



Healthcare Professional Guide

Enteral Tube Feeding

Use of K·Vita in the dietary management of adults and children with drug resistant epilepsy



Enhancing Lives Together



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Prepared by Vitaflo dietitians and reviewed by:

Ailsa Kennedy, RD, Clinical Specialist Dietitian (Transition / Nutrition Support), Mersey Care NHS Foundation Trust, Liverpool and South Sefton Community Services Division, Liverpool, UK

Natasha Schoeler PhD RD MA (Cantab) MSc, Senior Research Fellow and Specialist Paediatric Dietitian, UCL Great Ormond Street Institute of Child Health and Great Ormond Street Hospital for Children, London, UK

This guide is intended for use only by healthcare professionals advising on the use of **K·Vita** in adults and children with drug resistant epilepsy who are given all or a proportion of their daily nutritional needs via an enteral feeding tube.

The information on tube feeding is provided for guidance only. Please refer to and use local enteral feeding policies and procedures in preference.

IMPORTANT INFORMATION - FEEDING EQUIPMENT

- Do not use enteral feeding equipment manufactured from polyvinyl chloride (PVC) for the administration of **K·Vita**
- Over time, depending on usage and environmental conditions, PVC can be degraded by medium chain triglyceride (MCT)
- Equipment made from silicone and polyurethane is suitable for use
- To ensure proper functioning and integrity, regularly monitor the feeding tube

IMPORTANT INFORMATION - K·Vita

Use under medical supervision

Suitable from 3 years of age

Not suitable for use as a sole source of nutrition

Not suitable for use during pregnancy and lactation

Not suitable for individuals unable to metabolise MCT, for example, those with medium chain acyl-CoA dehydrogenase deficiency (MCADD)

For enteral use only

For further information on the use of **K·Vita** for the dietary management of epilepsy in adults and children, please contact Vitaflo (details on the last page of this guide) or at **www.K-Vita.co.uk**

Resources for the use of **K·Vita** can be accessed on the Vitaflo® in association with you website **www.vitaflo-via.com/kvita**

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Overview of K·Vita

K·Vita is:

- ▶ A Food for Special Medical Purposes for the dietary management of drug resistant epilepsy in adults and in children from 3 years of age
- ▶ A specific blend of fats (MCT). **K·Vita** contains the medium chain fatty acids capric/ decanoic acid (C10) and caprylic/octanoic acid (C8) in the ratio C10:C8, 80:20
- ▶ A strawberry flavour, thickened liquid. With sweetener
- ▶ Not suitable for use as a sole source of nutrition
- ▶ Suitable for enteral tube feeding
- ▶ Suitable for oral use. Note: *To ensure consistency in daily intake, it may be preferable for adults and children on a combination of tube and oral feeding to be given **K·Vita** via their feeding tube, depending on their individual feeding ability.*

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Key Points about the use of K·Vita

- 1 IMPORTANT:** To establish gastrointestinal (GI) tolerance to MCT, **K·Vita must be introduced slowly, in measured amounts, over a minimum of four weeks - however, this is dependent on individual tolerance (Section 3)**
- 2 The daily amount of K.Vita is divided up into three or four equal portions and given at regular intervals throughout the day, for example, every 3-4 hours
- 4 K·Vita** can be used in conjunction with the adult or child's usual enteral feed **(Section 5.4)**
- 5 To help optimise GI tolerance of MCT, **K·Vita** should not be given when the stomach is empty
- 6 Give **K·Vita** separately, part way through or straight after a bolus feed, or whilst pausing or during a continuous feed **(Section 5.3)**
- 8 Flush the feeding tube as per local guidance before **K·Vita** is given, and with a minimum of 50ml of water afterwards **(Section 5.3)**
- 9 If food is taken orally in combination with enteral feeding the usual diet can be continued **(Section 5.6)**

3.1 Establishing GI tolerance to MCT and K·Vita

- MCT is associated with symptoms of GI intolerance, including abdominal pain, bloating and diarrhoea related to how it is digested and absorbed²
- However, adaptation to MCT occurs over time provided small quantities are taken at first, the amount is built up gradually, and it is always consumed with feed (or food)³
- As **K·Vita** is a blend of MCT, a slow, incremental introduction of measured quantities is crucial, over a minimum of four weeks, possibly over up to eight weeks, (**Section 3**) to reach the daily amount chosen for the individual (**Section 4**)
- It may seem that it will take a long time to introduce **K·Vita**. However, it is worthwhile starting with small quantities and building up the amounts carefully, as this can help minimise side effects (**Section 7**) and was found to be a beneficial approach during the clinical trial¹
- Adults and children can be extremely sensitive to **K·Vita**, especially at first, and most need time for GI tolerance to be established

3.2 Creating an introduction plan

The Vitaflo 'introduction plan calculator' is available at www.vitaflo-via.com/kvita to create individualised introduction plans.

