

WP HEALTH
SERIES

NEW & WITH THE LATEST

VITAMINS

All you need to know
about vitamins, minerals
& supplements

GUIDE



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301 WAYS TO LOOK AND
FEEL YOUNGER

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Introduction

As many people's busy lifestyles and hectic schedules eat into their time to prepare quality, wholesome and nutrient-rich food, it often means they miss out on optimal vitamin and mineral intake. Even those with a diverse diet could be lacking in vitamin and mineral intake without even knowing it.

For most of us, gone are the days where we sourced all our food from the vegetable patch in the backyard and the milkman delivered the milk and eggs fresh from the farm each morning! The freshness of our food has a great impact on the nutrients it contains. These days much of our food is sprayed with chemicals, shipped from overseas, stored, frozen and thawed before it reaches our pantry. Then just the simple process of heating and cooking can further decrease the natural vitamin and mineral content. Most of us are also using more packaged foods, which have preservatives and flavours added and are often processed to such an extent that much of the natural vitamins and minerals are lost. In general, the more food you can eat which doesn't carry a barcode the better!

Vitamins and minerals are key factors in our development, health, energy levels, disease resistance and are key to our survival. But what are they?

What do they do for you?

How much do you need?

How do you know if you have taken enough?

How do you know if you have taken too much?

What are the best sources?

And what about supplements?

With an endless supply of vitamin and mineral supplements on the market, all featuring convincing marketing and advertising campaigns telling you why you *need* certain products, this information overload can make it hard to sort the fact from the fiction.

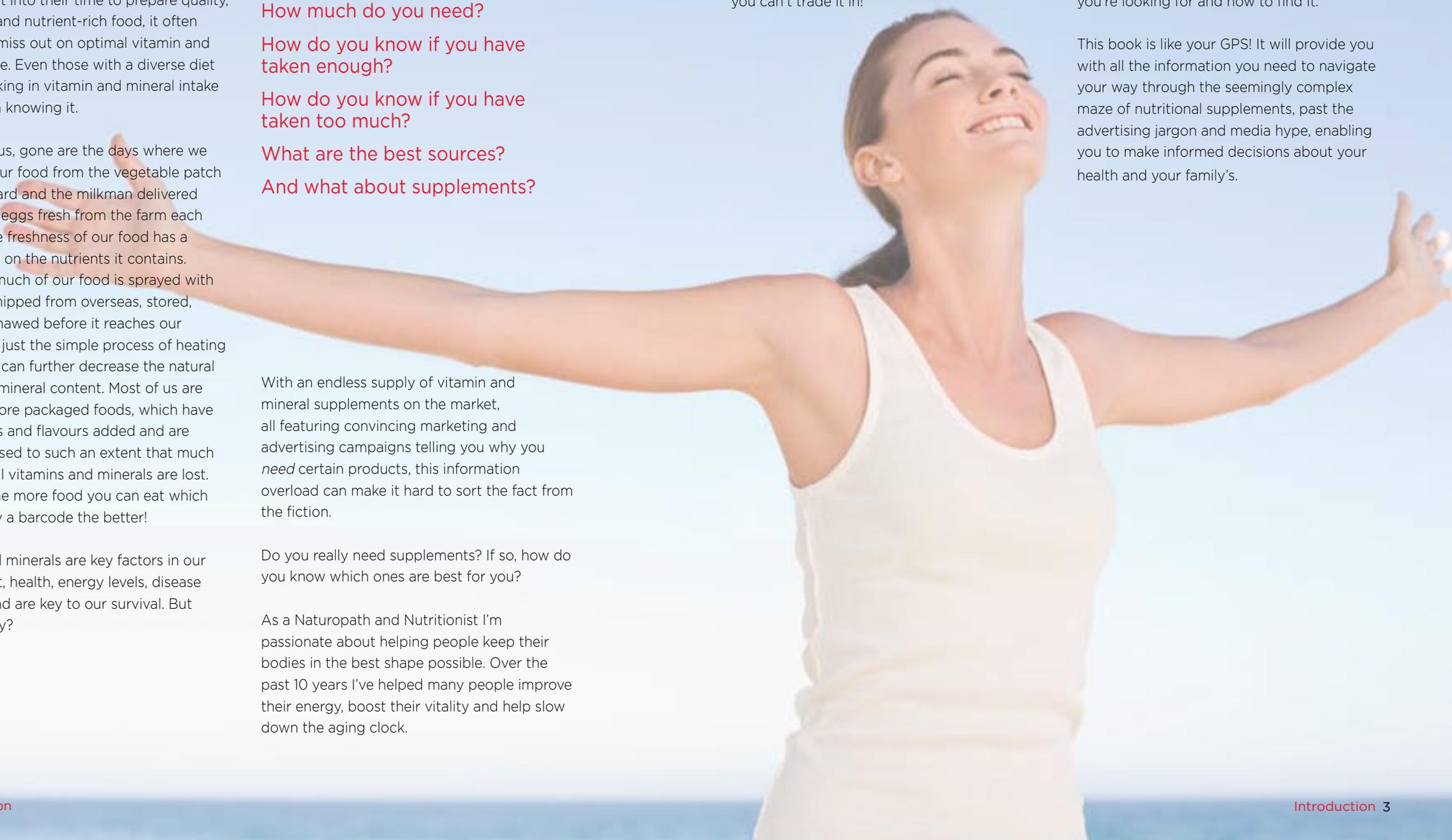
Do you really need supplements? If so, how do you know which ones are best for you?

