



Innovation in Nutrition

A Nestlé Health Science Company

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A practical guide for the introduction of solid foods and **PKU explore™** in the PKU diet.



Supporting education in the dietary management of rare diseases

Disclaimer

This practical guide should be read in conjunction with local and national protocols. It is based on best practice over the last 15 years of introducing a concentrated spoonable medical food in the diet of infants with PKU from six months of age.¹

This practical guide is:

- Only to be used by healthcare professionals.
- Not for use by patients or their families/caregivers.
- For guidance only and must not be used as a substitute for professional medical advice.

Important notice

PKU explore is a powdered Phenylalanine-free Medical Food for the dietary management of phenylketonuria.

PKU explore5 is suitable from 6 months of age.

PKU explore10 is suitable from 1 year of age.

Not for intravenous use.

For enteral use only.

Not for use as a sole source of nutrition.

Not intended for use as a breast milk substitute.

PKU explore must only be consumed by patients with proven PKU under strict medical supervision. Diet must be supplemented with natural protein, water, and other nutrients in prescribed quantities to supply phenylalanine, fluid, and general nutrition requirements.

Introducing and adjusting PKU explore is based on the individual needs of the child. While practical examples are given in this guide local practice may vary. It is the responsibility of the managing healthcare professional to use their clinical judgment to introduce and adjust PKU explore in the most appropriate way for their individual patients.

The product information contained in this practical guide, although accurate at the time of publication, is subject to change. To ensure accuracy, please refer to product labels or www.VitafloUSA.com.

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Symbols and abbreviations

Symbol/Abbreviation

Definition

Phe

Phenylalanine

PKU

Phenylketonuria

PE

Protein Equivalent



Breast milk/standard infant formula



Phe-free infant formula



PKU explore



Very low-phe foods: fruits and vegetables providing less than 75 mg of Phe per 100 grams of food weight.

Foreword

Introducing solid foods in the diets of infants with PKU can make the feeding routine more complex for caregivers and healthcare professionals. Feeding changes must continue to support an infant's development, growth, and blood phe control. Older infants transitioning to solid foods need the same basic nutrients as younger infants:

- Sufficient phenylalanine-free (phe-free) "protein."
- Measured amounts of phe-containing protein from breast milk/formula and now also from solid foods.
- Adequate but not excessive calorie intake.

Balance is key! One of the challenges of introducing solid foods is to find a balance between promoting solid food variety and progression, achieving adequate overall nutrient and total protein intakes, and maintaining blood phe control. Breast milk/formula and Phe-free infant formula remain important components of an infant's nutrient intake throughout the first year. However, meeting an older infant's increasing protein requirement by increasing the amount of high volume PKU infant formula may reduce appetite and delay solid food progression. This is especially true when excessive volumes of Phe-free infant formula are continued beyond the first 12 months of age. That's why a low volume medical food is important at this stage of childhood development. **PKU explore**, a low volume, phe-free medical food in a spoonable consistency.^{1,2}

- Helps meet increasing protein needs without requiring an excessive volume of PKU infant formula;
- May improve appetite by allowing for reduced liquid volume intake;
- Supports solid food introduction, feeding development, and eating skills during the first 6–12 months of life and beyond.¹

When choosing an appropriate medical food, it is important to consider the age and developmental stage of the child. For infants with PKU, the introduction of solids is a time of considerable change in the feeding experience. Throughout this time, the child's unique personality is developing and helps shape this process.

Establishing good practices with medical foods early in life is essential. High blood phenylalanine levels in early life may adversely influence longer term metabolic control.² It is important to manage this stage well. Introducing **PKU explore** requires a gradual and progressive approach according to individual needs. Parents/caregivers will need ongoing support with practical guidance and clear instructions to help them with the "day-to-day" challenges of feeding. They require focused and appropriate education. They need to know the "how and why" principles of introducing solids and then the "what" to feed focusing on the foods permitted in a low phe diet.

VitaFlo has developed this practical guide for healthcare professionals on the use and introduction of **PKU explore** for infants at around 6 months of age. This step wise system for introducing **PKU explore** is meant to establish a framework for successfully giving children medical foods to create a sound foundation for future years.

Suzanne Hollander, MS, RD

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1.0 An introduction to PKU explore

1.1 What is PKU explore?

PKU explore is a powdered phenylalanine-free medical food, containing a blend of essential and non-essential amino acids, carbohydrate, arachidonic acid (ARA), docosahexaenoic acid (DHA), vitamins and minerals.

