



Is a vegetarian diet adequate? Concepts and Controversies in Plant-based Nutrition

Meeting the Nutrient Reference Values on a Vegetarian Diet: *Sample Vegetarian Meal Plans and Analyses*

An Australian first, scientific literature review of vegetarian diets was recently conducted by a group of Accredited Practising Dietitians (APDs) and university academics with expertise in the area of vegetarian nutrition. As a result, a 40-page peer-reviewed Supplement to the Medical Journal of Australia was published in June 2012.

From a practical perspective, the 'Meeting the Nutrient Reference Values on a Vegetarian Diet' paper looks at meeting nutritional requirements in a suite of meal plans which cover both males and females and different life stages. Sample single-day lacto-ovo vegetarian meal plans were developed to meet the Nutrient Reference Values, including increased requirements for iron and zinc at 180% RDI and 150% RDI respectively for vegetarians

This document contains the meal plans and individual analyses, and may be used as a tool in clinical practice. For a discussion on these results, please refer to the full NRV paper available on the **MJA OPEN** website (<https://www.mja.com.au/open/2012/1/2/meeting-nutrient-reference-values-vegetarian-diet>).



Abbreviations and Footnotes Associated with Meal Plans and Analyses

ALA = α -linolenic acid.

CHO = carbohydrate.

LC n-3 PUFA = long-chain omega-3 polyunsaturated fatty acids.

MUFA = monounsaturated fatty acids.

NRV = Nutrient Reference Value.

PAL = Physical activity level.

PUFA = polyunsaturated fatty acids.

RDI = recommended dietary intake.

SFA = saturated fatty acids.

UL = upper level of intake.

y = years.

* NRVs for Australia and New Zealand (RDI and adequate intake).

† Energy value range is applicable to both male and female for the youngest in this NRV age group (males being the higher and females being the lower value).
If additional energy is required in an individual diet for an older child, add discretionary kJ from foods including avocado, dried fruit, fresh juice, peanut butter and olive oil spread. Nutritional requirements are still met.

^ Energy value range is applicable to both male and female in this NRV age group (males being the higher and females being the lower value).
If additional energy is required in an individual diet, add discretionary kJ. Nutritional requirements are still met.

Energy value is applicable to the youngest in this age group. If additional energy is required in an individual diet, add discretionary kJ.
Nutritional requirements are still met.

‡ The energy in this meal plan meets the requirements for a lower PAL of 1.6 (light activity), associated with an estimated energy requirement of 8900–9200 kJ.
If additional energy is required in an individual diet, add discretionary kJ. Nutritional requirements are still met.

§ Energy range is provided to be applicable to the large age range in this NRV group. If additional energy is required, add discretionary kJ. Nutritional requirements are still met.

¶ Acceptable macronutrient distribution range.

** This sample meal plan did not meet the extended RDI for iron (providing 180% of RDI for iron during pregnancy results in a level that is above the UL).

Ref: NHMRC, *Nutrient Reference Values for Australia and New Zealand--Including Recommended Dietary Intakes* (2006). 2006, Australian Government: Canberra.

Nutrient Analysis software: FoodWorks Professional, version 5 2007 (Xyris Software, Australia), utilising AusNut 1999 food composition database.



NRV age group: Children 1-3

1 year-old (15 month old). PAL 1.6 (light activity)

Reference weight 10.3kg (girls), 11.1kg (boys)

Breakfast:

2 fortified whole-wheat biscuits with ½ cup fortified soy milk, a sprinkle of chia seeds (<5g) and ¼ cup canned peaches (in natural juice, drained).

Snack:

Banana smoothie (made with ½ banana and ½ cup fortified soy milk).

Lunch:

Wholemeal sandwich with ½ cup baked beans.

Snack:

1 slice wholemeal bread (no crust) with tahini.

Dinner:

Tofu & vegetable casserole with ½ cup cooked brown rice (made with 60g tofu).

Add water as desired.