As a Naturopath and Nutritionist I'm passionate about helping people keep their bodies in the best shape possible. Over the past 10 years I've helped many people improve their energy, boost their vitality and help slow down the aging clock.

In my experience, many of us look after our cars better than we do our bodies! We wouldn't put water in the petrol tank or let the oil run dry and expect our cars to run efficiently. However, we often pump poor quality fuel into our body yet still expect to be firing on all cylinders! The body you're born with is the only one you get! If it breaks down, you can't trade it in!

A good quality diet is paramount to maintaining tip-top shape, and vitamins, minerals and supplements can help bridge the gap where diet may be lacking, as well as providing extra therapeutic support. However as they say, 'oils ain't oils', so to get the best value from your supplement and the best support for your body, you need to know what you're looking for and how to find it.

This book is like your GPS! It will provide you with all the information you need to navigate your way through the seemingly complex maze of nutritional supplements, past the advertising jargon and media hype, enabling you to make informed decisions about your health and your family's.



Vitamins and Minerals

The Lowdown

What are vitamins and minerals?

Vitamins and minerals are substances needed by the body for healthy growth and function. Some of these nutrients are key links in the chain of vital chemical pathways, activating nerve impulses, energy production and muscle contraction; others are essential building blocks for the development and maintenance of strong, healthy bodies.

These vitamins, minerals and other trace elements are known as micronutrients. The substances forming the larger bulk of our food, the protein, fats and carbohydrates, are known as macronutrients. Together the macro and micronutrients are the fuel which keeps our body running efficiently. Just like a car, the macronutrients can be seen as the petrol in our engine, and the micronutrients are the sparkplug, the battery and the oil. We need healthy balanced doses of all these essential ingredients to keep the motor running!

How much do we need?

Our Recommended Daily Intake (RDI) is a guide to the amount of each nutrient we should be consuming. However, in many cases we may actually require well above our recommended daily intake, with stress, lack of sleep and exertion increasing our demand for these nutrients.

Individual requirements also vary greatly due to factors including genetic makeup, inherited disease risk factors, metabolism, lifestyle, physical and emotional stress, pregnancy, smoking and age.

This means some people require larger/lesser doses of certain nutrients than others. So it's important to know how to identify deficiency signs and symptoms, to determine when you may need more or less of certain nutrients and what the ideal intake really is for you.

