Malnutrition And Parasitic Helminth Infections.

Stephenson, L S; Latham, M C; Ottesen, E A

Date: 2000

Abstract:

The Global Burden of Disease caused by the 3 major intestinal nematodes is an estimated 22.1 million disability-adjusted life-years (DALYs) lost for hookworm, 10.5 million for Ascaris lumbricoides, 6.4 million for Trichuris trichiura, and 39.0 million for the three infections combined (as compared with malaria at 35.7 million) (World Bank, 1993; Chan et al. 1994); these figures illustrate why some scarce health care resources must be used for their control. Strongyloides stercoralis is the fourth most important intestinal worm infection; its nutritional implications are discussed, and the fact that its geographic distribution needs further study is emphasized. Mechanisms underlying the malnutrition induced by intestinal helminths are described. Anorexia, which can decrease intake of all nutrients in tropical populations on marginal diets, is likely to be the most important in terms of magnitude and the probable major mechanism by which intestinal nematodes inhibit growth and development. We present a revised and expanded conceptual framework for how parasites cause/aggravate malnutrition and retard development in endemic areas. Specific negative effects that a wide variety of parasites may have on gastrointestinal physiology are presented. The synergism between Trichuris and Campylobacter, intestinal inflammation and growth failure, and new studies showing that hookworm inhibits growth and promotes anaemia in preschool (as well as school-age) children are presented. We conclude by presenting rationales and evidence to justify ensuring the widest possible coverage for preschool-age children and girls and women of childbearing age in intestinal parasite control programmes, in order to prevent morbidity and mortality in general and specifically to help decrease the vicious intergenerational cycle of growth failure (of low-birth-weight/intrauterine growth retardation and stunting) that entraps infants, children and girls and women of reproductive age in developing areas.