

# Vegetarian Information Pack

## Is the Vegetarian Diet Adequate?

A significant number of scientific studies have shown the health benefits of a diet based on plant foods. In populations that follow the vegetarian lifestyle, there tends to be less heart disease, cancer, obesity, osteoporosis and other chronic degenerative diseases.

A well-planned vegetarian diet emphasising a variety of plant products including milk and eggs (lacto-ovo-vegetarian) satisfies all our nutritional needs. Even a vegan diet that contains no milk, eggs or meat can be nutritionally adequate if carefully planned and Vitamin B12 is supplemented. Particular care should be taken when planning vegan meals for those whose nutritional needs are high, such as infants and children, pregnant and lactating women and those recovering from illness. In these situations a Dietitian may be consulted for assistance in planning balanced nutritious meals.



### Protein

For most vegetarians, obtaining enough protein is not a problem. Protein is found in many plant foods as well as animal foods. The vegan who includes no animal foods can get sufficient protein from plant foods if a variety is consumed throughout the day and daily energy needs are met.

### Recommended Daily Protein Intake:

Men	19-70 years	-	64 grams
	70+ years	-	81 grams
Women	19-70 years	-	46 grams
	70+ years	-	57 grams
Pregnant women (2nd and 3rd trimester)			
	14-18 years	-	58 grams
	19-50 years	-	60 grams
Lactating women			
	14-18 years	-	63 grams
	19-50 years	-	67 grams
Children	1-8 years	-	14-20 grams
Boys	9-13 years	-	40 grams
	14-18 years	-	65 grams
Girls	9-13 years	-	35 grams
	14-18 years	-	45 grams

**Sydney Adventist  
Hospital**  
185 Fox Valley Road  
Wahroonga  
2076

**Phone:** 9487 9581  
**Fax:** 9487 9583  
**Email:**  
SanNutrition@sah.org.au

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Protein Sources	Per serve (Grams)
250mls milk/soy milk	9
2 tblsp skim milk powder	6
1 egg	6
1 slice cheese	8
1/2 cup soybeans	11
1/2 cup lentils	5
1/2 cup baked beans	4
1/2 cup cottage cheese	18
1 tblsp nuts butters	5
1 carton fruit yoghurt	10
1 carton plain yoghurt	11
1 cup rolled oats (cooked)	4
1/2 cup cooked pasta	3
100g tofu	9
20 almonds	4
<b>Meat Alternatives:</b>	
Nutmeat (1 x 10mm slice)	12
Nutolene (1 x 10mm slice)	6
Casserole Mince (1/3 can)	18.1
Tenderbits (1/3 can)	20.6
Vegecuts (2 slices)	12



### Vitamin B12

A deficiency of vitamin B12 may occur due to a lack of the vitamin in the diet. As Vitamin B12 is found only in animal products, a diet that includes milk and eggs (lacto-ovo-vegetarian) is unlikely to be deficient. For the vegan, particularly vegan children or vegan mothers who are breastfeeding, a reliable source of Vitamin B12 must be supplied, either by foods that have been fortified with Vitamin B12 (see below), a Vitamin B12 tablet such as Blackmore's Naturetime B Complex which is free of animal products or B12 injections.

Plant products such as tempeh, spirulina, mushroom and brewer's yeast contain only *inactive* analogues of B12 and in fact block the absorption of true Vitamin B12. These are therefore inappropriate sources of Vitamin B12.

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A deficiency of Vitamin B12 can occur because the vitamin is not being absorbed despite there being adequate amounts in the diet. This can lead to a condition called pernicious anaemia and so injections of vitamin B12 are essential.

Vitamin B12 sources	Per serve (ug)
<b>Natural sources</b>	
250ml milk	0.7
1 large egg	0.8
1 slice cheese	0.6
2 tblsp skim milk powder	0.8
<b>Fortified with B12</b>	
250ml soy drink (So-Good)	0.7
250ml Up and Go Liquid Breakfast	0.5
<b>Today's Gourmet (Sanitarium)</b>	
Crispy Nuggets (3 per serve)	0.7
Seafarer Patties (2 per serve)	0.6
Country Burger (1 per serve)	0.6
Potato Pockets (2 per serve)	0.8
<b>Non Vegetarian Sources</b>	
Lamb, lean beef (100g)	2.5
Chicken, no skin (100g)	0.3
Tuna/Salmon (100g)	3.0
Fish (100g)	1.0



### Iron

Iron is needed in the red blood cells to form haemoglobin which carries oxygen throughout the body. It is also involved in the production of energy. Therefore a deficiency of iron leaves us feeling tired and washed-out.