Too much of a good thing

Although it's essential to ensure an adequate intake of vital nutrients, it's just as important that they are not being consumed in excess. For some nutrients the upper safe limit (UL) is quite close to the Recommended Daily Intake (RDI) so excess intake should be closely monitored. Some nutrients are 'fat soluble', meaning they are metabolised and stored in our fat stores. These are not excreted by the body and can build up to toxic levels if consumed in excess. Other nutrients are water soluble and are rapidly metabolised and excreted from the body daily, therefore consumption well above the RDI is safe and actually recommended during times of stress or illness when our demand increases. Being aware of your upper safe limit of certain nutrients can be just as important as ensuring you have enough.

Where to get them from

A good healthy diet can provide a broad spectrum of vital nutrients and is the optimal source of essential vitamins and minerals. However it's important to be aware of which foods are the best sources of which nutrients. Unless you are consuming a wide variety of foods, even seemingly healthy diets can be lacking.

Dietary intake is also not the only factor involved in maintaining optimal nutrient status. These nutrients must not only reach the stomach but must also be absorbed into the bloodstream for them to be effective. Absorption of nutrients can be affected by a variety of factors such as illness, medications, metabolism, digestive health and interaction with other substances. For example, any conditions affecting the gut such as diarrhoea, irritable bowel syndrome, inflammatory bowel disease and celiac disease can hinder nutrient

absorption. Common medications such as antacids, diuretics and the pill can also affect absorption. Even your daily coffee can hinder absorption of important nutrients while foods containing fibre can bind to some nutrients and affect uptake.

On the other hand, absorption of certain nutrients can be enhanced by the simultaneous consumption of other nutrients. Some vitamins and minerals are better absorbed via dietary sources, while others are actually best absorbed through supplements. By being informed and aware of these nutrient interactions and providing your body with the best sources to help ensure optimal absorption, you can quickly and easily maximise your nutrient status.

What about supplements?

Supplements will never and should never replace a balanced diet but appropriate nutritional supplementation can help bridge the gap between dietary consumption and the body's requirements. Taking a good multivitamin is like our insurance policy against deficiency and can help support optimal health, energy and vitality. Specific nutrients can also be used therapeutically to assist in the treatment of various diseases and conditions.

There is a vast array of nutritional supplements on the market, which supply a range of different forms of each nutrient. Some of these provide premium performance and lasting efficiency, while others offer little support and can even do more harm than good. It's important to know the difference. To ensure that you are getting lasting performance and the best value for money from your supplement, you need to know what to look for.

Terms Explained

RDI (Recommended Daily Intake)

The average daily dietary intake level that is sufficient to meet the nutrient requirements of nearly all (97-98%) healthy individuals in a particular life stage and gender group.

AI (Adequate Intake)

The average daily intake level, based on observed or experimentally-determined estimates of nutrient intake by a group (or groups) of apparently healthy people, that are assumed to be adequate. The AI is used when the RDI cannot be determined due to limited data.

UL (Upper Limit)

The UL is the highest average daily nutrient intake level likely to pose no adverse health effects to almost all individuals in the general population. As intake increases above the UL, the potential of adverse effects increases.

Antioxidant

Antioxidant refers to the ability of a nutrient to help protect our cells from oxidative damage caused by environmental exposure and the general effects of living and aging. While we're eating, digesting, exercising and even sleeping, metabolic functions occur which release free radicals into the system.

These free radicals are bullies! They love to attack and damage healthy cells. This leads to increased signs of cell damage, aging and can bring about changes in the cell which initiates cancer. Antioxidants are our cells' bodyguards! Once a free radical has been caught by an antioxidant, it can no longer cause harm and is simply excreted from the body. This is why antioxidants are commonly used in 'anti-aging' products and for cancer prevention.

All RDIs, AIs and ULs are based on Australian and New Zealand Guidelines.