The tool can be used to specify the duration of the introduction (from 4 and up to over 8 weeks) and the frequency that **K·Vita** is given (3 or 4 times daily). After entering a chosen daily amount of **K·Vita** to be reached at the end of the plan (**Section 4**), a schedule is generated detailing day by day, week by week, how much **K·Vita** is to be given and when. The plan can be printed out for caregivers to follow.

Introduction plans start with small quantities of **K·Vita**, for example, 5mls four times daily, or 10mls three times daily. As the introduction progresses, the amount of **K·Vita** given increases gradually and incrementally, for example, by 5ml or 10ml daily, to reach the chosen daily amount of **K·Vita** (**Section 4**) at the end of the plan.

Alternatively, pre-prepared plans for the introduction of **K·Vita** over four weeks (up to one pack (120ml) daily for children and up to two packs (240ml) daily for adults) are in the 'Guide for adults/children taking **K·Vita**', available at <http://www.vitaflo-via.com/kvita>

3.3 During the introduction

Encourage caregivers to follow carefully the introduction plan provided and to keep to the advised amounts as this may help minimise side effects (**Section 7**).

If an adult or child has symptoms of GI intolerance whilst introducing **K·Vita**, their plan can be adjusted by using the calculator. For example, the rate of increase in the amount taken each day can be slowed by extending the duration from 4 to 6 weeks, and/or the daily amount to be reached at the end of the plan can be reduced.

As well as HCP review during the introduction of **K·Vita**, it may be helpful for caregivers to keep a record of progression through the plan, and keep a note of any side effects and when they occurred. This information may help identify the daily amount of **K·Vita** that is most beneficial (**Section 3.4**), and/or help with the management of any symptoms of GI intolerance of MCT (**Section 7**).



3.4 Determining individual requirements during the introduction

The daily amount of **K·Vita** required for the dietary management of epilepsy is very individual. **Section 4** contains guidance on daily amounts to aim for during the introduction of **K·Vita**.

However, if during the introduction of **K·Vita** a lower daily amount than the original aim is efficacious (and/or better tolerated), no further increase in the amount given is necessary. This beneficial daily amount can be continued.

3.5 At the end of the introduction plan

A review of how much **K·Vita** is being given each day, if it is tolerated and if it is beneficial for the dietary management of epilepsy is recommended. This information may help inform a discussion with caregivers about continuing with **K·Vita** or discontinuing it at this point (**Section 10**).

-  If the daily amount of **K·Vita** reached is efficacious, this can be continued.
-  If the daily amount of **K·Vita** reached is tolerated but no benefit is observed, it may be worthwhile continuing with this for an agreed period (for example, up to three months) to assess if any improvement occurs over time before it is stopped.

Further, gradual increase in the daily amount of **K·Vita** given to determine the effect, up to a maximum of 35% of daily energy requirements (children only) or two packs (240ml) per day (adults or children, maximum daily intake), can be made, if tolerated (**Section 4**). Provide a plan for introducing extra **K·Vita** for caregivers to follow.

3.6 Changing from giving K.Vita four times daily to three

At the end of the introduction, if **K·Vita** has been given four times daily this can be continued, or, if preferred, reduced to three times each day. Provide a plan for making this changeover for caregivers to follow. However, if side effects occur (**Section 7**), it may be best to return to giving **K·Vita** four times daily again.

Daily amount of K·Vita

There is no set recommended daily amount of **K·Vita** as it depends on individual tolerance and efficacy. The information below is for guidance only when planning the introduction of **K·Vita** and is based on median daily intakes taken by adult and child participants in the clinical trial¹.

4.1 Adults

Two packs (240ml) of K·Vita per day (maximum)



The daily amount tolerated and/or required by an adult should be determined on an individual patient basis. It may be dependent on factors such as clinical condition, body size, daily energy requirements and GI tolerance of MCT. Some adults may require less than two packs (240ml) per day for efficacy.