It is designed to form a semi-solid (spoonable) consistency when mixed with a small amount of water (refer to section 3.1 for preparation instructions) to support the introduction of solids in the diet of infants from 6 months of age and young children with PKU.

Available in 2 pre-measured packet size options

Product name	Pre-measured packet size	Protein equivalent (PE)	Flavor(s)	Age indication
PKU explore5				
	12.5 g	5 g	unflavored	From 6 months
PKU explore10				
	25 g	10 g	orange or raspberry	From 1 year

Unflavored PKU explore5 is suitable for introduction from 6 months of age alongside solid foods, and PKU explore10 in orange and raspberry options are suitable for introduction from 1 year of age to add flavor variety and support the increasing protein requirements of the child.

1.2 Nutritional features of PKU explore

	Units	PKU explore5 (1 packet = 12.5 g of product)	PKU explore10 (1 packet = 25 g of product)
Calories	kcal	43	83
Protein Equivalent	g	5	10
Total Carbohydrate	g	5.2	9.8
Sugars	g	3.5	6.3
Total Fat	g	0.2	0.4
Saturated Fat	g	0.09	0.17
ARA	mg	35	70
DHA	mg	17	35

Micronutrients



10 g PE meets at least 25% of DRI recommendations for micronutrients for ages 7–12 months and 20 g PE from PKU explore meets at least 70% of DRI recommendations for micronutrients for ages 1–3 years.**

A protein-restricted diet increases the risk of micronutrient deficiencies.³⁻⁵ The composition of PKU explore contains a wide range of nutrients including selenium, zinc, iron, calcium, and a comprehensive range of vitamins including vitamin B12 and vitamin D important for nutrition and growth.

**Meets RDIs for 16 key micronutrients. For full nutritional information refer to product datasheet, available here: nestlehealthscience.us/vitafo-usa/inborn-errors-of-metabolism/protein-metabolism/phenylketonuria/pku-explore

Long Chain Polyunsaturated Fatty Acids (LCPUFAs)



PKU explore is formulated with LCPUFAs, including docosahexaenoic acid (DHA). In the PKU diet, foods rich in LCPUFAs are restricted and therefore intakes are low. Children on a protein-restricted diet have shown deficiency in DHA.⁶⁻⁸

2.0 The introduction of solid foods and PKU explore

2.1 Overview of the introduction of solids and the role of PKU explore

The overall goal of the introduction of solid foods is to progressively transition from an exclusively liquid diet to a varied diet, to meet both the nutritional and developmental needs of growing infants.

During this transition the metabolic dietitian and PKU parents/caregivers are faced with several challenges:

- Balance the need to encourage oro-motor and self-feeding skills in the setting of a restrictive diet.
- Maintain satisfactory growth and metabolic control.
- Meet a growing need for protein between 6–12 months of life.

In a healthy infant, this growing need would typically be met by introduction of protein containing solids, however the options are limited for the infant with PKU. The most common approach is to increase the volume of liquid Phe-free infant formula to meet the growing demand for protein to support growth and maintain metabolic control. This may prolong reliance on bottle feeding, impact appetite for food and delay the natural progression to a varied solid diet. Decreased reliance on bottles, the introduction of liquids from a cup, and spoon- and/or self-fed solids enhances oro-motor feeding skills and broadens the child's range of tastes and textures over time.

Role of PKU explore

- Provides a concentrated source of protein equivalent and micronutrients, which cannot be provided by protein rich foods.
- Supports age appropriate feeding by allowing reduction of liquid intake and letting appetite for solid foods to develop.¹⁰
- Supports parents to achieve both nutritional and developmental goals for their infant during the introduction of solids.

PKU explore supports the transition from an exclusively liquid diet to a varied diet incorporating solid foods with less reliance on excessive volumes of PKU infant formula beyond the typical amount at this stage of development.

