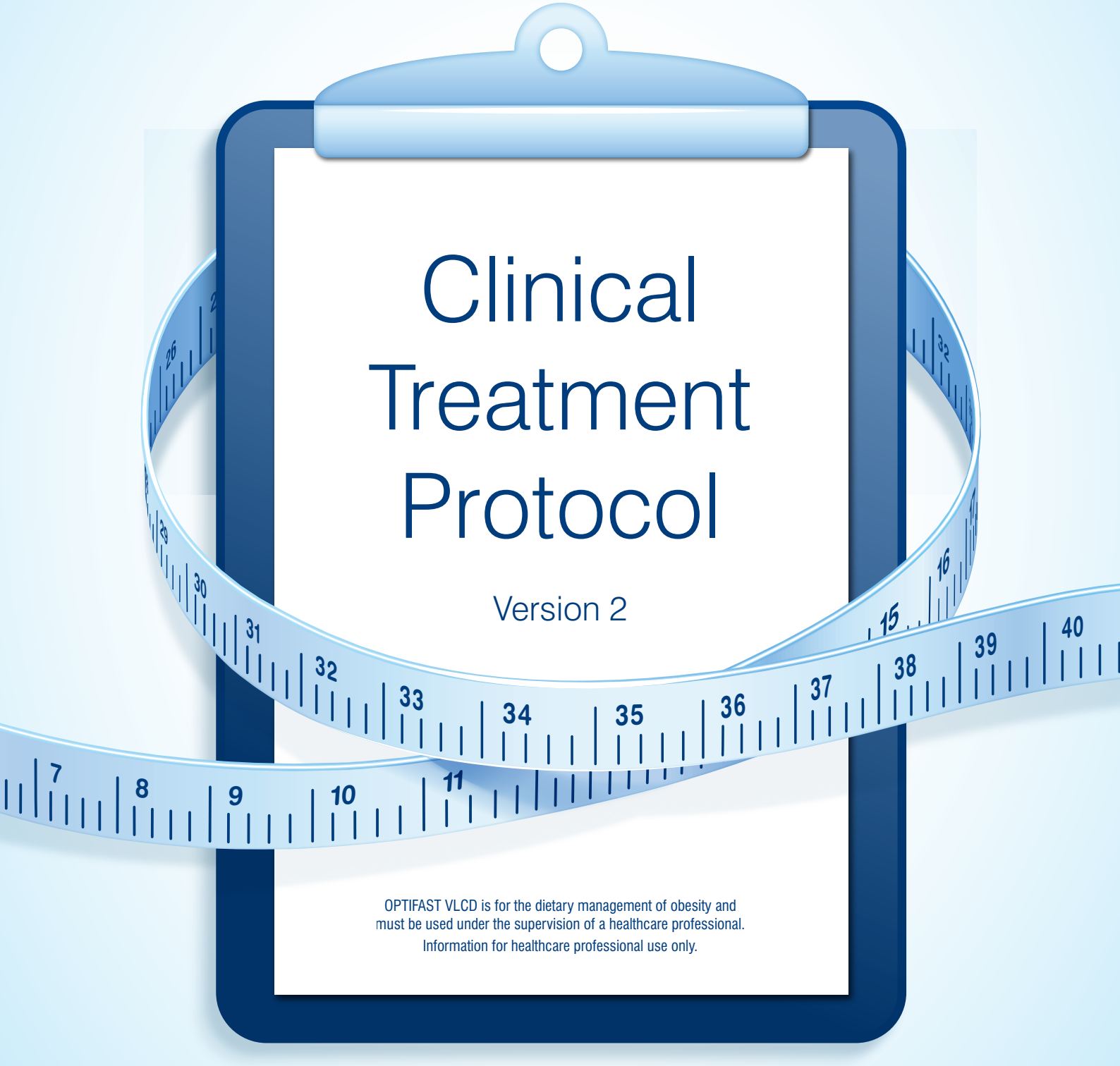
OPTIFAST® VERY LOW CALORIE DIET



Clinical Treatment Protocol

Version 2

OPTIFAST VLCD is for the dietary management of obesity and must be used under the supervision of a healthcare professional.
Information for healthcare professional use only.

Nestlé HealthScience

By 2028, in Australia, an estimated 123,000 men and women will die prematurely from conditions associated with their excess weight, according to a report published by the Baker Institute in 2008.[1]

A reduction in weight has the potential to reduce the risk of hypertension, dyslipidaemia, type 2 diabetes, cardiovascular disease, kidney disease, depression, certain cancers, sleep apnoea and osteoarthritis.[2-4]

The OPTIFAST VLCD Program aims to assist the healthcare professional manage a patient at medical risk due to excess body fat. This protocol has evolved in accordance with the most recent research available to reduce weight and lower health risks, as well as with the input from some of Australia's leading dietitians and specialists.

OPTIFAST VLCD Clinical Treatment Protocol

The OPTIFAST VLCD Clinical Treatment Protocol is designed to support professional standards and best practice methodologies for the healthcare professionals using them. These healthcare professionals include general practitioners, specialists, dietitians, pharmacists, surgeons, diabetes educators, exercise physiologists, researchers and specialist practice nurses.

Continuity of care is important. Contacting other healthcare professionals who are treating a specific individual can help all involved to work together as a co-ordinated team.

The following pages will guide you through how to identify a candidate suitable for the OPTIFAST VLCD Program, and how to support them on the program. If your patient suffers from co-morbid conditions please refer to the *OPTIFAST VLCD Management of Complex Cases* for further guidelines. It can be downloaded from the OPTIFAST VLCD website at **www.optifast.com.au**

The goals of the Program and recommended guidelines are as follows:

1. To address the unique needs of each participant by means of a comprehensive initial assessment and on-going evaluation.
2. To incorporate positive changes in eating habits and lifestyles of participants.
3. To encourage participants to build increased physical activity into their lifestyle.
4. To recommend appropriate supervision for existing medical conditions.
5. To support long-term maintenance by providing effective nutritional products, educational materials and follow-up.

We would like to thank the following experts for their contribution, feedback and review:

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Please note:

This OPTIFAST VLCD Clinical Treatment Protocol is a work in progress and will continue to evolve over time. Resources are currently focused on improving patient outcomes, reducing community costs and encouraging a multidisciplinary approach to chronic weight management.

We would appreciate any feedback or comments you may have on how to improve the OPTIFAST VLCD Clinical Treatment Protocol and make it more relevant to you and your practice.

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Why use Very Low Energy Diets in obesity management?

Overview of Very Low Energy Diets

Very Low Energy Diets (VLED), also known as Very Low Calorie Diets (VLCD) have been shown to be very effective in the management of obesity, with weight losses averaging approximately 1.0-2.5kg per week, providing greater initial weight loss than other forms of calorie restriction.[5,6] They are commonly used in medically supervised weight reduction programs for people with BMI >30kg/m^2 (or >27kg/m^2 with obesity-related co-morbidities), or for whom rapid weight loss is necessary.[7]

A VLED is a low carbohydrate, total food replacement for the dietary management of obesity, providing 800 kcal (3300kJ) or less per day. Reducing energy intake to less than 800 kcal (3300kJ) as well as reducing carbohydrate induces a mild ketosis resulting in body fat/lipid stores being utilised as the major source of energy. Advantages of VLEDs include the motivating effect of rapid weight loss and a mild ketosis that may suppress hunger.[7] They have also been associated with improvements in insulin sensitivity, blood pressure, serum triglycerides, sleep apnoea and glycaemic control in adults with Type 2 diabetes.[6,7] VLEDs are intended for use as part of the management of the moderately to severely overweight, particularly when there is an associated secondary pathology e.g. type 2 diabetes, hypertension, osteoarthritis, gynaecological disorders, dyslipidaemia, where obesity is an impediment to surgery or where more conservative approaches to weight loss have been unsuccessful.

VLEDs are not drugs. They do not contain pharmacologically active ingredients. Recent evidence suggests that management with a VLED does not lead to worse long-term results than other dietary approaches, and in fact individuals maintain more weight loss when the weight loss is achieved using a VLED compared to a low energy diet.[5] VLEDs have been shown to be most effective when combined with behavioural change, active follow-up and pharmacotherapy.[5]

The OPTIFAST VLCD Program incorporates a VLED component, called the Intensive Level. This is usually implemented at the beginning of the program, where you replace all 3 meals with OPTIFAST VLCD products, and is followed for a period of up to 12 weeks. This is then followed by a gradual reintroduction of food through the next three levels of the program. This will not only help your patients to lose weight, it will also teach them how to make sustainable lifestyle changes that will help keep the weight off long-term. If there is still a significant amount of weight to be lost at the end of the initial 12 weeks, you can keep a patient on the Intensive Level for longer, under healthcare supervision, but we recommend you follow the Active 2 level for a minimum of two weeks before repeating the Intensive Level again.

For more information about how the OPTIFAST VLCD Program works, refer to Sections 2 and 3 of this Clinical Treatment Protocol.

The OPTIFAST VLCD Program in the dietary management of obesity

The OPTIFAST VLCD Program is a total weight loss solution; scientifically formulated to assist medically at-risk patients lose weight quickly and safely, and lower weight-related health risks.

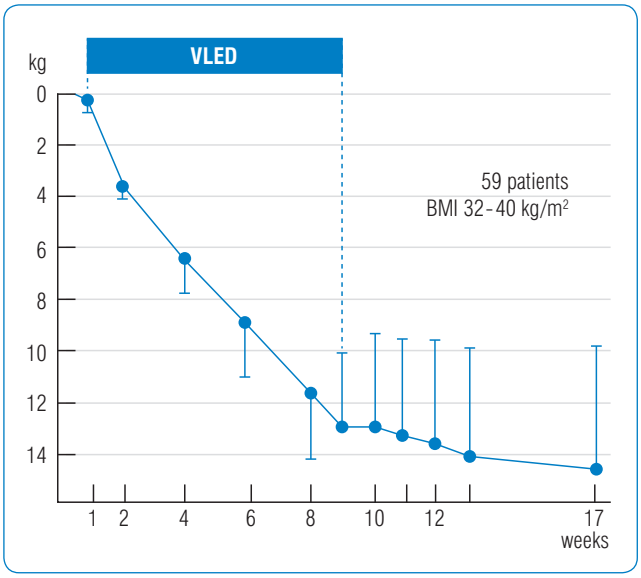
Expected rate of weight loss

During the Intensive Level of the OPTIFAST VLCD Program, weight loss averages 1.0 to 2.5kg/week with an average total loss of 20kg after 12 to 16 weeks.[5,6,8] It is common to see a larger amount of weight loss in the first week of the program. The weight loss in the second week will give you an idea of what to expect ongoing. Weight loss will vary between individuals and will also depend on physical activity levels. For example, both men and individuals with a higher BMI will have a greater reduction in weight because they have higher energy expenditures due to their bigger stature and relatively more lean body mass. The table below highlights the expected rates of weight loss based on BMI whilst following the OPTIFAST VLCD Intensive Level.

Table 1: Expected rate of weight loss[6]

BMI	Average weight loss per week
BMI 30-35kg/m^2	Around 1.5kg per week
BMI 35-40 or >40kg/m^2	1.5-2.5kg per week

Figure 1: Weight loss during an 8 week period[6]



Source: Mustojoki & Pekkarinen 2001.

Long-term weight loss goals

Reports on long-term weight loss maintenance over a 1-2 year period have been variable. A recent review supports the evidence that weight loss over 1-2 years averages 0-14kg and that success is more likely when behavioural or drug therapy was used in follow up.[9] This review also highlights that lean body mass was not compromised by VLED use with a 2 year follow up.

It is often mentioned in the lay press and amongst healthcare professionals that "the faster you lose weight the quicker you regain it" yet there is little evidence to support this assumption and in fact the opposite is true. Post hoc analyses of weight loss intervention studies show that a greater initial weight loss, usually achieved in the first 2-4 weeks of treatment, is associated with a better long-term outcome, i.e. a sustained weight loss 1-5 years later (see table 2 below).[5]

In conjunction, Purcell et al. randomised 200 participants to either a 36-week gradual weight loss group or a 12-week rapid loss group using a VLED. Participants that lost 12.5% of their initial weight loss from both groups were then placed onto a 144-week weight maintenance group. What they found was that the amount of weight regain was similar in both groups. The author's conclusion was that the rate of weight loss does not affect the proportion of weight regained within 144 weeks.[10]

Table 2: VLED vs Non-VLED weight losses[5]

	End of Program Weight Loss	Weight Loss at 1-2 Years
VLED	9.2-19.3kg	7.2-12.9kg
Non-VLED	6.2-14.3kg	5.7-9.5kg

Mechanics of a VLED

A VLED works by restricting total energy intake to 800 calories (3300kJ) or less per day, whilst consuming sufficient protein, fat, carbohydrates, vitamins, minerals, and trace elements for safe and effective weight loss. Weight loss with a VLED is achieved by the restriction of both carbohydrate and total energy intake. This enables the body to use its body fat stores for energy via a metabolic process called ketosis.

Ketosis is a metabolic response that occurs when following the OPTIFAST VLCD Program Intensive Level. When glucose is in short supply, ketones are produced which provide an alternative fuel source derived from fat.[11] A diet containing 50-70g carbohydrate is generally considered low enough in carbohydrates to produce ketones but there is no absolute level that guarantees ketone production. The amount of carbohydrate required to induce ketosis depends on a number of factors. It can be individual and can vary from day to day depending on activity levels, fluid intake and other factors.

The term "ketones" refers to the three compounds:

- Acetoacetate (AcAc)
- 3-ß-hydroxybutyrate (BHB)
- Acetone

The circulating levels of ketones are dependent both on their rate of production and rate of utilisation in the body. Acetoacetate and 3-ß hydroxybutyrate are the two main ketones generated and used for fuel under low-carbohydrate conditions. Acetone gives the characteristic odour to the breath of patients in ketosis, similar to that of nail polish remover.

Circulating ketones developed during a VLED to induce weight loss are very different to that of other uses of ketogenic diets such as refractory paediatric epilepsy. Ketogenic diets used in refractory paediatric epilepsy aim to generate a much higher ketone level than the ketogenic diets used for weight loss.

Dietary ketosis used in the management of weight loss should not be mistaken for ketoacidosis. **Dietary ketosis** is a controlled, insulin regulated process which results in a mild release of fatty acids and ketones into the circulation in response to a low carbohydrate intake. **Ketoacidosis** on the other hand is a condition in which abnormal quantities of ketones are produced due to no insulin regulation of ketone levels. In order to reach a state of ketoacidosis, the body has to be in a state of not producing any insulin. This is why ketoacidosis is generally only seen in uncontrolled type 1 diabetes. Ketogenic diets are considered to be safe in type 1 diabetes as long as there is a baseline level of insulin given to help regulate the level of circulating ketones. People with type 1 diabetes must be under the care of their doctor when using a VLED to ensure medications are adjusted accordingly.

Table 3: Level of circulating blood ketones for different conditions[12]

	Blood Ketone Level
Weight loss using a ketogenic diet such as a VLED	0.3-0.7mmol/L
Refractory paediatric epilepsy	2.0-7.0mmol/L
Diabetic ketoacidosis	>3.0mmol/L, can be as high as 25mmol/L

It has been suggested that ketosis may suppress appetite,[11] which helps make following the OPTIFAST VLCD Program Intensive Level much easier. As the Intensive Level induces only a mild ketosis, it is considered a safe approach to weight loss.

Once the body is in ketosis, any excess ketones that the body does not use for energy are excreted via the urine and breath (thus the incidence of halitosis in some cases). Measuring ketone levels can be used as a guide to assessing compliance.

Table 4: Summary of the advantages of following a VLED

Advantages of a VLED
Fast weight loss achieved via a VLED is motivating[5]
Utilisation of fat stores for energy via ketosis[12]
Suppression in ghrelin[13]
Assists in appetite control[5, 11, 13]
Ketosis may minimise muscle loss during weight loss[5, 6, 12, 14]
Convenience in the form of meal replacements[5, 15]
Compliance with the VLED increases the levels of ketones in urine/breath/blood and therefore can be used as a measure of compliance

Health outcomes and metabolic indicators

A systematic review of the impact of obesity and weight gain on diabetes risk and coronary heart disease (CHD) has shown that obesity and weight gain can increase diabetes by greater than ninetyfold and CHD by sixfold.[16] In conjunction with weight loss, energy restriction has also been found to improve a wide range of health-related outcomes and metabolic indicators such as improvements in insulin sensitivity, decrease fasting plasma glucose, lowering of blood pressure and lowering of serum triglyceride values.[6,16,17] VLEDs should therefore be considered in the management of overweight and obesity in patients presenting with co-morbidities.

Table 5: Metabolic outcomes after energy restriction** [16]

Risk Factors	% Change from Baseline
Plasma glucose	25.7% ⬇
Serum cholesterol	9.2% ⬇
Serum triglyceride	26.7% ⬇
Systolic Blood Pressure	8.1% ⬇
Diastolic Blood Pressure	8.6% ⬇

** Larger weight losses were associated with larger reductions in these values. Energy restriction was achieved through VLEDs and LEDs.

Weight loss with use of a VLED have also shown to benefit symptom control in patients with osteoarthritis and improve obstructive sleep apnoea in 80% of cases.[3,4]

Medical supervision

Despite OPTIFAST VLCD products being available from pharmacy over the counter, it is always advised that the use of the OPTIFAST VLCD Program is supervised by a healthcare professional such as a dietitian, doctor, pharmacist, diabetes educator or other trained healthcare professionals. Such support is advised primarily due to the health problems often associated with obesity, the medications that may need modification and to provide support for what can be a challenging regimen.

Patients with type 2 diabetes, hypertension or a BMI >35kg/m^2 should be monitored carefully and may need some modifications to their program by a healthcare professional.

Food for special medical purposes

OPTIFAST VLCD is classified as a food for special medical purposes and therefore a prescription is not required for purchase of OPTIFAST VLCD products.

2

What is the OPTIFAST VLCD Program?

The OPTIFAST VLCD Program

The OPTIFAST VLCD Program is a nutritionally complete, very low calorie diet for the dietary management of obesity. It includes a range of OPTIFAST VLCD products (Shakes, Soups, Desserts and Bars) and is structured into four simple levels.

