



## Diet Related Risk Factors for Leprosy

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**Received:** January 21, 2019; **Published:** February 27, 2019

Leprosy, also called Hansen's disease, is an infectious disease caused by *Mycobacterium leprae*, affects skin and nerves and can lead to deformities of the hands, feet and face.

The disease continues to be endemic in more than hundred countries and is a public health problem in several developing countries. Brazil, India, Nepal, Myanmar, Madagascar, and Mozambique contribute almost 90% to the leprosy cases registered worldwide [1]. Leprosy has long been known as a disease of poverty, aptly justified by the fact that most of the affected countries are underdeveloped. The developed countries successfully eradicated leprosy through strict segregation and all-round improvement in the living conditions of their people – including their health, sanitation and nutritional status, and not through specific control programmes based on drugs. On the contrary, in India the National Leprosy Eradication Programme in spite of being operational since 1954 with implementation of multidrug therapy in 85 leprosy-endemic districts of the country, is still far from its goal of total eradication of the disease.

Various studies [2,3] have shown positive associations between food shortage and food insecurity with the occurrence of leprosy, and it was suggested that impaired host immune response against the causative bacteria as a result of insufficient nutritional intake is the possible cause of this condition. This justifies need for enhanced focus on nutrition-leprosy interrelationship and to modify our present heavily drug-oriented approach to the control of leprosy.

There are very few systematic studies on interaction between various aspects of poverty with nutrition and leprosy. Rao, *et al.* [4] reported that serum concentrations of vitamin E and vitamin A showed a gradual progressive reduction as the disease advanced from the immunocompetent tuberculoid state to the immunocompromised lepromatous stage. Significantly low serum zinc levels and hypercupraemia in the case of leprosy have been reported by

Venkatesan, *et al.* [5] and Sher, *et al.* [6]. The fact that leprosy is a chronic ailment which requires prolonged Multi-drug therapy; also emphasizes the need to assess the impact of such therapy on the nutritional status of the subjects and on their nutrient requirements.

Recently, researchers have implicated excess generation of ROS (reactive oxygen species) in the pathogenesis of chronic, inflammatory, neurodegenerative disease process of leprosy. They have also recommended "Nutritional rehabilitation" by way of exogenous supplementation of functionally efficient antioxidants like vitamin E during the chronic course of the disease and antileprosy chemotherapy [7].

Sommerfelt, *et al.* [8] concluded that people affected by leprosy are at a definite disadvantage nutritionally in comparison with non leprosy patients from a similar background. Rao, *et al.* [9] stressed on the need to focus on dietary and nutritional aspects along with other socio-economic parameters by the Health programmes and service providers caring for leprosy patients.

Thus, it is imperative to broaden our strategy for the prevention and control of leprosy ; instead of placing our entire reliance on multi-drug therapy of established cases, the need of hour is to incorporate „nutritional dimension" of the leprosy problem into the care of leprosy patients by assessing the nutritional state of a leprosy affected person and improving dietary diversity through food-based approaches in high-prevalence areas.

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**Volume 3 Issue 3 March 2019**

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