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ZINC AND YOUR HEALTH

inc may not be one of the more well-known nutrients, but it is essential for humans, as it plays an important role in many of the body©s functions. This issue of Nyam News takes a look at zinc in the human body.

Function of Zinc in the Body

Nutritionally, zinc is considered an essential micro-mineral or trace mineral. This means that it is required in very small amounts for the body to function. Zinc is involved in more of the body©s enzyme systems than all the other trace minerals put together. In fact, zinc functions in association with over 100 enzymes in the body. These enzymes are generally involved in the synthesis or breakdown of carbohydrates,

lipids, proteins and nucleic acids. In addition, zinc plays an important role in immune function, brain function, bone formation, cell reproduction and repair of body tissues.

The amount of zinc required by a person depends on his or her age, sex and stages in life such as pregnancy and lactation, where there is a greater need for zinc. Table 1 shows the Caribbean Recommended Dietary Allowances (RDAs) for zinc.

Table 1: Recommended Dietary Allowances (RDAs) for the Caribbean – Zinc

Age/ Stage in Life	RDA for Zinc (mg/day)	
Infants 0 to 11 months	5	
Children 1 to 9 years	10	
Males 10 years and over	15	
Females 10 years and over	12	
Pregnant Women	15	
Lactating Women		
0 to 6 months	19	
Over 6 months	16	

Zinc Supplementation and Topical Application

Zinc is available as a supplement by itself, or in conjunction with other nutrients. Zinc supplements can be found in the forms zinc gluconate, zinc oxide, zinc aspartate, zinc picolinate, zinc citrate, zinc monomethionine, and zinc histidine. Of these, zinc sulphate is the least expensive and the most common but also the least

easily absorbed. Zinc gluconate is now being included in some throat lozenges and nasal sprays for the treatment of colds.

There is strong scientific evidence to support zinc





supplementation as part of the management of sickle cell anaemia. Studies show that there is increased height, weight, immune system function, and testosterone levels and decreased numbers of crises and sickled cells in patients who undergo zinc treatment.

Studies have shown that zinc utilised topically along with antiobiotic treatment can greatly improve the condition of the skin and clear up signs of acne. Oral zinc treatment has also been found useful in treating acne.

Preliminary research suggests that zinc supplementation can increase the ratio of good cholesterol to bad cholesterol, may significantly reduce plaque build up and incidence of gingivitis when used in toothpaste preparations and may even be an effective inclusion in the treatment of Herpes Type I and Herpes Type II infections. There is also encouraging research on the use of zinc in treatment of Attention Deficit Hyperactivity Disorder (ADHD). However, more research is needed in these areas.

Zinc Deficiency

The most common cause of zinc deficiency is inadequate intake of absorbable zinc from the diet. This may be due to consumption of foods which are mainly poor sources of zinc, or intake of foods which contain a high concentration of phytates. In areas of poor development or low economic status, zinc deficiency, if present, is usually as a result of inadequate intake of bio-available zinc, poor breast-

feeding practices or the presence of diseases which either cause excessive loss of zinc or impairment of zinc utilisation. Periods of rapid growth or pregnancy when zinc requirement is increased may also increase a person©s risk of becoming deficient.

General symptoms of zinc deficiency include alopecia (hair loss), slow wound healing, skin lesions, immune deficiencies, impaired appetite, eye lesions, night blindness, behavioural disturbances and impaired taste. In children, zinc deficiency can lead to growth retardation, delayed sexual maturation, hypogonadism (decreased function of the ovaries and testes) and mild anaemia.

Because zinc deficiency will cause increased vulnerability to a variety of diseases and infections, this can be especially dangerous in children, as many diarrhoeal diseases and infections which are contracted during infancy may prove fatal without immediate care. A recently concluded research series on maternal and child undernutrition concluded that zinc deficiency is responsible for approximately 4% of child mortality. Many community based zinc supplementation interventions have shown that zinc supplementation reduces the occurrence of diarrhoeal diseases and pneumonia in young children. Supplementation during diarrhoea reduces the severity and the length of the illness. It is now recommended by the WHO and UNICEF that zinc supplementation be included as part of the standard

treatment for diarrhoea. Several clinical trials have shown that children who received preventative zinc supplementation showed a 9% reduction in mortality.

Food Sources of Zinc

In general, zinc intake correlates well with protein intake, meaning that many foods high in zinc are also high in protein. The majority of most people©s intake of zinc comes from meat, fish and poultry. Other good sources are oysters and other shellfish, liver, dry beans and nuts. Soy products are considered a fairly good source. Although cow@s milk contains relatively good quantities, the calcium from the milk may interfere with absorption of zinc (and also iron). Zinc is also better absorbed from human milk (breastmilk) than from cow@s milk. Many modern processed cereals are fortified with zinc in addition to other minerals and so are also good sources of the micro-mineral. The following table shows the range of zinc content in some foods.



"It finally happened. The school hired a nutritionist and I really did flunk lunch."

Table 2: Zinc Content of Some Foods

FOOD	Quantity (g)	Measure	Zinc content (mg)
Oyster, raw	84	6 medium	76
Oyster, cooked, breaded and fried	85	3 oz	74
Baked beans and pork, canned	253	1 cup	14
Turkey neck, meat only, simmered	152	1 neck	11
Beef chuck, braised	85	3 oz	9
Alaska king crab, cooked	85	3 oz	6.5
Ground beef	85	3 oz	5.3
Beef, rib	85	3 oz	4.6
Beef liver, cooked, pan-fried	85	3 oz	4.5
Turkey, meat only, cooked, roasted	140	1 cup	4.3
Beef, round	85	3 oz	4.3
Pork, spareribs	85	3 oz	3.9
Turkey, dark meat, cooked, roasted	84	3 oz	3.8
Blue crab, cooked	85	3 oz	3.6
Wheat flour, whole-grain	120	1 cup	3.5
Chicken, meat only, cooked, stewed	140	1 cup	2.9
Pork, leg ham, cooked,	85	3 oz	2.8
Bulgur, dry	140	1 cup	2.7
Lentils, cooked	198	1 cup	2.5
Lobster, cooked, moist	85	3 oz	2.5
Chicken, dark meat, cooked	85	3 oz	2.4
Oats, cooked with water	234	1 cup	2.3
Milk, canned, evaporated	256	1 cup	2.3
Cornmeal, whole-grain, yellow	122	1 cup	2.2
Yogurt, plain, low fat	227	8 oz	2.0
Wild rice, cooked	164	1 cup	2.2
Split peas, cooked	196	1 cup	2.0
Kidney beans, boiled	177	1 cup	1.9
Cashew nuts, dry roasted	28	1 oz	1.6
Brown rice, long-grain, cooked	195	1 cup	1.2
Milk, low fat, fluid	244	1 cup	1.2
White bread, enriched	137	1 cup	1.1
Spaghetti, whole-wheat, cooked	140	1 cup	1.1
Sardine, canned in oil	85	3 oz	1.1
Chicken, light meat, cooked	84	3 oz	1.1
Cornmeal, de-germed, enriched	138	1 cup	0.98
Peanuts, dry-roasted	28	1 oz (~28)	0.94
Wheat flour, white, all purpose	125	1 cup	0.88

For further information contact: Caribbean Food and Nutrition Institute.