

Vitamins & Minerals	Functions	Food Sources	RDA (Recommended dietary allowance*)			
			Men		Women	
Water-soluble						
Vitamin B1-Thiamin	Necessary to help the body maximizes the use of carbohydrate, its major source of energy. Essential for the proper functioning of heart, nervous system and muscle coordination.	Wheat germ, sunflower seeds, pine nuts, nuts, oatmeal, lean meat (especially pork), offal, whole grain products.	Men 18- <30 yrs 30- <60 yrs < 60 yrs Pregnant women: Full activities Reduced activities	1.18 mg 1.18 mg 0.98 mg +0.11 mg +0.08 mg	Women 18- <30 yrs 30- <60 yrs < 60 yrs Lactating women: First 6 months After 6 months	0.84 mg 0.86 mg 0.80 mg +0.2 mg +0.2 mg
Vitamin B2-Riboflavin	Aids in carbohydrate, protein and fat metabolism. Promotes growth, needed for healthy eyes, hair, skin and nails.	Milk, liver, eggs, almonds, fortified breakfast cereals.	Men 18- <30 yrs 30- <60 yrs < 60 yrs Pregnant women: Full activities Reduced activities	1.77 mg 1.74 mg 1.47 mg +0.17 mg +0.12 mg	Women 18- <30 yrs 30- <60 yrs < 60 yrs Lactating women: First 6 months After 6 months	1.26 mg 1.29 mg 1.20 mg +0.3 mg +0.3 mg
Vitamin B3-Niacin	Required for fat, carbohydrate and protein metabolism. Aids in brain function, keeps nervous system healthy.	Rice bran, wheat bran, liver, peanut butter, nuts, chicken, beef, tuna, barley, rice.	Men 18- <30 yrs 30- <60 yrs < 60 yrs Pregnant women: Full activities Reduced activities	19.5 mg 19.1 mg 16.2 mg +1.9 mg + 1.3 mg	Women 18- <30 yrs 30- <60 yrs < 60 yrs Lactating women: First 6 months After 6 months	13.9 mg 14.2 mg 13.2 mg +3.3 mg +3.3 mg
Vitamin B5-Pantothenic acid	Essential for metabolism of fats, carbohydrates and protein and to make fatty acids and cholesterol.	Whole grains, legumes, brewer's yeast, egg yolk, organ meats.				
Vitamin B6-Pyridoxine	Essential for amino acid and carbohydrate metabolism. Helps the nervous system function properly. Aids in the production of red blood cells.	Wheat bran, liver, walnuts, brown rice, sunflower seeds, mackerel, meat, salmon, tuna, banana, brewer's yeast.				
Vitamin B12-Cobalamin	Forms and generates red blood cells, needed for DNA synthesis, maintains a healthy nervous system.	Liver, offal, mussels, oyster, egg, oily fish, crab, beef.	Men 18- <30 yrs 30- <60 yrs < 60 yrs Pregnant women: Full activities Reduced activities	2 mcg 2 mcg 2 mcg 3 mcg 3 mcg	Women 18- <30 yrs 30- <60 yrs < 60 yrs Lactating women: First 6 months After 6 months	2 mcg 2 mcg 2 mcg 2.5 mcg 2.5 mcg

Folate	Works with B12 to protect and develop the nervous system, production of RNA and DNA. Needed to produce red blood cells for babies in utero.	Brewer's yeast, liver, dark green leafy vegetables, lentils, chickpeas, kidney beans, nuts, oat bran.	Men 18- <30 yrs 200 mcg 30- <60 yrs 200 mcg < 60 yrs 200 mcg Pregnant women: Full activities 400 mcg Reduced activities 400 mcg	Women 18- <30 yrs 200 mcg 30- <60 yrs 200 mcg < 60 yrs 200 mcg Lactating women: First 6 months 300 mcg After 6 months 300 mcg
Vitamin C	Collagen production. Required for healthy skin, bones, cartilage, teeth and blood vessels. Promotes healing, aids iron absorption.	Guava, red chilies, broccoli, green leafy vegetables, capsicum, citrus, kiwi and papaya.	Men 18- <30 yrs 30 mg 30- <60 yrs 30 mg < 60 yrs 30 mg Pregnant women: Full activities 50 mg Reduced activities 50 mg	Women 18- <30 yrs 30 mg 30- <60 yrs 30 mg < 60 yrs 30 mg Lactating women: First 6 months 50 mg After 6 months 50 mg
Biotin	Essential for energy production and the metabolism of fats and protein. Required for healthy skin and hair.	Egg yolk, organ meats, brewer's yeast, legumes, nuts.		
Fat-Soluble				
Vitamin A	Required for healthy skin, eyes and hair. Helps the body resist infection and maintains healthy mucous membranes.	Liver. Chilies, carrots, dairy foods, sweet potato, pumpkin, mangoes, spinach.	Men 18- <30 yrs 750 mg 30- <60 yrs 750 mg < 60 yrs 750 mg Pregnant women: Full activities 750 mg Reduced activities 750 mg	Women 18- <30 yrs 750 mg 30- <60 yrs 750 mg < 60 yrs 750 mg Lactating women: First 6 months 1200 mg After 6 months 1200 mg
Vitamin D	Needed for calcium and phosphorus absorption and for healthy bones and teeth.	Sunshine, dairy products, canned sardines, herrings, tuna, sunflower seeds, egg yolk, fish oils.	Men 18- <30 yrs 2.5 mcg 30- <60 yrs 2.5 mcg < 60 yrs 2.5 mcg Pregnant women: Full activities 10 mcg Reduced activities 10 mcg	Women 18- <30 yrs 2.5 mcg 30- <60 yrs 2.5 mcg < 60 yrs 2.5 mcg Lactating women: First 6 months 10 mcg After 6 months 10 mcg
Vitamin E	Natural antioxidant, helps healing, prevents scarring. Keeps nerves and red blood cells healthy. Protects cell membranes.	Sunflower seeds, sunflower seed oil, safflower oil, peanut oil, olive oil, almonds, peanut butter.		