The OPTIFAST VLCD product range

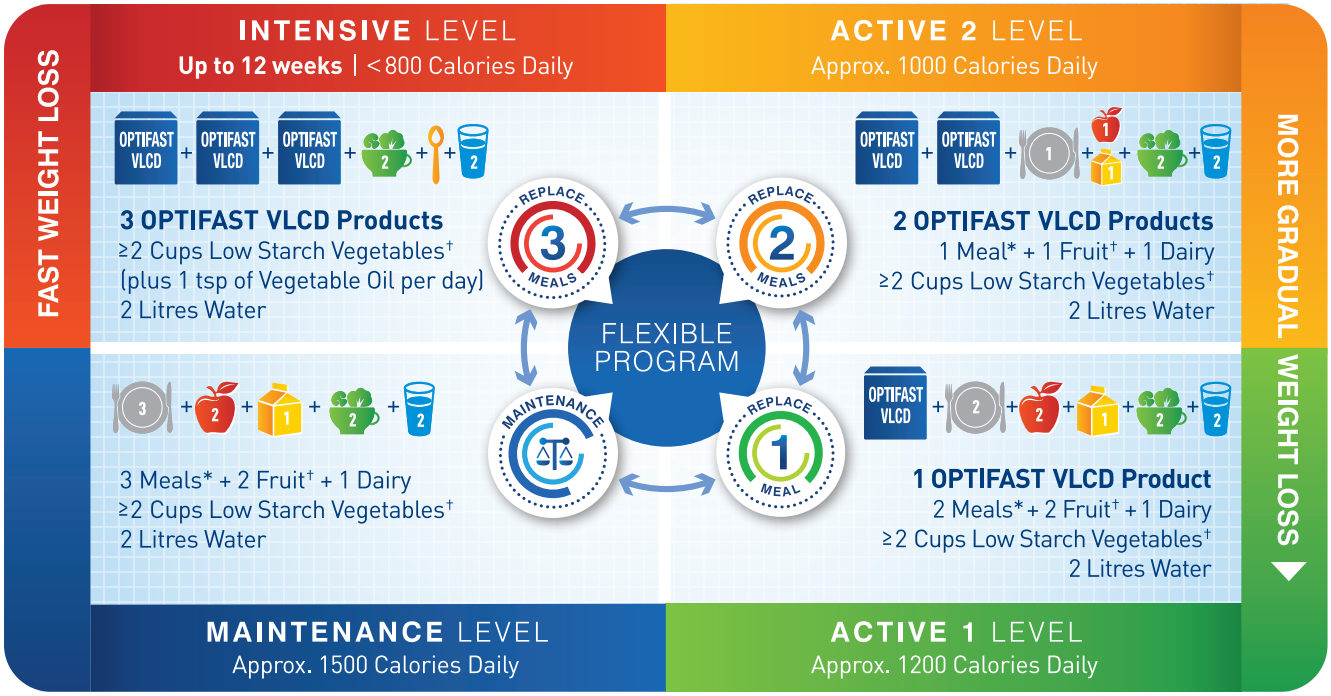
Each of the OPTIFAST VLCD products can be used interchangeably throughout the program, depending on individual preference. Each sachet is mixed with cold or warm water then stirred, blended or shaken. Bars are directly eaten and no preparation is required.

For more information on the nutritional composition of the products and ingredients, please see the Appendices in **Section 6**.

Overview of the OPTIFAST VLCD Program

There are four Levels of the OPTIFAST VLCD Program. For active weight loss there are three Levels, followed by the fourth Level which is Maintenance. Although most individuals will start at the Intensive Level and work their way through to the Maintenance Level, the program can be tailored to the individual to ensure it suits their lifestyle needs and weight-loss goals. Therefore, it may be more appropriate to start at Active 2 or Active 1, and then move through the levels, or go back to the Intensive Level later on.

Figure 2: OPTIFAST VLCD Program Levels Overview

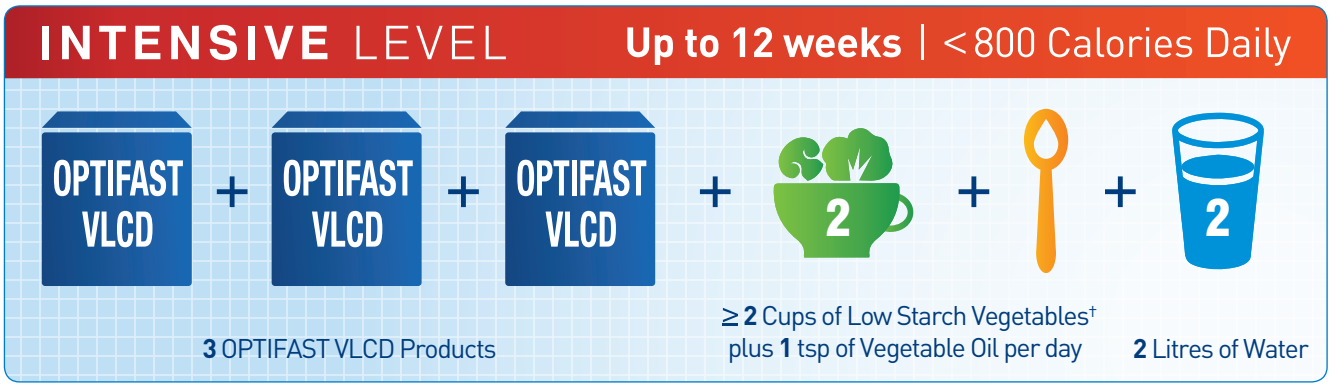


The OPTIFAST VLCD Program can be modified to suit individual requirements.
*Meals should equal approximately 350 calories each.
†See allowed low starch vegetables and fruit in the 'Allowed Vegetables and Additional Food Allowances' table **(www.optifast.com.au).**

The OPTIFAST VLCD Program weight loss levels

Intensive Level

The Intensive Level of the OPTIFAST VLCD Program is the 'Very Low Calorie Diet' or 'VLCD' part of the program (also known as 'very low energy diet' or 'VLED'). During the Intensive Level an individual will take an OPTIFAST VLCD product three times daily as a substitute for breakfast, lunch and dinner and all snacks.



†See allowed low starch vegetables in the 'Allowed Foods' table on page 12.

Alternatively, OPTIFAST VLCD products can be more evenly spread throughout the day. For example, ½ Bar for morning tea and ½ Bar for afternoon tea if this helps with compliance. Please refer to the sample meal plans for ideas on how the OPTIFAST VLCD products can be distributed throughout the day. In addition to this, patients need to consume a minimum of 2 cups of low starch vegetables (see Allowed foods list on **page 12**), 2 litres of water and 1 teaspoon oil each day. The addition of the vegetables assists in providing fibre, water and nutrients, as well as the social aspect of eating.

Weight loss during the Intensive Level is achieved by the restriction of carbohydrate and total energy intake. This enables the body to use its body fat stores for energy via a metabolic process called ketosis. Ketosis is a metabolic response that occurs when following the OPTIFAST VLCD Program Intensive Level. Ketones provide an alternative fuel source derived from fat when glucose is in short supply.[11] This Level is recommended only for individuals with a BMI >30kg/m^2 or a BMI >27kg/m^2 with obesity related co-morbidities.

OPTIFAST VLCD products contain carbohydrates, fatty acids and protein, which helps preserve lean body mass while losing body fat stores. They also contain vitamins and minerals to ensure that nutritional requirements are met during periods of calorie restriction.

Generally, patients can stay on this Level for anywhere up to 12 weeks, however this period is variable and depends on weight loss goals and the ability to tolerate the VLED.

It is not necessary for patients to reach their goal weight with one period of VLED use. They may have repeated periods of following the Intensive Level separated by periods of weight maintenance.[5] If there is still a significant amount of weight to be lost at the end of the initial 12 weeks, we recommend following the Active 2 level for a minimum of two weeks before repeating the Intensive Level again. Alternatively if a patient is doing well on the VLED and still has more weight to lose after the initial 12 weeks, then they may continue on the Intensive Level for longer than the 12 weeks at the discretion of the treating healthcare professional.[5] This requires close monitoring and supervision. In some cases VLEDs have been used for up to 16 weeks or even longer in instances where higher amounts of weight loss are required.[6] This should only be done under medical supervision.

Historically, as very low energy diets were very low in fat, it was recommended to add 1 teaspoon of vegetable oil each day to ensure there is a sufficient fat intake to keep the gall bladder contracting, to prevent the formation of gall stones. As the current OPTIFAST VLCD products have sufficient fat content, the addition of the teaspoon of vegetable oil is less relevant. The Shakes, Soups and Desserts contain omega-3 fatty acids, however the Bars do not, and therefore if consuming the OPTIFAST VLCD Bars only the addition of the teaspoon of vegetable oil will be necessary. However, in order to add flavour to the vegetables and improve compliance, it is encouraged for everyone to incorporate the vegetable oil into the Intensive Level.

Despite popular belief, there is no evidence to suggest that the consumption of caffeine-containing beverages as part of a normal lifestyle leads to fluid loss in excess of the volume ingested or is associated with poor hydration status.[18] Caffeine up to the dose of 400mg/day or 3-4 cups of coffee can safely be included in the OPTIFAST VLCD Program. Coffee should be preferably consumed with no or a maximum of 30mL skim milk and no sugar.

Alcohol is not recommended during the Intensive Level of the OPTIFAST VLCD Program as it can put extra strain on the liver and kidneys. Alcohol also has a diuretic effect as well as contains extra calories which will slow down weight loss progress. Instead, recommend low energy/calorie drinks such as soda water with a spritz of lemon or lime.

Table 6: Sample Meal Plans for the Intensive Level

Meals	Sample Meal Plan 1	Sample Meal Plan 2	Sample Meal Plan 3
Breakfast	**1 OPTIFAST VLCD Shake**	**1 OPTIFAST VLCD Shake**	**1 OPTIFAST VLCD ProteinPlus Shake**
Morning Tea	**½ OPTIFAST VLCD Bar** Tea/coffee (either black or with up to 30mL of skim milk and no sugar)	Tea/coffee (either black or with up to 30mL of skim milk and no sugar)	Tea/coffee (either black or with up to 30mL of skim milk and no sugar)
Lunch	**1 OPTIFAST VLCD Soup**	**1 OPTIFAST VLCD Shake**	**1 OPTIFAST VLCD Bar**
Afternoon Tea	**½ OPTIFAST VLCD Bar** Tea/coffee (either black or with up to 30mL of skim milk and no sugar)	Vegetable sticks	1 cup of low starch vegetables
Dinner	2 cups of low starch salad or vegetables with 1 tsp of vegetable oil and other allowed condiments	2 cups of low starch salad or vegetables with 1 tsp of vegetable oil and other allowed condiments	**1 OPTIFAST VLCD Soup** plus 1 cup of low starch vegetables with 1 tsp of vegetable oil
Supper	Herbal tea 125mL of diet jelly	**1 OPTIFAST VLCD Dessert**	Herbal tea
Total Nutrient Intake	**753 calories** **64.2g protein** **68.5g carbohydrate**	**744 calories** **65g protein** **65g carbohydrate**	**793 calories** **73g protein** **66g carbohydrate**

Allowed vegetables and additional food allowances

The recommended allowed vegetables on the OPTIFAST VLCD Program are low starch or low carbohydrates and also low-calorie. The table on the following page lists what vegetables are recommended whilst on the OPTIFAST VLCD Intensive Level.

The OPTIFAST VLCD Program calls for at least 2 cups a day of allowed vegetables, but doubling that quantity makes little difference to weight loss as long as the recommended allowable vegetables are consumed. Eating vegetables during the program is an important part of helping patients with the transition onto a balanced, calorie-controlled diet after the OPTIFAST VLCD Program has been completed.

We do not recommend deviating from the list as other foods may have a higher carbohydrate and calorie content and could affect ketosis and appetite regulation.

Additional low energy foods (soups, sauces, condiments, herbs, spices and miscellaneous items) are also allowed whilst following the OPTIFAST VLCD Program. These are designed to add variety to meals and assist in compliance. See the following page for a list of the additional allowances permitted during the OPTIFAST VLCD Program.

Table 7: Allowed Vegetables and Additional Allowances during the Intensive Level of the OPTIFAST VLCD Program

Allowed				Avoid
Low starch vegetables				
Alfalfa sprouts Asparagus Bean Sprouts Bok Choy Broccoli Brussels sprouts Beetroot (30–40g) Cabbage Capsicum	Carrots (30–40g) Cauliflower Celery Cucumber Eggplant Green beans Konjac noodles (Slendier/ Slim Pasta range)	Lettuce (all types) Leeks Mushrooms Onions Radishes Shallots Silverbeet	Snow peas Spinach Squash Tomatoes Watercress Zucchini	Corn Green peas Legumes Lentils Potato Sweet potato Parsnip Pumpkin Turnip
Soups				
Stock cubes	Bonox (in moderation)	Vegetable soups made from allowed vegetables	Miso soup	All other soups
Sauces and Condiments				
Lemon and lime juice Vinegar	Worcestershire sauce Tabasco sauce	Soy sauce (in moderation) Chilli	Mustard Tomato paste	Cream High calorie simmer sauces and dressings
Herbs and Spices				
All spice Basil Celery flakes Chilli Chives Cinnamon Cloves	Coriander Cumin Curry powder Dill Fennel Garlic Ginger	Lite salt Mint Mustard seed Nutmeg Oregano Paprika Parsley	Pepper Rosemary Sage Thyme Turmeric Tarragon	
Miscellaneous				
Artificial sweeteners# Sugar-free lollies and gum (1–2 pieces per day)	Flavour essences (½–1 tsp)	Diet jelly (125g)	Diet topping (1–2 tsp)	
Low energy drinks				
Water Soda water	Diet soft drinks and cordial Plain mineral water	Tea and coffee (no or 30mL skim milk and no sugar)	Herbal teas	Fruit juice Alcohol Soft drinks Cordial

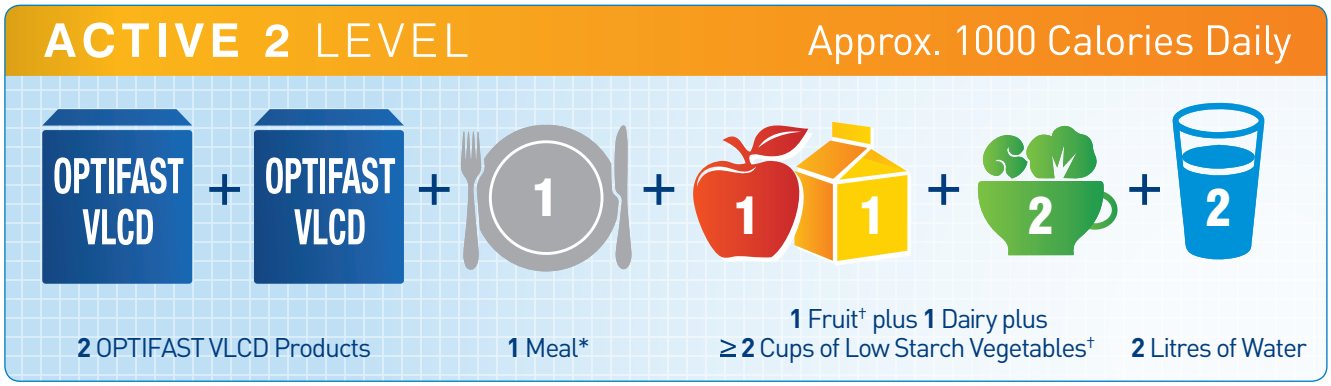
Additional condiments can be included as part of the Intensive Level of the OPTIFAST VLCD Program once a day, provided they contain no more than 50kJ and up to 2g of carbohydrate per serve.
#It is important to note that large amounts of sugar-free lollies can add additional kilojoules and cause gastrointestinal discomfort. Please only use in moderation.

Key summary points for the Intensive Level of the OPTIFAST VLCD Program to discuss with your client/patient:

1. Importance of following the Intensive Level exactly as prescribed in order to achieve mild ketosis. This is associated with control of appetite and burning of fat stores.
2. The use of all 3 OPTIFAST VLCD products, plus at least 2 cups of low starch vegetables and additional fluids.
3. Addition of a small amount of fat each day (e.g. 1 teaspoon vegetable oil on salad or vegetables) to contract the gall bladder, for compliance or the addition of omega-3 fatty acids.
4. The need for active supervision by a healthcare professional during the Intensive Level and supervised progression on to Active 2 and Active 1 Levels to achieve long-term weight loss and Maintenance.

Active 2 Level

The Active 2 Level is the second level in the OPTIFAST VLCD Program, where the reintroduction of food takes place by replacing one OPTIFAST VLCD product with a low-calorie meal. This ensures a gradual and controlled reintroduction to meals, and is designed to prevent abrupt retention of fluid and abdominal discomfort.[6]



*Meals should equal approximately 350 calories each. †See allowed low starch vegetables and fruit in the 'Allowed Vegetables and Additional Food Allowances' table **(www.optifast.com.au).**

During the Active 2 Level, two OPTIFAST VLCD products are consumed along with one low-calorie meal of approximately 350 calories. Two cups of low starch vegetables and 2 litres of water should be continued, and 1 serve of fruit (around 70 calories) and 1 serve of dairy (around 100 calories) is introduced. This level provides approximately 1000 calories per day.

Table 8: Fruit and Dairy Allowances for Active 2, Active 1 and Maintenance Levels of the OPTIFAST VLCD Program

Fruit – 1 serve equivalents (70 calories)		
Apple (1 small) Apricots (2) Blueberries (¾ cup) Canned fruit in natural juice (120g) Cherries (15) Grapes (½ cup) Kiwi fruit (1)	Lychees (canned in light syrup, 4) Mandarin (½) Mango (½) Orange (1 medium) Passionfruit (4) Peach (1 medium) Pear (1 small)	Pineapple (2 slices) Plum (2 small) Prunes (3) Rhubarb (200g cooked) Strawberries (1.5 punnet)
Dairy – 1 serve equivalents (100 calories)		
Cottage Cheese (⅓ cup) Low fat ice cream (1 scoop)	Low fat milk (1 cup/250mL) Low fat yoghurt (1 tub ~ 150g)	Reduced fat cheese (25% reduced fat, 30g)

The low-calorie meal (~350 kcal)

The low-calorie meal that is introduced during this level and subsequent levels of the program should equal approximately 350 calories or less. The evening meal is generally substituted during the Active 2 Level, purely for social reasons. You may prefer to tailor this for the individual and substitute the morning or lunch meal instead. It is quite normal for individuals to feel quite anxious about the reintroduction of food for the fear of losing appetite control, returning to pre-VLED habits and weight regain. It is important to guide your patients on the appropriate foods and portion sizes to introduce into their allowed meal.

There is no conclusive evidence on the optimal diet post VLED however research indicates that a higher protein (25-28% of energy intake) and low Glycaemic Index (GI) appears to offer the most favourable results for weight loss maintenance post energy restriction.[19] Continual monitoring of appetite control and weight regain are important during this time.