0–4 months

4–6 months

6–9 months

9–12 months

12–15+ months

Oro-motor skills and texture



- Poor control of head
- Swallows liquid



- Sits with support
- Can hold head up
- Is curious about food; reaching out to try foods others are eating
- Can control position of food in mouth
- Swallows puréed or strained food



- Begins to sit alone unsupported
- Can chew and swallow coarsely mashed food and finger foods
- Can take sips from a cup



- Sits alone easily
- Completes side to side tongue movement
- Can eat minced/chopped foods



- Can self feed
- Participates in family meals
- Transitioning away from a baby bottle
- Drinks from a cup

Intact protein

Breast milk/standard infant formula



Phe-free infant formula

Medical Food

Introducing very low protein foods

- Start with 1–2 solid feeds per day after liquid feed; may be just a few small spoons in the beginning.
- Solids should not replace breast milk or formula intake at this early stage.

Introducing PKU explore

- Start with small amounts to taste.
- Phe-free infant formula volume remains the same.

Introducing measured portions of protein foods

- Continue to take breast milk/standard infant formula, with gradual replacement of these liquids with measured equivalents of solid foods.
- Continue to progress texture and encourage finger foods and drinking from an open or sippy cup.

Gradually increase PKU explore⁵ to meet the changing protein requirements of the infant

- Ensure changing protein needs are met by a combination of phe-free infant formula and PKU explore.

Adapting to the family meal pattern

3 chopped/textured meals per day consisting of the tolerated allowance of measured portions of protein foods and very low protein foods to appetite.

Continue to transition to PKU explore

- Give PKU explore before food.
- May introduce PKU explore¹⁰ in orange and raspberry to support increasing protein needs and offer flavor variety.
- Evaluate whether a toddler age medical food (such as PKU trio[™])* is needed in addition to PKU explore based on individual needs.

- Phe-free infant formula is important in the 1st year of life. It helps contribute to calorie, fluid and other nutrient needs. However, excessive volumes of phe-free infant formula beyond the 1st year of life may interfere with appetite for solid foods.

- Introduce PKU explore before introducing measured portions of protein foods to help the infant become accustomed to its taste.

Encourage drinking water from an open or sippy cup throughout the day.

It is vital that the blood Phe is monitored throughout this process.

* PKU trio[™] is a powdered phenylalanine free medical food suitable from 1 year of age.

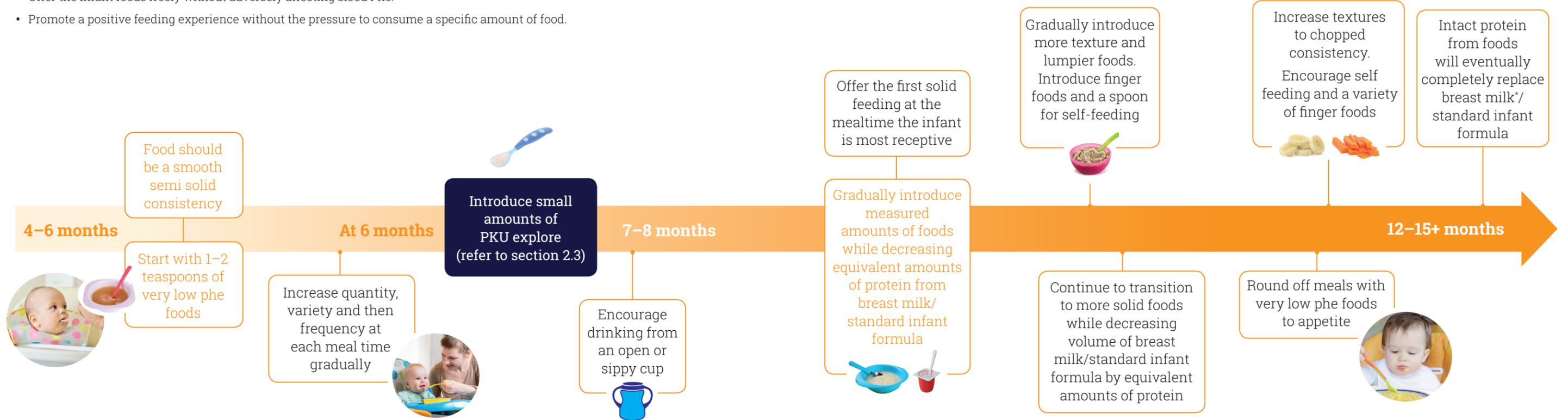
2.2 Introduction of solid foods

At 4–6 months – Introduce very low phe foods

Although general recommendations⁹ for the introduction of solids in infants is 6 months of age, a study in PKU infants demonstrated that introducing solids between 17–26 weeks of age may be advantageous as early exposure to food may lead to acceptance of a wider range of foods while maintaining blood phe levels within recommendations.²

The first foods offered are very low phe fruits and vegetables containing less than 75 mg of Phe per 100 g of food weight.¹⁰ These foods do not need to be measured or the Phe counted, allowing the parent/caregiver to:

- Offer the infant foods freely without adversely affecting blood Phe.
- Promote a positive feeding experience without the pressure to consume a specific amount of food.