4.2 Children

One pack (120ml) of K·Vita per day



The daily amount tolerated and/or required by a child should be determined on an individual patient basis. It may be dependent on factors such as clinical condition, body size, daily energy requirements and GI tolerance of MCT. Some children may require up to a maximum of two packs (240ml) per day for efficacy.

Children only: Prescribing K·Vita as a percentage of daily energy requirements

A maximum of 35% of daily energy requirements can be provided by **K·Vita**, but the total intake should not exceed two packs (240ml) per day.

A dietary assessment must be undertaken by a paediatric dietitian to determine the daily energy requirements of the child. From this, a daily amount of **K·Vita** to aim for can be calculated and an individualised introduction plan created using the introduction plan calculator www.vitaflo-via.com/kvita

5.1 Measuring K·Vita

1. Ensure that re-usable equipment is made from MCT-compatible materials (silicon and polyurethane). For example, syringes from ENFit <https://medicina.co.uk/>
2. **K·Vita** should always be measured accurately before being given to a patient
3. **K·Vita** should be shaken before use
4. Once opened, recap the unused portion, refrigerate the pack and use the remaining **K·Vita** within 48 hours or within 6 hours if kept at ambient (room) temperature.

5.2 Tube feeding regimes

Bolus feeds

Adults and children can be given **K·Vita** to coincide with their usual daily bolus feeding routine. Identify with the caregiver suitable feed times, or modify the current feeding schedule, so that **K·Vita** is given at regular intervals during the day, for example, every 3 or 4 hours.

Continuous tube feeds

Identify with the caregiver suitable time points, for example, four times each day at 3-4 hour intervals, when **K·Vita** can be delivered down the tube whilst the feed is paused or running. Feeding can be resumed again afterwards.

5.3 Giving K·Vita down a feeding tube

Note: At ambient (room) temperature, **K·Vita** passes more easily down a feeding tube than after being stored in a fridge.

1. Flush the feeding tube with water first, as per local guidance, or individual fluid requirements
2. **To help with GI tolerance of MCT, K·Vita should not be given when the stomach is empty**
3. **Give K·Vita part way through or straight after a bolus feed, or during or whilst pausing a continuous feed**
4. Connect the syringe containing the measured amount of **K·Vita** onto the feeding tube via the drug port
5. **K·Vita** can be given down the feeding tube as a bolus via gravity, or by pushing the syringe plunger down using steady, gentle pressure

- 6. K·Vita is best given slowly to avoid it entering the stomach rapidly and possibly causing side effects (Section 7)**
- 7. If K·Vita is mixed with water or a small quantity of enteral feed before being delivered down the feeding tube, ensure caregivers know to give the full amount of K·Vita**
- 8. The feeding tube should be flushed afterwards with a minimum of 50ml of water.**

5.4 Enteral feeds and K·Vita

The feed that was prescribed before starting **K·Vita** can usually be continued. No special feed is required.

5.5 Meeting dietary requirements

Intakes of energy, protein, micronutrients, and fluid

K·Vita will provide a patient with a proportion of their energy intake. Therefore, the quantity of enteral feed given before starting **K·Vita** may need to be reduced, or the feed changed to one with a lower energy density.

K·Vita does not contain any protein or micronutrients, and has a low fluid content. Any reduction in the quantity of enteral feed given to account for the energy contribution from **K·Vita** may impact on nutritional and fluid intakes.

Nutritional and dietary assessment

Before an adult or child is given K·Vita, and regularly once they are taking it every day, a dietitian must:

- 1.** Determine and monitor energy, nutritional and fluid requirements on an individual patient basis, and ensure these are being met adequately
- 2.** Define the enteral feed and the requirement for any sources of additional protein and/or micronutrients to meet the unique dietary needs of the patient whilst they are given **K·Vita**, and determine the most suitable products for them
- 3.** Provide caregivers with instructions on preparing the patients enteral feed and on ensuring an adequate fluid intake, both during the introduction of **K·Vita** and once established on a daily amount.



5.6 Combined oral and tube feeding

If food is taken orally in combination with tube feeding, patients can continue to be given their usual diet.

