

Body composition from conception through infancy

Session Description:

The impact of environmental factors during early growth and development and their role in disease causation has recently been highlighted. Extensive epidemiological evidence supports the association between smaller size or relative thinness at birth and during infancy and higher rates of coronary heart disease, stroke, type 2 diabetes mellitus, adiposity, the metabolic syndrome and osteoporosis. Similarly, a number of studies have identified an increased risk for type 2 diabetes mellitus, hypertension and obesity in individuals with low birth weight and thinness at 2 years of age which is followed by rapid weight gain. Early adiposity rebound is a further example where low body fatness in the early childhood years followed by high fatness may have consequences for later health status. However, a potential shortcoming of many studies in the area is that the only measurement available at birth was body weight. Assumptions that underlie infant body composition and growth are often poorly supported. For example, the dramatic functional adjustments of the newborn at birth include changes in hydration status but we have little understanding of the consequences of these changes. Much attention is paid to birth weight as a growth and development landmark however less attention is given to the constellation of factors which contribute to variability in birth weight. This includes low birth weight in premature and term neonates. Differences in body composition between premature and term babies may be important functional markers of short- and longterm health risks. A better understanding is also required of the environmental determinants which have an impact on infant health including feeding practices and infection status.

The International Atomic Energy Agency (IAEA) recently organized a meeting to discuss the technically challenging topic “Body composition from conception through infancy” (<http://www.iaea.org/NewsCenter/News/2008/malnutrition.html>). Suggested speakers for the session during ICN 2009 represent the group of leading international experts participating in the meeting at the IAEA Headquarters.

Session Chair & Co-chair:

Chair: Dr. Lena Davidsson, International Atomic Energy Agency (IAEA), USA

Co-chair: Dr. Chittaranjan S Yajnik, India

Session Topics and Speakers:

Introduction

Dr. Lena Davidsson

Topic 1: *Body composition during early life; structure and function*

Speaker: Dr Alan Jackson, United Kingdom (TBC)

Topic 2: *The thin/fat Indian baby*

Speaker: Dr. CS Yajnik, India

Topic 3: *Recent development; body composition assessment during early life*

Speaker: Dr. Kenneth J. Ellis, USA