Nutrient		Meal Plan Provides	NRV/Goal*
Energy (kJ)		3,800	3,500 – 3,800 [^]
Protein	(g)	41	14
	% total energy	18%	15-25% [¶]
CHO	(g)	122	-
	% total energy	55%	45-65% [¶]
Fat	(g)	22	-
	% total energy	22%	20-35% [¶]
SFA	(g)	3	-
	% total energy	2%	<10% [¶]
	% total fat	13%	-
PUFA	(g)	13	-
	% total fat	59%	-
MUFA	(g)	6	-
	% total fat	27%	-
ALA (g)		0.7	0.5
LC n-3 [EPA/DHA/DPA](mg)		-	40
Fibre (g)		25	14
Iron (mg)		16.5	16.2 (180% RDI)
Zinc (mg)		4.8	4.5 (150% RDI)
Vitamin B12 (µg)		1.0	0.9
Calcium (mg)		659	500 (UL 2,500)
Folate (µg)		336	150 (UL 300)
Vitamin A equivalents (µg)		442	300 (UL 600)
Vitamin E (mg)		30	5 (UL 70)
Vitamin D (µg)		<1	5
Vitamin C (mg)		46	35 (No UL)
Sodium (mg)		771	200-400 (UL 1,000)



NRV age group: Children 1-3

2 year-old PAL 1.6 (light activity)

Reference weight 12.7kg (boys) and 12.1kg (girls)

Breakfast:

2 fortified whole-wheat biscuits with ½ cup fortified soy milk, a sprinkle of chia seeds (5g) and ¼ cup canned peaches (in light syrup).

Snack:

Banana smoothie (made with ½ cup fortified soy milk and ½ banana).

Lunch:

Wholemeal sandwich with ½ cup baked beans and avocado.

Snack:

2 Rye biscuits with tahini and honey.

Dinner:

Lentil, tofu & vegetable casserole with ¼ cup cooked brown rice (made with ½ cup cooked lentils, 30g tofu).

Add water as desired.

Nutrient		Meal Plan Provides	NRV/Goal*
Energy (kJ)		4,200	4,200 – 4,400 [^]
Protein	(g)	45	14
	% total energy	18%	15-25% [¶]
CHO	(g)	135	-
	% total energy	54%	45-65% [¶]
Fat	(g)	28	-
	% total energy	24%	20-35% [¶]
SFA	(g)	5	-
	% total energy	4%	<10% [¶]
	% total fat	18%	-
PUFA	(g)	14	-
	% total fat	50%	-
MUFA	(g)	9	-
	% total fat	32%	-
ALA (g)		1.4	0.5
LC n-3 [EPA/DHA/DPA](mg)		-	40
Fibre (g)		30	14
Iron (mg)		17.9	16.2 (180% RDI)
Zinc (mg)		4.9	4.5 (150% RDI)
Vitamin B12 (µg)		1.0	0.9
Calcium (mg)		568	500 (UL 2,500)
Folate (µg)		377	150 (UL 300)
Vitamin A equivalents (µg)		406	300 (UL 600)
Vitamin E (mg)		30	5 (UL 70)
Vitamin D (µg)		<1	5
Vitamin C (mg)		39	35 (No UL)
Sodium (mg)		727	200-400 (UL 1,000)



NRV age group: Children 1-3

3 year-old PAL 1.6 (light activity)

Reference weight 14.3kg (boys) and 13.9kg (girls)

Reference height 0.95m (boys) and 0.94m (girls)

Breakfast:

2 fortified whole-wheat biscuits with ½ cup regular soy milk, and ¼ cup canned peaches (in light syrup) ½ cup apple juice.

Snack:

Chocolate banana smoothie (made with 1 small banana, 2 tsp fortified malted chocolate powder, ¾ cup regular soy milk).

Lunch:

Egg, tomato & avocado sandwich on iron-fortified wholemeal bread with margarine.

Snack:

Peanut butter on 2 rice cakes.

Dinner:

Lentil, tofu & vegetable casserole (broccoli and sweet potato) with ¼ cup cooked brown rice (made with ½ cup cooked lentils, 30g tofu).

Snack: 100g tub of vanilla yoghurt.

Add water as desired.