However, the advice for those who are solely orally fed is to have their usual meals and snacks whilst taking **K•Vita**, but to avoid foods and beverages high in sugar to help optimise the nutritional quality of the diet and control excess energy intake. This may also be relevant for adults and children having food in conjunction with an enteral feed and **K•Vita**. For further information refer to 'A Guide for Adults (or Children) Taking **K•Vita**' available at www.vitaflo-via.com/kvita

Note: *To ensure consistency in daily intake it may be preferable for adults and children on a combination of tube and oral feeding to be given **K•Vita** via their feeding tube, depending on their individual feeding ability.*



The 'Guide to giving K·Vita to adults and children who are tube fed'

Printed copies of the guide for caregivers and blank charts for creating individualised K·Vita introduction plans are available from your Vitaflo representative.

These can also be viewed on-line and downloaded from www.vitaflo-via.com/kvita

The guide contains information and advice for caregivers on:

- ▮ **K·Vita** and what it is for
- ▮ Measuring **K·Vita**
- ▮ Giving **K·Vita** via a feeding tube
- ▮ Following the introduction plan
- ▮ Possible side effects from **K·Vita** and how to manage these
- ▮ Amending the amount of enteral feed whilst introducing **K·Vita** (and food, if on a combination of oral and tube feedings)
- ▮ Storing **K·Vita**
- ▮ Getting prescriptions of **K·Vita**.

To help establish GI tolerance and promote adherence with giving it every day, it is recommended to:

1. Explain and discuss the information contained in the guide with caregivers
2. Go through the introduction plan for **K·Vita** and the plan for making any amendments to the patients enteral feed.
3. Provide contact details for yourself (or another healthcare professional) for caregivers to access support with giving **K·Vita**
4. Ensure they have contact details for the Nutrition Support Team for help with enteral feeding and equipment supplies
5. Provide the Nutritional Support Team with details about **K·Vita**, the patients introduction plan, instructions for amends to their enteral feed and any requests for feeding equipment/supplies.



Side-effects from K·Vita



7.1 What to look out for

Consumption of MCT can cause symptoms of GI intolerance². However, not every patient who takes **K·Vita** will be affected, and building up the amount gradually and always giving it with feed can help to minimise side-effects^{1,3}.

However, some adults and children may experience one or more of the following during the introduction of **K·Vita**, which is the most likely time for them to occur:





-  Vomiting
-  Nausea
-  Abdominal pain/discomfort
-  Bloating
-  Feeling full
-  Excessive burping
-  Excessive flatulence (wind)
-  Diarrhoea
-  Constipation

If taken orally:

-  Burning sensation in the mouth and/or throat
-  Coughing

7.2 Managing side effects if they occur

Check that **K·Vita** is always being given at the same time as some of the enteral feed and that the plan to introduce it slowly and in measured amounts is being followed. If side effects occur, trying one or more of the following may help improve tolerance to **K·Vita**:

-  If in week One of the introduction plan, take a one or two-day break, then restart from the beginning
-  Beyond week One, reduce the amount of **K·Vita** taken. Go back a day or two in the introduction plan (or to when side effects were first noticed). Stay on that amount until things improve. Then, start increasing again, according to the introduction plan
-  Make increases of **K·Vita** more slowly, for example, every two or three days instead of every day
-  Alternatively, use the **K·Vita** introduction plan calculator to adjust the plan, for example, to extend the duration from 4 to 6 weeks, or to reduce the daily amount aimed for (**Section 3.3, Section 3.4, Section 4**) www.vitaflo-via.com/kvita

GI tolerance to MCT can take time to establish. Caregivers may need advice and support with making changes to the introduction plan to facilitate this. Encouragement to continue with **K·Vita** may be needed before consideration given to stopping it.

Any side effects that do occur are usually mild and tend to disappear with time and or management advice implementation.

The 'Guide to giving **K·Vita** to adults and children who are tube fed' advises caregivers to contact the patients' healthcare professional if side-effects continue after trying these suggestions, and if any other symptoms occur which they think may be caused by **K·Vita**.

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Support provision and follow-up

1. Provide contact details for access to help with **K·Vita**-related issues. Ensure support is available with enteral feeding from a Nutrition Support Team.
2. Arrange a prescription for **K·Vita** via the patients GP or the 'Vitaflo to You' home delivery service: www.nestlehealthscience.co.uk/vitaflo/vitaflo-to-you
3. Provide the Nutritional Support Team with details about **K·Vita**, the introduction plan that the patient will be following and information on amending the enteral feed
4. Monitor adherence and efficacy of **K·Vita**:
 - During and/or at the end of the introduction
 - At three months
 - On an ongoing basis, as part of routine clinical care
5. No specific biochemical monitoring is recommended for individuals taking **K·Vita**. Routine monitoring as part of the specific clinical service caring for the individual should be followed
6. Concerns regarding dietary intake and/or nutritional status should be managed by a dietitian

9

Intercurrent illness

The clinical team caring for the patient should decide if K.Vita should be stopped during periods of intercurrent illness.