Choosing a Multivitamin YOUR ABC CHECKLIST

When choosing a supplement, it's important to remember that all multivitamins aren't created equal. Don't be fooled by fancy words or enticing imagery on the front of the label. The truth about your supplement is always contained in the nutritional panel on the back. To help you decipher the nutritional panel of your supplement, use our quick checklist below.

A. Does it contain all the vitamins and minerals I need?

Check the nutritional panel to ensure your supplement contains all the important nutrients your body needs for optimum health as outlined in this book.

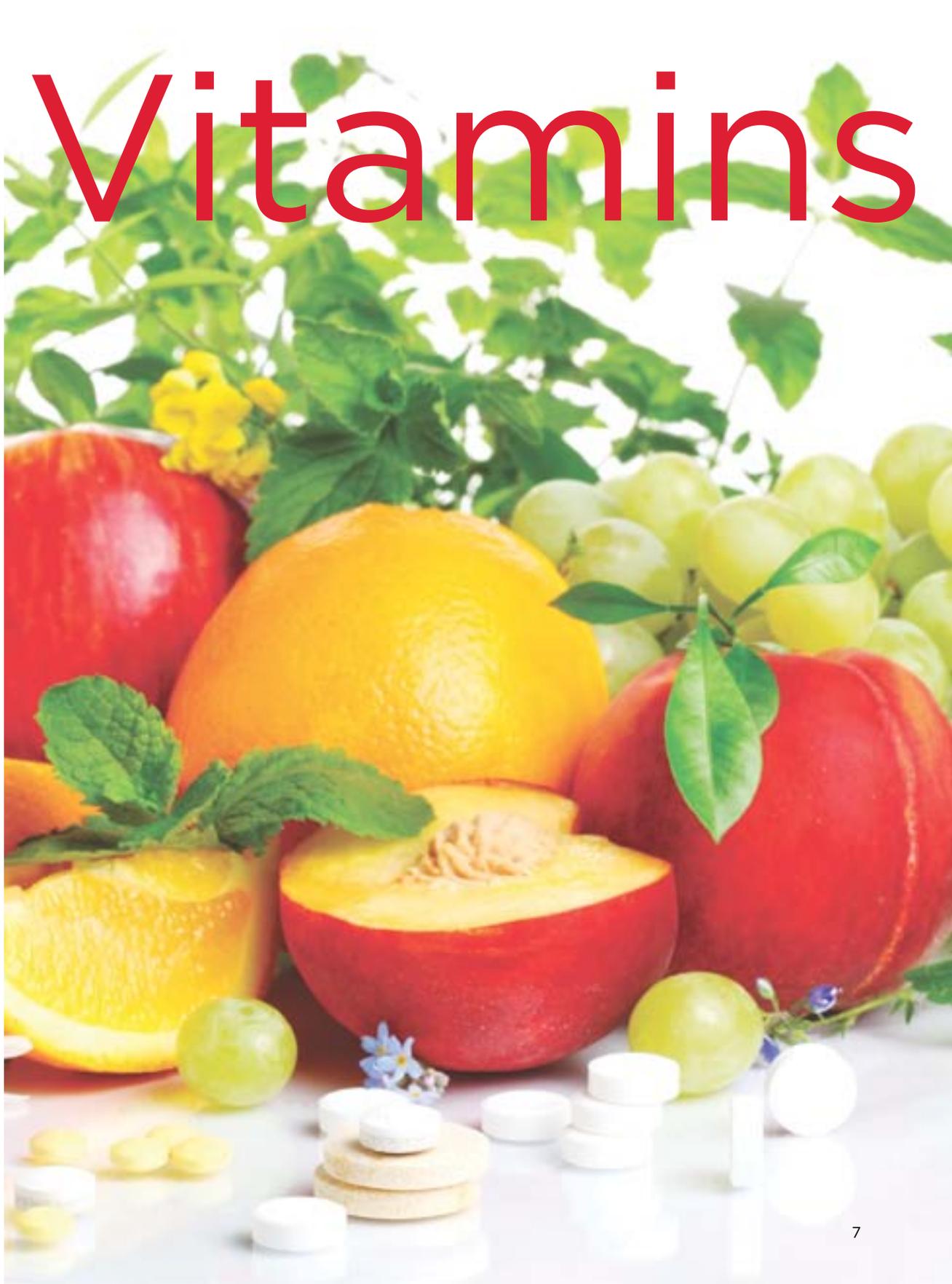
B. Are the vitamins and minerals provided in adequate doses?