A useful guide can be to use portion control. Aim for a quarter of the dinner plate to be low GI carbohydrates (½ -1 cup cooked pasta, ½ - ¾ cup cooked rice, 1 small-medium potato or corn cob, 1-2 slices of thin bread), one quarter to be good quality protein (65-100g meat or chicken, 130g fish, 2 eggs or 150g tofu) and half the plate to be low starch vegetables or salad. The two cups of low starch vegetable allowance can be incorporated into the low-calorie meal or if the calorie allowance allows, they can be added as extras to the meal plan. One tablespoon (20mL) of dressing or sauce can also be added to help flavour the meal. By following this outline the low-calorie meal will be approximately less than or equal to 350 calories.

The website lists a range of different healthy low-calorie recipes that can be incorporated into your patient's meal plan once they have moved onto the Active 2, Active 1and Maintenance Levels.

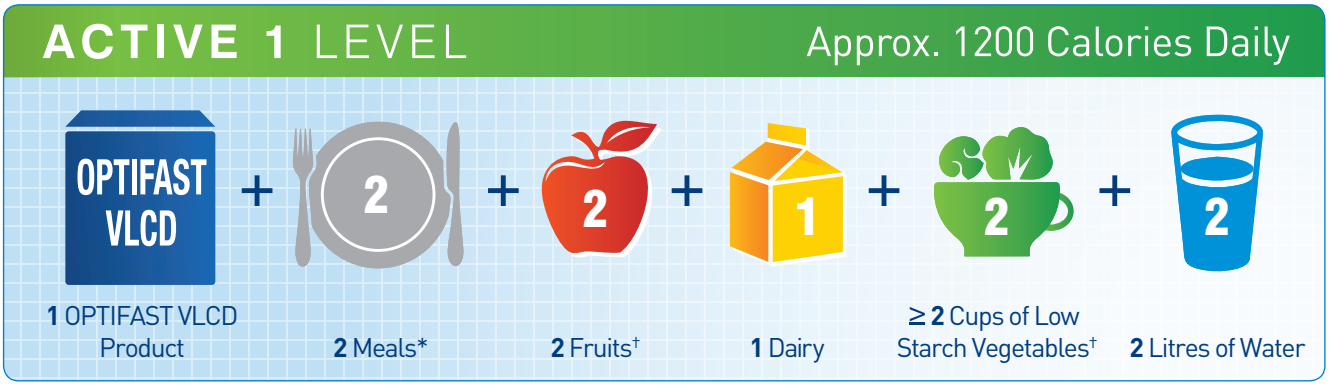
The Active 2 Level can also be used as a long-term meal replacement program for individuals with a BMI of 25-30kg/m^2 who want to lose weight, but where the Intensive Level is not recommended or is too restrictive.

Table 9: Sample Meal Plans for the Active 2 Level

Meals	Sample Meal Plan 1	Sample Meal Plan 2	Sample Meal Plan 3
Breakfast	**1 OPTIFAST VLCD Shake**	**1 OPTIFAST VLCD Shake**	**1 OPTIFAST VLCD ProteinPlus Shake**
Morning Tea	Tea/coffee (either black or with 30mL of skim milk and no sugar) 1 serve of fruit	Tea/coffee (either black or with 30mL of skim milk and no sugar) 1 serve of fruit	1 tub of yoghurt
Lunch	1 cup of low starch salad or vegetables	**Low-calorie meal (~350kcal, 25g protein, 25g CHO)**	**1 OPTIFAST VLCD Dessert** 60g of vegetable sticks
Afternoon Tea	**1 OPTIFAST VLCD Bar**	1 cup of low starch vegetables	1 serve of fruit
Dinner	**Low-calorie meal (~350kcal, 25g protein, 25g CHO)**	**1 OPTIFAST VLCD Soup** 1 cup of low starch vegetables	**Low-calorie meal (~350kcal, 25g protein, 25g CHO)**
Supper	Herbal tea 1 tub of yoghurt	Glass of warm skim milk with diet topping	Herbal tea 125mL of diet jelly
Total Nutrient Intake	**981 calories** **74g protein** **99g carbohydrate**	**1013 calories** **79.5g protein** **104g carbohydrate**	**1035 calories** **82g protein** **97g carbohydrate**

Active 1 Level

The Active 1 Level is the third level of the program, in which another meal is introduced. One OPTIFAST VLCD product is consumed in addition to two low-calorie meals of approximately 350 calories each. Two cups of low starch vegetables and 2 litres of water should be continued, and another serve of fruit is added so that two serves of fruit and one serve of dairy are consumed. This level provides approximately 1200 calories per day.



*Meals should equal approximately 350 calories each. †See allowed low starch vegetables and fruit in the 'Allowed Vegetables and Additional Food Allowances' table **(www.optifast.com.au).**

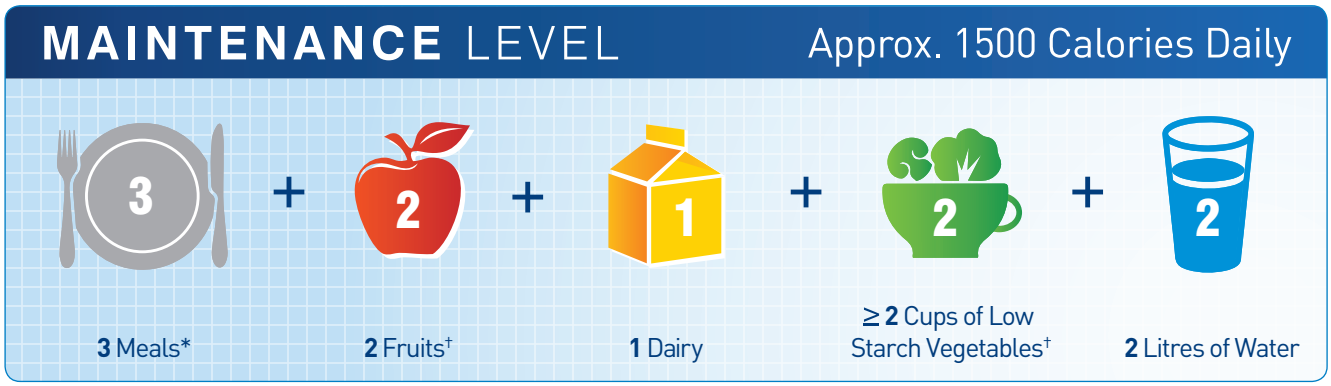
As with the Active 2 Level, the Active 1 Level can be used as a meal replacement program for individuals with a BMI of 25-30kg/m^2 who want to lose weight but for whom the Intensive Level is not recommended.

Table 10: Sample Meal Plans for the Active 1 Level

Meals	Sample Meal Plan 1	Sample Meal Plan 2	Sample Meal Plan 3
Breakfast	**1 OPTIFAST VLCD Shake**	**Low-calorie meal (~350kcal, 25g protein, 25g CHO)**	**Low-calorie meal (~350kcal, 25g protein, 25g CHO)**
Morning Tea	Tea/coffee (either black or with 30mL of skim milk and no sugar) 1 serve of fruit	Tea/coffee (either black or with 30mL of skim milk and no sugar) 1 serve of fruit	1 tub of yoghurt 1 serve of fruit
Lunch	**Low-calorie meal (~350kcal, 25g protein, 25g CHO)**	**1 OPTIFAST VLCD Bar**	**Low-calorie meal (~350kcal, 25g protein, 25g CHO)**
Afternoon Tea	Tea/coffee (either black or with 30mL of skim milk and no sugar) Vegetable sticks	1 serve of fruit Vegetable sticks	1 serve of fruit Vegetable sticks
Dinner	**Low-calorie meal (~350kcal, 25g protein, 25g CHO)**	**Low-calorie meal (~350kcal, 25g protein, 25g CHO)**	**1 OPTIFAST VLCD ProteinPlus Shake** 1 cup of low starch vegetables
Supper	Herbal tea 1 tub of yoghurt ½ cup of diced fruit	Glass of warm skim milk (200mL) with diet topping	Herbal tea 125mL of diet jelly
Total Nutrient Intake	**1200 calories** **83g protein** **111g carbohydrate**	**1200 calories** **78g protein** **119g carbohydrate**	**1270 calories** **91g protein** **117g carbohydrate**

Maintenance Level

The Maintenance Level is where all OPTIFAST VLCD products are eliminated and is designed to help maintain a long-term focus on maintaining weight loss.



*Meals should equal approximately 350 calories each. †See allowed low starch vegetables and fruit in the 'Allowed Vegetables and Additional Food Allowances' table **(www.optifast.com.au).**

Dietary intake consists of three low-calorie meals (approximately 350 calories each), two serves of fruit and one serve of dairy, plus low starch vegetables and water. The nutrition component of the Maintenance Level requires ongoing monitoring for meal plan adjustments and education to ensure long-term weight management.

Table 11: Sample Meal Plans for the Maintenance Level

Meals	Sample Meal Plan 1	Sample Meal Plan 2	Sample Meal Plan 3
Breakfast	**Low-calorie meal (~350kcal, 25g protein, 25g CHO)**	**Low-calorie meal (~350kcal, 25g protein, 25g CHO)**	**Low-calorie meal (~350kcal, 25g protein, 25g CHO)**
Morning Tea	Tea/coffee 1 serve of fruit	Tea/coffee 150g of low fat yoghurt	Tea/coffee 150g of low fat yoghurt
Lunch	**Low-calorie meal (~350kcal, 25g protein, 25g CHO)**	**Low-calorie meal (~350kcal, 25g protein, 25g CHO)**	**Low-calorie meal (~350kcal, 25g protein, 25g CHO)**
Afternoon Tea	Tea/coffee 1 cup of carrot and celery sticks	Tea/coffee 1 piece of fruit 1 cup of carrot and celery sticks	Tea/coffee 1 piece of fruit 1 cup of carrot and celery sticks
Dinner	**Low-calorie meal (~350kcal, 25g protein, 25g CHO)**	**Low-calorie meal (~350kcal, 25g protein, 25g CHO)**	**Low-calorie meal (~350kcal, 25g protein, 25g CHO)**
Supper	Cup of black or herbal tea 150g of low fat yoghurt ½ cup of fresh raspberries	½ cup of fruit salad	Cup of black or herbal tea 125mL of diet jelly with ½ cup of fruit salad
Total Nutrient Intake	**1290 calories** **86g protein** **108g carbohydrate**	**1287 calories** **86g protein** **111g carbohydrate**	**1296 calories** **87g protein** **111g carbohydrate**

3

Who is the OPTIFAST VLCD Program suitable for?

Patient suitability

Indications

The Intensive Level of the OPTIFAST VLCD Program (which is the VLED component) can be considered in individuals with a BMI ≥30kg/m^2, or a BMI ≥27kg/m^2 plus risk factors, poor mobility, or a need for weight reduction prior to surgery. Risk factors include smoking, hypertension, dyslipidaemia, hyperglycaemia, family history of heart disease and sleep apnoea.

Medical supervision is always advised when following a VLED program. Many patients who require weight loss will not present to you asking for assistance. A proactive approach may be required. A good way to identify patients who are suitable for a very low energy diet is to classify them by BMI or waist circumference, distribution of body fat, morbidity of complications, age and readiness to commit.

In addition to the appropriate BMI, suitable patients may include those with:

1. Waist circumference measurement: >102cm in men and >88cm in women
2. A need for rapid weight loss, e.g. prior to elective surgery, to allow for increased mobility, or an improvement of an obesity-related medical condition
3. A history of unsuccessful weight loss attempts with diet and exercise, with or without pharmacotherapy
4. Motivation and high readiness to undergo the strict supervision and discipline of the OPTIFAST VLCD Program.

If your patient's BMI is less than 30kg/m^2 and they have no risk factors, the Active 2 or Active 1 Level of the OPTIFAST VLCD Program may still be appropriate.

Contraindications

Healthy weight (BMI <25kg/m^2)

VLEDs should never be used by people with a normal weight because it may lead to excessive loss of lean body mass.

Pregnancy

The OPTIFAST VLCD Program is contraindicated in pregnancy, as there is no evidence to indicate that a VLED is either beneficial or safe during this time.

Following a VLED leads to elevated levels of ketones in the blood. Although the levels of ketones are fairly low, the effect on the foetus is unknown. In addition, the OPTIFAST VLCD Program is not designed to meet the increased nutrient requirements of pregnancy (e.g. protein, iron and B group vitamins).

Premenopausal women should be advised to take suitable contraception if on the Intensive Level of the OPTIFAST VLCD Program.

Lactation

The Intensive Level of the OPTIFAST VLCD Program (replacing all three meals with OPTIFAST VLCD products) is not recommended for women who are fully breastfeeding as it is not designed to meet the increased nutritional demands of lactation. Patients may start on the Active 1 Level (i.e. replacing one meal per day with an OPTIFAST VLCD product). They can gradually increase the amount of meals replaced with an OPTIFAST VLCD product once the baby has started to wean off breast milk and is also consuming a reasonable quantity of solids.

Children <18 years

VLEDs are contraindicated in children who are still growing; however, there may be children in whom severe obesity is resistant to other treatments. In such individuals, the risks associated with obesity should be weighed against the risks of using a VLED and should only be prescribed and monitored by a qualified healthcare professional.

Presence of porphyria

Porphyria is the umbrella term for a group of rare disorders that involve a particular molecule called 'haem'. Haem contains iron and is used in metabolic processes throughout the body. Porphyria occurs when the body cannot convert naturally occurring compounds (called 'porphyrins') into haem. While all tissues have haem, those that use it the most are the red blood cells, liver and bone marrow. Porphyria can affect the skin, nervous system and gastrointestinal system, depending on the specific type. Porphyria is contraindicated with OPTIFAST VLCD Program as extreme calorie restriction can provoke an acute attack.

Recent myocardial infarction or unstable angina

Patients should be referred to a cardiologist to determine suitability for a VLED or severe calorie restriction.

Liver disease

Rapid weight loss using a VLED is not recommended for patients with advanced liver disease. Rapid weight loss induced by VLED can induce a transient and reversible (2-6 weeks) rise in liver enzymes.[20] One observational study with paired biopsies found some subjects developed portal inflammation and fibrosis with extensive VLED induced weight loss. Those likely to develop portal changes had greater steatosis initially, greater loss of liver fat and more rapid weight loss.[21]

In those with known hepatic disease or dysfunction the OPTIFAST VLCD Program may be commenced at one of the lower Levels i.e. Active 2 or Active 1 and be stepped up toward the Intensive Level progressively over weeks while monitoring liver enzyme levels.

Contraindications (continued)

Renal disease

While there is limited clinical data on the use of VLEDs in people with renal disease, they have been shown to be effective in reducing weight and improving renal function without any reported adverse effects in these patients. However, such patients should be closely monitored to ensure that there is no disruption to electrolyte or fluid balance. Particular care needs to be taken in patients on a fluid restriction and such patients should be monitored by a physician while on a VLED.

Before commencement on OPTIFAST VLCD Program, electrolytes, creatinine and eGFR should be performed. The following criteria should be used to assess suitability:

Stage 1

Kidney damage but normal GFR >90mL/min/1.73m²
May follow standard OPTIFAST VLCD Program.

Stage 2

Mild insufficiency (GFR 60–89/min/1.73m²)
May follow standard OPTIFAST VLCD Program.

Stage 3

Moderate insufficiency (GFR <60mL/min/1.73m²)
Need close monitoring with at least weekly measurement of renal function and electrolytes initially.

Stage 4

Severe insufficiency (GFR <30mL/min/1.73m²)
Such patients should be under the care of a nephrologist who should be contacted to determine whether they are suitable for OPTIFAST VLCD Program. If on OPTIFAST VLCD Program, electrolytes, renal function, calcium, phosphate and fluid balance need to be monitored regularly.

Stage 5

Renal failure (GFR <15mL/min/1.73m²)
Their nephrologist needs to be contacted to determine whether they are suitable to follow a VLED and if so the renal team, including a specialist dietitian, needs to be closely involved in their care, as such patients usually have complex medical problems. While on the OPTIFAST VLCD Program, electrolytes, renal function, calcium, phosphate and fluid balance need to be monitored regularly. However, those patients who are on dialysis are generally easier to manage as their electrolytes and fluid balance can be controlled with dialysis.

Patients with acute renal disease are not suitable for the OPTIFAST VLCD Program as they may need decreased or increased intakes of potassium, sodium and fluids. OPTIFAST VLCD is also contraindicated for patients in a catabolic state. For more information on the management of renal disease please refer to the *OPTIFAST VLCD Management of Complex Cases*.

Precautions

Age >65 years

The Intensive Level of the OPTIFAST VLCD Program is generally not advised for use in persons over the age of 65 years. Older people (aged >70 years) have increased protein requirements due to an elevated anabolic resistance to ingested protein.[22] Recent research however, indicates that VLEDs in conjunction with exercise has potential in the treatment of obesity in older persons under medical supervision.[23] Care must be taken to ensure nutritional requirements are met, in particular protein. Research indicates that high protein (1.2g/kg/day) hypocaloric diets are required to maintain serum albumin in senior people with metabolic syndrome.[24]

History of severe psychological disturbance, alcoholism or drug abuse

Individuals diagnosed with psychosis should only proceed with a VLED diet under the guidance of their medical practitioner. The medical practitioner must weigh up the benefits versus the risks. The psychotic state may lead to inappropriate and/or unreliable use of the VLED placing the patient at nutritional risk.

Cholelithiasis

Rapid weight loss may induce the formation of gallstones. Where fat intake can sometimes be low with a VLED, the addition of fat (i.e. 1 teaspoon vegetable oil per day) to the program has historically been prescribed to stimulate the emptying of the gall bladder and can prevent the formation of gallstones. OPTIFAST VLCD products now contain enough fat to cause contraction of the gall bladder and prevention of this problem. The addition of 1 teaspoon of oil to the Intensive Level can still be recommended to increase compliance and add variety and taste to the vegetables and salad. It is not absolutely necessary for the prevention of cholelithiasis. However, the Bars do not contain omega-3 fatty acids, and therefore if consuming the OPTIFAST VLCD Bars only the addition of the teaspoon of oil will be necessary. Formation of gallstones can also be prevented with ursodeoxycholic acid in individuals predisposed to cholelithiasis.

Precautions (continued)

Pancreatitis

Gallbladder problems may be associated with pancreatitis and/or cholangitis. In patients with a suspected history of cholecystitis or gallstones, the potential for the development of pancreatitis must be considered and reviewed with the patient. Isolated acute pancreatitis has been reported only rarely during weight reduction, however with a patient complaint of severe abdominal pain and/or elevated amylase or alkaline phosphatase, pancreatitis and/or cholangitis should be considered. If confirmed, the patient should be advised to postpone weight reduction until the condition is treated and resolved.