Iron is present in foods in two main forms, haem iron and non-haem iron. Haem iron is found in meat and is readily absorbed by the body. Non-haem iron is found in cereals, fruits, vegetables and eggs, and requires Vitamin C to aid in absorption.

It is important therefore to include a food rich in Vitamin C (such as tomato, citrus fruits, kiwi fruit, capsicum) with each meal. Since a vegetarian diet is typically high in Vitamin C rich foods, adequate amounts of iron are generally absorbed.

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How much iron you absorb depends on how much you need. If you are lacking iron, you will absorb more. Thus, during pregnancy when needs increase, the amount you absorb almost doubles.

Emphasising iron-rich foods in the diet is especially important during periods of rapid growth. For example, those whose needs are greatest are women of child-bearing age, infants, children and adolescent girls. Women who are constantly dieting and restricting their food intake tend not to get enough iron. The recommended daily intake is 8 mg for men, 10-18 mg for women and lactating mothers, 8-11 mg for infants and children and 22-28 mg for pregnant women.

Sources of Iron	Per serve (mg)
250 ml soy drink (So-Good)	1.3
1 egg	1.0
1/2 cup soybeans	1.4
1/2 cup baked beans/lentils	1.5
20 almonds	0.8
2 slices wholegrain bread	1.3
5-6 prunes	0.6
6 dried apricot halves	0.9
2 wholewheat breakfast biscuits	2.6
1 cup ready to eat cereals	1.3-2.5
1 cup cooked rolled oats	1.6
1/2 cup green leafy vegetables	1.4-2.5
1 stalk broccoli	1.0

### Zinc



As with iron, the more zinc we need, the more we will absorb. However, phytic acid in wholegrain husks, such as unprocessed bran, may interfere with the absorption of zinc, as well as calcium and iron.

Problems only arise, however, when excessive amounts of unprocessed bran are eaten each day.

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## Is the Vegetarian Diet Adequate?

The Recommended Daily Intake for zinc is 8-16 mg for men and women; 10-12 mg for pregnant women; 11-12 mg for lactating women and 6-13 mg for boys and girls.

Sources of Zinc	Per Serve (mg)
250ml milk	1.0
250ml soy milk	0.5
1 egg	0.6
1 slice cheese	1.1
1 carton plain yoghurt	1.2
1 carton fruit carton	1.0
1/2 cup legumes	0.7
2 slices wholemeal bread	0.8
1 cup brown rice	1.4
1 cup cooked rolled oats	0.7
60g muesli	1.6
8 brazil nuts	1.2
20 almonds	0.8
1 tblsp sunflower seeds	1.0



### Calcium

Calcium is a mineral which is important in building strong teeth and bones. The body also has some calcium in the blood to maintain the proper functioning of the nervous system and muscles. The amount of calcium we have in our blood varies very little. If there is a change, the body withdraws calcium from the bones to make up for the change. Thus the bones act as a reservoir and can become depleted if our dietary intake of calcium is poor over a period of time.

We all lose some calcium from our bones as we age, but women tend to lose twice as much as men. Around menopause the loss of calcium increases. Osteoporosis can result if insufficient calcium was built up in our bones during early adult life.

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For most people the calcium we obtain comes from dairy products such as milk and cheese. If, however, these are not included in the diet, adequate calcium can be obtained from plant foods. Good sources of calcium for the vegan include fortified soy drink, tofu made with calcium, dark-green leafy vegetables, nuts, seeds, legumes and whole grains. Not all soy drinks have calcium added - be sure to read the label to ensure that the soy drink you choose is fortified.

### Recommended Daily Calcium Intake:

Pre-menopausal women	-	1000 mg
Post-menopausal women	-	1300 mg
During pregnancy	-	1000-1300 mg
During lactation	-	1000-1300 mg
Men	-	1000 mg
Girls 9-13 years	-	1000-1300 mg
Girls 14-18 years	-	1300 mg
Boys 9-13 years	-	1000 mg

Sources of Calcium	Per Serve (mg)
250ml milk	290
250ml soy milk	290
2 tblsp skim milk powder	195
1 carton fruit yoghurt	350
1 carton plain yoghurt	390
1 slice cheese	190-230
1/2 cup cottage cheese	80
100g tofu (fortified)	500
1/2 cup cooked soybeans	42
1 stalk broccoli	30
1/2 cup cooked bok choy	60
1/2 cup cooked choy sum	70
1/2 cup cooked gaii choy	130
1 tblsp tahini	83
20 almonds	50
15-20 walnut halves	27
30g brazil nuts	45
1 slice bread	25
2 dried figs	60