Nutrient		Meal Plan Provides	NRV/Goal*
Energy (kJ)		5,400	5,300 – 5,600 [^]
Protein	(g)	56	14
	% total energy	18%	15-25% [¶]
CHO	(g)	159	-
	% total energy	50%	45-65% [¶]
Fat	(g)	44	-
	% total energy	30%	20-35% [¶]
SFA	(g)	10	-
	% total energy	8%	<10% [¶]
	% total fat	25%	-
PUFA	(g)	15	-
	% total fat	34%	-
MUFA	(g)	15	-
	% total fat	34%	-
ALA (g)		0.5	0.5
LC n-3 [EPA/DHA/DPA](mg)		-	40
Fibre (g)		21	14
Iron (mg)		17.2	16.2 (180% RDI)
Zinc (mg)		5.6	4.5 (150% RDI)
Vitamin B12 (µg)		2.0	0.9
Calcium (mg)		753	500 (UL 2,500)
Folate (µg)		384	150 (UL 300)
Vitamin A equivalent (µg)		596	300 (UL 600)
Vitamin E (mg)		5	5 (UL 70)
Vitamin D (µg)		<1	5
Vitamin C (mg)		57	35 (No UL)
Sodium (mg)		725	200-400 (UL 1,000)



NRV age group: Children 4-8

4 year-old PAL 1.6 (light activity)

Reference weight 16.2kg (boys) and 15.8kg (girls)

Reference height 1.02m (boys) and 1.01m (girls)

Breakfast:
2 fortified whole-wheat biscuits, ½ cup low fat fortified soy milk, a sprinkle of chia seeds (5g).
1 iron-fortified wholemeal toast with chopped banana.

Snack:
¾ cup low fat fortified soy milk and strawberries (2).

Lunch:
Salad sandwich with tahini & tabouli (2 slices wholemeal iron-fortified bread).

Snack:
2 rye and sesame crispbread, one spread with tahini, one with Marmite.

Dinner:
Honey & soy brown fried rice (with 40g tofu, just under 1 cup vegetables and cooked brown rice).

Snack:
100g low fat plain yoghurt.

Add water as desired.

Nutrient		Meal Plan Provides	NRV/Goal*
Energy (kJ)		5,800	5,500 – 5,900†
Protein	(g)	55	20
	% total energy	16%	15-25% [¶]
CHO	(g)	186	-
	% total energy	55%	45-65% [¶]
Fat	(g)	38	-
	% total energy	24%	20-35% [¶]
SFA	(g)	8	-
	% total energy	5%	<10% [¶]
	% total fat	21%	-
PUFA	(g)	17	-
	% total fat	45%	-
MUFA	(g)	13	-
	% total fat	34%	-
ALA (g)		1.4	0.8
LC n-3 [EPA/DHA/DPA](mg)		-	55
Fibre (g)		31	18
Iron (mg)		18	18 (180% RDI)
Zinc (mg)		7	6 (150% RDI)
Vitamin B12 (µg)		1.5	1.2
Calcium (mg)		824	700 (UL 2,500)
Folate (µg)		463	200 (UL 400)
Vitamin A equivalent(µg)		429	400 (UL 900)
Vitamin E (mg)		40	6 (UL 100)
Vitamin D (µg)		<1	5
Vitamin C (mg)		80	35 (No UL)
Sodium (mg)		1298	300-600 (UL 1,400)



NRV age group: Children 9-13

9 year-old. PAL 1.8 (moderate activity)

Reference weight 28.6kg (boys) and 29.0kg (girls)

Reference height 1.34m (boys) and 1.33m (girls)

Breakfast:

2 fortified whole-wheat biscuits with 1/2 cup low fat fortified soy milk & 4 medium strawberries.
1 multi-grain toast with margarine.

Snack:

Chocolate and banana smoothie (made with 1 cup low fat fortified soy milk, a sprinkle of chia seeds, 1 banana, 2 tsp fortified malted chocolate powder).

Lunch:

1 mixed-grain sandwich with hard-boiled egg and margarine.
10 cashews.
½ cup of orange juice.