At 7–8 months – Introduce measured amounts of intact protein from foods

When the infant begins the process of bottle weaning this signifies readiness to introduce measured amounts of intact protein from food and begin counting Phe/protein. Intact protein in solids will gradually replace intact protein from breast milk/standard infant formula.

Practical Tips

- Start solids at one mealtime in the day, ideally when the infant is most receptive.
- Initially very low phe foods are offered after breast milk/standard infant formula + phe-free infant formula.
- Ensure the volume of phe-free infant formula consumed does not reduce while introducing very low phe foods, but do not increase its volume.

Practical Steps

1 g protein = 50 mg phe



~1 breast feed



~3 fl oz (90 ml)
standard infant
formula**

- Initially aim to introduce intact protein from food in one feeding.
- Reduce breast milk/standard infant formula by equivalent amount of Phe/protein.

It is vital to monitor blood Phe weekly throughout this process.

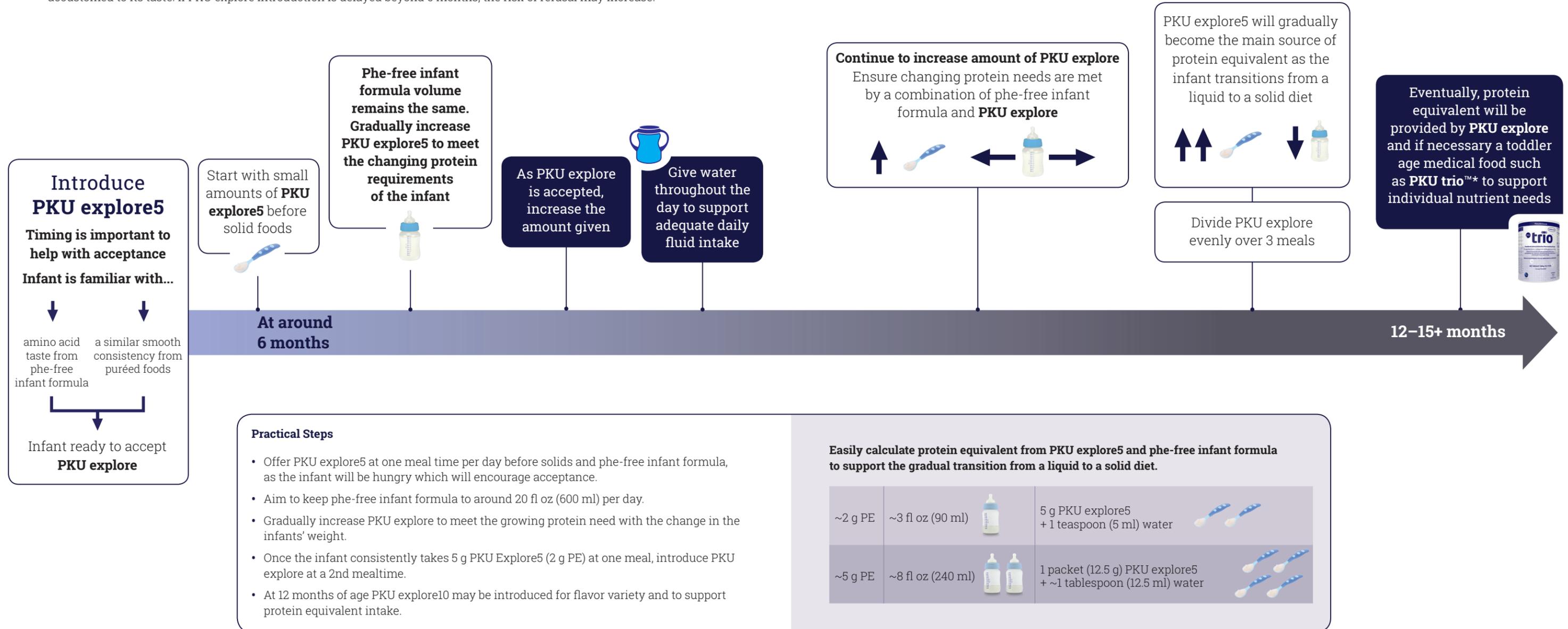
* Breast feeding can continue beyond 12 months as part of phe allowance.