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## 5 Food Groups for Vegetarians

Food Group	Men	Women	Pregnant Women	Lactating Women	4-7 yr old	8-11 yr old	12-18 yr old
<b>Cereals</b>	6-12	6-9	7-9	8-9	4	6	7-11
<b>Vegetables</b>	5	6	5-6	5-7	2	3	4
<b>Fruit</b>	2-4	2-4	4	4	1-2	1-2	2-4
<b>Protein Foods</b>	2-3	2-3	3-4	4-6	1	2	2-3
<b>Dairy /Soy</b>	2-3	2-3	2-3	2-3	2	2	2-3

Food Group	1 serve is equivalent to:
Cereals	<ul style="list-style-type: none"> <li>• ½ cup cooked rice, pasta, cous cous, porridge, buckwheat</li> <li>• ¾ cup breakfast cereal</li> <li>• 1 slice of bread</li> </ul>
Vegetables	<ul style="list-style-type: none"> <li>• 1 cup salad vegetables</li> <li>• ½ cup cooked vegetables</li> </ul>
Fruit	<ul style="list-style-type: none"> <li>• 1 medium fruit or 3 small fruits e.g. plums</li> <li>• ½ cup canned fruit</li> <li>• 4-5 pieces dried fruit</li> </ul>
Protein Foods	<ul style="list-style-type: none"> <li>• ¾ cup cooked legumes or 100g tempeh or 150g tofu</li> <li>• 25g nuts / seeds or 1 tblsp peanut butter / tahini or 2 tblsp hummus</li> </ul>
Dairy/Soy	<ul style="list-style-type: none"> <li>• 250ml milk / soy milk (fortified with calcium), custard, yoghurt or 30g cheese</li> </ul>
Fats	<ul style="list-style-type: none"> <li>• Small amounts of fat are needed in the diet. This may come from nuts, seeds, nut butters, tahini, avocado or oils such as olive oil. These fats are preferred to saturated fats and trans fats found in dairy, coconut cream, palm oil, etc.</li> </ul>

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## Protein Alternatives—Legumes

Legumes include dried peas, beans and lentils. They are a cheap and nutritious alternative to meat, and are a vital part of a well-balanced vegetarian diet. They are also a valuable source of protein and soluble fibre, and contain no cholesterol. Apart from soy beans, they are low in fat. All legumes provide iron, zinc, calcium and B group vitamins. However, because preparation time is longer than that for meat and vegetables, they are often overlooked and undercooked. This leaflet is designed to introduce you to the use of these nutritious foods, so that you can include them in your diet on a regular basis.



**Buying:** Buy legumes from your supermarket, either dried or canned.

- Dried varieties are cheaper
- Use of canned beans reduces preparation time - choose "no added salt" varieties - or rinse lightly under running water to reduce sodium level

**Soaking:** Most pulses (except split peas and lentils) need to be soaked before cooking. There are two methods of soaking:

- Slow soak - place in a bowl and add at least three cups of cold water for each cup of beans. Put aside overnight or for several hours.
- Quick soak - place washed pulses in saucepan, add cold water as above. Bring to the boil and boil for five minutes. Remove from heat, cover and set aside for 1 1/2 hours.

**Cooking:** Beans take different times to cook, depending on their size and variety. See attached chart.

**Freezing:** Cooked beans freeze well. To save time, cook a large batch of beans and freeze in 1-2 cup portions, ready to use in soups, loaves or patties, curries and casseroles.

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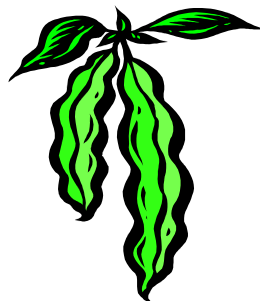
## Protein Alternatives—Legumes

**Pressure cooking:** This method can reduce cooking time but care is needed as certain beans, for instance, lima beans, black beans and soy beans, may foam and clog the vent. A general guide would be to reduce water to 2 cups and cooking time by half. Soak beans as above.

Type	Amount	Water	Cooking Time
Soy beans	1 cup	4 cups	2-3 hours
Chickpeas	1 cup	4 cups	2-3 hours
Lentils	1 cup	3 cups	25-35 minutes
Split peas	1 cup	3 cups	25-35 minutes
Other beans:			
Kidney, red	1 cup	3-4 cups	1-2 hours
Black beans	1 cup	3-4 cups	Depending on type

### What about `wind'?

Many people have problems with flatulence after eating pulses. This can be reduced by discarding the soaking water, and cooking in fresh water.



