

Essential Fatty Acid Deficiency in Infants and Children

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DESCRIPTION

The Polyunsaturated Fatty Acids (PUFA) that are required for health but cannot be produced in the body are referred to as Essential Fatty Acids (EFA). That must be provided by different food supplements. EFAs are into two groups: omega-3 (-3) and omega-6 (-6). Linoleic and linolenic acid, two EFAs, serve as substrates for the endogenous synthesis of other fatty acids, which are required for numerous physiologic processes, such as the production of prostaglandins, leukotrienes and maintaining the integrity of cell and skin membranes. EFAs, like eicosapentaenoic acid and docosahexaenoic acid, are important components of the brain and retina, respectively. Triglycerides make up most of the dietary lipids. They are made by esterifying three fatty acid moieties to a glycerol backbone. The majority of fatty acids are transported and stored in this form.

The intake of lipids is a crucial component of the diet. For infants and children, they are the primary source of energy in their diets. Lipids produce for between 40% and 55% of the energy in human milk and infant formula. Lipids help to maintain the structural components of all tissues provide essential fatty acids, slow down the emptying of the stomach and the movement of the intestine, and store energy in infants and children.

Dietary intake needs to be very low for EFA deficiency to develop. EFA deficiency can be avoided even when consumed in trace amounts. Although cow's milk only contains about 25% of human milk's linoleic acid, it contains sufficient linoleic acid in normal amounts to prevent EFA deficiency in children. People in many countries with high rates of food insecurity may consume very less fat, but the fat they consume is typically vegetable-based and contains sufficient linolenic acid to prevent EFA deficiency.

EFA deficiency can occur in infants who consume skim-milk formula or other low-linoleic acid formula. Long-term Total Parenteral Nutrition (TPN) without fat used to cause EFA deficiency. However, fat emulsions are included in the majority

of TPN treatments to prevent EFA deficiency. Laboratory practice of EFA deficiency may be present without clinical signs in patients with fat malabsorption or increased metabolic needs (such as after surgery, multiple trauma, or burns). Dermatitis due to EFA deficiency is generalized and scaly it may resemble congenital ichthyosis in infants. The dermatitis makes the skin lose more water.

In short period of 7-10 days, biochemical signs of essential fatty acid deficiency appeared in patients who received total intravenous nutrition (also known as parenteral nutrition). This nutrition contained mixtures of fat-free glucose and amino acids. High circulating insulin levels prevented the release of essential fatty acids stored in fat (or adipose tissue) during these instances of continuous glucose infusion. Fundamental unsaturated fat lack has likewise been found to happen in patients with persistent unfortunate assimilation of fat from food and in patients with cystic fibrosis. When omega-3 fatty acid intake is insufficient, blood levels of Docosahexaenoic Acid (DHA) decrease, but no cutoff values have been established.

CONCLUSION

The develop of essential fatty acid deficiency as a result of fatty acid malabsorption or a poor diet. Childhood caloric requirements range from 1 to 4 caloric percent. Following an essential fatty acid deficiency, numerous abnormalities, including a cessation in growth, dermatitis, hair loss, increased bacterial infection susceptibility, histological abnormalities, and disruptions of biochemical and physiological processes, are described. An abnormal serum fatty acid composition can lead for these disorders by causing a disruption in membrane structure and function. The diagnosis of essential fatty acid deficiency also relies heavily on these fatty acids. Essential fatty acid supplementation can be administered orally, intravenously, or topically. A patient with an essential fatty acid deficiency is described. A mixture high in linoleic acid that was applied immediately lead to a faster rate of growth.

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