** Check phe content of the standard infant formula being used, there is variation between infant formulas.

2.3 Introduction of PKU explore

Introduce PKU explore5 around 6 months of age

It is important to introduce PKU explore5 before introducing measured portions of protein foods to help the infant become accustomed to its taste. If PKU explore introduction is delayed beyond 6 months, the risk of refusal may increase.¹



- Phe-free infant formula is important in the 1st year of life. It helps contribute to calorie, fluid and other nutrient needs. However, excessive volumes of phe-free infant formula may interfere with appetite for solid foods.
- Prepare PKU explore5 to the same consistency every time. If this varies widely the infant may reject it due to unfamiliarity.
- Every infant will progress at different rates. Increase PKU explore5 as quickly as the infant accepts and according to protein equivalent needs.

It is vital that the blood Phe is monitored throughout this process.

* PKU trio™ is a powdered phenylalanine free medical food suitable from 1 year of age.

3.0 Practical tips and troubleshooting

3.1 Practical tips for successful introduction of solids and PKU explore

Share practical advice with parents/caregivers to aid the successful introduction of PKU explore and solid foods. Setting a solid foundation and promoting good habits with a consistent approach from the beginning will support success in the long term.

Introducing PKU explore

- **Be prepared** – PKU parents/caregivers will need to be ready to start feeding with necessary supplies: PKU explore packets, a small container with a lid, baby bib, and a feeding spoon.
- **Timing matters** – initially offer PKU explore at a time of day when the infant is most receptive/interested and when convenient for the parent/caregiver.
- **Routine helps** – give PKU explore at the same time and in the same way each day to help the infant get used to it. Give at the start of each meal. Ensure all caregivers prepare it the same consistency.
- **Take it slowly and go at the infant's pace** – encourage parents/caregivers to follow the infant's hunger and satiety cues. Infants should not be forced to eat PKU explore.
- **Reinforce positive feeding behavior** – encourage parents/caregivers to ignore negative feeding behavior and offer lots of attention such as eye contact, smiles, and praise to their infant when PKU explore is accepted and the prescribed amount is finished.
- **Remove distractions for parents/caregivers and infants** – switch off the television, remove toys and avoid screens/phones at meal times.
- **Offer water** – infants may enjoy exploring sippy or open cups to help with their daily fluid intake.
- **Be patient** – it is normal infant behavior to spit out or refuse foods at times. It is no different with PKU explore. Encourage parents/caregivers to keep calm and continue with positive feeding techniques.
- **During teething** – making PKU explore up with ice cold water may help or PKU explore can be frozen and taken as an ice pop.

Introducing solid foods

- Encourage appropriate homemade or commercially-available very low phe foods from a spoon.
- Provide families with lots of practical advice regarding cooking and grocery shopping.
- Encourage batch cooking if preparing homemade foods, this is especially useful in the early stages when portion sizes are small.
- Provide parents information regarding Phe content of foods, as well as effective and convenient methods of planning and monitoring dietary Phe intake (i.e. protein content food lists, diet tracking apps).
- Repeat exposure – remember it can take $\geq 8-10$ times of offering the same food for an infant to become accustomed to the taste and accept it – continue to offer foods even if at first refused.^{11,12} Infants should not be forced to eat solids.
- Encourage eating with the family and share some low protein meals/foods.
- Establish regular meal times, but avoid prolonged feeding, keep to 20–30 minutes per meal.
- Encourage parents to follow infant's hunger and satiety cues. Infants should not be forced to eat.
- Encourage parent/caregiver to keep a record of intake to help ensure protein prescription is met.

Provide information for other caregivers

- Provide any new caregiver with an explanation of PKU.
- Provide the caregiver with clear written instructions of the feeding plan and the necessary feeding supplies.
- Emphasize the importance of ensuring the child finishes all the PKU explore at each meal.

During illness

It is normal for an infant to refuse or have difficulties taking their usual amount of medical food, including PKU explore when ill or teething. If possible, continue to offer PKU explore throughout the day as stopping PKU explore may create difficulties with its reintroduction.

