

# Very Low Energy Diet (VLED)– for Health Professionals

## What is a VLED?

A VLED is a diet that is low in energy/calories used for short periods of time to assist with weight loss. The VLED is designed to make your body shift from using glucose from carbohydrates to burning fat stores as your main energy source. When this starts to happen your body will produce ketones, this is called ketosis. The VLED is low in carbohydrates to force your body to burn its own fat stores. Carbohydrates are starchy and sweet foods such as bread, pasta, rice, vegetables that grow in the ground and fruit, lollies, cakes etc. This meal plan should be followed for a maximum of 6 weeks with help from your doctor, nurse or Registered Dietitian.

## Important considerations before starting a patient on a VLED:

- Suitable for people with a BMI over 30, or waist circumference of >94cm for men and >80cm for women
- Not suitable for people under age 18 years, pregnant or breastfeeding women
- Higher risk patients may require more regular monitoring. These include : BMI >35, high CVD risk, people with diabetes, people over 65 years and those on prescribed medications
- Medications need to be reviewed regularly when on a VLED e.g. blood pressure medications, insulin, oral hypoglycaemic agents, warfarin, steroids and diuretics
- Monitoring may include FBC, electrolytes, ECG, urine analysis, blood pressure, blood glucose levels and any other necessary tests relating to the clinical conditions of the patient
- Side effects may include sensitivity to cold, fatigue, diarrhoea, constipation, muscle cramps, irritability, dizziness, headaches, dehydration
- Follow under supervision and guidance of your doctor/nurse/dietitian

## What does the VLED meal plan look like?

See the pictorial and sample meal plan on the following pages. The meal plan is 3 meals a day with water in between. Meals are based on non-starchy coloured vegetables and a quality source of protein. Make sure to include some leafy greens into the mix of vegetables. 2 cups of non-starchy vegetables at each meal is a minimum. **Men need to have at least 3 cups at each meal.** Drink 2 Litres of plain water per day, soda/sparkling can be included. Ensure that patients are eating plenty of non-starchy vegetables, drinking water and doing gentle exercise to prevent constipation. Alpine tea is also good for constipation management while on a VLED. Do not drink more than 2 cups of black coffee and tea/day. You can also have herbal/fruit teas. Try and include a variety of vegetables from the list below, the more colours the better. You can steam, lightly fry, dry fry, grill and roast the vegetables or eat them raw. Frozen vegetables can be included. You can use herbs and spices, vinegar, stock, lemon juice to flavour the food. Do not drink alcohol, regular/diet soft drinks or juice. You can change the suggested protein foods to other protein foods e.g. pork, fish, beef, chicken, venison, fish but try to get a wide variety of protein sources. Avoid snacking; you won't need to once your hunger subsides.

## Will patients get hungry?

It is normal to feel hungry for the first few days on the VLED as the body adjusts to using fat for energy. This will go away as the body starts producing ketones from burning fat stores. Ketones tend to suppress appetite. If patients are feeling hungry make sure you they are drinking enough water.

## Can patients exercise while on a VLED?

Yes, they can exercise while on a VLED, but keep it to a light to moderate intensity.

## What should patients do to prepare for the VLED?

Unlike sachet meal replacements, a food based VLED requires planning and preparation. It is very important that meals are pre-planned, bought and prepared as much as possible, ideally at least a week in advance. This is to ensure that patients are not caught out and end up missing meals or choosing foods that are not part of the VLED. It is important patients get into a routine of having 3 meals at the same time each day. Ensure that meals are portable if they are going out e.g. birthdays, friends' houses.

## What do patients do once they have finished the VLED?

Following this VLED you will naturally transition onto a real/wholefood diet, which can be continued indefinitely after the 6 week VLED period. However, additional foods and overall quantities will need to change; therefore guidance from a registered Dietitian is essential to assist with the transition period. Make sure you visit your Dietitian after completing the VLED.

## What should patients do if they go off the VLED?

If your patients do eat high sugar/starch foods, it will take a few days before the body can get back to burning fat as fuel. Patients may also go through the same process of being hungry for a few days. Continue with the VLED meal plan.