Some multivitamins may contain A-Z of all your nutrients but are they in a sufficient dose to be of benefit? Check the doses as outlined in this book to ensure your multivitamin contains enough of the important nutrients you need.

C. Are these nutrients supplied in well absorbed forms?

Vitamins and minerals can be provided in a variety of forms, some which are better absorbed than others. To make sure your supplement is well absorbed always check the nutritional panel to confirm that the nutrients are being supplied in well absorbed forms as outlined in this book.

Vitamins



Vitamin

A

The Snapshot

Vitamin A is an important antioxidant vital for healthy growth and repair of body tissues and especially important for eye health. Vitamin A is particularly involved in night vision, so the old wives' tale that carrots will help you see in the dark does hold some merit!

Available in the form of retinol or via beta-carotene, the pure retinol form is only available from animal sources and is the most active form. Carotenes, in particular beta-carotene, are a plant source of vitamin A. Beta-carotene is converted to vitamin A by the body when it's needed, helping avoid risk of toxicity.

Unless otherwise advised by a health care professional the safest way to consume vitamin A is through beta-carotene supplementation.

Other names

Retinol, beta-carotene, carotenoids.

What does it do?

Vitamin A is an antioxidant helping to protect cells from damage and reducing the effects of aging, and is vital for the growth, function and repair of bones, teeth, mucous membranes, skin and all skeletal and soft tissue.

Healthy functioning of the immune system relies on adequate supply of vitamin A to stimulate antibody response and white blood cell activity to help treat and prevent viral and bacterial infections.

The active form of vitamin A is known as retinol, due to its involvement in the production of retina pigments in the eye, which assist with vision. Vitamin A is also beneficial to help treat and prevent macular degeneration, particularly in combination with nutrients vitamin C, vitamin E and zinc.

With its role in growth and development, adequate vitamin A is essential for conception, pregnancy and breastfeeding. However excess vitamin A, particularly in supplemental form, can lead to birth defects, therefore intake should be contained within recommended doses during pregnancy and taken in the form of beta-carotene.



How do I know if I'm deficient?

Vitamin A deficiency is prevalent in developing countries however it is relatively rare in developed nations. Deficiency can be related to lack of intake of vitamin A containing foods, however it is more commonly related to lack of absorption. Being a fat soluble nutrient, absorption can be hindered by reduced ability to metabolise fats, as commonly occurs in alcoholics or those with liver disease, or a chronically low fat diet.

Is a supplement recommended for me?

Most good multivitamins will contain vitamin A, either in the form of retinol or beta-carotene. You can also find vitamin A or beta-carotene in good antioxidant combinations. Vitamin A is beneficial in conjunction with vitamin C, vitamin E and zinc for the treatment and prevention of macular degeneration. Unless deficiency has been established, single vitamin A supplements are rarely needed.

Signs and Symptoms

MILD DEFICIENCY

- Impaired vision, particularly night vision
- Impaired immune function
- Dry skin

SEVERE DEFICIENCY

- Blindness
- Hypokeratosis (hard bumps around hair follicles)

Which supplement should I choose?

Vitamin A comes in a number of forms; retinol, retinal, retinoic acid or retinyl ester. Unless otherwise advised by a health care professional the safest way to consume vitamin A via supplements is through beta-carotene supplementation, so your body only absorbs the amount of vitamin A it requires.

When should I take my supplement?

As a fat soluble nutrient, vitamin A is best taken with food.

What foods does it come in?

