Malnutrition and Chronic Illnesses in Early Life and Long Term Health Outcome

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Abstract:
Both physical growth and development are highly influenced by genetic, nutritional and environmental factors. Malnutrition in infancy and early childhood is an important factor leading to stunted growth in adulthood. It is estimated that 925 million people are malnourished the world over and 165 million children < 5 years are stunted. Most of these are related to malnutrition during infancy or early childhood. In the period when nutritional intake are compromised, hormones which stimulates growth (such as insulin, IGF-1, growth hormone) are suppressed while hormones suppressing growth (such as corticosteroids) are stimulated. On the other hand, chronic illnesses, especially in diseases characterized by chronic inflammation, cause stunted growth via increased circulating level of various cytokines acting upon the physiological growth plate. For example, TNF- α and IL-6 which suppress levels of IGF-1, an important mediator of growth, are increased in chronic inflammation. Stunted growth in early childhood have been associated with various adverse outcome in adulthood. These include increased risk of metabolic syndrome, development, final adult height, schooling, academic achievement, as well as income. Thus, it is important to identify children at risk of nutritional compromised and treat the cause vigorously.