## What non-starchy vegetables can patients eat?

Variety is best (go for a variety of colours)

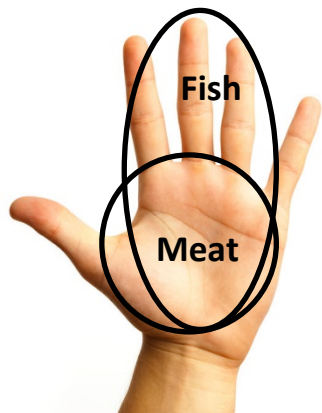
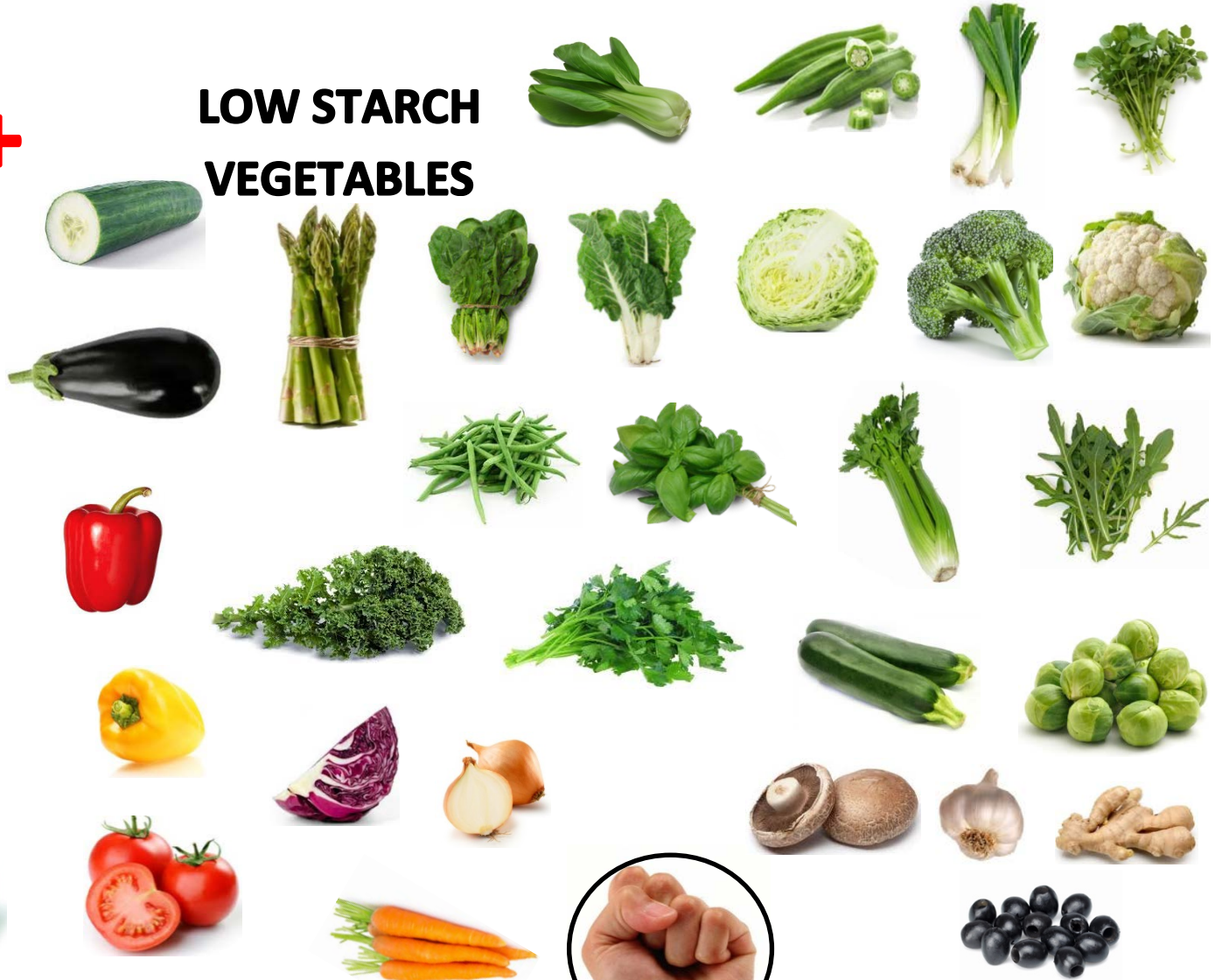
All green leafy <i>vegetables</i> ( <i>spinach, cabbage, lettuces etc.</i> )	Cabbage	Ginger	Radishes
Artichoke hearts	Carrots	Leeks	Sauerkraut
Asparagus	Cauliflower	Lettuce	Spring onions
Aubergines	Capsicum	Leeks	Spinach
Avocados	Celery	Mushrooms	Silverbeet
Alfalfa sprouts	Chilli	Mung beans	Snow peas
Broccoli	Cucumber	Olives	Tomatoes
Brussel sprouts	Courgettes	Onions	<i>(including plain canned)</i>
Bok choy	Eggplant	Okra	Watercress
Green beans	Frozen vegetables (no peas or corn)	Peppers	Zucchini
	Garlic	Pak choy	