Electrolytes

Although the OPTIFAST VLCD Program contains adequate electrolytes for most individuals, some individuals may become hyponatraemic or hypokalaemic, especially if they are receiving diuretic therapy. In such circumstances, electrolyte supplements may be required or diuretic therapy reduced or stopped. In addition, when following a carbohydrate restricted diet for more than two weeks, the body switches from retaining salt to rapidly excreting salt. If your patients experience side effects such as weakness, fatigue, light-headedness, headache or constipation, consider adding 1-2 cups of stock, broth or bouillon to the daily meal plan.[25]

Gout

Serum uric acid increases during the first weeks on a VLED. Despite this, attacks of gout are rare although patients with a history of gout may occasionally develop an acute attack. In patients with a history of gout it is important to ensure an adequate fluid intake, and the addition of allopurinol 300mg daily may be considered.

Liver enzymes

Transient elevations of hepatocellular enzymes may occur through the Intensive Level of the program, but progressive elevation beyond three times the upper limit is abnormal and unusual. Elevations of liver enzyme values (SGOT, SGPT, ALT, GGT) occur in a significant number of morbidly obese patients. Sometimes such elevations are present at baseline and decrease to normal during weight loss. Isolated elevations of hepatocellular enzymes and the absence of significant elevations of bilirubin, alkaline phosphatase or findings of acute disease, may not require further investigation or changes in dietary protocol. Significant elevation of bilirubin and/or alkaline phosphatase and gamma glutamyl transpeptidase (GGT) with a progressive elevation of hepatocellular enzymes suggest inter-current hepatic disease, such as hepatitis or pancreatitis and must be investigated.

Women menstrual cycle changes

Women may experience a variety of changes in their menstrual cycle during weight loss. Cycles may resume or decrease with weight loss and generally return to normal following re-feeding.

Fertility

Women previously infertile (due to polycystic ovarian syndrome PCOS) may ovulate and become fertile whilst on a weight loss program. Women should therefore be informed and take appropriate birth-control precautions. It is also recommended that women must avoid the 'Intensive Level' of the OPTIFAST VLCD Program whilst trying to conceive.

Even though loss of weight may improve fertility in most cases, studies have shown that use of a VLED may compromise reproductive outcomes and may also result in an unsatisfactory IVF outcome, in individuals undertaking Assisted Reproductive Technology (ART).[26,27] It is therefore recommended to cease the use of a VLED six weeks prior to conception or embryo insertion.

Diaphragm usage

Women who are using a diaphragm for birth control may need to be referred to their Obstetrician/Gynaecologist for periodic checks on the fit, since fit may change as the patient loses weight.

Managing patients with diabetes

Most overweight and obese patients with Type 1 or Type 2 diabetes are eligible to use OPTIFAST VLCD products as part of an overall management program that emphasises the importance of ongoing weight maintenance. Special care is needed when managing patients with diabetes, as a VLED significantly reduces plasma glucose concentration independently of weight loss. For this reason, hypoglycaemia is likely to occur if medications aren't managed prior to going on the OPTIFAST VLCD Program. For more information on the dietary management of patients with diabetes please refer to the *OPTIFAST VLCD Management of Complex Cases*.

Patient readiness

In order for a patient to succeed with the OPTIFAST VLCD Program, it is important to assess their readiness to undertake the necessary behaviour changes required for effective weight management. After physically assessing the patient and presenting the VLED program outline, it may be helpful to address how the patient perceives the importance of making the changes required as well as assess their level of confidence in making those changes.

If the patient perceives that the level of importance is low, then assisting the patient to identify benefits or intrinsic motivators should be discussed. In addition, if the patient's level of confidence is low then reducing the magnitude of the goals may be helpful, for example aim at losing 5kg rather than 20kg, or starting with 4 weeks on the Intensive Level of the Program rather than 12 weeks. Alternatively you can start a patient on Active 2 or 1 Level if you feel that this would be more suitable for them. In addition, work through and identify any barriers that may inhibit making the necessary lifestyle changes. Once you can confirm that the patient is ready to move ahead with the Program then it is important to create some specific goals and an action plan. A step wise approach is outlined below with some sample questions that can be used.

Step 1
Assess level of importance

1. How important do you think it is for you to make changes (i.e. lose weight) at the moment given all the other priorities currently in your life?

Step 2
Assess level of confidence

1. How confident are you that you can change your diet and increase your physical activity to lose weight and improve your health?
2. Do you feel you can succeed in losing weight right now?

Step 3
Help patient to identify benefits or intrinsic motivators

1. If you made some changes, what benefits do you think you would gain?
2. If you make changes, how would your life be different from what it is today?
3. How would you like things to turn out for you in 2 years?
4. How would losing weight impact the things or people that are important to you?

Step 4
Identify obstacles or barriers

1. Are there any stressful events in your life right now that might get in the way of you making the necessary changes?
2. Have you tried to lose weight before? What got in the way of you achieving or maintaining your goals in the past?
3. What do you find most difficult about losing weight?
4. What would be not so good about making the changes you are thinking about making?
5. Are there people who can support you to lose weight? Do you think they will help you in your efforts?
6. How can I help you get past some of the difficulties you are experiencing?
7. If you were to decide to change, what would you have to do to make this happen?

Step 5
Confirm level of readiness

1. On the following scale from 1 to 10, where 1 is definitely not ready to change and 10 is definitely ready to change, what number best reflects how ready you are at the present time to lose weight?
2. How do you feel about making the necessary changes?

Step 6
Set specific goals

Generating some specific goals is an important part of the process with which the patient may need some assistance. Goals may include one or a combination of the following:

1. Medical or clinical targets – certain amount of weight loss, reducing blood pressure, reducing waist circumference, lowering BMI.
2. Specific health goals – exercising 4 times per week, drinking 2 litres of water per day.
3. Motivation goals – fitting into old clothes or a certain dress, not having to take hypoglycaemic medication any longer, being able to run a 5km fun run in 6 months.

Step 7
Create an action plan

An action plan should include as much detail as necessary for the client to feel confident that they can achieve the desired task. Some things to consider when creating an action plan are:

1. All the steps needed to overcome barriers and achieve the personal goal.
2. When and how to follow the program.
3. Prompts to aid memory where necessary.
4. Support mechanisms.
5. Contingency plans.
6. Tracking and monitoring strategies.
7. Review details.

Medications

The use of a VLED may influence the dosage requirements of some medications. This is important for medications that have a narrow effective therapeutic range. The mechanisms that may alter requirements include:

- A major change in the nature of dietary intake – macronutrient and micronutrient
- Significant negative energy balance and resultant rapid weight loss
- Ketosis associated with fat catabolism
- Alterations in body composition with weight loss:
  - Reduced fat/lipid compartment
  - Altered lean body mass
  - Altered hydration.

Individuals receiving medication for Type 1 and Type 2 diabetes, hypertension, dyslipidaemia or those on lithium therapy may need a reduction in dose or withdrawal from their medication whilst undergoing a VLED program. For the recommendations of management for patients on any of the above medications please refer to the *OPTIFAST VLCD Management of Complex Cases*. All individuals should be monitored carefully in the first few weeks of using a VLED.

No interactions

The following list of medications can be used normally in patients on a VLED:

- Minor tranquilizers
- Antibiotics
- Anti-emetics
- Anti-diarrhoea agents
- Antacids
- Oral contraceptives
- Oestrogen for the prevention of osteoporosis
- Antihistamines.

Bariatric surgery and OPTIFAST VLCD

Surgical intervention by way of bariatric surgery can result in substantial weight loss that is sustained over the long-term when combined with education, ongoing monitoring and patient support.

However, features of severe obesity can increase the complexity of the bariatric surgical procedure and may increase the risks of the surgery itself.

Preoperative weight loss is generally recommended to optimise the safety of surgery in obese patients.[28] Most studies have shown weight loss prior to bariatric surgery decreases operating time complications, blood loss during surgery and post-surgery hospital stays.[29,30]

VLEDs have often been prescribed pre-surgery when rapid weight loss is indicated and to assist in reducing liver volume. A reduction in liver volume improves abdominal access for the surgeon and reduces the risk of conversion from laparoscopic to an open procedure.[31,32] Importantly, weight loss prior to surgery sensitises the patient to the potential benefits of complying with postoperative dietary restrictions.

Preoperative weight loss prior to obesity surgery can be achieved rapidly and safely using the OPTIFAST VLCD Program. The Intensive Level of the OPTIFAST VLCD Program replaces normal dietary intake while maintaining sufficient quantities of protein, carbohydrates and essential fatty acids, as well as vitamins, minerals and trace elements. Short-term usage of the Intensive Level of the OPTIFAST VLCD Program has been shown to produce effective weight loss and improve health outcomes. Preoperative weight loss does not appear to adversely affect immune function or wound healing post-surgery.[28,33]

OPTIFAST VLCD products may also be required post bariatric surgery once a patient moves on from clear fluids to full fluids. Using OPTIFAST VLCD products post-surgery will provide additional protein, vitamins and minerals. Three OPTIFAST VLCD Shakes could be taken daily in place of meals. This will ensure all nutritional requirements are met but low enough in calories to assist with weight loss.

For further information on the management of preoperative (including pre-bariatric surgery) please refer to the *OPTIFAST VLCD Preoperative Protocol.*

4

How to implement the OPTIFAST VLCD Program

Calculate Ideal Body Weight (IBW)

Ideal Body Weight is calculated to help determine an appropriate weight for height or to determine a long-term weight loss goal. However, when estimating an Ideal Body Weight or Goal Weight for individuals with a BMI >30kg/m^2 calculating the 'Obesity Adjusted Ideal Body Weight' (Adj IBW) is a common approach.[34, 35]

This equation allows for 25% of excess metabolically active body weight (lean muscle mass), giving you a more appropriate estimate of an Ideal Body Weight for that individual. Aiming for a goal within the healthy weight range may not be appropriate or realistic for all patients.

It is important to remember that even a 5-10% weight loss can result in significant reductions in co-morbidities and improvements in health outcomes. Therefore, small incremental weight losses as short- term goals can result in large health benefits.

Equation for calculating Adjusted Ideal Body Weight is;

Adj IBW =
[(Actual Body Weight – IBW) x 0.25] + IBW

Where IBW = Weight at BMI 25kg/m^2

Table 12: Ideal Body Weight (Weight at BMI 25kg/m^2)

Height in cm	IBW (Weight at BMI 25kg/m^2)
140	49
142	50
144	52
146	53
148	55
150	56
152	58
154	59
156	61
158	62
160	64
162	66
164	67
166	69
168	71
170	72
172	74
174	76
176	77
178	79
180	81
182	83
184	85
186	86
188	88
190	90
192	92
194	94
196	96
198	98
200	100

Calculate protein requirements

Adequate protein intake during weight loss is important to help preserve fat free mass and control appetite.[22] Evidence suggests that loss of fat free mass during weight loss can be attenuated by diets providing protein intakes of >0.8 g/kg body weight/day.[22]

Research has been mixed on the amount of protein level required for preventing loss of fat free mass during severely energy restricted diets.[22] We propose that >0.8g/kg Adj IBW/day be used as a basis for calculating protein requirements, however this is at the discretion of the treating healthcare professional.

Consumption of 3 standard OPTIFAST VLCD products per day meets the protein requirements for obesity/weight loss for most females providing between 54.6g and 60g of protein per day, depending upon what combination of OPTIFAST VLCD products are consumed. The below individuals may benefit from extra protein:

- Those with a BMI >35kg/m^2
- Males
- Those that participate in regular physical exercise.

There are several ways to provide additional protein to meet increased requirements:

- Replacing 1, 2 or 3 standard OPTIFAST VLCD products with OPTIFAST VLCD ProteinPlus
- Supplement with a pure protein, powdered supplement (e.g. BENEPROTEIN)
- Increasing the number of OPTIFAST VLCD products used
- Supplementing with lean protein-rich foods (e.g. meat, chicken, fish and eggs).

The method used to increase protein should be based on the best outcome for the individual. OPTIFAST VLCD ProteinPlus can be used in place of the standard OPTIFAST VLCD products at any level of the OPTIFAST VLCD Program. OPTIFAST VLCD ProteinPlus contains 40% more protein than the standard OPTIFAST VLCD products, and also contains less lactose making them a suitable alternative for people with higher protein needs or a lactose intolerance.

Research suggests in order to minimise additional energy and carbohydrate intake and avoid the temptation of food, the addition of a pure protein supplement such as BENEPROTEIN is an effective option. BENEPROTEIN dissolves readily and is relatively tasteless. In addition BENEPROTEIN is rich in whey protein which may be important for reducing appetite.[22]

Increasing the number of OPTIFAST VLCD products per day can be another option to increase protein intake. However, if extra OPTIFAST VLCD products are prescribed/consumed (i.e. more than the recommended 3 products per day), carbohydrate and calorie intakes will also increase and therefore may affect ketosis on the Intensive Level.

If using food source of protein, one serve of protein is equivalent to 65–100g meat, 2 eggs or 130g fish and can be added to the evening vegetables. This will provide approximately 25g protein and an additional 150kcal (630kJ) to the daily intake of 800kcal.

Table 13: Protein, energy and carbohydrate content of OPTIFAST VLCD products, plus additional protein sources

	Protein (g/day)	Energy (kcal/day)	Carbohydrate (g/day)
3 OPTIFAST VLCD per day	57.6–60	603–714	54.6–70.2
3 OPTIFAST VLCD ProteinPlus per day§	84	750	60
Adding BENEPROTEIN			
3 OPTIFAST VLCD per day plus 1 scoop (7g) of BENEPROTEIN per product	75.6–78	678–789	54.6–70.2
3 OPTIFAST VLCD per day plus 2 scoops (14g) of BENEPROTEIN per product	93.6–96	753–864	54.6–70.2
Adding food source of protein‡			
3 OPTIFAST VLCD per day plus 1 serve of protein	82.6–85	753–864	54.6–70.2
3 OPTIFAST VLCD per day plus 2 serves of protein	107.6–110	903–1014	54.6–70.2
4 OPTIFAST VLCD per day plus 1 serve of protein	101.8–105	954–1102	72.8–93.6
Adding extra OPTIFAST VLCD products			
4 OPTIFAST VLCD per day	76.8–80	804–952	72.8–93.6
5 OPTIFAST VLCD per day	96–100	1005–1190	91–117

The energy, protein and carbohydrate calculations when incorporating BENEPROTEIN or an additional food source of protein shown in this table have been calculated when using standard OPTIFAST VLCD products.
§OPTIFAST VLCD ProteinPlus can replace one, two or three standard OPTIFAST VLCD products per day while following the OPTIFAST VLCD Program, depending upon individual protein requirements.
‡1 protein serve is equal to 65–100g meat, chicken containing approximately 25g protein and 150 calories.

Medical monitoring

OPTIFAST VLCD must be taken under the supervision of a healthcare professional such as a dietitian, doctor, pharmacist, diabetes educator or other trained healthcare professionals. Research has shown that having the support and guidance of a healthcare professional will make the program more successful.

As a healthcare professional, you can tailor the plan to suit your patients' specific likes and dislikes, medical conditions, nutritional needs, physical activity levels and lifestyle. If your patient has a co-existing medical condition then you may need to monitor them more closely or even adjust their medication dosage.

It is recommended that once a patient has commenced on the Intensive Level of the OPTIFAST VLCD Program they should be followed up fortnightly for check-ups, weight and waist circumference monitoring, advice and encouragement.

Patients can be classified as low medical risk, or high medical risk when following a VLED. For all patients, regular monitoring of weight, BMI, waist circumference and blood pressure is recommended during the Intensive Level of the OPTIFAST VLCD Program. Regular blood monitoring is important during the Intensive Level of the OPTIFAST VLCD Program for 'high risk' patients because of the risk of electrolyte imbalance. Please see below for the recommended blood tests and medical monitoring during the Intensive Level of the OPTIFAST VLCD Program.

Definition of risk level for patients following a VLED

High Medical Risk Patient	Low Medical Risk Patient
BMI >27 plus co-morbidities	No co-morbidities
BMI >35	BMI <35
Taking prescribed medications during the VLED	No prescription medications
Greater than 65 years of age	Less than 65 years of age

Medical Monitoring Guidelines for all patients

Assessment	Baseline Measures	Fortnightly
Weight/BMI	✓	✓
Waist Circumference	✓	✓
Blood Pressure	✓	✓

Medical Monitoring Guidelines for High Risk Patients

Assessment	Baseline Measures	6 weeks	Completion of Intensive Level
Electrolytes/Creatinine	✓	If required	✓
Liver function tests	✓	If required	✓
Fasting Glucose	✓	If required	✓
Cholesterol/ Triglycerides/HDL	✓	If required	✓
Uric acid	✓	If required	✓
Full Blood Count	✓	If required	✓
Iron Studies	✓	If required	✓
Vitamin D (25-OH vitamin D)	✓	If required	✓
Thyroid Stimulating Hormone	✓	If required	✓

Use of pharmacotherapy

Due to the biological basis of obesity some patients may require additional pharmacotherapy to assist in appetite suppression. The OPTIFAST VLCD Program may be used in conjunction with prescription medications to facilitate weight loss. Noradrenergic agonists (phentermine) have been used in conjunction with the OPTIFAST VLCD Program, however given that there have been no long-term studies conducted with these agents, it is recommended that they are not used for a period of more than 3 months.

We do not recommend other over the counter weight loss products or appetite suppressants be taken with OPTIFAST VLCD products. There is currently no clinical evidence to support the efficacy and safety of using products such as these in conjunction with the OPTIFAST VLCD Program.

Side effects

The Intensive Level of the OPTIFAST VLCD Program is accepted as being safe with only minor, transient side effects being observed. These side effects are generally the result of the fast weight loss and ketosis and may include;

- Sensitivity to cold
- Halitosis
- Headache
- Hair loss
- Irritability
- Postural hypotension
- Fatigue
- Muscle cramps
- Menstrual disturbances
- Constipation and/or diarrhoea.

These side effects are generally insufficient in magnitude or duration to warrant cessation of the program.

As with any major dietary adjustment, the first few days on the Intensive Level of the OPTIFAST VLCD Program can be difficult and are commonly known as the '3-day challenge'. As the body transitions into ketosis, patients may experience some transient side effects in the first 3 days such as:

- Fatigue
- Hunger
- Lack of concentration
- Nausea
- Headaches.

Typically, only mild ketosis occurs during the Intensive Level of the OPTIFAST VLCD Program and most symptoms pass by days 4-6. By this time, users will experience an increase in energy and reduction in appetite which, through the Intensive Level, is likely to result in consistent and successful weight loss.