If **K·Vita** is restarted, a slow reintroduction may be required to help re-establish GI tolerance to MCT.

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Discontinuing K·Vita

If it is decided to discontinue K.Vita due to lack of observed benefit (**Section 3.5**) or for other reasons, consideration should be given to the clinical condition and circumstances of the individual, how much **K·Vita** they are currently being given, and how long they have been on it for.

Depending on these factors, **K·Vita** can either be stopped straight away or a plan provided to reduce the daily amount gradually, for example, over a few days or a week.

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Storing K·Vita

Unopened: Store in a cool, dry place.

Once opened: Recap unused portion, refrigerate and use within 48 hours or within 6 hours at room temperature.

Advising on the use of K·Vita by adults and children in 7 steps:

- 1** Give copies of the 'Guide for adults and children taking **K·Vita** who are tube-fed' to caregivers and go through it with them.
- 2** **IMPORTANT:** Explain the **K·Vita** introduction plan, how to measure **K·Vita** and put down the feeding tube, and how to manage any symptoms of GI intolerance, if they occur.
- 3** Go through with caregivers the plan for making any adjustments to the patients enteral feed (if required) as **K·Vita** is introduced.
- 4** Provide contact details for access to support with the introduction of **K·Vita** (as this is an important time) and for its continuing use. Ensure they have contact details for a Nutritional Support Team.
- 5** Arrange for a prescription of **K·Vita** via the GP or '**VitaFlo To You**' www.nestlehealthscience.co.uk/vitaflo/vitaflo-to-you
- 6** Plan follow-up: make contact during and/or towards the end of the introduction of **K·Vita**. If use continues, review at three months after **K·Vita** is started, then as part of routine care.
- 7** At follow-up: establish GI tolerance and efficacy of **K·Vita** and advise accordingly. Ensure overall nutritional intake from feed and **K·Vita** combined is adequate. Refer any concerns with dietary intake and/or nutritional status to a dietitian and/or the Nutritional Support Team.

References

1. Schoeler NE et al. K. Vita: a feasibility study of a blend of medium chain triglycerides to manage drug-resistant epilepsy. Brain communications. 2021; 3(4): fcab160 <https://doi.org/10.1093/braincomms/fcab160>
2. Marten B, Pfeuffer M, Schrezenmeir J. Medium-chain triglycerides. International Dairy Journal. 2006 Nov 1; 16(11): 1374-82.
3. Sills MA, Forsythe WJ, Haidukewych D, MacDonald A, Robinson M. The medium chain triglyceride diet and intractable epilepsy. Archives of disease in childhood. 1986 Dec 1; 61(12): 1168-72.0



Food for Special Medical Purposes.
With sweetener.
Strawberry flavour.

K·Vita is a thickened liquid containing a specific blend of medium chain triglycerides (MCT).
For the dietary management of drug resistant epilepsy in adults and in children from 3 years of age.

Recommended Intake and Administration

To be determined by the clinician or dietitian as it is dependent on the age,
body weight and medical condition of the patient.

Shake well before use.

Important Information

Use under medical supervision.

Suitable from 3 years of age.

Not suitable for use as a sole source of nutrition.

Not suitable for use during pregnancy and lactation.

Not suitable for individuals unable to metabolise MCT, for example,
those with medium chain acyl-CoA dehydrogenase deficiency (MCADD).

For enteral use only.

Use as directed by the clinician or dietitian

Introduce **K·Vita** slowly and in measured amounts.

Always take with food.

Take regularly throughout the day, preferably at mealtimes.

Consume as part of your usual diet but avoid foods and beverages high in sugar.

Suitable for tube feeding.

For further product information please contact your local Vitaflo representative,
call our **Nutrition Service Helpline +44 (0)151 702 4937** or visit our website www.vitafloweb.com



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Vitaflo International Ltd
Suite 1.11, South Harrington Building, 182 Sefton Street, Brunswick Business Park, Liverpool, L3 4BQ, UK.
+44 (0)151 709 9020 vitaflo@vitaflo.co.uk www.vitafloweb.com

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