

DELAYED EXPULSION OF NIPPOSTRONGYLUS BRASILIENSIS IN
THE IRON AND PROTEIN DEFICIENT RAT: THE SITE OF THE IMMUNE
DEFECT.

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Malnutrition is widespread on a global basis and, in association with infection is a common cause of morbidity and death. One important factor in this infection/malnutrition synergism is the effect of nutritional deficiencies on the immune response.

As earlier studies have demonstrated that the immunological expulsion of N.brasiliensis is delayed in the iron and protein deficient rat, it was the aim of this study to determine the site of the immunological defect. Highly inbred DA rats were divided into two dietary groups and fed a synthetic diet which was either sufficient or deficient in iron and protein. Immune mesenteric lymph node cells were transferred to recipient rats at the time of inoculation with 1,000 larvae of N.brasiliensis. Total worm counts performed on day 10 of infection showed that cells from iron and protein deficient donors were functional, as assessed by their capacity to cause parasite expulsion from sufficient recipients. In contrast, donor cells from both sufficient and deficient animals did not result in parasite expulsion from deficient recipients. This suggested that some other component of the rejection mechanism, such as bone marrow cells or humoral immunity, is defective in iron and protein deficient rats.

It was then shown that syngeneic bone marrow transfer was effective in reconstituting the rejection mechanism in that bone marrow cells from sufficient donors resulted in parasite expulsion from deficient recipients. The bone marrow component necessary for reconstitution has not yet been identified.

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