



# The Consequences of Kwashiorkor: A Study on Protein Deficiency and Child Malnutrition

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## DESCRIPTION

Malnutrition is a global health problem that affects millions of people, especially children, in developing countries. Malnutrition can take many forms, depending on the type and degree of nutrient deficiency. One of the most severe and life-threatening forms of malnutrition is kwashiorkor, which is caused by a lack of protein in the diet. Kwashiorkor is a Ga word from coastal Ghana that describes a condition that affects older children when they are weaned from breastfeeding and their diet lack in protein. It reflects the typical situation where older children are transitioned from breast milk to a diet that is rich in carbohydrates but deficient in protein and other essential nutrients when a younger sibling is born.

Breast milk contains essential amino acids that are vital for growth and development. Without adequate protein intake, the body cannot synthesize enough proteins for various functions, such as maintaining muscle mass, repairing tissues, producing enzymes and hormones, and supporting the immune system. Kwashiorkor is characterized by edema (swelling with fluid), especially in the ankles, feet, face, and belly. The swollen abdomen is due to ascites (a build-up of fluid in the abdominal cavity) and an enlarged liver with fatty infiltrates. The liver accumulates fat due to its inability to metabolize the surplus carbohydrates and fats present in the diet. The edema is caused by low levels of albumin, a protein that helps maintain fluid balance in the blood vessels. When albumin is low, fluid leaks out of the blood vessels and accumulates in the tissues.

The treatment of kwashiorkor aims to correct the protein deficiency and restore normal growth and development. Nutritional therapy includes providing adequate and balanced food that contains enough protein, energy, and micronutrients. The food should be easily digestible and palatable which should be given gradually and frequently, starting with small amounts and increasing as tolerated. The food should be supplemented with multivitamins and minerals to prevent or correct

deficiencies. Ready-To-Use Therapeutic Food (RUTF) is a paste made of peanut butter, milk powder, sugar, oil, and micronutrients. It is energy-dense, protein-rich, and shelf-stable. It can be eaten directly from the packet without any preparation or refrigeration.

It is suitable for home-based treatment of children with uncomplicated kwashiorkor. Therapeutic milk is a liquid formula that contains milk powder, sugar, oil, and micronutrients. It is also energy-dense and protein-rich. It can be given through a cup, a spoon, or a nasogastric tube. It is suitable for hospital-based treatment of children with complicated kwashiorkor who have severe edema, infection, or organ failure. Locally available foods include animal products (such as eggs, milk, cheese, yogurt, meat, fish, and poultry), legumes (such as beans, peas, lentils, soybeans, and peanuts), cereals (such as rice, wheat, maize, millet, and sorghum), tubers (such as potatoes, yams, cassava, and sweet potatoes), fruits (such as bananas, oranges, mangoes, and papayas), and vegetables (such as spinach, kale, carrots, and tomatoes).

These foods can provide protein, energy, and micronutrients. They can be prepared in various ways to make them more appealing and nutritious. Medical therapy includes treating any underlying or associated infections or complications with appropriate antibiotics, antiparasitics, antifungals, antivirals, antimalarials, or antipyretics. It also includes correcting any fluid or electrolyte imbalance with oral rehydration solution (ORS) or intravenous fluids. It also includes managing any hypoglycemia with glucose or honey. It also includes providing oxygen therapy or mechanical ventilation for respiratory distress or failure. Psychosocial support includes providing emotional and mental support to the child and the family. It also includes educating the family about the causes and prevention of kwashiorkor and the importance of proper nutrition and hygiene. It also includes involving the family in the care of the child and encouraging them to participate in feeding and stimulation activities.

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**Received:** 25-Jul-2023, Manuscript No. JNDT-23-23059; **Editor assigned:** 28-Jul-2023, Pre QC No. JNDT-23-23059 (PQ); **Reviewed:** 11-Aug-2023, QC No. JNDT-23-23059; **Revised:** 18-Aug-2023, Manuscript No. JNDT-23-23059 (R); **Published:** 25-Aug-2023, DOI: 10.35248/2161-0509.23.13.259.

**Citation:** Steinman S (2023) The Consequences of Kwashiorkor: A Study on Protein Deficiency and Child Malnutrition. J Nutr Disord Ther. 13:259.

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## CONCLUSION

Kwashiorkor is a severe form of malnutrition that results from severe protein deficiency. It affects mainly children in developing countries who have inadequate and unbalanced diets. It causes edema and an enlarged liver as well as other signs and symptoms that impair growth and development and increase the risk of

infection and death. It can be diagnosed by clinical signs and symptoms as well as laboratory tests that measure protein status and other parameters. It can be treated by providing adequate and balanced food that contains enough protein and micronutrients as well as treating any underlying or associated infections or complications with appropriate medications or interventions.