	BETA-CAROTENE	
Liver	Pumpkin	Peas
Cheddar cheese	Green leafy vegetables	Squash
Cod liver oil	Mango	Broccoli
Crab	Carrots	Papaya
Carrots	Tomato	Nectarines
Egg yolk	Apricots	Spinach
Salmon liver oil	Peaches	Yellow vegetables
Milk	Collard greens	Peppers
Butter	Sweet potatoes	Cantaloupe
Halibut liver oil		Watermelon



What happens if I take too much?

Unlike water soluble nutrients, fat soluble nutrients such as vitamin A are stored by the body and as such are more difficult to excrete, therefore it can accumulate. Excess consumption is not recommended and can lead to toxicity, causing symptoms such as nausea, irritability, loss of appetite, blurry vision, vomiting, abdominal pain, headaches, weakness, drowsiness, dry skin, liver damage, jaundice and hair loss. Vitamin A toxicity has been associated with increased fractures and osteoporosis due to depletion of the vital bone nutrients D and K.

Vitamin A intake should be particularly monitored in pregnancy as excess intake can harm a growing foetus. It is, however, essential to maintain adequate vitamin A levels for healthy growth and development of the foetus. Beta-carotene is the safest source of vitamin A to consume during pregnancy to maintain healthy levels without risk of toxicity.

Matching it up

TAKE VITAMIN A WITH

- Vitamin A can have a positive effect on the absorption of iron and zinc
- Zinc is also required to help transport vitamin A to where it's needed in the body
- Vitamin A works well in combination with vitamin C, vitamin E and zinc for the treatment and prevention of macular degeneration

DON'T TAKE VITAMIN A WITH

- Vitamin A can compete with vitamin D and K for absorption
- Avoid vitamin A in the form of retinol during pregnancy

How much should I have?

IU (International units)

IU is often used when referring to measurements of fat soluble nutrients vitamin A, vitamin D, vitamin K or vitamin E. One International Unit (IU) of vitamin A is equivalent to 0.3mcg.

INFANTS	AI	UL
0 - 6 months	250mcg/day (833IU)	600mcg/day (2000IU)
7 - 12 months	430mcg/day (1433IU)	600mcg/day (2000IU)
TODDLERS	RDI	UL
1 - 3 years	300mcg/day (1000IU)	600mcg/day (2000IU)
4 - 8 years	400mcg/day (1333IU)	900mcg/day (3000IU)
CHILDREN	RDI	UL
Boys 9 - 13 years	600mcg/day (2000IU)	1700mcg/day (5666IU)
Boys 14 - 18 years	900mcg/day (3000IU)	2800mcg/day (9333IU)
Girls 9 - 13 years	600mcg/day (2000IU)	1700mcg/day (5666IU)
Girls 14 - 18 years	700mcg/day (2333IU)	2800mcg/day (9333IU)
ADULTS	RDI	UL
Men 19 - 70 + years	900mcg/day (3000IU)	3000mcg/day (10,000IU)
Women 19 - 70 + years	700mcg/day (2333IU)	3000mcg/day (10,000IU)
PREGNANCY	RDI	UL
14 - 18 years	700mcg/day (2333IU)	2800mcg/day (9333IU)
19 + years	800mcg/day (2666IU)	3000mcg/day (10,000IU)
LACTATION	RDI	UL
14 - 18 years	1100mcg/day (3666IU)	2800mcg/day (9333IU)
19 + years	1100mcg/day (3666IU)	3000mcg/day (10,000IU)

THERAPEUTIC ADULT DOSE

The RDI of vitamin A is generally adequate to carry out most functions in the body, however to provide antioxidant activity in times of increased exposure to environmental pollutants or stress, doses at the UL between 3000 - 4000mcg are recommended. Ideally this should be consumed in the form of beta-carotene. 6mg (6,000mcg) of beta-carotene is considered to be approximately equivalent to 1mg (1,000mcg) of vitamin A. This dose however is not recommended during pregnancy.

