

zinc deficiency have been found to be at increased risk for diarrhea and respiratory diseases.

**OBJECTIVE:** The aim of this study was to evaluate the roles of zinc supplementation in the episodes of respiratory and gastrointestinal infections in children.

**METHODS:** This study was a randomized, double-blind, placebo-controlled trial of 90 children (50 boys and 40 girls aged 7–12 years) who were underweight or had stunted growth. They were supplemented with 10 mg of zinc or placebo on school days for 6 months. Episodes of respiratory and gastrointestinal infections were recorded monthly.

**RESULTS:** At the end of this study, significant effects of zinc supplementation on the decreased number of episodes of respiratory and gastrointestinal infections were seen during the full 6 months.

**CONCLUSIONS:** On the basis of this study, zinc supplementation decreased the number of episodes of respiratory and gastrointestinal infections in school-children who were underweight or had stunted growth.

### SEVERE LUNG HYPOPLASIA IS OBSERVED IN *DHCR24*-KNOCKOUT MICE: A MOUSE MODEL OF DESMOSTEROLOSIS

Submitted by Rusella Mirza

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**INTRODUCTION:** The *DHCR24* gene encodes an enzyme that converts desmosterol to cholesterol in the last step of cholesterol synthesis. Desmosterolosis is an autosomal-recessive disorder that is caused by mutation in the *DHCR24* gene, resulting multiple developmental anomalies.

**OBJECTIVE:** The objective of this study was to understand the pathophysiology of desmosterolosis.

**METHODS:** *DHCR24*-knockout mice were used in this study. All homozygous mice ( $-/-$ ) died soon after birth. *DHCR24*<sup>-/-</sup> mice demonstrated features of lethal restrictive dermopathy, associated with impaired skin barrier function as a result of hyperproliferation of undifferentiated keratinocytes throughout the epidermis. One other possible cause for neonatal death in *DHCR24*<sup>-/-</sup> mice is respiratory failure, as evidenced by severe cyanosis immediately after birth. We therefore studied the lung development of these mice. Lungs from the newborn alive pups were subjected to weight measurement and histologic and Western blot analyses.

**RESULTS:** *DHCR24*<sup>-/-</sup> mice were identified by their phenotype and genotyping. Lung-to-body weight ratio was decreased in *DHCR24*<sup>-/-</sup>. The space between lung surface and the thoracic wall was significantly increased as a result of less expansion of the lung. The majority of the lung portion consisted of collapsed alveoli and decreased saccular space in *DHCR24*<sup>-/-</sup> mice. No differentiation defect in alveolar type I cell was detected by Western blot and immunohistochemistry with anti-T1  $\alpha$  antibody, a type I cell-specific marker. Immunohistochemistry with anti-caveolin 1 demonstrated no change in vascular development.

**CONCLUSIONS:** A distinct saccular hypoplasia in *DHCR24*<sup>-/-</sup> mice suggests that there is an important role of *DHCR24* in lung development. Additional experiments with surfactant compositions are needed to explore the underlying respiratory pathology.

### USING Q-METHODOLOGY TO EXPLORE PREFERENCES FOR CARE OF ADOLESCENTS WITH CHRONIC DISORDERS: 4 PROFILES

Submitted by AnneLoes Van Staa

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**INTRODUCTION:** Adolescents with chronic disorders are seldom asked to give opinions about their preferences for care, even though they are frequent health care users and soon need to take over the responsibility of managing their own care.

**OBJECTIVE:** The aim of the study was to investigate care-related preferences of adolescents with chronic disorders.

**METHODS:** A Q-methodologic study was conducted in a random sample of 31 adolescents with various congenital and acquired disorders from the total population of Erasmus Medical Center-Agia Sophia Children's Hospital (12–19 years). Adolescents rank-ordered 37 statements about preferences for care and self-care using a quasi-normal distribution. Factor analysis was applied to identify clusters in the Q-sorts, groups of adolescents with common preferences.

**RESULTS:** Four profiles were distinguished: concerned and compliant, backseat patient, opinionated and careless, and worried and insecure. Differences between profiles are related to independence competencies, level of involvement in management of the illness, adherence to therapeutic regimens, and appreciation of their parents' role. All adolescents want to have an important say in treatment-related decisions. Although adolescents are used to being accompanied by their parents in the con-

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