# What do VLED meals look like?

## PROTEIN



## LOW STARCH VEGETABLES



**at least 2 cups**

**Sample meal plan:** This shows 4 options for each meal. Try to get as much variety as possible. Repeat days 1-5 for 6 weeks OR pick and choose one meal from each column for the remainder of the 6 weeks.

<b>Day</b>	<b>Breakfast</b> <i>Options</i>	<b>Lunch</b> <i>Options</i>	<b>Dinner</b> <i>Options</i>	<b>Additional</b>	<b>Nutrition</b> <b>(Approx.)</b>
<b>1</b>	2 eggs + a minimum of 2 cups of low starch vegetables raw/ or cooked	85-90g can tuna in spring water + a minimum of 2 cups of low starch vegetables raw/ or cooked	Approx. 150g lamb/steak + a minimum of 2 cups of low starch vegetables raw/ or cooked	½ cup plain unsweetened yoghurt, with lemon juice, 1 tbsp olive or avocado oil and a pinch of salt and pepper. 2L water.	109 protein 39g carb 47g fat 21g fibre  1006 calories
<b>2</b>	63g (1/2 pack) sardines in spring water + a minimum of 2 cups of low starch vegetables raw/ or cooked	2 poached eggs + a minimum of 2 cups of low starch vegetables raw/ or cooked	Approx. 150g chicken + a minimum of 2 cups of low starch vegetables raw/ or cooked	½ cup plain unsweetened yoghurt, with lemon juice, 1 tbsp olive or avocado oil and a pinch of salt and pepper. 2L water.	102g protein 34g carb 50g fat 17g fibre  981 calories
<b>3</b>	50g lambs fry + a minimum of 2 cups of low starch vegetables raw/ or cooked + ½ avocado	2 hardboiled eggs + a minimum of 2 cups of low starch vegetables raw/ or cooked	180g (approx. 1 fillet) of white flesh fish (e.g. terakihi, hoki, snapper) + a minimum of 2 cups of low starch vegetables raw/ or cooked	½ cup plain unsweetened yoghurt, with lemon juice, 1 tbsp olive or avocado oil and a pinch of salt and pepper. 2L water.	99g protein 35g carb 61g fat 28g fibre  1072 calories
<b>4</b>	½ cup cottage cheese blended with ½ cup frozen berries + 2 tbsp ground linseed	85-95 can tuna in spring water + a minimum of 2 cups of low starch vegetables raw/ or cooked	Approx. 150g lamb/steak + a minimum of 2 cups of low starch vegetables raw/ or cooked	½ cup plain unsweetened yoghurt, with lemon juice, 1 tbsp olive or avocado oil and a pinch of salt and pepper. 2L water	109g protein 40g carb 43g fat 22g fibre  970 calories
<b>5</b>	½ cup plain Greek yoghurt, 2 tbsp ground linseed + ½ cup frozen berries	Approx. 150g chicken + a minimum of 2 cups of low starch vegetables raw/ or cooked	10 mussels (steamed) + a minimum of 2 cups of low starch vegetables raw/ or cooked	½ cup plain unsweetened yoghurt, with lemon juice, 1 tbsp olive or avocado oil and a pinch of salt and pepper. 2L water.	107g protein 44g carb 46g fat 19g fibre  1011 calories