Snack:

2 Rice cakes spread with tahini & honey.

Dinner:

Honey & soy brown fried rice (with 1cup cooked brown rice, 30g tofu and 1cup vegetables).

Snack:

1 slice wholemeal fruit toast with margarine. 1 cup low fat fortified soy milk.

Add water as desired.

Nutrient		Meal Plan Provides	NRV/Goal*
Energy (kJ)		8,200	8,200-8,900 [†]
Protein	(g)	74	40
	% total energy	15%	15-25% [¶]
CHO	(g)	268	-
	% total energy	55%	45-65% [¶]
Fat	(g)	60	-
	% total energy	27%	20-35% [¶]
SFA	(g)	12	-
	% total energy	5%	<10% [¶]
	% total fat	20%	-
PUFA	(g)	19	-
	% total fat	32%	-
MUFA	(g)	29	-
	% total fat	48%	-
ALA (g)		1.9	1.0
LC n-3 [EPA/DHA/DPA](mg)		-	70
Fibre (g)		32	24
Iron (mg)		16.8	14.4 (180% RDI)
Zinc (mg)		10	9 (150% RDI)
Vitamin B12 (µg)		3.1	1.8
Calcium (mg)		1,080	1,000-1,300 (UL 2,500)
Folate (µg)		470	300 (UL 600)
Vitamin A equivalent (µg)		773	600(UL 1,700)
Vitamin E (mg)		30	9 (UL180)
Vitamin D (µg)		<2	5
Vitamin C (mg)		144	40 (No UL)
Sodium (mg)		1,689	400-800 (UL 2,000)



NRV age group: Boys 14-18

14 year-old Male PAL 1.8 (moderate activity)

Reference weight 51kg

Reference height 1.64m

Breakfast:

½ cup muesli with 1tbsp wheat germ, a sprinkle of chia and 1tbsp mixed berries and grated apple.
1cup low fat fortified soy milk.
2 slices multi-grain toast with tahina and honey.

Snack:

A chocolate drink (made with 1 cup low fat fortified soy milk, 2tbsp fortified malted chocolate powder).

Lunch:

1 mixed grain sandwiches with chickpea felafel ball, hummus, tabouli and sundried tomato.
1 kiwi fruit.

Snack:

200g tub Low-fat vanilla yoghurt with 3tbsp pumpkin seeds..

Dinner:

Tofu (60g), cashew (10 nuts), sesame (1 tbs sesame seeds) and vegetable (broccoli, carrot, capsicum, mushroom, sundried tomato) stir fry with 1 ½ cup brown rice.

Snack:

½ banana and soy custard (made with 1 cup low fat fortified soy milk and 1tbsp custard powder).

Add water as desired.

Nutrient		Meal Plan Provides	NRV/Goal*
Energy (kJ)		11,600	11,900#
Protein	(g)	113	65
	% total energy	17%	15-25% [¶]
CHO	(g)	349	-
	% total energy	58%	45-65% [¶]
Fat	(g)	91	-
	% total energy	29%	20-35% [¶]
SFA	(g)	18	-
	% total energy	6%	<10% [¶]
	% total fat	20%	-
PUFA	(g)	37	-
	% total fat	41%	-
MUFA	(g)	36	-
	% total fat	40%	-
ALA (g)		1.2	1.2
LC n-3 [EPA/DHA/DPA](mg)		-	125
Fibre (g)		58	28
Iron (mg)		31	19.8 (180% RDI)
Zinc (mg)		19.5	19.5 (150% RDI)
Vitamin B12 (µg)		3.4	2.4
Calcium (mg)		1,756	1,300 (UL 2,500)
Folate (µg)		597	400 (UL 800)
Vitamin A equivalent (µg)		1,058	900 (UL 2,800)
Vitamin E (mg)		20	10 (UL 250)
Vitamin D (µg)		<1	5
Vitamin C (mg)		195	40 (no UL)
Sodium (mg)		1,942	460-920 (UL 2,300)



NRV age group: Girls 14-18

14 year-old Female PAL 1.8 (moderate activity)

Reference weight 49.4kg

Reference height 1.60m

Breakfast:

1 cup cooked, rolled oats with 10 hazelnuts, 6 strawberries and 1 cup low fat fortified soy milk.
1 slice mixed grain bread with tahini and honey.

