Ananda S Prasad, MD, PhD, the first to suggest that zinc deficiency was the cause of stunting and hypogonadism among Iranian farmers, and later, the first to show his hypothesis true (2-8). Reproduced with permission from (1).
James A Halsted, MD (10), the collaborator of Ananda Prasad who asked him to evaluate the Index Case (2). Later, Halsted et al (11) confirmed the findings from Egypt that showed zinc deficiency caused stunting and hypogondism. Reproduced with permission from (10).
Online Supporting Material
Supplemental Figure 3.

The Index Case the first patient described by Prasad that was presumed to be zinc deficient. Reproduced with permission from (2).
William J Darby, MD, PhD, Director of the Vanderbilt Nutrition Group (VNG) at NAMRU-3. He recognized the potential importance of “Prasad’s Syndrome” and therefore added human zinc deficiency to the research agenda of the VNG. Reproduced with permission from (12).
Arnold E Schaefer, PhD Executive Director of the Interdepartmental Committee for National Development (14) based at the National Institutes of Health. He gave permission to expend funds to test Prasad’s Hypothesis. Reproduced with permission from (13).
Comparison of height of Iowa school boys relative to age, to height and bone age relative to chronological age of zinc deficient male farmers from the Nile delta of Egypt. Stunting was severe. With few exceptions, stature was more affected than bone age. Reproduced with permission from (9).
Hypogonadism in a 16 year stunted farmer for the Nile delta of Egypt (9). Juvenile genitalia such as shown here were present in all 56 of the zinc deficient farmers from the Nile delta and 2 desert oasis (4-9). Photograph by Harold H Sandstead.
Growth of a zinc deficient stunted farmer from the Nile delta while living at home, during treatment at NAMRU-3 with diet alone, or diet and zinc. The subject was at home for 279 days. He returned to NAMRU-3 and was treated for hookworm, and fed the diet for 41 days. He was then treated for 88 days with diet and zinc. His calculated 1-year growth increment was nearly 17.8 cm. Reproduced with permission from (9)
The effect of diet and zinc treatment on growth and development of a zinc deficient farmer, aged 17 years, from the Nile delta. Treatment with diet and zinc while living in the metabolic unit of NAMRU-3 was associated with increased growth and genital development. From 11-23-62 to 6-13-63 he grew 7 cm. From 11-23-62 to 1-29-63 his penis and scrotum began to mature. Pubic hairs were evident on 1-29. Reproduced with permission from (9)
The effect of diet and zinc treatment on growth and development of a zinc deficient farmer, aged 20 years, from the Nile delta. Treatment with diet and zinc while living in the metabolic unit of NAMRU-3 was associated with increased growth and genital development. From 1-29-63 to 6-13-63 he grew 5 cm. Pubic hairs were evident on 3-20-63. Reproduced with permission from (9)
Online Supporting Material

References