Tips for managing side effects

Careful management of the side-effects during the Intensive Level of the OPTIFAST VLCD can greatly increase the success of the program as well as the patient's compliance. It is important to note that some initial side-effects, especially during the first 3 days of the program, are normal and can be easily managed. Please see the tips below on how to manage the more common side-effects.

Headaches, fatigue, lack of concentration, nausea

Side effects such as headaches, fatigue, lack of concentration and nausea can occur in the first couple of days as the body transitions into ketosis. Encourage your patients to stick to the program as prescribed and to avoid eating any extra food during this initial 3 days, otherwise they will just prolong the uncomfortable feeling. If your patient has quite an intensive job, recommend that they start the program on a weekend where they have more time to rest, as this may assist with them managing their symptoms. If your patients continue to experience some of these symptoms, consider adding in 1-2 cups of stock, broth or bouillon to the daily meal plan. When following a carbohydrate restricted diet for more than two weeks, your body switches from retaining salt to rapidly excreting salt, along with stored fluid. Some of these symptoms can be due to an electrolyte imbalance and can be easily and quickly rectified with the addition of some extra sodium.[25] Headaches can also be managed by recommending some over-the-counter pain relief.

Hunger

It is normal to feel hungry for the first few days of the program as the body transitions into ketosis. If possible, encourage your patient not to eat any extra food to compensate for the fatigue or hunger. However, if they are struggling then recommending to add in a small serve of lean protein each day may help manage their hunger feelings whilst they adjust to ketosis. It is very important that they avoid foods that contain carbohydrates, as this will stop ketosis from occurring. If hunger is a problem whilst on the OPTIFAST VLCD Program, make sure fluid intake is adequate as we sometimes mistake hunger for thirst. Also, you can recommend that they distract themselves with another activity such as going for a walk or taking a bath. If all else fails, use the foods listed in the Additional Allowances table to increase intake, or have some sugar-free lollies which may also help with bad breath.

Constipation

A complete meal replacement program is usually a dramatic change of intake for most people, and this can cause changes in bowel habits. In addition, if the recommended fluid and low starch vegetables are not consumed, a lack of fibre (dietary bulk) and fluid can result in constipation. It's important to know the difference between going less frequently and true constipation. It is normal to go less frequently when consuming less food, whereas true constipation is when the consistency is also affected. If your patient is experiencing constipation, recommend they consume more than the 2 cups of low starch vegetables per day, drink 2-3 litres of calorie-free fluid, and ensure they are exercising daily to help keep the bowels healthy and regular. If they still find they are constipated, suggest a fibre supplement. Additionally, adding 1-2 cups of stock or bouillon to the daily meal plan also helps rectify symptoms of constipation.[25]

Diarrhoea

Diarrhoea can be a temporary side effect of taking OPTIFAST VLCD products and should pass with time (refer to leaflet in product packaging under 'Adverse Reactions'). If diarrhoea continues for more than a week you may need to investigate for further causes.

Bloating/flatulence

There could be several explanations to explain bloating or an increase in flatulence. Bloating/increased flatulence may be caused by the change in diet. If there is more fibre in the new regimen due to increased intake of vegetables, this may result in the bloating. Some people find that they feel bloated because they are drinking a lot more fluid than usual. The bloating/increased flatulence is usually transient and resolves quickly so it is recommended to keep progressing with the program.

Alternatively, if your patient is lactose or fructose intolerant, OPTIFAST VLCD products may cause bloating as they may contain one or both of lactose and fructose. If the symptoms don't improve within a week it may be worth doing some further investigation. See Appendices 1 and 2 on **page 41** for the lactose and fructose content of OPTIFAST VLCD products.

Hydration

Estimated fluid requirements are 35-45mL/kg Adjusted IBW/day. For most patients, greater than 80kg this will equate to approximately 2.5-3.0L/day. As 3 sachets of OPTIFAST VLCD provides approximately 600mL per day, most patients on OPTIFAST VLCD will require an additional 2L per day of fluid, preferably water.

Nutritional deficiencies/supplementation

Multivitamins

The OPTIFAST VLCD Intensive Level (3 OPTIFAST VLCD products plus 2 cups of vegetables) is designed to meet the recommended dietary intake for most people. Therefore, additional supplementation is not necessary unless there has been a pre-existing nutritional deficiency diagnosed when starting the OPTIFAST VLCD Program. If additional supplementation is desired, care would need to be taken to ensure that recommended safe levels of vitamins, minerals and trace elements are not exceeded.

Fish oils

Fish oil supplementation is considered relatively safe and there is substantial research regarding the benefits of omega-3, particularly in the area of cardiovascular health. The Australian dietary target to reduce chronic disease is 430mg for females and 610mg for males.[36] The National Heart Foundation has set the recommendation of 500mg per day for all adults to help reduce the risk of heart disease.[37] The OPTIFAST VLCD Shakes, Soups and Desserts contain on average 70mg of omega-3 (combined EPA/DHA) per serve (the Bars currently do not contain fish oil). If additional fish oil supplementation is desired for health benefits then this will be safe to include as part of the OPTIFAST VLCD Program.

Cholecystitis

Rapid weight loss may induce the formation of gallstones. Historically, fat intake was very low with a VLED, therefore the addition of fat (i.e. 1 tsp vegetable oil per day) was recommended to stimulate the emptying of the gallbladder. Most of the OPTIFAST VLCD products contain levels of fat which include omega-3 fatty acids, and therefore the addition of the teaspoon of vegetable oil is less relevant. However, for compliance and adding flavour to vegetables, it can still be added. If consuming the OPTIFAST VLCD Bars only, the addition of the teaspoon of vegetable oil will be necessary to provide omega-3 fatty acids.

Halitosis

Bad breath or halitosis can occur whilst using OPTIFAST VLCD Program. This is caused by ketosis and generally due to an increase in acetone levels. This is characteristic of ketogenic type diets and indicates compliance to the program. The halitosis will only last whilst they are following the Intensive Level of the OPTIFAST VLCD Program. Recommending chewing on a low-calorie mint or sugar-free chewing gum can help. Chewing fresh parsley can also be very effective.

Measuring ketones

Measuring ketone levels can be used as a guide to assessing compliance. It is not compulsory to measure ketone levels but some patients may find it useful. Ketones can be measured via urine, breath or blood. Monitoring symptoms and side-effects can also be a good indication of whether an individual is in ketosis.

Urine ketone strips

Urine ketones can be measured using ketone reagent strips. The OPTIFAST VLCD Intensive Level only causes a mild ketosis therefore urine ketone levels will only show approximately 0.5-1.5mmol/L. Urinary ketone levels can be higher early on in the program so can be a good initial indicator of compliance however levels excreted in the urine decrease as the body starts to use more of them as energy. In addition, ketone reagent strips only measure acetoacetate but tell you nothing about the level of ketones in your bloodstream (BHB) which is most probably higher.

Breath testing

A non-invasive and cheap alternative is to measure breath acetone concentration. Acetone is one of the ketone bodies that results from a breakdown of acetoacetate. Ketone breathalysers are available and offer an easy and inexpensive way to test your breath ketones (acetone). There is an initial outlay in cost to purchase the breathalyser however you won't need to purchase reagent strips. Keep in mind that breath ketones do not always exactly correlate with blood ketones and are affected by several factors such as alcohol consumption and water.

Blood testing

Blood ketone meters are the most accurate way to measure ketone bodies. They can precisely determine the level of ketones in your blood but can be more expensive than breath and urine testing. Blood ketone meters can be purchased from pharmacies or online.

Observation

Monitoring symptoms is another way of assessing ketosis. When in ketosis, the smell of acetone is present. This can be sensed in breath, sweat or urine. Some people refer to this as ketogenic "fruity" smelling breath.

Managing allergies and intolerances

Allergies

Your patients can still follow the OPTIFAST VLCD Program if they have allergies or intolerances. It is just a matter of working out which OPTIFAST VLCD products will suit them best. Different products in the OPTIFAST VLCD range have different allergens present. This table lists the allergens present in each of the OPTIFAST VLCD products, to allow you to choose the most appropriate choice.

Table 14: Allergens present in the OPTIFAST VLCD range

Product	Gluten	Soy	Dairy	Nuts	Eggs	Fish Oil	Phenylalanine
ProteinPlus Shakes							
OPTIFAST VLCD ProteinPlus Chocolate Shake	×	✓	✓	×	×	✓	✓
OPTIFAST VLCD ProteinPlus Vanilla Flavour Shake	×	✓	✓	×	×	✓	✓
Shakes							
OPTIFAST VLCD Chocolate Shake	×	✓	✓	×	May contain	✓	✓
OPTIFAST VLCD Vanilla Flavour Shake	×	✓	✓	×	May contain	✓	✓
OPTIFAST VLCD Strawberry Flavour Shake	×	✓	✓	×	May contain	✓	✓
OPTIFAST VLCD Coffee Shake	×	✓	✓	×	May contain	✓	✓
OPTIFAST VLCD Banana Flavour Shake	×	✓	✓	×	May contain	✓	✓
OPTIFAST VLCD Caramel Flavour Shake	×	✓	✓	×	May contain	✓	✓
OPTIFAST VLCD Chai Flavour Shake	×	✓	✓	×	May contain	✓	✓
OPTIFAST VLCD Mocha Shake	×	✓	✓	×	May contain	✓	✓
Desserts							
OPTIFAST VLCD Chocolate Dessert	×	✓	✓	×	May contain	✓	✓
OPTIFAST VLCD Lemon Crème Flavour Dessert	×	✓	✓	×	May contain	✓	✓
Soups							
OPTIFAST VLCD Vegetable Soup	×	✓	✓	×	May contain	✓	×
OPTIFAST VLCD Chicken Flavour Soup	×	✓	✓	×	May contain	✓	×
OPTIFAST VLCD Tomato Country Style Soup	×	✓	✓	×	May contain	✓	×
Bars							
OPTIFAST VLCD Chocolate Bar	✓	✓	✓	May contain	×	×	×
OPTIFAST VLCD Berry Crunch Flavour Bar	✓	✓	✓	May contain	×	×	×
OPTIFAST VLCD Cappuccino Flavour Bar	✓	✓	✓	May contain	×	×	×
OPTIFAST VLCD Cereal with Cranberry Bar	✓	✓	May contain	May contain	×	×	×

Lactose intolerance

All the OPTIFAST VLCD products contain some quantity of lactose. The amount of lactose may be tolerated by some people; however, it can be individual and it may be a matter of trial and error to see what products your patient can manage. OPTIFAST VLCD ProteinPlus Shakes and OPTIFAST VLCD Bars are low in lactose and may be more suitable for individuals with lactose intolerance. Alternatively, you can recommend a lactase enzyme tablet with your OPTIFAST VLCD product. Lactase enzyme tablets are available from your local pharmacy.

Please see Appendix 1 on **page 41** for the lactose content of specific products.

Fructose malabsorption

The OPTIFAST VLCD Shakes, Soups and Desserts do not contain any fructose, and therefore may be appropriate for those with fructose malabsorption. The Bars contain a small amount of fructose and therefore may not be appropriate, however it may be a matter of trial and error to work out which products are better tolerated.

Please see Appendix 2 on **page 41** for the fructose content of specific products.

FODMAPs

FODMAPs refer to Fermentable Oligosaccharides, Disaccharides, Monosaccharides And Polyols. Research shows that reducing the intake of these sugars in the diet can improve symptoms associated with Irritable Bowel Syndrome (IBS). This group of sugars include fructose, lactose, fructans, galactans and polyols.

In individuals with IBS or other gut disorders these sugars are poorly absorbed in the small intestine and therefore travel to the large intestine where they are fermented by bacteria that are naturally present. This process can cause symptoms such as gas (wind), pain, bloating, diarrhoea or constipation. The table below highlights the OPTIFAST VLCD products that may contribute to the FODMAP load.±

Table 15: FODMAPs content of the OPTIFAST VLCD range

Product	Fructans	Galactans	Fructose (g/serve)	Lactose (g/serve)	Polyols
ProteinPlus Shakes					
OPTIFAST VLCD ProteinPlus Chocolate Shake	✓	×	0	0.63	✓
OPTIFAST VLCD ProteinPlus Vanilla Flavour Shake	✓	×	0	0.63	✓
Shakes					
OPTIFAST VLCD Chocolate Shake	✓	×	0	9.0	×
OPTIFAST VLCD Vanilla Flavour Shake	✓	×	0	9.5	×
OPTIFAST VLCD Strawberry Flavour Shake	✓	×	0	9.5	×
OPTIFAST VLCD Coffee Shake	✓	×	0	8.5	×
OPTIFAST VLCD Banana Flavour Shake	✓	×	0	9.5	×
OPTIFAST VLCD Caramel Flavour Shake	✓	×	0	9.5	×
OPTIFAST VLCD Chai Flavour Shake	✓	×	0	8.5	×
OPTIFAST VLCD Mocha Shake	✓	×	0	9.0	×
Desserts					
OPTIFAST VLCD Chocolate Dessert	✓	×	0	8.0	×
OPTIFAST VLCD Lemon Crème Flavour Dessert	✓	×	0	8.0	×
Soups					
OPTIFAST VLCD Vegetable Soup	✓	×	0.39	7.4	×
OPTIFAST VLCD Chicken Flavour Soup	✓	×	0	9.5	×
OPTIFAST VLCD Tomato Country Style Soup	✓	×	0.98	8.0	×
Bars					
OPTIFAST VLCD Chocolate Bar	×	✓	1.4	1.4	✓
OPTIFAST VLCD Berry Crunch Flavour Bar	✓	✓	0.55	1.4	✓
OPTIFAST VLCD Cappuccino Flavour Bar	✓	✓	0.5	1.4	✓
OPTIFAST VLCD Cereal with Cranberry Bar	✓	✓	1.95	<0.5	✓

± The OPTIFAST VLCD products are not FODMAP tested. Please note that this table is an estimate of the FODMAP content based on each product's individual formulation.

Exercise recommendations

Physical activity is important for many reasons. Not only does it contribute to part of the energy balance equation and therefore play a role in weight management but is also an important part of an individual's emotional well-being and provides many health benefits such as reducing blood pressure and blood glucose levels.

For this reason, increasing physical activity in patients undergoing the OPTIFAST VLCD Program is highly recommended. The general goal of physical activity in weight management is to increase an individual's total energy expenditure as well as resting energy expenditure (REE). Research indicates however that during a period of weight loss induced by energy restriction, absolute REE tends to decrease, and neither resistance or aerobic exercise has been shown to prevent the decrease in REE that is typically observed.[38, 41] However aerobic and resistance exercise during weight loss has been shown to prevent the normal decline in fat-free mass and increase muscular strength and aerobic fitness compared with diet-induced weight loss alone, so in this respect it may offer some long-term benefits following weight loss.

Exercise doesn't appear to significantly accelerate the amount of weight loss that is achieved by the VLED alone,[39, 41] however it does appear to offer benefits in terms of weight loss maintenance and preventing weight regain.[42] The minimal recommended level of physical activity that will improve health is 150 minutes/week or 30 minutes of moderate exercise 5 days per week.[43] Although this is the minimal amount that should be achieved, research suggests that this may not be enough to prevent weight regain following a period of weight loss.[42] Data collected from the National Weight Control Registry of individuals that have maintained a weight loss of ~30kg for 6 years reported participating in 2500-3000 kcal/week of leisure time physical activity.[44] This would be equivalent to 60-100 minutes of brisk walking 5 days per week.

This data does not suggest that the minimal recommended guidelines are ineffective but simply suggests that is a minimum to aim for with your patients, and then once this is achieved aim to increase further.

Exercise should include both planned physical activity (i.e. walking for a set time each day, training at a gym or with a personal trainer, team or individual sports) as well as increases in daily activity (e.g. reducing sitting time and sedentary activities, walking to and from transport, using stairs rather than lifts, parking car further away from desired destination, getting up from computer or desk regularly, lifestyle approaches such as gardening, housecleaning etc.). It has been suggested that lifestyle approaches to increasing physical activity such as gardening and housecleaning may be effective in managing body weight so these shouldn't be dismissed and may be easier to achieve for time poor individuals.[45]

For most patients that haven't exercised for a long period of time, starting small and building up can be a good place to start. Repeated bouts of 10 minutes of activity can equal that of one 30 or 40-minute block of exercise. This method may facilitate the initial adoption of activity in previously sedentary individuals.[46, 47]

During the first week of the program whilst the body is transitioning into ketosis, it is recommended to only include some light exercise. Once your patient has adjusted to ketosis and energy levels increase, exercise levels can increase as required based on the individual.

For patients participating in exercise at a high level for periods longer than 60 minutes, a higher protein intake may be required. This can be provided by adding a small amount of meat, fish or eggs (60-100g) to the salad or vegetable plate, the addition of a pure protein powder such as BENEPROTEIN or having an extra serve of OPTIFAST VLCD per day. It is also important when exercising to ensure fluid intake is adequate.

Practical information to support weight management through physical activity[7, 48]

1. Provide ideas for increasing the amount of incidental activity, for example:
   - **a)** Choose stairs rather than lifts
   - **b)** Park further away from destination and walk
   - **c)** Use public transport rather than driving
   - **d)** Walk to do errands
   - **e)** Use a community bicycle
   - **f)** Use a pedometer to measure the number of steps achieved each day – aim to get 10,000 steps
   - **g)** Limit screen time
   - **h)** Look at lifestyle approaches such as gardening and housecleaning as a way of increasing physical activity levels.
2. Provide ideas for low impact/low risk exercise options:
   - **a)** Aqua aerobics or hydrotherapy
   - **b)** Walking or low impact gym machines
   - **c)** Yoga or Pilates.
3. Suggest to exercise with others such as family, friends, partners or children to help maintain motivation.
4. Explain the relative benefits of different types of exercise intensity and how this need to increase as fitness levels increase.
5. Suggest how to get involved in physical activity events or groups.

Australian physical activity recommendations for adults[48]

1. Doing any physical activity is better than doing none. If you currently do no physical activity, start by doing some, and gradually build up to the recommended amount.
2. Be active on most, preferably all, days every week.
3. Accumulate 150 to 300 minutes (2 ½ to 5 hours) of moderate intensity physical activity or 75 to 150 minutes (1.25 to 2 ½ hours) of vigorous intensity physical activity, or an equivalent combination of both moderate and vigorous activities, each week.
4. Do muscle strengthening activities on at least 2 days each week.

Managing non-compliance

Despite the best intentions there may be circumstances in which a patient is finding it difficult to comply with the OPTIFAST VLCD Program. Listed below are some answers to help you guide them.

I am finding it difficult to have OPTIFAST VLCD at work.

