

Critical life-stages when under nutrition is particularly devastating

Prolonged under nutrition is detrimental to health at all stages of life but particularly critical during some periods of growth and old age.

Pregnancy – The period when under nutrition poses the greatest health risk is during pregnancy. A pregnant woman needs extra nutrients to meet both her own needs and those of her developing foetus. Nourishing the fetus may deplete stores of maternal nutrient. Maternal - iron deficiency anaemia is one possible consequence. In Africa, women give birth, on average; to more than six live babies. Coupled with chronic under nutrition, these high birth rates create 1 in 20 chances that a woman will die from pregnancy-related causes. In contrast, American women face a risk of 1 death in about 8000 births from pregnancy-related cause. No other social indicator, including literacy, life expectancy, and infant mortality, betrays a wider gap between the developing and industrialized world.

Fetal and Infant stages – The fetus faces major health risks from under nutrition during gestation. To support growth and development of the brain and other body tissues, a growing fetus requires a rich supply of protein, vitamins and minerals. When these needs are not met, the infant is often born before 37 weeks of gestation, well before the 40 weeks of gestation that is considered ideal. Consequences of preterm include reduced lung function and a weakened immune system. These conditions not only compromise health but also increase the likelihood of death. Long-term problems in growth and development can result if the infant survives. In extreme cases, low birth-weight babies (2500g) face 5 to 10 times the normal risk of dying before the age of one year, primarily because of reduced lung development. When low birth weight is accompanied by physical abnormalities, medical intervention can cost \$100.00 or more. When severe retardation occurs, the lifetime cost of care can exceed \$2 million.

Childhood – Early childhood, when growth is rapid, is another period when under nutrition is extremely risky. The brain and central nervous system are particularly vulnerable because of their rapid growth from conception through early childhood. After the preschool years, brain growth and development slow dramatically until maturity, when they cease. Nutritional deprivation, especially in early infancy, can lead to permanent brain impairment.

In general, poor children experience more nutritional deprivation and overall illness and are more severely affected than other children. For example, iron deficiency anaemia is much more common among poor children than children from less deprived families. This deficiency can lead to fatigue, reduced stamina, stunted growth, impaired motor development and learning problems. Under nutrition in childhood can also weaken resistance to infection, because immune function decreases when such nutrients as protein, vitamin A, and zinc are very low in diet. Clearly, under nutrition and illness have a cyclical relationship. Not only does under nutrition cause illness, but illness worsens under nutrition, particularly diarrhoea and infectious diseases. For this reason, many children in developing countries are dying from the combination of malnutrition and infection. When adequate nutrients are restored to children's diets, improvements in health can be obvious million.

Later years – Older people are also at risk for under nutrition. They often require nutrient-dense foods, in amounts depending on their state of health and degree of physical activity. Because many of them have fixed income and incur significant medical costs, food often becomes a low-priority item. In addition, older people are

often unable to take care of their own needs, are sometimes isolated, and are more apt to be depressed—all important factors that influence food intake.