Vitamin B1

The Snapshot

Vitamin B1 is involved in many functions and processes in the body particularly the nervous system and the stress response as well as brain and memory function. It also forms part of our body's 'spark plug' and helps to convert our fuel (food) into active energy!

Thiamin is the only supplemental source of vitamin B1. Unless otherwise recommended by a health care professional, vitamin B1 is best taken in a supplement containing all the B complex vitamins.

Other names

Thiamin or thiamine

What does it do?

Vitamin B1 is involved in many body functions and processes, particularly in the nervous system. Adequate B1 is important to support nerve conduction and the stress response as well as brain function and memory.

Vitamin B1, as with other members of the B vitamin family, is important for carbohydrate metabolism and the conversion of carbohydrate into energy. Vitamin B1, in combination with all the B vitamins, is like the spark plug in a car. No matter how much fuel you put in, if the spark plug is not firing to get the fuel to where it needs to be, then you're not moving far! B vitamins help convert the fuel (food) we put into our body into active energy, which can then be used all over the body.

Vitamin B1 is also essential for the production of hydrochloric acid in the stomach, which is vital for healthy digestion as it kick-starts the fuel-to-energy conversion by breaking it down into smaller molecules, which are then metabolised and converted into active energy.

How do I know if I'm deficient?

Deficiency can be caused by a lack of vitamin B1 containing foods or diminished ability to absorb B1 from the diet. Very little vitamin B1 is actually stored in the body therefore consistent replenishment is essential as the body can become deplete within 14 days.



Signs and Symptoms

MILD DEFICIENCY

- Weight loss
- Fatigue
- Lack of concentration
- Mental confusion
- Irritability

SEVERE DEFICIENCY

- Severe eye fatigue
- Nervous system complications
- Muscle wasting
- Beriberi

The vitamin B1 deficiency disorder **Beriberi** affects the peripheral nervous system and/ or the cardiovascular system. If left untreated Beriberi can be fatal. This syndrome is mainly associated with severe malnutrition, gastrointestinal disorders, HIV/Aids and alcoholics where adequate B vitamin supplementation hasn't been administered.

What foods does it come in?

Pork	Sunflower seeds	Rye	Potato
Beef	Nuts	Wholegrain bread	Orange
Ham	Wheat bran	Wholegrains	Avocado
Lamb	Wheat germ	Peas	
Liver	Brewer's yeast	Corn	
Asparagus	Legumes	Broccoli	

How much should I have?

INFANTS	AI
0 - 6 months	0.2mg/day
7 - 12 months	0.3mg/day
TODDLERS	RDI
1 - 3 years	0.5mg/day
4 - 8 years	0.6mg/day
CHILDREN	RDI
Boys 9 - 13 years	0.9mg/day
Boys 14 - 18 years	1.2mg/day
Girls 9 - 13 years	0.9mg/day
Girls 14 - 18 years	1.1mg/day
ADULTS	RDI
Men 19 - 70 + years	1.2mg/day
Women 19 - 70 + years	1.1mg/day
PREGNANCY	RDI
14 - 18 years	1.4mg/day
LACTATION	RDI
14 + years	1.4mg/day



THERAPEUTIC ADULT DOSE

50 - 100mg/day is recommended to support the nervous system and energy production. 100mg - 300mg/day is used to treat deficiency and help repel mosquitoes! Therapeutic doses of vitamin B1 should be taken in conjunction with a B complex supplement to ensure that all the B vitamins are maintained in balance.

There is no recommended upper limit (UL) for vitamin B1.

Is a supplement recommended for me?

Vitamin B1 supplements are often recommended for the elderly to help support memory and brain function. Supplementation is also recommended for recovering alcoholics. Vitamin B1 can be useful in combination with the other B complex vitamins for those lacking energy and/or under stress. B1 within a good B complex is also good for those taking the contraceptive pill.



Which supplement should I choose?

Thiamine (spelt thiamine or thiamin) is the only supplemental source of vitamin B1. For general health, stress and energy, vitamin B1 is best taken in a supplement containing all the B complex vitamins.