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## Vegetarian Meal/Snack Ideas

In order to ensure an adequate intake of nutrients, it is necessary to eat a variety of foods each day. Below are some ideas to help you plan quick and nutritious meals. Mix and match the following ideas to suits your needs.

### Breakfast

- Fresh paw paw and a toasted muffin with cottage cheese and pineapple
- Cereal with wheat germ, low fat milk and banana and wholemeal toast and a scrape of margarine
- Baked beans on wholegrain toast
- Rolled oats with dates or sultanas, soy drink or low fat milk and an orange juice
- Fruit toast with nut butter or tahini spread and rockmelon smoothie
- Grilled tomato halves topped with ricotta cheese with a toasted crumpet
- Fresh fruit salad and yoghurt with wholemeal toast and peanut butter
- Light and Tasty Cereal / Weetbix with soy drink or low fat milk and stewed fruit / fresh strawberries
- Fresh orange and toast with ricotta cheese topped with sliced apple & cinnamon
- Dried fruit (apricots/raisins) and nuts (cashews/almonds/walnuts) with a banana smoothie



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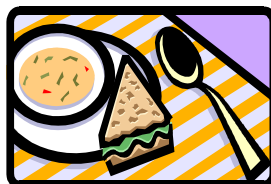
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**Fax:** 9487 9583  
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SanNutrition@sah.org.au

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## Vegetarian Meal/Snack Ideas

### Lunch

- Vegetable and bean soup with wholemeal roll and fresh fruit
- Pita bread stuffed with sliced tomato, lettuce, grated carrot, sprouts, avocado, baked beans or diced Nutolene and a banana smoothie
- Open wholegrain sandwich spread with cottage cheese, topped with sliced tomato, sprouts, chopped olives and an orange juice
- Mexican tortilla (burrito) filled with spicy beans, chopped lettuce and tomato, grated low fat cheese and salsa with a soy drink / low fat milk
- Baked beans on toast with grilled tomato and fresh fruit
- Spicy baked bean sandwich with grated cheese and fresh strawberries with yoghurt
- Vegetarian hot dog on a wholemeal bun, with sautéed onion and sauce and dried fruit and nut mix
- Fresh garden salad with pasta salad or bean mix or leftover savoury with crusty wholemeal bread and tahini spread



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### Dinner

- Bean and vegetable casserole, brown rice and fresh fruit salad
- Jacket potato topped with ricotta or cottage cheese and fresh garden salad
- Pasta with tomato based sauce and parmesan cheese and steamed vegetables and/or fresh garden salad
- Potato stacks - cooked potato (diced), topped with bean sauce (three bean-mix plus spices), shredded lettuce, diced tomatoes, diced capsicum, diced cucumber, grated cheese, chopped olives, guacamole (avocado) and salsa
- Stir-fry tofu and vegetables (onion, garlic, ginger, capsicum, broccoli, Chinese cabbage, snow peas, fresh asparagus) and noodles or steamed rice
- Vegetarian patty with mashed potato, steamed carrot, broccoli or curly kale and a wholemeal dinner roll
- Lentil and vegetable soup, wholemeal crackers / roll and fresh fruit
- Vegetable lasagne served with steamed vegetables (corn on the cob, fresh green beans, baked pumpkin) or fresh garden salad and yoghurt and stewed fruit
- Vegetarian pizza (top with any of the following: diced capsicum, mushrooms, onions, olives, pineapple, steamed asparagus or broccoli, and grated low fat cheese) and green salad



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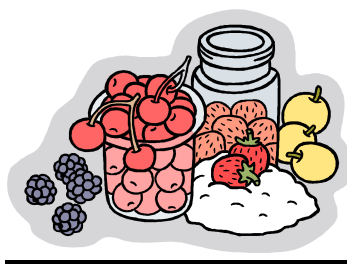
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### Healthy Snacks

- Fresh fruit
- Yoghurt
- Banana / fruit smoothie
- Dried fruit and nuts
- Cereal with dried fruit and soy / low fat milk
- Celery sticks with peanut butter
- Quesidilla (tortilla with salsa and melted low fat cheese)
- Instant noodle soup with carrot sticks
- Fruit toast with nut butter spread or fruit spread
- Crumpet / English muffin / Fruit muffin



### FURTHER INFORMATION

Our outpatient Dietitian is located within the hospital and can also help you with maintaining a healthy weight (increasing or decreasing) and provide a full dietary analysis to measure dietary adequacy. Further information is available on feeding a vegetarian or vegan infant/child. Please call to make an appointment (02) 9487 9581.

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