes, insulin resistance, cardiovascular disease, sympathetic nerve dysfunction, and sensorineural hearing loss, findings consistent across diverse populations in the Americas, Europe, Asia, and Australasia. The association of LBW and obesity raises important disease prevention issues for healthcare professionals. Assumptions about the benefits of developmental catch-up for LBW infants may require reconsideration in light of potential health outcomes in adulthood.

The association of LBW and obesity raises important disease prevention issues for healthcare professionals.



- obesity
- gestational age
- birth weight
- health care
- disease prevention

- disease
- infants

David P.Adams, Ph.D., M.P.H. Armstrong Atlantic State University
<http://dx.doi.org/10.4135/9781412963862.n279>

See Also:

- [Infant Weight Gain and Childhood Overweight](#)
- [Pregnancy](#)

Bibliography

M.L.Barrenas, et al., "High Risk of Sensorineural Hearing Loss in Men Born Small for Gestational Age with and without Obesity or Height Catch-Up Growth: A Prospective Longitudinal Register Study on Birth Size in 245,000 Swedish Conscripts," *The Journal of Clinical Endocrinology and Metabolism* (v.90/8, 2005)

L.Dubois and M.Gerard, "Determinants of Birthweight Inequalities: Population-Based Study," *Pediatrics International* (v.48/5, 2006)

M.J.Finken, et al., on behalf of the Dutch POPS-19 Collaborative Study Group, "Preterm Birth and Later Insulin Resistance: Effects of Birth Weight and Postnatal Growth in a Population Based Longitudinal Study from Birth into Adult Life," *Diabetologia* (v.49/3, 2006)

P.L.Hofman and W.S.Cutfield, "Insulin Sensitivity in People Born Pre-Term, with Low or Very Low Birth Weight and Small for Gestational Age," *Journal of Endocrinological Investigation* (v.29/Suppl 1, 2006)

J.Laitinen, et al., "Predictors of Abdominal Obesity among 31-Y-Old Men and Women Born in Northern Finland in 1966," *European Journal of Clinical Nutrition* (v.58/1, 2004)

M.J.McNeely, et al., "The Association between Birth Weight and Visceral Fat in Middle-Age Adults," *Obesity* (v.15/4, 2007)

V.Mericq, "Prematurity and Insulin Sensitivity," *Hormone Research* (v.65/Suppl 3, 2006)

P.Saenger, et al., "Small for Gestational Age: Short Stature and Beyond," *Endocrine Reviews* (v.28/2, 2007)

P.D.Taylor and L.Poston, "Developmental Programming of Obesity in Mammals," *Experimental Physiology* (v.92/2, 2007)

J. Y.Tian, et al., "Birth Weight and Risk of Type 2 Diabetes, Abdominal Obesity and Hypertension among Chinese Adults," *European Journal of Endocrinology* (v.155/4, 2006)

M.Wadsworth, et al., "Early Growth and Type 2 Diabetes: Evidence from the 1946 British Birth Cohort," *Diabetologia* (v.48/12, 2005)

L.T.Weaver, "Rapid Growth in Infancy: Balancing the Interests of the Child," *Journal of Pediatric Gastroenterology and Nutrition* (v.43/4, 2006)

World Health Organization, *Physical Status: The Use and Interpretation of Anthropometry* (World Health Organization, 1995).