Snack:

1 Banana and 1 cup low fat fortified soy milk.

Lunch:

1 mixed grain sandwich with chickpea fefafel ball, hummus, tabouli and margarine.
1 kiwi fruit

Snack:

Dried fruit and seed mix:
(1 tsp pumpkin seeds, 2tsp sunflower seeds, 20g sultanas, 6 dried apricot-halves).

Dinner:

Tofu and vegetable stir fry with 1 ¼ cup cooked brown rice, 100g tofu, sesame seeds.

Snack:

Blueberry smoothie (made with ½ cup blueberries, 1 cup low fat fortified soy milk, a sprinkle of chia seeds and 2 scoops soy ice-cream).

Add water as desired.

Nutrient	Meal Plan Provides	NRV/Goal*
Energy (kJ)	10,200	10,300#
Protein (g)	97	45
% total energy	16%	15-25% [¶]
CHO (g)	319	-
% total energy	53%	45-65% [¶]
Fat (g)	76	-
% total energy	27%	20-35% [¶]
SFA (g)	11	-
% total energy	4%	<10% [¶]
% total fat	14%	-
PUFA (g)	31	-
% total fat	41%	-
MUFA (g)	34	-
% total fat	45%	-
ALA (g)	1.3	0.8
LC n-3 [EPA/DHA/DPA](mg)	-	85
Fibre (g)	53	22
Iron (mg)	27	27 (180% RDI)
Zinc (mg)	12.9	10.5 (150% RDI)
Vitamin B12 (µg)	3.2	2.4
Calcium (mg)	1,575	1,300 (UL 2,500)
Folate (µg)	549	400 (UL 800)
Vitamin A equivalents (µg)	1,213	700 (UL 2,800)
Vitamin E (mg)	40	8 (UL 250)
Vitamin D (µg)	<1	5
Vitamin C (mg)	379	40 (no UL)
Sodium (mg)	1,560	460-920(UL 2,300)



NRV age group: Men 19-30 & 31-50
(these age groups have the same requirements)
35 year-old Male PAL 1.8 (moderate activity)
Reference weight 67.5kg
Reference height 1.75m (average height)

<i>Breakfast:</i> 1 cup muesli with ½ cup mixed berries, 1cup low fat fortified soy milk, 1tbsp wheat germ & 20g sunflower seeds. ½ cup freshly squeezed orange juice.
<i>Snack:</i> Dried fruit, nut and seed mix: (40g dried apricots, 15g almonds, 30g pumpkin seeds, 3 dried apple rings).
<i>Lunch:</i> Mixed salad including ½ cup mixed beans, 1 boiled egg & 2tbsp sundried tomatoes. 2 slices multigrain bread with margarine 1 kiwi fruit.
<i>Snack:</i> Berry smoothie (made with 1cup low fat fortified soy milk, 100g low fat vanilla yoghurt and ½ cup berries).
<i>Dinner:</i> Tofu, cashew, sesame and vegetable stir fry (with 1 ½ cup cooked brown rice, and 125g tofu).
<i>Snack:</i> Strawberries with low fat soy custard (made with 1 cup low fat soy milk, 1tbsp custard powder, 1 banana).

Add water as desired.

Nutrient	Meal Plan Provides	NRV/Goal*
Energy (kJ)	12,700	12,400 – 12,800 [§]
Protein (g)	121	64
% total energy	16%	15-25% [¶]
CHO (g)	353	-
% total energy	47%	45-65% [¶]
Fat (g)	114	-
% total energy	33%	20-35% [¶]
SFA (g)	21	-
% total energy	6%	<10% [¶]
% total fat	18%	-
PUFA (g)	37	-
% total fat	32%	-
MUFA (g)	56	-
% total fat	49%	-
ALA (g)	1.4	1.3
LC n-3 [EPA/DHA/DPA](mg)	-	160
Fibre (g)	64	30
Iron (mg)	40	14.4 (180% RDI)
Zinc (mg)	21	21 (150% RDI)
Vitamin B12 (µg)	3.7	2.4
Calcium (mg)	1,935	1,000 (UL 2,500)
Folate (µg)	789	400 (UL1,000)
Vitamin A equivalent (µg)	1,899	900 (UL 3,000)
Vitamin E (mg)	15	10 (UL 300)
Vitamin D (µg)	<1	5
Vitamin C (mg)	337	45 (no UL)
Sodium (mg)	1,669	460-920(UL 2,300)



