The Facts on Very Low Calorie Diets

You may wish to print off this factsheet and discuss it with your healthcare professional

What are Very Low Calorie Diets?

□ Very low calorie diets or VLCDs (also known as very low energy diets or VLEDs) are commercially-prepared formulas, usually in liquid form, that completely replace all usual food intake.

□ They provide 800 kilocalories or less per day\(^1\) and contain protein, carbohydrate, essential fatty acids and the recommended daily allowance for vitamins, minerals and electrolytes.

□ They should not be confused with ‘meal replacements’ which are portion-controlled products (often liquid shakes or bars), designed to replace one to two meals per day in conjunction with a low calorie meal and snack(s).\(^2\)

How do VLCDs work?

□ VLCDs provide a limited amount of energy (kilocalories) for the body to use each day. This isn’t enough to meet the energy needs of the body, so the body starts to break down its own fat stores and muscle tissue to produce energy, resulting in weight loss. On a VLCD, the loss is about 75% body fat and 25% lean body mass once a minimum of 50g of protein is provided each day.\(^3\)

How do VLCDs help people to manage their weight?

□ VLCDs are not considered a first line dietary treatment for weight loss. Dietary and lifestyle changes such as reducing portion sizes, eating fewer high calorie foods, and increasing activity levels should always be trialled first.\(^4\) The INDI website (www.indi.ie) has lots of useful factsheets and links for helping with weight management through dietary change.

□ If other weight loss methods have been unsuccessful, VLCDs may be considered when the body mass index (BMI) is greater than 30kg/m\(^2\).\(^5-7\) Where BMI is 27-30kg/m\(^2\), use of VLCDs may be sometimes considered in those with medical conditions that would benefit from rapid weight loss (e.g. severe obstructive sleep apnoea or prior to planned surgery).\(^8\)

□ VLCDs should only be used under careful medical supervision. Medical assessment is recommended before commencing a VLCD. There is a need for continual monitoring\(^9\) as improvement in any medical condition associated with rapid weight loss (eg. type 2 diabetes), may require medication regimens to be altered.

□ VLCDs are recommended for a maximum of 12-16 weeks continuously, as there are few published controlled studies on their use as a sole source of nutrition for longer than this.\(^5, 8, 10, 11\)

□ The National Institute for Clinical Excellence (NICE) also recommends that VLCDs may be used intermittently with a low calorie diet (e.g. 2-4 days per week) in obese people who have
reached a weight loss plateau.\textsuperscript{12} If VLCDs are to be used for extended periods, referral to a specialist care centre is necessary.\textsuperscript{12}

\begin{itemize}
  \item A re-feeding period, when food is re-introduced slowly, is recommended following completion of a VLCD. This helps to prevent shifts in fluid and electrolyte balance and prevents abdominal discomfort.\textsuperscript{13, 14} It also allows for adjustment in eating behavior to a lower body weight and may reduce the rate of weight regain.\textsuperscript{15} The optimal length of this re-feeding period isn’t known but generally 3 to 8 weeks is recommended.\textsuperscript{13} Continuing to work with a dietitian or other health care professional may help you to slowly adapt healthy eating habits that you can sustain.
\end{itemize}

**How much weight can be lost on a VLCD?**

\begin{itemize}
  \item On average, strict use of a VLCD results in 1.0-2.5kg weight loss per week. VLCDs give rapid initial, weight loss but are no more effective in the long-term (after 1 year) than less restrictive, low calorie diets.\textsuperscript{6, 16, 17}
\end{itemize}

**What’s the best way to maintain weight loss following use of a VLCD?**

\begin{itemize}
  \item Studies show a lot of variation in the amount of weight loss that is regained following completion of a VLCD \textsuperscript{3, 16, 18-21} but, as with all weight loss interventions, weight can be regained if lifestyle changes are not sustained.
  \item An active follow-up weight maintenance programme, that includes behavioural therapy, nutritional education, exercise and weight loss medications (delivered in a group setting by a multidisciplinary team of healthcare professionals) has been shown to improve weight maintenance following completion of a VLCD.\textsuperscript{3, 19, 22-25}
\end{itemize}

**Are VLCDs safe?**

\begin{itemize}
  \item VLCDs are considered safe and effective when used in appropriate individuals under careful medical supervision,\textsuperscript{6} combined with behavior modification,\textsuperscript{26} nutrition education and an exercise programme.\textsuperscript{19}
\end{itemize}

**Who should not use VLCDs?**

\begin{itemize}
  \item VLCDs should be used under medical supervision and your doctor can advise you as to whether a VLCD is suitable for you or not.
  \item VLCDs are not advisable in certain population groups and medical conditions. These include
    \begin{itemize}
      \item Infants, children and adolescents\textsuperscript{8, 11, 13}
      \item Adults over the age of 65 years.\textsuperscript{13, 27} Caution is also advised in adults over 50 years as VLCDs are not well studied in this age group and depletion of lean body mass may already exist\textsuperscript{7}
      \item Pregnant or breastfeeding women\textsuperscript{8, 13, 27}
      \item In severe systemic or organ disease (e.g. systemic infections, malignancy, unstable cardiac or cerebrovascular disease, severe renal or hepatic failure, porphyria \textsuperscript{8, 11, 13, 28}
      \item Acute psychiatric disorders\textsuperscript{8, 11, 13, 29}
      \item Type 1 diabetes mellitus\textsuperscript{8, 13}
    \end{itemize}
  \end{itemize}

**What kinds of side effects are possible with VLCDs?**

\begin{itemize}
  \item Possible side effects include cold intolerance, dry skin, hair loss/thinning, headaches, dizziness, fatigue, dry mouth, bad breath, constipation, diarrhea (due to the low fibre content of many VLCDs), irregular periods in women, brittle nails and oedema.
  \item More severe side effects include gout and gallstones. Gallstones can occur during rapid weight loss but the risk of getting gallstones when using a VLCD is reduced if the VLCD contains a minimum of 7g fat per day.\textsuperscript{3, 7, 8, 13, 29}
\end{itemize}
Conclusion

□ There is no magic bullet for sustained weight loss. VLCDs may be useful to 'kick start' weight loss when used appropriately i.e. in carefully selected individuals under medical supervision. The use of VLCDs should be supported by trained health care professionals who encourage individuals through the re-feeding period and beyond, and who educate about the life-long behavior and dietary changes needed to sustain weight loss. Obesity is a long-term condition that needs a lifetime of attention even after a formal weight loss programme ends. The only way to manage weight in the longer term is to commit to permanent changes of healthier eating, regular physical activity and develop a positive and respectful relationship with food.

This factsheet is a public service of the Irish Nutrition and Dietetic Service intended for information only. It is not a substitute for proper medical diagnosis or dietary advice given by a dietitian.

Factsheet prepared by Weight Management Interest Group, INDI, Ashgrove House, Kill Avenue, Dun Laoghaire, Co Dublin. References available on request

References:


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