If making the Shakes at work is just not practical, try taking the OPTIFAST VLCD Bars instead. This way you don't need to prepare anything. Remember to always include a salad along with the Bar as this will help fill you up with fibre, vitamins and minerals as well as helping you feel as though you are consuming a regular work lunch. Another idea is to use a wide brim sports bottle to mix up your OPTIFAST VLCD Shakes. Simply add the powder to the bottle, add 200mL or more of chilled water, pop on the lid and shake.

I am used to having a snack between meals.

OPTIFAST VLCD products do not have to be restricted to meal times only. You can try splitting an OPTIFAST VLCD Bar in two, and have half at morning tea, the other half at afternoon tea and have a salad or cooked vegetables at lunch. You could also try Miso soup or diet jelly between meals, and don't forget that low-starch vegetables can be used as a snack at any time. If you are on the Active 2, Active 1 or Maintenance Level of the OPTIFAST VLCD Program, 1-2 pieces of fruit or a low-fat yoghurt (~150g) can be consumed as a snack between meals. Make sure you are drinking plenty of water and getting adequate sleep each night to make sure your hunger signals are not really signals of thirst or tiredness.

I am just too hungry, it is too restrictive.

If followed correctly, most people find after the first week, appetite is controlled during the Intensive Level of the OPTIFAST VLCD Program. If additional carbohydrates are avoided, your body should enter a state of ketosis and this chemical reaction in turn reduces your appetite. If you are really struggling to stick to the program, you can include some lean meat or fish in the first week prior to the onset of ketosis to help manage hunger levels. Many people are surprised that the Intensive Level may actually be easier to adhere to than the later levels in the diet when ketosis is mild or not present. Remember to stick to the OPTIFAST VLCD Program and only have the foods recommended on the plan along with your OPTIFAST VLCD products.
To make sure the signals of hunger are not getting confused with other body signs, drink the recommended 2 litres of water daily, have the recommended serving of low starch vegetables and get sufficient sleep each night. Ask yourself if it is true hunger or whether you are eating because you are bored or stressed.

I seem to have hit a plateau and my weight is not moving any more.

It is not unusual to experience a plateau during an extended weight loss program. Remember, as you lose weight, the energy cost of moving your lighter body during daily tasks and exercise is much less, which makes it harder to burn up the calories. Review your plan and make sure that it is still on track. Other things you may need to consider are increasing the intensity of your exercise in order to burn more calories or alternatively look at ways to increase your daily activity levels; that is the amount of movement you are doing during the rest of your day. A pedometer is a great tool to measure this. Try aiming for 8,000-12,000 steps per day, increasing up to this amount gradually from your current level of activity.

I have too many social outings involving eating out and I don't want to miss out on these.

Suggested answer for Level: Intensive
That's OK; you can still enjoy social occasions whilst on the OPTIFAST VLCD Program. Your life doesn't have to stop nor should it have to. Try to focus on the other aspects of socialising such as the people you are with and the location rather than focusing solely on the food and drink. Try having your OPTIFAST VLCD product prior to going out and then choose a low starch salad or vegetables. Try a Miso soup, stir-fry vegetables, or a garden salad with the dressing on the side (no creamy sauces). If possible, skip the protein and carbohydrates on offer. If you must eat something other than just the vegetables or salad, miss the OPTIFAST VLCD product for that meal and opt for a small portion of protein such as 100g meat or chicken, some fish or eggs. Avoid the carbohydrates as this will affect ketosis. Remember it is important not to drink alcohol whilst on the Intensive Level of the program. Try some mineral water with a spritz of lemon or lime instead.

Suggested answer for Levels: Active 2 and Active 1
That's OK; you don't need to miss out on your social outings. Choose grilled meat, chicken or fish with a side salad or cooked low starch vegetables. Always ask for the sauce/dressing on the side so you can control the amount that is put on the meal (if any). Always pick your own meal, avoid banquets and sharing meals. If possible, get a copy of the menu prior to going out so you can take your time to review the menu options. Avoid alcohol - have a sparkling mineral water with a wedge of lemon or lime in it or a diet soft drink served in a champagne or wine glass.

It is winter and the thought of having Shakes and salads is not comforting in the cold weather.

Try making your Shakes with warm water (not boiling) or try the OPTIFAST VLCD Soups. During the winter months, we often divert from salads to cooked vegetables, so do the same on the OPTIFAST VLCD Program. There are plenty of low starch vegetables you can cook up with a tomato based sauce. Why not make a hearty winter soup from the allowed vegetables or see our list of healthy recipes on the website.

I am getting constipated.

A total diet replacement program is usually a dramatic change of intake for most people, and this can cause changes in bowel habits. In addition, if the recommended fluid and low starch vegetables are not consumed, a lack of fibre (dietary bulk) and fluid can cause a dramatic change. It's important to know the difference between going less frequently and true constipation. It is normal to go less frequently when you are consuming less food. You should only consider true constipation if the consistency is also affected. Try to consume more than the recommended 2 cups of low starch vegetables per day, drink 2-3 litres of fluid and exercise daily to help keep your bowels healthy and regular. If you still find that you are constipated, try considering a fibre supplement.

Everyone around me is concerned that the diet is too strict.

The OPTIFAST VLCD Program has 3 levels for active weight loss. Where appropriate, we encourage people to start on the Intensive Level as this is where the greatest weight loss occurs. This part of the Program is the 'Very Low Calorie Diet' component, (where you replace all 3 meals with OPTIFAST VLCD products) and has been shown to be safe and effective for fast weight loss. If the Intensive Level is not suiting your lifestyle, you can move to a more gradual weight loss program in Active 2 or 1 Levels.

Importantly, the program is flexible. You can move between levels as your patients' goals or lifestyle needs change over time.

It is too boring.

When you stick to the same thing for a long period, anything can become boring. To make things a little more interesting, vary the OPTIFAST VLCD products as much as possible rather than sticking to the same products each day. Also play around with the way you prepare your salads and vegetables. Don't just have them plain – try adding fresh or dried herbs and spices, and buy vegetables you wouldn't normally eat to create variety. Adding lots of different colours on the plate is important to help make the meal look appealing, whilst also getting a range of vitamins and minerals which are vital for optimal health.

People keep saying I have lost enough weight and should stop.

It's hard enough for individuals to adjust to their new eating habits and body image, but it is common and sometimes even harder for others around you to adjust. Dramatically changing to a healthier lifestyle can start people questioning themselves and whether they need to change too. Your healthcare professional will advise you on your weight loss progress and provide tips to help deal with the adjustment you and the people around you are making.

I don't fit into any of my clothes anymore, I will have to stop.

Although visiting the clothing store seems like a daunting experience, it's not a reason to stop your desire to be a healthier weight. Change is a good thing when it means progression and moving in the right direction. Ask to borrow clothes from your friends and family while you transition into your new body size, as you won't want to buy too many clothes if you plan to lose many more dress or pant sizes. You may consider shopping at opportunity stores or hiring a business suit during the Intensive Level of weight loss or until you have reached your goal weight.

I don't seem to have enough energy at the gym.

Weight loss is all about eating less energy than what you are burning. High intensity exercise uses predominantly carbohydrates. On the Intensive Level of the OPTIFAST VLCD Program you are consuming very little carbohydrates; therefore, you may find lower intensity exercise and weights a little easier to handle. You may also want to change the time you exercise, so that tiredness from the day doesn't play a factor. Choosing exercise that you enjoy will always improve motivation levels, as can exercising with a friend. Even if your exercise intensity and duration is slightly reduced (but not to nothing) while you are on the OPTIFAST VLCD Program, some exercise is still better than none as it greatly improves your metabolism and helps you preserve metabolic muscle tissue while burning the fat in your body. Remember, drinking sufficient fluids and getting adequate sleep will also help improve your energy and motivation to exercise.

I keep getting headaches.

The first few days of the OPTIFAST VLCD Program Intensive Level is known as 'The 3 Day Challenge' because, as the body transitions into ketosis, you may experience some side effects such as:

- Fatigue
- Hunger
- Nausea
- Headaches
- Lack of concentration.

This doesn't sound pleasant, but most symptoms pass by days 4-6, followed by an increase in energy and reduction in appetite, of which, through this dietary phase will result in consistent and successful weight loss. It is important that you know these are typical symptoms and you should stick to the weight loss plan as prescribed, or you will simply prolong this slightly uncomfortable few days of your OPTIFAST VLCD Program.

I'm not losing any weight.

This is very unlikely on the Intensive Level of the OPTIFAST VLCD Program. If you are not losing weight and you are sticking to the plan as prescribed, then reasons for your inadequate weight loss may need to be explored. If you haven't been exercising, consider starting walking or going to the gym. The combined effects of exercise plus a VLED have been shown to increase the retention of lean muscle mass and reduce fat mass. If just starting out with exercise it is important to establish a baseline which can be improved upon each week. If you are concerned with your weight loss, speak to your healthcare professional for further investigation.

There are a range of support and educational videos available at **www.optifast.com.au** that can help to motivate and inform your patients.

Long-term weight management with the OPTIFAST VLCD Program

Whilst the focus of the OPTIFAST VLCD Program is on weight loss, what is just as important is identifying behaviours and strategies for successful weight maintenance. Maintaining lost weight is just as important as the weight loss itself and does require ongoing monitoring by a healthcare professional.

Following weight loss, people must overcome potent physiological responses that increase hunger and encourage weight regain, as well as resisting returning to previous weight-promoting lifestyle habits.[7] Weight management however does get easier over time. Once people have maintained a weight loss for 2-5 years, the chances of longer-term success greatly increases.[7] The OPTIFAST VLCD Program is designed to assist with long-term weight management. The gradual reintroduction of food across the three Levels (Active 2, Active 1 and Maintenance), assists patients to learn about appropriate food choices and portion sizes in a controlled and supported manner. In addition, the Active 2, Active 1 and Maintenance Levels can be followed as a long-term weight maintenance plan.

It is advised that VLEDs should not be used alone but in conjunction with cognitive and behavioural counselling for permanent lifestyle changes. This is highly recommended as research shows that weight invariably will be regained after VLEDs if used without additional measures.[6]

When following the OPTIFAST VLCD Program, cognitive behaviour counselling can begin during the VLED period. Topics such as increasing exercise and day to day activity levels, stimulus control, increasing consumption of low starch vegetables and limiting sedentary activities or sitting time can be advised. Then following the VLED period, cognitive behavioural sessions need to be carried out in more normal living conditions. Topics such as slowing the pace of eating, separating food from other activities, shopping for food according to a list, not using food as a reward, appropriate portion sizes and including the whole family can be discussed.[6]

In addition, other behaviours have also been associated with successful long-term weight maintenance. These include; regular monitoring of weight to catch lapses before they become large-scale weight gains, regular monitoring of food intake, and maintaining a consistent eating pattern. While most of these strategies involve self-management, healthcare professionals play an important role in continued monitoring to review weight and behaviours, provide continuing support, reinforce lifestyle and behavioural advice and discuss intensive interventions when needed.[7]

Long-term weight maintenance strategies:

1. Set up 3 monthly regular review visits to monitor weight and continue to provide support by reinforcing lifestyle and behavioural changes.
2. Set a weight regain limit (e.g. 3-4kg) at which reintervention is sought.[7]
3. If weight regain limit is attained, reinforce lifestyle and behaviour changes and consider an intensive intervention.
4. The OPTIFAST VLCD Program under the supervision of a healthcare professional can successfully and effectively be used in the following ways to assist long-term weight management:
   - **a)** Reintroduction of Intensive Level for 2-6 weeks if weight regain limit or higher is achieved.[49]
   - **b)** Use Intensive Level intermittently for 2 weeks every 3 months as part of a continuous weight management program.[49]
   - **c)** Use as a meal replacement for 1-2 meals per day as part of a continuous low energy weight management program.[50, 51]

5

OPTIFAST VLCD support

Becoming an OPTIFAST VLCD Accredited Healthcare Professional

We always recommend that the OPTIFAST VLCD Program be followed under the supervision of a healthcare professional. Research has shown that having the support and guidance of a healthcare professional will enhance outcomes.[52]

When it comes to weight loss, everyone is different and no one plan will suit or achieve the desired results for all people. Becoming an OPTIFAST VLCD Accredited Healthcare Professional will allow you to learn and give you the confidence to implement and manage the OPTIFAST VLCD Program to best meet the needs of your patients.

The OPTIFAST VLCD Accredited Healthcare Professional Program is an intensive workshop which will allow you to get up to date with the latest research on VLEDs and learn how best to apply this to the management of your patients.
You will:

- Understand the role that OPTIFAST VLCD plays in your practice toolkit
- Review the evidence surrounding VLED use
- Learn how to tailor your OPTIFAST VLCD recommendations to meet each individual's unique dietary requirements
- Undertake practical case studies so that you feel confident using the OPTIFAST VLCD Program with your clients
- Learn how to transition off the OPTIFAST VLCD Program and on to a sustainable way of eating
- Undertake assessment to become an OPTIFAST VLCD Accredited Healthcare Professional.

For further information on becoming an OPTIFAST VLCD Accredited Healthcare Professional, visit the OPTIFAST VLCD website at **www.optifast.com.au**

OPTIFAST® VERY LOW CALORIE DIET
ACCREDITED

OPTIFAST VLCD online support member benefits

Like all new things, getting started can be the hardest part and we can all recognise that support is an essential part of any weight loss program. OPTIFAST VLCD online support offers a whole range of benefits to help and support you and your patient through a successful weight loss journey.

Encourage your patient to become a member of the OPTIFAST VLCD website which will give them access to a range of tools and resources that they will be able to use as part of their weight loss journey.

Online support membership is FREE and grants your patient full access to all support tools and information, which includes:

- Tools to help them set up their weight loss goals
- Ability to develop a personalised OPTIFAST VLCD Program plan, including meal and exercise trackers
- Review progress over time to see how they are tracking
- Dietitian-approved, delicious and healthy low-calorie recipes
- Informative articles and videos from our healthcare professional team
- Ability to connect with like-minded members for support via the forum.

The OPTIFAST VLCD team appreciates that everyone is different and that no one plan will suit or achieve the desired results for all people. Whilst you, as their healthcare professional are the main point of support, additional support like the OPTIFAST VLCD Community Forum, tracking tools, recipes and resources will only enrich their weight loss experience and increase long-term compliance.

6

Appendices

Appendix 1

Lactose content of the OPTIFAST VLCD product range

Product	Lactose per serve (g)	Lactose per 100g powder or bar (g)
ProteinPlus Shakes		
OPTIFAST VLCD Protein Plus Chocolate Shake	0.63	1.0
OPTIFAST VLCD Protein Plus Vanilla Flavour Shake	0.63	1.0
Shakes		
OPTIFAST VLCD Chocolate Shake	9.0	17
OPTIFAST VLCD Vanilla Flavour Shake	9.5	18
OPTIFAST VLCD Strawberry Flavour Shake	9.5	18
OPTIFAST VLCD Coffee Shake	8.5	16
OPTIFAST VLCD Banana Flavour Shake	9.5	18
OPTIFAST VLCD Caramel Flavour Shake	9.5	18
OPTIFAST VLCD Chai Flavour Shake	8.5	16
OPTIFAST VLCD Mocha Shake	9.0	17
Desserts		
OPTIFAST VLCD Chocolate Dessert	8.0	15
OPTIFAST VLCD Lemon Crème Flavour Dessert	8.0	15
Soups		
OPTIFAST VLCD Vegetable Soup	7.4	14
OPTIFAST VLCD Chicken Flavour Soup	9.5	18
OPTIFAST VLCD Tomato Country Style Soup	8.0	15
Bars		
OPTIFAST VLCD Chocolate Bar	1.4	2.0
OPTIFAST VLCD Berry Crunch Flavour Bar	1.4	2.2
OPTIFAST VLCD Cappuccino Flavour Bar	1.4	2.2
OPTIFAST VLCD Cereal with Cranberry Bar	<0.5	<0.5

Appendix 2

Fructose content of the OPTIFAST VLCD product range

Product	Fructose per serve (g)	Fructose per 100g powder or bar (g)
ProteinPlus Shakes		
OPTIFAST VLCD Protein Plus Chocolate Shake	0	0
OPTIFAST VLCD Protein Plus Vanilla Flavour Shake	0	0
Shakes		
OPTIFAST VLCD Chocolate Shake	0	0
OPTIFAST VLCD Vanilla Flavour Shake	0	0
OPTIFAST VLCD Strawberry Flavour Shake	0	0
OPTIFAST VLCD Coffee Shake	0	0
OPTIFAST VLCD Banana Flavour Shake	0	0
OPTIFAST VLCD Caramel Flavour Shake	0	0
OPTIFAST VLCD Chai Flavour Shake	0	0
OPTIFAST VLCD Mocha Shake	0	0
Desserts		
OPTIFAST VLCD Chocolate Dessert	0	0
OPTIFAST VLCD Lemon Crème Flavour Dessert	0	0
Soups		
OPTIFAST VLCD Vegetable Soup	0.39	0.74
OPTIFAST VLCD Chicken Flavour Soup	0	0
OPTIFAST VLCD Tomato Country Style Soup	0.98	1.85
Bars		
OPTIFAST VLCD Chocolate Bar	1.4	2.0
OPTIFAST VLCD Berry Crunch Flavour Bar	0.55	0.85
OPTIFAST VLCD Cappuccino Flavour Bar	0.5	0.8
OPTIFAST VLCD Cereal with Cranberry Bar	1.95	3.0

Appendix 3

Glycaemic Index (GI) of OPTIFAST VLCD product range

Product	GI Value
ProteinPlus Shakes	
OPTIFAST VLCD Protein Plus Chocolate Shake	27
OPTIFAST VLCD Protein Plus Vanilla Flavour Shake	32
Shakes	
OPTIFAST VLCD Chocolate Shake	22
OPTIFAST VLCD Vanilla Flavour Shake	28
OPTIFAST VLCD Strawberry Flavour Shake	26
OPTIFAST VLCD Coffee Shake	25
OPTIFAST VLCD Banana Flavour Shake	29
OPTIFAST VLCD Caramel Flavour Shake	24
OPTIFAST VLCD Chai Flavour Shake	21
OPTIFAST VLCD Mocha Shake	23
Desserts	
OPTIFAST VLCD Chocolate Dessert	20
OPTIFAST VLCD Lemon Crème Flavour Dessert	21
Soups	
OPTIFAST VLCD Vegetable Soup	18
OPTIFAST VLCD Chicken Flavour Soup	21
OPTIFAST VLCD Tomato Country Style Soup	16
Bars	
OPTIFAST VLCD Chocolate Bar	19
OPTIFAST VLCD Berry Crunch Flavour Bar	28
OPTIFAST VLCD Cappuccino Flavour Bar	23
OPTIFAST VLCD Cereal with Cranberry Bar	30

The GI is a ranking of carbohydrates according to their effect on blood glucose levels.