NRV age group: Women 19-30 & 31-50
(these age groups have the same requirements)
35 year-old Female PAL 1.8 (moderate activity)
Reference weight 60kg
Reference height 1.65m (average height)

<i>Breakfast:</i> 2 fortified whole grain wheat biscuits with 4 strawberries, 10g chia seeds and ½ cup low fat fortified soy milk. 1 slice multigrain toast with 1 poached egg.
<i>Snack:</i> 30g cashews and 6 dried apricot-halves.
<i>Lunch:</i> 1 flat wholemeal pita bread with chickpea fefafel, hummus, ½ cup tabouli and salad.
<i>Snack:</i> Banana and wheat germ smoothie (made with ¾ cup low fat fortified soy milk, 2tsp wheat germ, and 1 banana).
<i>Dinner:</i> Stir-fry greens with tofu, served with 1 cup cooked brown rice (100g tofu, asparagus, bok choy and snow peas).
<i>Snack:</i> Hot chocolate (made with 1 cup low fat fortified soy milk and 10g fortified malted chocolate powder).

Add water as desired.

Nutrient	Meal Plan Provides	NRV/Goal*
Energy (kJ)	8,600 [‡]	10,050 – 10,350 [§]
Protein (g)	90	46
% total energy	18%	15-25% [¶]
CHO (g)	262	-
% total energy	52%	45-65% [¶]
Fat (g)	64	-
% total energy	27%	20-35% [¶]
SFA (g)	12	-
% total energy	5%	<10% [¶]
% total fat	19%	-
PUFA (g)	22	-
% total fat	34%	-
MUFA (g)	30	-
% total fat	47%	-
ALA (g)	2.8	0.8
LC n-3 [EPA/DHA/DPA](mg)	-	90
Fibre (g)	46	25
Iron (mg)	32.6	32.4 (180% RDI)
Zinc (mg)	13	12 (150% RDI)
Vitamin B12 (µg)	3.2	2.4
Calcium (mg)	1,386	1,000 (UL 2,500)
Folate (µg)	517	400 (UL 1,000)
Vitamin A equivalents (µg)	748	700 (UL 3,000)
Vitamin E (mg)	10	7 (UL 300)
Vitamin D (µg)	<1	5
Vitamin C (mg)	115	45 (no UL)
Sodium (mg)	1,738	460-920 (UL 2,300)



NRV age group: Adult 50 - 70+

71 year-old Male PAL 1.6 (light activity)

Reference weight 67.5kg

Reference height 1.75m (average height)

Breakfast:

Rolled Oats made with ½ cup dry oats, ½ cup low fat fortified soy milk, 2tbsp wheat germ and 10g chopped walnuts, 30g pumpkin seeds and 1 banana.

Snack:

1 apple.

Hot chocolate made with 1 cup low fat fortified soy milk, 2tsp cocoa powder and 1tsp sugar.

Lunch:

Mixed grain sandwich with 40g cheese, salad, 4 pieces sun-dried tomatoes and margarine.

½ cup orange juice.

Snack:

3 Rye Biscuits with tahini and honey.

Dinner:

Lentil curry with vegetables (pumpkin, peas, beans, canned tomatoes, ½ cup lentils) and cashews, served with 1 cup cooked brown rice and sprinkled with sesame seeds.

Snack:

Hot chocolate (made with 1 cup low fat fortified soy milk, 2tsp cocoa powder and 1tsp sugar).
10g walnuts.

Add water as desired.