## What are some VLED meal ideas?

- Tomato + veges: In a fry pan cook up onions, garlic and ginger. Add shredded silverbeet/spinach, sliced carrots and mushrooms. Cook until the vegetables have softened. Add a can of canned tomatoes. Garnish with coriander. Serve with a protein food.
- Oriental broth: In a small pot bring to a simmer vegetable stock (approx. 2 cups liquid/equivalent in stock). Add a small knob of fresh ginger, thinly sliced cabbage, finely sliced carrots, mushrooms and some bok/puk choy. In another pot, hard boil 2 eggs (approx. 8 min). When the vegetables are just cooked (still crunchy) add mung bean sprouts and halved hard boiled eggs.
- “Rice and mince”: Steam cauliflower, mash/puree. Separately cook up garlic, onions and some herbs. Add beef mince. Break up until cooked right through. Add can of tomato paste and canned tomatoes. Simmer until it has thickened. Add baby spinach, silverbeet and shredded cabbage. Arrange the mince on top of the pureed cauliflower and garnish with fresh basil.
- “Rice” salad: grate/use a food processor to finely chop raw broccoli and cauliflower. Add diced capsicum, carrots, beans, mung beans, sprouts, coriander and lemon juice. Serve with a protein food.
- Curry omelette: cook up finely diced carrots and onions until soft. Add curry powder. Whisk eggs in a bowl and add to the vegetables. Stir until eggs are just cooked. Serve with some more vegetables of your choice.
- Use Portobello mushrooms instead of toast, top with eggs, avo, tomato and basil
- Use a vegetable peeler to create zucchini ‘noodles’ and make meal balls with the noodles with mince, canned tomatoes and basil like a spaghetti bolognese.
- Wrap ideas: nori (seaweed) as a wrap, fill with vegetables and some protein. Eggs: beat 2 eggs in a bowl and cook in a large fry pan, the egg will be very thin and can be used as a wrap. Try cabbage leaves or large ice-berg lettuce leaves.

## Tips from people who have followed this VLED meal plan:

- *Have at least 2 salads pre-prepared in the fridge ready to go e.g. cabbage slaw and a solid green salad, this means you can just take them with you in the day time*
- *Keep up your water consumption, you may have difficulty thinking clearly or have trouble concentrating*
- *If you are consuming quite a bit of sugar/sweet food in your regular diet, you will may experience some withdrawal like symptoms in the first few days (headaches, cravings, trouble concentrating, mood swings, low energy, tiredness) this will pass*
- *When exercising you may feel more lethargic than usual*
- *Eat your three meals at the same time each day so it becomes routine*
- *If you are working full time, consider starting on a Friday or a Saturday so that the side effects may have lessened by Monday (you might feel a bit lethargic in the weekend)*
- *Use a wide range of vegetables to keep the meals interesting (particularly if doing for 6 weeks)*
- *Add herbs, spices, lemon juice, pepper and a little salt to your meals*
- *The VLED is easier if you have support of family/friends and work colleagues*

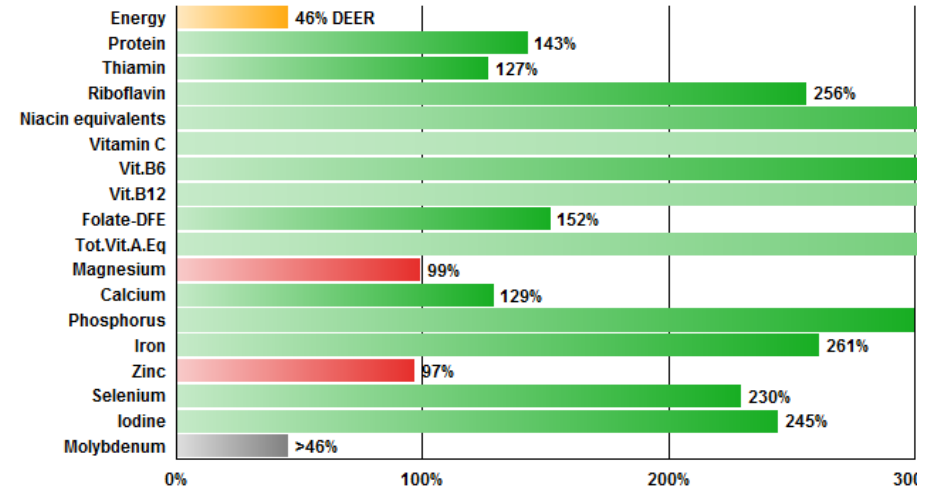
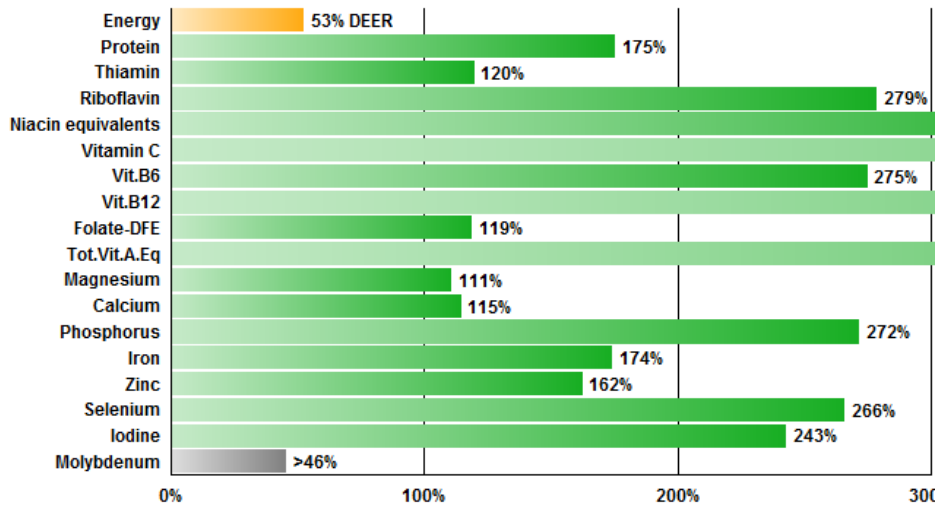
## Nutritional Analysis

