Beriberi Encyclopedia Article

Beriberi

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Beriberi

Beriberi, a disease caused by a thiamine deficiency, is most common in Far Eastern countries where boiled white rice makes up a large part of the daily diet. In other parts of the world, including the United States, the disease is seen today mostly in alcoholics, who often fail to nourish themselves properly. The name *beriberi* is Sinhalese for "I cannot"--an apt description of the patient in later stages of the disease who finds it difficult to perform even simple tasks.

Beriberi occurs in two forms. In the more commonly seen chronic form, the disease is characterized by *polyneuritis*, a generalized inflammation of nerves in the arms and legs. The polyneuritis may soon escalate to severe nerve damage, progressive paralysis of the legs, and a deterioration of muscles. In the more acute form of the disease, the beriberi causes fluid retention, which in turn causes swelling of tissues, including those around the heart. In time, potentially fatal heart problems tend to develop.

Before its cause was discovered, beriberi was almost impossible to treat and caused widespread suffering. In 1896 Christiaan Eijkman, a Dutch physician, found that he could give laboratory animals beriberi by feeding them a diet restricted to polished rice and that he could then cure them simply by switching their diet to unpolished rice. Although Eijkman thought a toxin in the rice might be the culprit, his colleague, Gerrit Grijns, correctly deduced that polished rice was lacking an essential substance somehow needed by the nervous system, and that this substance was present in the outer layers of rice and in other foods as well. Reports of Eijkman's and Grijns's work prompted a number of investigators to join the search for the elusive anti-beriberi factor, which in 1934 was finally isolated and identified as thiamine, the first member of the B family of vitamins.