When should I take my supplement?

As with all B vitamins, vitamin B1 is best taken with food in the morning to avoid possible sleep disturbance at night.

What happens if I take too much?

Vitamin B1 has been shown to be safe even in high doses. No clear upper safe limit has been established however large doses may cause dermatitis, drowsiness or muscle relaxation in some people.

Matching it up

TAKE VITAMIN B1 WITH

- Diuretics can increase excretion of B1, increasing the body's demand
- The contraceptive pill can deplete the body of B1 so a vitamin B supplement is a good support for those on the pill
- Excess alcohol consumption depletes the body of vitamin B1
- B1 should be taken with a B complex supplement to ensure adequate balance

DON'T TAKE VITAMIN B1 WITH

- Antacids can reduce the body's ability to absorb B1
- Thiaminases, found in raw fish, shellfish and high sulfate foods can degrade B1, making it less available for absorption
- The flavonoids quercetin and rutin may hinder absorption of B1
- Single B1 supplements should not be taken long term unless combined with a B complex



Vitamin

B2

The Snapshot

As with all B vitamins, vitamin B2 is involved in the conversion of food to energy forming part of our body's 'spark plug'! It also plays a key role in the nervous system and stress response as well as aiding in hormone production and maintenance of healthy blood cells.

Vitamin B2 is known for its yellow-orange colour and because of this is often used as a natural food colouring (food additive number E101).

As a supplement, vitamin B2 should be taken in conjunction with a B complex containing all the B vitamins to ensure balance is maintained. But be warned, the metabolism of B2 will turn urine bright yellow! No need to panic, this discoloration is due to the natural metabolites being excreted and does not mean that B vitamins are being lost through urine.

Other names

Riboflavin

What does it do?

Vitamin B2 is essential for optimal body functioning at a cellular level. It plays a key role in energy metabolism by helping the body produce energy from the macronutrients protein, fat and carbohydrate.

Vitamin B2 supports healthy blood cells and is involved in iron metabolism, which further supports energy production. It's required for healthy development and function of the brain and nervous system and is involved in adrenal gland function and stress response.

Vitamin B2 is also involved in hormone production and regulation via its adrenal gland activity.

How do I know if I'm deficient?

Mild deficiency is relatively common if dietary sources are lacking as B2 is quickly lost from the body and thus requires constant replenishment. Deficiency of B2 is often accompanied by deficiencies of other B vitamins and can be quickly and easily corrected with supplementation or a few extra serves of your favourite vitamin B2 containing foods!

Signs and Symptoms

MILD DEFICIENCY

- Cracks in the corners of the mouth
- Dry scaly patches on the scalp

SEVERE DEFICIENCY

- None known

What foods does it come in?

Milk	Beef	Spinach	Whole grains
Yoghurt	Tuna	Eggs	Currants
Cheese	Organ meats	Wholegrain bread	Sprouts
Pork	Broccoli	Wholegrain cereal	Yeast

Is a supplement recommended for me?

Supplementation is recommended for those with cracks in the corners of the mouth. It is also recommended in combination with the other B complex vitamins for those lacking energy and under stress.

Which supplement should I choose?

Riboflavin is the only supplemental source of vitamin B2. Unless otherwise recommended by a health care professional, vitamin B2 is best taken in a supplement containing all the B complex vitamins.





Complete copy of the *Vitamins Guide* only \$11.99!

During each life stage we have different requirements for various nutrients, particularly during important developmental stages such as conception, pregnancy, teenage years, menopause and the list goes on. The *Vitamins Guide* will not only teach you how to best manage all these vital life stages to maximize energy, vitality and optimal development, but will enable you to make informed decisions about proper nutrition and supplementation to get the best value for your money!

For your complete copy of the *Vitamins Guide*, including all your essential vitamins, minerals and nutritional antioxidants to help you and your family live longer, happier and healthier visit

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