Female, 45 years, 165cm tall, 100kg, BMI 37.

Male, 45 years, 177cm, 115kg, BMI 37.

Estimated Average Requirement

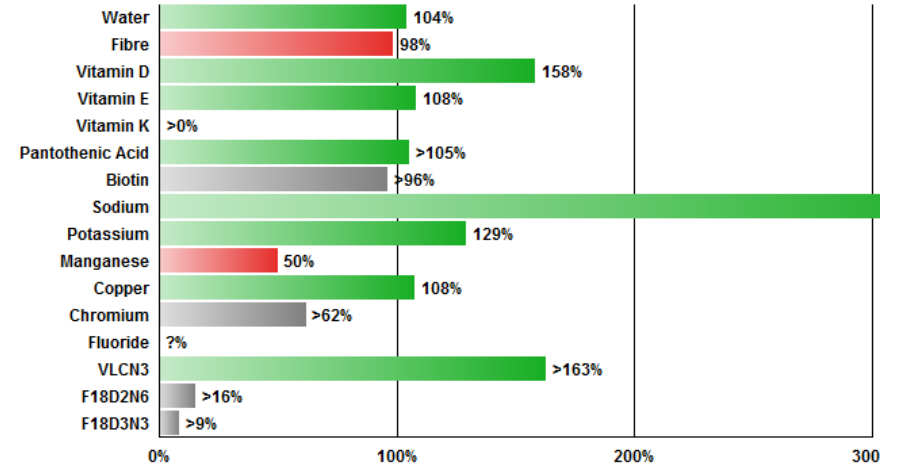
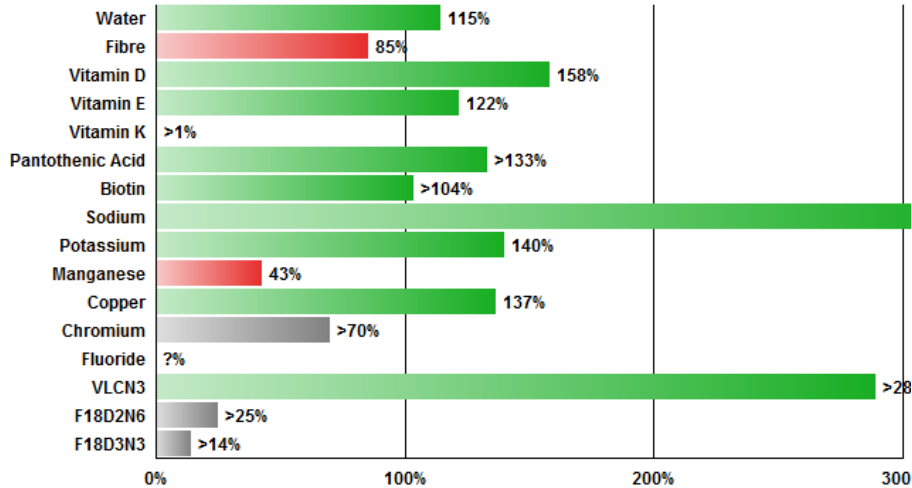
Estimated Average Requirement



*Note: this is when vegetables at each meal is increased to at least 3 cups*

Adequate Intake

Adequate Intake



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FoodWorks used for nutritional analysis. DEER = daily estimated energy requirements (low as this is a very low energy diet).