Vitamin K	Promotes blood clotting to stop bleeding.	Green leafy vegetables, cabbage, milk, liver, wheat bran.		
Major Minerals				
Calcium	A major component of bones and teeth. Necessary for the clotting of blood, blood pressure regulation, and enzyme regulation.	Diary products, sardines eaten with their bones, ikan bilis, fortified soy milk and tofu.	Men 18- <30 yrs 800 mg 30- <60 yrs 800-1000 mg < 60 yrs 1000 mg Pregnant women: Full activities 1000 mg Reduced activities 1000 mg	Women 18- <30 yrs 800 mg 30- <60 yrs 800-1000 mg < 60 yrs 1000 mg Lactating women: First 6 months 1000 mg After 6 months 1000 mg
Iron	An essential component of hemoglobin, a protein which enables red blood, cells to carry oxygen throughout the body.	Red meat, liver, fortified cereals, spinach, dried fruits.	Men 18- <30 yrs 6 mg 30- <60 yrs 6 mg < 60 yrs 6 mg Pregnant women: Full activities 19 mg Reduced activities 19 mg	Women 18- <30 yrs 19 mg 30- <60 yrs 19 mg < 60 yrs 6 mg Lactating women: First 6 months 19 mg After 6 months 19 mg
Magnesium	In combination with phosphorus and sodium, required for muscle and nerve function. Needed for energy. Maintains bone structure, regulates calcium balance.	Wheat germs, wheat bran, nuts, rolled oats, peanut butter, seeds.		
Sodium	Works with potassium to regulate fluid and acid/alkali balance. Responsible for nerve and muscle function.	Table salt, shellfish, seafood, cheese, miso.		
Potassium	Works with sodium to regulate the body's fluid balance, maintains normal blood pressure, heartbeat and nerve impulses.	Spinach, Kai Lan, Chye Sim, potato, sweet potato, banana, mango, grapes.		
Trace Minerals				
Phosphorus	Builds and maintains teeth and bones. Plays an essential role in muscle and nerve function and in the quick release of energy.	Meat, fish, diary products, nuts, wheat bran, seeds, nuts.	Men 18- <30 yrs 1200 mg 30- <60 yrs 1200 mg < 60 yrs 1200 mg Pregnant women: Full activities 1200 mg Reduced activities 1200 mg	Women 18- <30 yrs 1200 mg 30- <60 yrs 800 mg < 60 yrs 800 mg Lactating women: First 6 months 1200 mg After 6 months 1200 mg

Trace Minerals

Zinc	Improves immunity and healing. Needed for healthy eyes, skin, nails for growth and sexual development, for the activity of enzymes, for DNA and protein synthesis.	Oysters, crab and shellfish, seafood, red meat, liver.	Men 18- <30 yrs 15 mg 30- <60 yrs 15 mg < 60 yrs 15 mg Pregnant women: Full activities 15 mg Reduced activities 15 mg	Women 18- <30 yrs 12 mg 30- <60 yrs 12 mg < 60 yrs 12 mg Lactating women: First 6 months 19 mg After 6 months 19 mg
Copper	Needed in brain and red blood cell function, connective tissue synthesis.	Oysters, nuts, sesame seeds, seafood, liver, tempeh.		
Iodine	Essential component of the thyroid hormones which regulates metabolic rate, growth and promote protein synthesis.	Seafood, seaweeds, iodized salt.		
Selenium	Works with Vitamin E.	Seafood, organ meats, eggs, whole grain.	Men 18- <30 yrs 70 mcg 30- <60 yrs 70 mcg < 60 yr 70 mcg Pregnant women: Full activities 65 mcg Reduced activities 65 mcg	Women 18- <30 yrs 55 mcg 30- <60 yrs 55 mcg < 60 yrs 55 mcg Lactating women: First 6 months 75 mcg After 6 months 75 mcg
Fluorine	Protects teeth against dental decay.	Fluorinated water, tea leaves.		

* Health Promotion Board Singapore
 Mann & Truswell. *Essentials of Human Nutrition*. 1998
The Vitamins and Minerals Counter. 2001

The information in this leaflet is meant for reference/educational purposes and should not be used as a substitute for medical diagnosis or treatment. Please seek your doctor's advice before starting any treatment or if you have any questions related to your health, physical fitness or medical condition.

Contents in this brochure are not to be quoted or reproduced without the permission of National University Hospital. Information is correct at time of printing (June 2006) and is subject to revision without notice.

(Prepared by Dietetics Department, NUH)

National University Hospital

5 Lower Kent Ridge Road, Singapore 119074

Tel : 6779 5555 Fax : 6779 5678 Website : www.nuh.com.sg



NUH Pharmacy Committee for Health
Supplement & Alternative Medicine