



PELLAGRA

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Pellagra is a systemic disease that results from severe vitamin B3 (Niacin) deficiency. Mild deficiency may go unnoticed, but a diet chronically low or without Niacin may result in the 4 D's: diarrhea, dermatitis, dementia, and possibly even death. Usually diarrhea will occur before the other D's. Mucosal inflammation may occur throughout the entire gastrointestinal (GI) system causing a sore tongue, sores in the mouth, nausea, vomiting, and diarrhea. The dermatitis usually begins as a rash with defined borders that resembles a sunburn on areas of skin exposed to sunlight. The rash may become severe with darker pigmentation, blisters, and skin sloughing on the face, neck, arms, and legs. Neurologic features such as insomnia, depression, hallucinations, and memory loss (dementia) may present later in the disease process. Lastly, if pellagra goes untreated, death may result within a few years.

Many enzymes in the body require niacin to work properly. Niacin is found in many different foods including animal proteins (chicken, beef, fish, liver), fruits (avocado, dates, passion-fruit), and vegetables (mushrooms, broccoli, asparagus). It can also be made in the body from tryptophan, an essential amino acid. Essential amino acids cannot be made in our bodies and therefore must be consumed in our diets. Tryptophan is plentiful in most animal and plant proteins such as chicken, turkey, eggs, sunflower or pumpkin seeds, peanuts, and soybeans. Pellagra is common in poor parts of the world, such as Africa and India, where corn (or maize) is a staple food. This is because corn is a poor source of tryptophan and niacin. In the United States, pellagra was prevalent in the early 1900's in the South where corn played a large role in the diet. However, by the 1950's, many foods such as breads and cereals were being fortified with niacin and deaths from pellagra were essentially eliminated in the US.

Pellagra may also result from existing medical conditions that result in amino acid or Niacin deficiency. Some examples would be anorexia nervosa, chronic alcohol abuse, Crohn's disease, carcinoid syndrome, other B vitamin deficiencies, and medications such as isoniazid (used in the treatment of tuberculosis). Pellagra may also arise in patients with Hartnup disease, a genetic disorder where neutral amino acids such as Tryptophan are unable to be absorbed from the GI tract.

Typically pellagra presents in adults aged 20-50 years old. This can be avoided by consuming the recommended daily allowance (RDA) of niacin for adults of 14-16 mg/day. When pregnant or lactating, the RDA increases to about 18 mg/day. For those under 18 years of age, the RDA ranges from 6-16 mg/day. Patients with symptomatic pellagra should be treated with 50-100 mg of niacin or niacinamide (a different form of niacin thought to have fewer side effects) three times a day for five days. Large doses of niacin may cause flushing and nausea with vomiting, but improvement in skin and neurological conditions is usually seen within two days. It is a good idea to also consider taking a daily multivitamin and following a high protein diet for a more complete restoration of well being.

This information has been provided to you compliments of the American Osteopathic College of Dermatology and your physician.

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