Nutrient		Meal Plan Provides	NRV/Goal*
Energy (kJ)		9,700	9,200 – 10,100 ⁵
Protein	(g)	101	81
	% total energy	18%	15-25% [¶]
CHO	(g)	277	-
	% total energy	48%	45-65% [¶]
Fat	(g)	80	-
	% total energy	30%	20-35% [¶]
SFA	(g)	14	-
	% total energy	5%	<10% [¶]
	% total fat	18%	-
PUFA	(g)	34	-
	% total fat	43%	-
MUFA	(g)	32	-
	% total fat	40%	-
ALA (g)		1.3	1.3
LC n-3 [EPA/DHA/DPA](mg)		-	160
Fibre (g)		48	30
Iron (mg)		24.8	14.4 (180% RDI)
Zinc (mg)		21.3	21 (150% RDI)
Vitamin B12 (µg)		2.9	2.4
Calcium (mg)		1,489	1,300 (UL 2,500)
Folate (µg)		494	400 (UL1,000)
Vitamin A equivalent (µg)		928	900 (UL 3,000)
Vitamin E (mg)		65	10 (UL 300)
Vitamin D (µg)		<2	15
Vitamin C (mg)		106	45 (no UL)
Sodium (mg)		1,786	460-920 (UL 2,300)



NRV age group: Adult 50 - 70+

71 year-old Female PAL 1.6 (light activity)

Reference weight 60kg

Reference Height 1.65m (average height)

Breakfast:

2 fortified whole grain wheat biscuits with 1 cup low fat fortified soy milk, ½ cup sliced strawberries, a sprinkle of chia seeds.
1 slice wholemeal bread with peanut butter and honey.

Snack:

1 Banana.
150g tub low fat, fruit yoghurt.

Lunch:

Wholemeal sandwich with egg, lettuce and mayonnaise.
½ cup blackcurrant juice.

Snack:

2 crispbread with 40g low fat cheddar cheese and tomato.

Dinner:

Tofu curry with vegetables (made with 100g tofu, broccoli, capsicum, carrot and mushrooms, sprinkled with sesame seeds) served with 1 cup cooked brown rice.

Snack:

125ml custard with ½ cup tinned peaches.

Add water as desired.

Nutrient		Meal Plan Provides	NRV/Goal*
Energy (kJ)		8,400	8,050 – 8,500 [§]
Protein	(g)	98	57
	% total energy	20%	15-25% [¶]
CHO	(g)	254	-
	% total energy	51%	45-65% [¶]
Fat	(g)	61	-
	% total energy	27%	20-35% [¶]
SFA	(g)	18	-
	% total energy	8%	<10% [¶]
	% total fat	30%	-
PUFA	(g)	20	-
	% total fat	33%	-
MUFA	(g)	23	-
	% total fat	38%	-
ALA (g)		3.3	0.8
LC n-3 [EPA/DHA/DPA](mg)		-	90
Fibre (g)		34	25
Iron (mg)		23.4	14.4 (180% RDI)
Zinc (mg)		12	12 (150% RDI)
Vitamin B12 (µg)		3.6	2.4
Calcium (mg)		1,737	1,300 (UL 2,500)
Folate (µg)		484	400 (UL1,000)
Vitamin A equivalent (µg)		1,136	700 (UL 3,000)
Vitamin E (mg)		10	7 (UL 300)
Vitamin D (µg)		<2	15
Vitamin C (mg)		423	45 (no UL)
Sodium (mg)		1,721	460-920 (UL 2,300)



NRV age group: Pregnancy

25 year-old Pregnant Female PAL 1.6 (light activity)

Reference height 1.65m (average height)

Energy requirements: + 1.4MJ for pregnancy

Breakfast:

2 fortified whole grain wheat biscuits with ½ cup low fat fortified soy milk with 1 banana and a sprinkle of chia seeds (7g)
1 slice iron-fortified toast with marmite and margarine.
½ cup freshly squeezed orange juice.

Snack:

25g cashews and 5 halves dried apricot.

Lunch:

2 slices iron-fortified toast topped with baked beans and 20g low fat melted cheese.
Hot chocolate (made with 1 cup low fat fortified soy milk and 2 tsp fortified malted chocolate powder).