® of GI Symbol Reg. Trademark of Glycemic Index Foundation.

Appendix 4

OPTIFAST VLCD ProteinPlus Shake nutrition information and ingredient lists

OPTIFAST VLCD		Chocolate	Vanilla Flavour
	Units	Ave Quantity per serving (63g)	Ave Quantity per serving (63g)
Energy	kJ	1050	1050
	Cal	250	250
Protein	g	28	28
Fat, Total	g	5.6	5.6
- Saturated	g	0.8	0.8
- Linoleic Acid	g	1.6	1.6
- α-Linolenic Acid	mg	230	230
Carbohydrate	g	20	20
- Sugars	g	1.9	2.2
- Lactose	g	0.63	0.63
- Galactose	g	0.06	0.06
Dietary Fibre	g	3.6	3.6
Sodium	mg	270	270
Vitamin A	µg RE	320	320
Thiamin (B1)	mg	0.60	0.60
Riboflavin (B2)	mg	0.80	0.80
Niacin	mg NE	14.5	14.5
Pantothenic Acid	mg	3.0	3.0
Vitamin B6	mg	1.2	1.2
Biotin	µg	30	30
Folic Acid	µg	110	110
Vitamin B12	µg	1.5	1.5
Vitamin C	mg	40	40
Vitamin D	µg	3.4	3.4
Vitamin E	mg TE	7.0	7.0
Vitamin K	µg	36	36
Calcium	mg	380	380
Chromium	µg	21	10
Copper	mg	0.9	0.8
Fluoride	mg	0.9	0.9
Iodine	µg	78	78
Iron	mg	7.7	7.2
Magnesium	mg	146	146
Manganese	mg	1.1	1.0
Molybdenum	µg	13.5	13.0
Phosphorus	mg	340	330
Selenium	µg	27	27
Zinc	mg	4.5	4.4
Potassium	mg	955	955
Chloride	mg	320	320
Gluten	mg/kg	Nil Detected	Nil Detected

Chocolate

Milk Proteins (Calcium Caseinate [25%], Sodium Caseinate [12%], Whey [10%]), Maltodextrin (Corn), Vegetable Oil (Canola, Sunflower), Minerals (Magnesium Citrate, Potassium Phosphate, Potassium Citrate, Calcium Carbonate, Potassium Chloride, Sodium Chloride, Ferrous Sulphate, Zinc Sulphate, Copper Gluconate, Manganese Sulphate, Sodium Fluoride, Potassium Iodide, Sodium Selenite, Sodium Molybdate, Chromium Chloride), Cocoa Powder (4%), Vegetable Gum (414), Fructo-Oligosaccharide, Inulin, Glucose Syrup (Corn), Sugar, Medium Chain Triglycerides, **Fish** Oil, Sweeteners (Aspartame, Acesulfame Potassium), Emulsifiers (472c, **Soy** Lecithin, 471), Antioxidants (301, 304, 306), Vitamins (Sodium Ascorbate, Nicotinamide, Vitamin E Acetate, Calcium Pantothenate, Pyridoxine Hydrochloride, Thiamine Hydrochloride, Riboflavin, Vitamin A Acetate, Folic Acid, Phytomenadione, Biotin, Cholecalciferol, Cyanocobalamin), Flavour.

Contains Milk, Soy and Fish. Contains Phenylalanine. Gluten Free.

Vanilla Flavour

Milk Proteins (Calcium Caseinate [25%], Sodium Caseinate [12%], Whey [11%]), Maltodextrin (Corn), Vegetable Oil (Canola, Sunflower), Minerals (Magnesium Citrate, Potassium Phosphate, Potassium Citrate, Calcium Carbonate, Potassium Chloride, Sodium Chloride, Ferrous Sulphate, Zinc Sulphate, Copper Gluconate, Manganese Sulphate, Sodium Fluoride, Potassium Iodide, Sodium Selenite, Sodium Molybdate, Chromium Chloride), Vegetable Gum (414), Fructo-Oligosaccharide, Inulin, Glucose Syrup (Corn), Sugar, Medium Chain Triglycerides, **Fish** Oil, Flavour, Sweeteners (Aspartame, Acesulfame Potassium), Emulsifiers (472c, **Soy** Lecithin, 471), Antioxidants (301, 304, 306), Vitamins (Sodium Ascorbate, Nicotinamide, Vitamin E Acetate, Calcium Pantothenate, Pyridoxine Hydrochloride, Thiamine Hydrochloride, Riboflavin, Vitamin A Acetate, Folic Acid, Phytomenadione, Biotin, Cholecalciferol, Cyanocobalamin), Colour (Curcumin).

Contains Milk, Soy and Fish. Contains Phenylalanine. Gluten Free.

Appendix 4

OPTIFAST VLCD Shake nutrition information and ingredient lists

OPTIFAST VLCD		Chai Flavour	Banana Flavour	Strawberry Flavour	Coffee	Chocolate	Vanilla Flavour	Caramel Flavour	Mocha
	Units	Ave Quantity Per Serving (53g)	Ave Quantity Per Serving (53g)	Ave Quantity Per Serving (53g)	Ave Quantity Per Serving (53g)	Ave Quantity Per Serving (53g)	Ave Quantity Per Serving (53g)	Ave Quantity Per Serving (53g)	Ave Quantity Per Serving (53g)
Energy	kJ	840	840	840	840	840	840	840	840
	Cal	201	201	201	201	201	201	201	201
Protein	g	20	20	20	20	20	20	20	20
Fat, Total	g	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
- Saturated	g	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9
- Linoleic Acid	g	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2
- α-Linolenic Acid	mg	196	196	196	196	196	196	196	196
Carbohydrate	g	18.2	18.2	18.2	18.2	18.2	18.2	18.2	18.2
- Sugars	g	9.5	10.1	10.1	9.5	9.5	10.1	10.1	9.5
- Lactose	g	8.5	9.5	9.5	8.5	9.0	9.5	9.5	9.0
Dietary Fibre	g	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6
Sodium	mg	215	215	215	215	215	215	215	215
Vitamin A	µg RE	345	345	345	345	345	345	345	345
Thiamin (B1)	mg	0.58	0.58	0.58	0.58	0.58	0.58	0.58	0.58
Riboflavin (B2)	mg	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74
Niacin	mg NE	8.0	8.5	8.0	8.5	8.7	8.0	8.5	8.7
Pantothenic Acid	mg	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7
Vitamin B6	mg	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Biotin	µg	10.6	10.6	10.6	10.6	10.6	10.6	10.6	10.6
Folic Acid	µg	110	110	110	110	110	110	110	110
Vitamin B12	µg	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1
Vitamin C	mg	40	40	40	40	40	40	40	40
Vitamin D	µg	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7
Vitamin E	mg TE	7.4	7.4	7.4	7.4	7.4	7.4	7.4	7.4
Vitamin K	µg	31.8	31.8	31.8	31.8	31.8	31.8	31.8	31.8
Calcium	mg	420	420	420	420	400	420	420	420
Chromium	µg	13	13	13	13	19	13	13	15
Copper	mg	1.1	1.1	1.1	1.1	1.2	1.1	1.1	1.1
Fluoride	µg	340	340	340	340	340	340	340	340
Iodine	µg	98	98	98	98	98	98	98	98
Iron	mg	8.0	8.0	8.0	8.0	8.2	8.0	8.0	8.0
Magnesium	mg	160	160	160	160	160	160	160	160
Manganese	mg	0.8	0.8	0.8	0.8	0.9	0.8	0.8	0.8
Molybdenum	µg	18.6	18.6	18.6	18.6	18.6	18.6	18.6	18.6
Phosphorus	mg	360	360	360	360	360	360	360	360
Selenium	µg	40	40	40	40	40	40	40	40
Zinc	mg	4.2	4.2	4.2	4.2	4.3	4.2	4.2	4.2
Potassium	mg	955	955	955	955	955	955	955	955
Chloride	mg	280	280	280	280	280	280	280	280
Gluten	mg/kg	Nil Detected	Nil Detected	Nil Detected	Nil Detected	Nil Detected	Nil Detected	Nil Detected	Nil Detected

Chai Flavour

Skimmed **Milk** Powder (31%), **Milk** Proteins [Calcium Caseinate (20%), Sodium Caseinate (10%)], Maltodextrin (Corn), Vegetable Oil (Canola, Sunflower), Minerals (Potassium Citrate, Magnesium Carbonate, Calcium Phosphate, Sodium Chloride, Potassium Phosphate, Ferric Pyrophosphate, Copper Gluconate, Zinc Sulphate, Manganese Sulphate, Sodium Fluoride, Potassium Iodide, Sodium Molybdate, Sodium Selenite, Chromium Chloride), Vegetable Gum (414), Fructo-oligosaccharide, Inulin, Medium Chain Triglycerides, Glucose Syrup (Corn), Sugar, **Fish** Oil, Colour (150a), Emulsifiers (472c, **Soy** Lecithin, 471), Sweeteners (Aspartame, Acesulfame Potassium), Antioxidants (301, 304, 306), Flavour, Vitamins (Vitamin E Acetate, Nicotinamide, Calcium Pantothenate, Sodium Ascorbate, Pyridoxine Hydrochloride, Thiamine Hydrochloride, Vitamin A Acetate, Riboflavin, Folic Acid, Phytomenadione, Cholecalciferol, Cyanocobalamin, Biotin).

Contains Milk, Soy and Fish. Contains Phenylalanine. May contain Egg. Gluten Free.

Banana Flavour

Skimmed **Milk** Powder (31%), **Milk** Proteins [Calcium Caseinate (20%), Sodium Caseinate (10%)], Maltodextrin (Corn), Vegetable Oil (Canola, Sunflower), Minerals (Potassium Citrate, Magnesium Carbonate, Calcium Phosphate, Sodium Chloride, Potassium Phosphate, Ferric Pyrophosphate, Copper Gluconate, Zinc Sulphate, Manganese Sulphate, Sodium Fluoride, Potassium Iodide, Sodium Molybdate, Sodium Selenite, Chromium Chloride), Vegetable Gum (414), Fructo-oligosaccharide, Inulin, Medium Chain Triglycerides, Glucose Syrup (Corn), Sugar, **Fish** Oil, Emulsifiers (472c, **Soy** Lecithin, 471), Sweeteners (Aspartame, Acesulfame Potassium), Antioxidants (301, 304, 306), Vitamins (Vitamin E Acetate, Nicotinamide, Calcium Pantothenate, Sodium Ascorbate, Pyridoxine Hydrochloride, Thiamine Hydrochloride, Vitamin A Acetate, Riboflavin, Folic Acid, Phytomenadione, Cholecalciferol, Cyanocobalamin, Biotin), Colour (Curcumin, Beetroot), Flavour.

Contains Milk, Soy and Fish. Contains Phenylalanine. May contain Egg. Gluten Free.

Strawberry Flavour

Skimmed **Milk** Powder (31%), **Milk** Proteins [Calcium Caseinate (20%), Sodium Caseinate (10%)], Maltodextrin (Corn), Vegetable Oil (Canola, Sunflower), Minerals (Potassium Citrate, Magnesium Carbonate, Calcium Phosphate, Sodium Chloride, Potassium Phosphate, Ferric Pyrophosphate, Copper Gluconate, Zinc Sulphate, Manganese Sulphate, Sodium Fluoride, Potassium Iodide, Sodium Molybdate, Sodium Selenite, Chromium Chloride), Vegetable Gum (414), Fructo-oligosaccharide, Inulin, Medium Chain Triglycerides, Glucose Syrup (Corn), Sugar, **Fish** Oil, Emulsifiers (472c, **Soy** Lecithin, 471), Colour (Beetroot), Sweeteners (Aspartame, Acesulfame Potassium), Antioxidants (301, 304, 306), Flavour, Vitamins (Vitamin E Acetate, Nicotinamide, Calcium Pantothenate, Sodium Ascorbate, Pyridoxine Hydrochloride, Thiamine Hydrochloride, Vitamin A Acetate, Riboflavin, Folic Acid, Phytomenadione, Cholecalciferol, Cyanocobalamin, Biotin).

Contains Milk, Soy and Fish. Contains Phenylalanine. May contain Egg. Gluten Free.

Coffee

Skimmed **Milk** Powder (31%), **Milk** Proteins [Calcium Caseinate (20%), Sodium Caseinate (10%)], Maltodextrin (Corn), Vegetable Oils (Canola, Sunflower), Minerals (Potassium Citrate, Magnesium Carbonate, Calcium Phosphate, Sodium Chloride, Potassium Phosphate, Ferric Pyrophosphate, Copper Gluconate, Zinc Sulphate, Manganese Sulphate, Sodium Fluoride, Potassium Iodide, Sodium Molybdate, Sodium Selenite, Chromium Chloride), Coffee Extract (4.5%), Vegetable Gum (414), Fructo-oligosaccharide, Inulin, Medium Chain Triglycerides, Glucose Syrup (Corn), Sugar, Flavour, **Fish** Oil, Emulsifiers (472c, **Soy** Lecithin, 471), Sweeteners (Aspartame, Acesulfame Potassium), Antioxidants (301, 304, 306), Vitamins (Vitamin E Acetate, Nicotinamide, Calcium Pantothenate, Sodium Ascorbate, Pyridoxine Hydrochloride, Thiamine Hydrochloride, Vitamin A Acetate, Riboflavin, Folic Acid, Phytomenadione, Cholecalciferol, Cyanocobalamin, Biotin).

Contains Milk, Soy and Fish. Contains Phenylalanine. May contain Egg. Gluten Free.

Appendix 4

Chocolate

Skimmed **Milk** Powder (31%), **Milk** Proteins [Calcium Caseinate (20%), Sodium Caseinate (10%)], Maltodextrin (Corn), Vegetable Oils (Canola, Sunflower), Cocoa Powder (5%), Minerals (Potassium Citrate, Magnesium Carbonate, Calcium Phosphate, Sodium Chloride, Potassium Phosphate, Ferric Pyrophosphate, Copper Gluconate, Zinc Sulphate, Manganese Sulphate, Sodium Fluoride, Potassium Iodide, Sodium Molybdate, Sodium Selenite, Chromium Chloride), Vegetable Gum (414), Fructo-oligosaccharide, Inulin, Medium Chain Triglycerides, Glucose Syrup (Corn), Sugar, **Fish** Oil, Emulsifiers (472c, **Soy** Lecithin, 471), Sweeteners (Aspartame, Acesulfame Potassium), Antioxidants (301, 304, 306), Flavour, Vitamins (Vitamin E Acetate, Nicotinamide, Calcium Pantothenate, Sodium Ascorbate, Pyridoxine Hydrochloride, Thiamine Hydrochloride, Vitamin A Acetate, Riboflavin, Folic Acid, Phytomenadione, Cholecalciferol, Cyanocobalamin, Biotin).

Contains Milk, Soy and Fish. Contains Phenylalanine. May contain Egg. Gluten Free.

Vanilla Flavour

Skimmed **Milk** Powder (31%), **Milk** Proteins [Calcium Caseinate (20%), Sodium Caseinate (10%)], Maltodextrin (Corn), Vegetable Oil (Canola, Sunflower), Minerals (Potassium Citrate, Magnesium Carbonate, Calcium Phosphate, Sodium Chloride, Potassium Phosphate, Ferric Pyrophosphate, Copper Gluconate, Zinc Sulphate, Manganese Sulphate, Sodium Fluoride, Potassium Iodide, Sodium Molybdate, Sodium Selenite, Chromium Chloride), Vegetable Gum (414), Fructo-oligosaccharide, Inulin, Medium Chain Triglycerides, Glucose Syrup (Corn), Sugar, **Fish** Oil, Flavour, Emulsifiers (472c, **Soy** Lecithin, 471), Sweeteners (Aspartame, Acesulfame Potassium), Antioxidants (301, 304, 306), Vitamins (Vitamin E Acetate, Nicotinamide, Calcium Pantothenate, Sodium Ascorbate, Pyridoxine Hydrochloride, Thiamine Hydrochloride, Vitamin A Acetate, Riboflavin, Folic Acid, Phytomenadione, Cholecalciferol, Cyanocobalamin, Biotin), Colour (Curcumin).

Contains Milk, Soy and Fish. Contains Phenylalanine. May contain Egg. Gluten Free.

Caramel Flavour

Skimmed **Milk** Powder (31%), **Milk** Proteins [Calcium Caseinate (20%), Sodium Caseinate (10%)], Maltodextrin (Corn), Vegetable Oil (Canola, Sunflower), Minerals (Potassium Citrate, Magnesium Carbonate, Calcium Phosphate, Sodium Chloride, Potassium Phosphate, Ferric Pyrophosphate, Copper Gluconate, Zinc Sulphate, Manganese Sulphate, Sodium Fluoride, Potassium Iodide, Sodium Molybdate, Sodium Selenite, Chromium Chloride), Vegetable Gum (414), Fructo-oligosaccharide, Inulin, Medium Chain Triglycerides, Glucose Syrup (Corn), Sugar, **Fish** Oil, Colour (150a), Emulsifiers (472c, **Soy** Lecithin, 471), Flavour, Antioxidants (301, 304, 306), Sweeteners (Aspartame, Acesulfame Potassium), Vitamins (Vitamin E Acetate, Nicotinamide, Calcium Pantothenate, Sodium Ascorbate, Pyridoxine Hydrochloride, Thiamine Hydrochloride, Vitamin A Acetate, Riboflavin, Folic Acid, Phytomenadione, Cholecalciferol, Cyanocobalamin, Biotin).

Contains Milk, Soy and Fish. Contains Phenylalanine. May contain Egg. Gluten Free.

Mocha

Skimmed **Milk** Powder (31%), **Milk** Proteins [Calcium Caseinate (20%), Sodium Caseinate (10%)], Maltodextrin (Corn), Vegetable Oils (Canola, Sunflower), Minerals (Potassium Citrate, Magnesium Carbonate, Calcium Phosphate, Sodium Chloride, Potassium Phosphate, Ferric Pyrophosphate, Copper Gluconate, Zinc Sulphate, Manganese Sulphate, Sodium Fluoride, Potassium Iodide, Sodium Molybdate, Sodium Selenite, Chromium Chloride), Coffee Extract (3.5%), Vegetable Gum (414), Fructo-oligosaccharide, Cocoa Powder (2%), Inulin, Medium Chain Triglycerides, Glucose Syrup (Corn), **Fish** Oil, Sugar, Colour (Beetroot), Sweeteners (Aspartame, Acesulfame Potassium), Emulsifiers (472c, **Soy** Lecithin, 471), Antioxidants (301, 304, 306), Flavour, Vitamins (Vitamin E Acetate, Nicotinamide, Calcium Pantothenate, Sodium Ascorbate, Pyridoxine Hydrochloride, Thiamine Hydrochloride, Vitamin A Acetate, Riboflavin, Folic Acid, Phytomenadione, Cholecalciferol, Cyanocobalamin, Biotin).

