

Joint statement by the World Health Organization and the
United Nations Children's Fund



Multiple Vitamin and Mineral Supplements for Pregnant and lactating Women,
and for Children aged 6 to 59 Months

Background

Deficiencies of micronutrients constitute a major global health problem. More than 2 billion people in the world today are estimated to be deficient in key vitamins and minerals, particularly vitamin A, iodine, iron and zinc. Most of these people live in low income countries and are typically deficient in more than one micronutrient. Deficiencies occur when people do not have access to micronutrient-rich foods such as fruit, vegetables, meat and fortified products, usually because they are too expensive to buy or are not locally available. Micronutrient deficiencies are among the 10 leading risk factors that contribute to the global burden of disease (1), because they increase the risk of infectious illness or of dying due to diarrhoea, measles, malaria and pneumonia.

The groups most vulnerable to a lack of micronutrients are pregnant women, lactating women and young children, mainly because of their relatively greater need for vitamins and minerals and their susceptibility to the harmful consequences of deficiencies. For pregnant women this includes a greater risk of dying during childbirth or of giving birth

to an underweight or mentally-impaired baby. For a lactating mother, her micronutrient status determines the health and development of her infant during the breast feeding period, especially for the first 6 months of life. For a young child, micronutrient deficiencies increase the risk of dying due to infectious disease and contribute to impaired physical and cognitive development.

Micronutrients in emergencies

In any humanitarian crisis, micronutrient deficiencies can easily develop or be made worse if they are already present. This happens because livelihoods and food crops are lost, food supplies are interrupted, diarrhoeal diseases break out and cause mal-absorption and nutrient losses, and infectious diseases suppress the appetite while increasing the need for micronutrients to help fight illness. For these reasons it is essential to ensure that the micronutrient needs of people affected by a disaster, such as the Asian tsunami, are adequately met.

One way to meet this need is to fortify food rations distributed during an emergency to try and meet the recommended daily micronutrient intake (2,3). The blended foods that are typically given during an emergency usually contain added vitamin A, thiamine, riboflavin, niacin, vitamin C, folic acid, iron and iodine, all of which can make a substantial contribution to protect the micronutrient status of the population. However, blended foods may not fully meet the needs of pregnant and lactating women or young children because the micronutrients may not be absorbed very well, and because other critical micronutrients, such as vitamin B₆, vitamin B₁₂ and zinc, are lacking.

UNICEF and WHO have developed daily multiple micronutrient formulae (2), shown in Table 1, that can meet the recommended nutrient intake¹ (3, 4) of these vulnerable groups during a humanitarian crisis.

Table 1 Composition of vitamin and mineral formulae for pregnant women, lactating women, and children from 6 to 59 months of age designed to provide the daily recommended intake of each nutrient (1 RNI)

Micronutrient	Pregnant and lactating women	Children (6-59 months)
Vitamin A µg	800	375
Vitamin D µg	5	5
Vitamin E mg	10	4
Vitamin C mg	70	150
Thiamine (vitamin B ₁) mg	1.4	0.5
Riboflavin (vitamin B ₂) mg	1.4	0.5
Niacin (vitamin B ₃) mg	18	6
Vitamin B ₆ mg	1.9	0.5
Vitamin B ₁₂ µg	2.6	0.9
Folic acid µg	400	150
Iron mg	30	10
Zinc mg	15	10
Copper mg	2	0.6
Selenium µg	65	-
Iodine µg	150	50

¹ Recommended nutrient intake (RNI) is defined as the daily dietary intake level of a nutrient sufficient to meet the nutrient requirements of nearly all apparently healthy individuals in an age and sex specific population group (9). The definition of RNI is equivalent to that of recommended dietary allowance (RDA) as used by the Food and Nutrition Board of the United States Institute of Medicine (10).

Pregnant and lactating women should be given this supplement daily, whether they receive fortified rations or not. Iron and folate supplements, when already given, should be continued. When fortified rations are not being given, children aged 6 to 59 months should also be given the appropriate supplement daily (as in Table 1); but when fortified rations are being given to children in this age group, they should be given an appropriate double supplement of micronutrients once a week. This schedule is shown in Table 2.

Furthermore, the provision of vitamin A supplementation to young children and post-partum mothers should be continued as per existing recommendations. Breastfeeding should also continue to be actively promoted as well as appropriate complementary feeding.

The multiple micronutrient supplements should be given until basic health services have been re-established and nutrient rich foods are once again locally available.

Table 2 Schedule for giving the multiple micronutrient supplement shown in Table 1 which provides a daily recommended nutrient intake (1 RNI)

Target groups	Fortified food rations NOT being used	Fortified food rations being used
Pregnant and lactating women	1 RNI/day	1 RNI/day
Children (6-59 months)	1 RNI/day	2 RNI/week

Monitoring

Before giving any supplements it is important to ensure that micronutrient supplements are not being provided from other sources, especially with regard to fat soluble vitamins such as vitamin A in pregnancy, so that excessive intakes are prevented. The delivery of supplements should be monitored to assess coverage and existing micronutrient programmes should continue as before (5). The health of the target groups should be monitored to ensure that they are protected from deficiencies and from excessive consumption. Indicators for this are described in several WHO publications (6 – 11).

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