Snack:

35g almonds, 1 kiwifruit.

Dinner:

Tofu (100g), chickpea (1/2 cup) and vegetable (spinach, broccoli and carrot) curry with 1 cup cooked brown rice.

Snack:

200g tub Low fat fruit yogurt and 25g pumpkin seeds.

Add water as desired.

Nutrient	Pregnant (2 nd Trimester)	
	Meal Plan Provides	NRV/Goal*
Energy (kJ)	10,600	10,300 – 10,600 [§]
Protein (g)	120	60
% total energy	19%	15-25% [¶]
CHO (g)	284	-
% total energy	46%	45-65% [¶]
Fat (g)	91	-
% total energy	32%	20-35% [¶]
SFA (g)	17	-
% total energy	6%	<10% [¶]
% total fat	19%	-
PUFA (g)	26	-
% total fat	29%	-
MUFA (g)	48	-
% total fat	53%	-
ALA (g)	2.1	1.0
LC n-3 [EPA/DHA/DPA](mg)	-	115
Fibre (g)	53	28
Iron (mg)	36.6**	48.6 (180% RDI)
Zinc (mg)	16.5	16.5 (150% RDI)
Vitamin B12 (µg)	3.2	2.6
Calcium (mg)	2,083	1,000 (UL 2,500)
Folate (µg)	716	600 (UL 1,000)
Vitamin A equivalents (µg)	992	800 (UL 2,800-3,000)
Vitamin E (mg)	25	7 (UL 300)
Vitamin D (µg)	<2	5
Vitamin C (mg)	175	60 (no UL)
Sodium (mg)	1,908	460-920 (UL 2,300)



NRV age group: Lactation

25 year-old Lactating Female PAL 1.6 (light activity)

Reference height 1.65m (average height)

Energy requirements: + 2.0MJ for lactation

Breakfast:

2 fortified whole grain wheat biscuits with ¼ cup low fat fortified soy milk, a sprinkle of chia (<5g) and 1 kiwi fruit.
1 slice multi-grain toast peanut butter.

Snack:

25g cashews, ½ cup popped popcorn, 4 slices of dried apple and 1 banana.

Lunch:

2 slices mixed-grain toast with avocado, ½ cup baked beans, and 20g melted low fat cheese.
1 cup hot chocolate (made on 1 cup low fat fortified soy milk with 2tsp fortified malted chocolate powder).

Snack:

1 slice fruit toast with margarine.
20g walnuts and 10g almonds.

Dinner:

Tofu, chickpea, and vegetable (sundried tomato, grated carrot spinach and broccoli) curry with 1 cup cooked brown rice (made with 140g tofu, ½ cup chickpeas).

Snack:

200g tub regular fruit yoghurt and 30g pumpkin seeds.

Add water as desired.

Nutrient	Lactating	
	Meal Plan Provides	NRV/Goal*
Energy (kJ)	11,200	10,900 – 11,200 [§]
Protein (g)	121	67
% total energy	18%	15-25% [¶]
CHO (g)	310	-
% total energy	47%	45-65% [¶]
Fat (g)	96	-
% total energy	32%	20-35% [¶]
SFA (g)	21	-
% total energy	7%	<10% [¶]
% total fat	22%	-
PUFA (g)	36	-
% total fat	38%	-
MUFA (g)	40	-
% total fat	42%	-
ALA (g)	2.5	1.2
LC n-3 [EPA/DHA/DPA](mg)	-	145
Fibre (g)	56	30
Iron (mg)	33.6	16.2 (180% RDI)
Zinc (mg)	18	18 (150% RDI)
Vitamin B12 (µg)	2.8	2.8
Calcium (mg)	2,142	1,000 (UL 2,500)
Folate (µg)	623	500 (UL1,000)
Vitamin A equivalents (µg)	1,182	1100 (UL 2,800-3,000)
Vitamin E (mg)	20	11 (UL 300)
Vitamin D (µg)	<2	5
Vitamin C (mg)	150	85 (no UL)
Sodium (mg)	1,808	460-920 (UL 2,300)