Contains Milk, Soy and Fish. Contains Phenylalanine. May contain Egg. Gluten Free.

OPTIFAST VLCD Soup nutrition information and ingredient lists

OPTIFAST VLCD		Tomato Country Style	Chicken Flavour	Vegetable
	Units	Ave Quantity per serving (53g)	Ave Quantity per serving (53g)	Ave Quantity per serving (53g)
Energy	kJ	840	840	840
	Cal	201	201	201
Protein	g	20	20	20
Fat, Total	g	4.5	4.5	4.5
- Saturated	g	0.9	0.9	0.9
- Linoleic Acid	g	1.2	1.2	1.2
- α-Linolenic Acid	mg	196	196	196
Carbohydrate	g	18.2	18.2	18.2
- Sugars	g	10.1	10.1	8.5
- Lactose	g	8.0	9.5	7.4
Dietary Fibre	g	3.6	3.6	3.6
Sodium	mg	725	645	760
Vitamin A	µg RE	345	345	345
Thiamin (B1)	mg	0.58	0.58	0.58
Riboflavin (B2)	mg	0.69	0.74	0.74
Niacin	mg NE	8.0	8.0	8.0
Pantothenic Acid	mg	2.7	2.7	2.7
Vitamin B6	mg	1.0	1.0	1.0
Biotin	µg	9.8	10.6	10.6
Folic Acid	µg	111	111	111
Vitamin B12	µg	1.1	1.1	1.1
Vitamin C	mg	40	40	40
Vitamin D	µg	3.7	3.7	3.7
Vitamin E	mg TE	7.4	7.4	7.4
Vitamin K	µg	37.1	31.8	31.8
Calcium	mg	420	420	420
Chromium	µg	15.9	15.9	13.3
Copper	mg	1.1	1.1	1.1
Fluoride	µg	345	345	345
Iodine	µg	93	98	98
Iron	mg	8.0	8.0	8.0
Magnesium	mg	160	160	160
Manganese	mg	0.8	0.8	0.8
Molybdenum	µg	24	24	23
Phosphorus	mg	360	360	360
Selenium	µg	40	40	40
Zinc	mg	4.2	4.2	4.2
Potassium	mg	955	955	955
Chloride	mg	1030	950	880
Gluten	mg/kg	Nil Detected	Nil Detected	Nil Detected

Tomato Country Style

Milk Proteins [Calcium Caseinate (20%), Sodium Caseinate (10%)], Skimmed **Milk** Powder (24%), Tomato (8.5%), Minerals (Potassium Citrate, Sodium Chloride, Calcium Phosphate, Magnesium Oxide, Potassium Phosphate, Ferric Pyrophosphate, Zinc Sulphate, Copper Gluconate, Manganese Sulphate, Sodium Fluoride, Potassium Iodide, Sodium Selenite, Sodium Molybdate, Chromium Chloride), Vegetable Oil (Canola, Sunflower), Maltodextrin (Potato, Corn), Vegetable Gum (414), Colours (Beetroot, Curcumin), Fructo-oligosaccharide, Inulin, Medium Chain Triglycerides, Glucose Syrup (Corn), Sugar, **Fish** Oil, Parsley, Emulsifiers (472c, **Soy** Lecithin, 471), Antioxidants (301, 306, 304), Flavours, Vitamins (Vitamin E Acetate, Nicotinamide, Calcium Pantothenate, Sodium Ascorbate, Pyridoxine Hydrochloride, Thiamine Hydrochloride, Vitamin A Acetate, Riboflavin, Folic Acid, Phytomenadione, Cholecalciferol, Cyanocobalamin, Biotin).

Contains Milk, Soy and Fish. May contain Egg. Gluten Free.

Chicken Flavour

Skimmed **Milk** Powder (31%), **Milk** Proteins [Calcium Caseinate (19%), Sodium Caseinate (10%)], Maltodextrin (Corn), Vegetable Oil (Canola, Sunflower), Minerals (Potassium Citrate, Sodium Chloride, Magnesium Carbonate, Potassium Phosphate, Ferric Pyrophosphate, Calcium Phosphate, Zinc Sulphate, Copper Gluconate, Manganese Sulphate, Sodium Fluoride, Potassium Iodide, Sodium Selenite, Sodium Molybdate, Chromium Chloride), Vegetable Gum (414), Fructo-oligosaccharide, Flavours, Inulin, Medium Chain Triglycerides, Glucose Syrup (Corn), Sugar, **Fish** Oil, Parsley, Emulsifiers (472c, **Soy** Lecithin, 471), Flavour Enhancer (621), Antioxidants (301, 304, 306), Vitamins (Vitamin E Acetate, Nicotinamide, Calcium Pantothenate, Sodium Ascorbate, Pyridoxine Hydrochloride, Thiamine Hydrochloride, Vitamin A Acetate, Riboflavin, Folic Acid, Phytomenadione, Cholecalciferol, Cyanocobalamin, Biotin), Colour (Curcumin).

Contains Milk, Soy and Fish. May contain Egg. Gluten Free.

Vegetable

Milk Proteins [Calcium Caseinate (20%), Sodium Caseinate (10%)], Skimmed **Milk** Powder (25%), Vegetables (8%) (Potato, Tomato, Carrot, Onion, Leek), Minerals (Potassium Citrate, Sodium Chloride, Magnesium Carbonate, Calcium Phosphate, Potassium Phosphate, Ferric Pyrophosphate, Zinc Sulphate, Copper Gluconate, Manganese Sulphate, Sodium Fluoride, Potassium Iodide, Sodium Selenite, Sodium Molybdate, Chromium Chloride), Vegetable Oil (Canola, Sunflower), Maltodextrin (Corn, Potato), Vegetable Gum (414), Fructo-oligosaccharide, Flavour Enhancer (621), Glucose Syrup (Corn), Inulin, Flavours, Parsley, Medium Chain Triglycerides, Sugar, **Fish** Oil, Emulsifiers (472c, **Soy** Lecithin, 471), Antioxidants (301, 306, 304), Colour (Paprika), Vitamins (Vitamin E Acetate, Nicotinamide, Calcium Pantothenate, Sodium Ascorbate, Pyridoxine Hydrochloride, Thiamine Hydrochloride, Vitamin A Acetate, Riboflavin, Folic Acid, Phytomenadione, Cholecalciferol, Cyanocobalamin, Biotin).

Contains Milk, Soy and Fish. May contain Egg. Gluten Free.

Appendix 4

OPTIFAST VLCD Dessert nutrition information and ingredient lists

OPTIFAST VLCD		Chocolate	Lemon Crème Flavour
	Units	Ave Quantity per serving (53g)	Ave Quantity per serving (53g)
Energy	kJ	840	840
	Cal	201	201
Protein	g	20	20
Fat, Total	g	4.5	4.5
- Saturated	g	1.0	0.9
- Linoleic Acid	g	1.2	1.2
- α-Linolenic Acid	mg	196	196
Carbohydrate	g	18.2	18.2
- Sugars	g	8.5	8.5
- Lactose	g	8.0	8.0
Dietary Fibre	g	3.6	3.6
Sodium	mg	545	545
Vitamin A	µg RE	345	345
Thiamin (B1)	mg	0.58	0.58
Riboflavin (B2)	mg	0.64	0.64
Niacin	mg NE	9.0	9.0
Pantothenic Acid	mg	2.7	2.7
Vitamin B6	mg	1.0	1.0
Biotin	µg	10.6	10.6
Folic Acid	µg	110	110
Vitamin B12	µg	1.1	1.3
Vitamin C	mg	40	40
Vitamin D	µg	3.7	3.7
Vitamin E	mg TE	7.4	7.4
Vitamin K	µg	31.8	31.8
Calcium	mg	590	590
Chromium	µg	27	16
Copper	mg	1.2	1.1
Fluoride	µg	340	330
Iodine	µg	93	93
Iron	mg	8.7	8.0
Magnesium	mg	160	160
Manganese	mg	1.0	1.0
Molybdenum	µg	27	27
Phosphorus	mg	580	580
Selenium	µg	40	42
Zinc	mg	4.7	5.3
Potassium	mg	955	955
Chloride	mg	280	280
Gluten	mg/kg	Nil Detected	Nil Detected

Chocolate

Milk Protein (17%), Calcium Caseinate (9.5%), Sodium Caseinate (5.5%), Skimmed **Milk** Powder (24%), Vegetable Oil (Canola, Sunflower), Minerals (Potassium Citrate, Sodium Phosphate, Calcium Carbonate, Magnesium Carbonate, Potassium Chloride, Ferric Pyrophosphate, Zinc Sulphate, Copper Gluconate, Manganese Sulphate, Sodium Fluoride, Potassium Iodide, Sodium Selenite, Sodium Molybdate, Chromium Chloride), Maltodextrin (Corn), Cocoa Powder (5%), Vegetable Gum (414), Starch (Potato), Fructo-oligosaccharide, Inulin, Glucose Syrup (Corn), Medium Chain Triglycerides, Sugar, **Fish** Oil, Flavour, Sweeteners (Aspartame, Acesulfame Potassium), Emulsifiers (472c, **Soy** Lecithin, 471), Antioxidants (301, 304, 306), Vitamins (E, Niacin, C, Pantothenic Acid, B6, B1, A, B2, Folic Acid, K, Biotin, D, B12).

Contains Milk, Soy and Fish. Contains Phenylalanine. May contain Egg. Gluten Free.

Lemon Crème Flavour

Milk Protein (32%), Skimmed **Milk** Powder (25%), Maltodextrin (Corn), Minerals (Potassium Citrate, Sodium Phosphate, Magnesium Carbonate, Calcium Carbonate, Potassium Chloride, Sodium Molybdate, Ferric Pyrophosphate, Chromium Chloride, Zinc Sulphate, Copper Gluconate, Manganese Sulphate, Sodium Fluoride, Potassium Iodide, Sodium Selenite), Vegetable Oil (Canola, Sunflower), Vegetable Gum (414), Fructo-oligosaccharide, Starch (Potato), Inulin, Glucose Syrup (Corn), Medium Chain Triglycerides, Sugar, **Fish** Oil, Sweeteners (Aspartame, Acesulfame Potassium), Flavour, Emulsifiers (472c, **Soy** Lecithin, 471), Antioxidants (301, 304, 306), Vitamins (E, Niacin, C, Pantothenic Acid, B6, B1, A, B2, Folic Acid, K, Biotin, D3, B12), Colour (Curcumin).

Contains Milk, Soy and Fish. Contains Phenylalanine. May contain Egg. Gluten Free.

OPTIFAST VLCD Bars nutrition information and ingredient lists

OPTIFAST VLCD		Chocolate	Cappuccino Flavour	Berry Crunch Flavour	Cereal with Cranberry
	Units	Ave Quantity Per Serving (70g)	Ave Quantity Per Serving (65g)	Ave Quantity Per Serving (65g)	Ave Quantity Per Serving (65g)
Energy	kJ	980	970	950	880
	Kcal	233	230	227	210
Protein	g	19.3	20.8	20.8	19.2
Fat, Total	g	7.6	7.5	7.3	5.2
- Saturated	g	2.8	3.8	3.6	1.0
- Monounsaturated	g	2.7	2.3	2.3	2.0
- Polyunsaturated	g	1.4	1.3	1.3	2.3
- α-Linolenic Acid	mg	168	172	172	338
- Linoleic Acid	mg	1190	1170	1170	1820
Carbohydrate	g	23.4	20.8	19.5	22.1
- Sugars	g	7.1	7.5	7.5	5.2
- Lactose	g	1.4	1.3	1.3	0.3
- Glycerol	g	6.5	1.9	3.3	3.3
- Sorbitol	g	5.4	6.1	4.3	4.9
Fibre	g	6.7	4.4	5.9	5.9
- Polydextrose	g	5.6	2.8	4.2	3.3
Sodium	mg	335	405	405	405
Vitamin A	µg RE	336	338	338	338
Thiamin	mg	0.46	0.46	0.46	0.46
Riboflavin	mg	0.91	0.91	0.91	0.91
Niacin	mg NE	14	11.7	11.7	11.7
Pantothenic Acid	mg	2.8	2.7	2.7	2.7
Vitamin B6	mg	0.9	0.9	0.9	0.9
Biotin	µg	19.6	23	23	20.8
Folic Acid	µg	140	130	130	130
Vitamin B12	µg	2.0	1.4	1.4	1.4
Vitamin C	mg	39	39	39	46
Vitamin D	µg	2.8	2.7	2.7	2.6
Vitamin E	mg TE	5.3	5.2	5.2	5.6
Vitamin K	µg	31.5	31.2	31.2	31.2
Calcium	mg	420	420	420	420
Copper	mg	0.8	0.7	0.7	0.7
Iodine	µg	70	75	75	72
Iron	mg	6.8	6.8	6.8	6.8
Magnesium	mg	140	140	140	140
Manganese	mg	0.8	1.1	1.1	1.1
Phosphorus	mg	290	360	360	360
Selenium	µg	28	26	26	26
Zinc	mg	4.9	5.1	5.1	5.1
Potassium	mg	840	715	715	715

Chocolate

Milk Proteins, **Milk** Chocolate (14.5%) [Sugar, Cocoa Solids (6%), Whole **Milk** Powder, Emulsifier (**Soy** Lecithin), Flavour], Polydextrose, Sorbitol, Glycerol, Minerals (Potassium Citrate, Calcium Carbonate, Sodium Citrate, Sodium Phosphate, Magnesium Carbonate, Magnesium Phosphate, Calcium Phosphate, Copper Sulphate, Iron Pyrophosphate, Potassium Iodate, Sodium Selenate, Zinc Oxide, Manganese Sulphate), Cocoa Powder (5%), Vegetable Oils (Rapeseed, Safflower), Fructose Syrup, **Soy** Protein Isolate, Glucose Syrup, Flavour, Vitamins (Ascorbic Acid, Vitamin E Acetate, Niacinamide, Vitamin A Acetate, Calcium Pantothenate, Biotin, Cyanocobalamin, Folic Acid, Cholecalciferol, Pyridoxine Hydrochloride, Riboflavin, Phylloquinone, Thiamin Mononitrate), Emulsifier (**Soy** Lecithin).

Contains Milk and Soy. May contain Peanuts, Tree Nuts and Oats.

Cappuccino Flavour

Soy Crisp (**Soy** Protein Isolate, Tapioca Starch, Salt), **Milk** Chocolate (17%) [Sugar, Cocoa Solids (6.6%), Whole **Milk** Powder, Emulsifier (**Soy** Lecithin), Flavour], Sorbitol, **Soy** Protein Isolate, Polydextrose, **Soy** Cores, Minerals (Potassium Citrate, Calcium Carbonate, Sodium Phosphate, Sodium Citrate, Magnesium Carbonate, Magnesium Phosphate, Calcium Phosphate, Copper Sulphate, Iron Pyrophosphate, Potassium Iodate, Sodium Selenate, Zinc Oxide, Manganese Sulphate), Maltodextrin (Corn), Glycerol, Fructose-Glucose Syrup, Inulin, Rapeseed Oil, Water, Mocha Paste (0.5%), Vitamins (Ascorbic Acid, Vitamin E Acetate, Niacinamide, Vitamin A Acetate, Calcium Pantothenate, Biotin, Cyanocobalamin, Folic Acid, Cholecalciferol, Pyridoxine Hydrochloride, Riboflavin, Phylloquinone, Thiamin Mononitrate), Flavour, Sweeteners (Sucralose, Acesulfame Potassium), Emulsifier (**Soy** Lecithin).

Contains Milk and Soy. May contain Peanuts, Tree Nuts and Oats.

Appendix 4

Berry Crunch Flavour

Soy Crisp (**Soy** Protein Isolate, Tapioca Starch, Salt), **Milk** Chocolate (17%) [Sugar, Cocoa Solids (6.6%), Whole **Milk** Powder, Emulsifier (**Soy** Lecithin), Flavour], **Soy** Protein Isolate, Polydextrose, Sorbitol, **Soy** Cores, Minerals (Potassium Citrate, Calcium Carbonate, Sodium Phosphate, Magnesium Carbonate, Sodium Citrate, Magnesium Phosphate, Calcium Phosphate, Copper Sulphate, Iron Pyrophosphate, Potassium Iodate, Sodium Selenate, Zinc Oxide, Manganese Sulphate), Glycerol, Fruit Preparation (1.5%) [Sugar, Raspberry Puree (0.3%), Fructose Syrup, Raspberry Juice Concentrate (0.2%), Apple Puree (0.2%), Lactose, Cherry Juice Concentrate (0.1%)], Maltodextrin (Corn), Inulin, Rapeseed Oil, Fructose-Glucose Syrup, Water, Vitamins (Ascorbic Acid, Vitamin E Acetate, Niacinamide, Vitamin A Acetate, Calcium Pantothenate, Biotin, Cyanocobalamin, Folic Acid, Cholecalciferol, Pyridoxine Hydrochloride, Riboflavin, Phylloquinone, Thiamin Mononitrate), Acidity Regulator (330), Flavour, Sweeteners (Sucralose, Acesulfame Potassium), Emulsifier (**Soy** Lecithin).

Contains Milk and Soy. May contain Peanuts, Tree Nuts and Oats.

Cereal with Cranberry

Soy Crisp (**Soy** Protein Isolate, Tapioca Starch, Salt), **Soy** Protein Isolate, Sorbitol, **Soy** Cores, Polydextrose, **Oat** Flakes (7%), Maltodextrin (Corn), Minerals (Potassium Citrate, Calcium Carbonate, Sodium Phosphate, Sodium Citrate, Magnesium Carbonate, Magnesium Phosphate, Calcium Phosphate, Copper Sulphate, Iron Pyrophosphate, Potassium Iodate, Sodium Selenate, Zinc Oxide, Manganese Sulphate), Glycerol, Fructose-Glucose Syrup, Cranberries in Syrup [Cranberries (2.4%), Sugar, Sunflower Oil], Rapeseed Oil, Water, Vitamins (Ascorbic Acid, Vitamin E Acetate, Niacinamide, Vitamin A Acetate, Calcium Pantothenate, Biotin, Cyanocobalamin, Folic Acid, Cholecalciferol, Pyridoxine Hydrochloride, Riboflavin, Phylloquinone, Thiamin Mononitrate), Sweeteners (Sucralose, Acesulfame Potassium), Flavour, Emulsifier (**Soy** Lecithin).

Contains Soy and Oats. May contain Peanuts, Milk and Tree Nuts.

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Notes

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