Preparation instructions

PKU explore5 – prepared as a semi-solid spoonable consistency

1 packet of PKU explore5 containing 5 g of protein equivalent (PE) mixes with approximately 1 tablespoon of water making 4 teaspoons of prepared feed.

1. Add 12.5 ml (approximately 1 tablespoon) of cold water into a small container with a lid.
2. Empty the contents of the packet into the container.
3. Secure the lid and shake well for 10 seconds.
4. Leave to stand for 2 minutes, allowing a smooth semi-solid consistency to form. Consume with a spoon.

PKU explore10 can be prepared as a semi-solid spoonable consistency or as a low volume drink

1 packet of PKU explore10 containing 10 g of PE mixes with approximately 1.5–2 tablespoons of water making 8 teaspoons of prepared feed.

A) To prepare as a spoonable consistency:

1. Add 25 ml (1.5–2 tablespoons) of cold water into a small container with a lid.
2. Empty the contents of the packet into the container.
3. Secure the lid and shake well for 10 seconds.
4. Leave to stand for 2 minutes, allowing a smooth semi-solid consistency to form. Consume with a spoon.

B) For the recommended concentration as a low volume drink (only for PKU explore10):

1. Add 80 ml (approximately 3 fl oz) of cold water into a small container with a lid.
2. Empty the contents of the packet into the container.
3. Secure the lid and shake well for 10 seconds.
4. Drink immediately.

General mixing tips

- When prepared as a semi-solid PKU explore is formulated to maintain consistency throughout mealtimes (up to 1 hour).
- Vitaflo recommends that PKU explore is made up with water. However, it can also be prepared with other permitted beverages or foods at the dietitian's discretion.
- PKU explore can be added to warm water or warm foods (up to 70°C or 158°F). This will not impact the nutrient profile, consistency, or sensory profile.
- If prepared PKU explore is frozen, for best results consume immediately after defrosting.

3.2 Increasing calories in the diet

When an infant transitions to a solid diet, calories from breast milk or standard infant formula are replaced by food. Beyond 12 months of age during the transition from a phe-free infant formula to PKU explore a caloric deficit is created to allow appetite for solid foods.

General tips to increase calorie intake:

- Fortify lower calorie foods, such as vegetables and fruit, by adding fat (i.e butter or oil).
- Offer more calorie dense foods rather than increasing portion sizes.
- Offer drinks with or after meals.
- Have mealtimes when the infant is not too tired to encourage cooperation and appetite.

The following methods can be used to increase calories in the low protein diet:

Carbohydrate Sources

Low protein/Starchy	Protein free/Sugary
Sweet potato Butternut squash Tapioca Low protein bread Low protein pasta Wheat/Potato/Corn starch	Pancake syrup Jams, jellies Fruit rollups Jello cups Honey (after 1 year of age) VitaBite™ low protein chocolate
TIPS	TIPS
These foods are easily incorporated into puddings, pie fillers or savory dishes: <ul style="list-style-type: none"> • Tapioca to make a low protein crumble • Starch can be used to make cakes/buns/pancakes and dough for bread sticks/pizza base • Sweet potato and butternut squash in mild curry sauces • Grated cauliflower lightly fried in oil for rice 	Sweets and sugary foods are easily incorporated into puddings or given as snacks: <ul style="list-style-type: none"> • Mix into low protein fruit pie fillings • Add to low protein fruit and yogurt • Add to low protein pancakes

Fat Sources

Low protein	Protein free
Heavy cream Non-dairy creamers Soy creamer Coconut milk yogurt/low protein yogurt Mayonnaise Avocado	Cooking oils – canola, corn and olive Margarine Butter Butter spreads Bacon fat
TIPS	TIPS
<ul style="list-style-type: none"> • Mix cream/low protein yogurt with low protein fruit to make 'fruit creams' • Add coconut milk to low protein vegetable sauces • Mix cream/mayonnaise with avocado to make a spread for low protein toast • Use non-dairy creamers in pancake recipes 	Fats are easily incorporated into savory meals: <ul style="list-style-type: none"> • Lightly fry/roast low protein vegetables • Mix into mashed potatoes/sweet potatoes/butternut squash • Add into low protein tomato based sauces or mild curry sauces

Check product label or consult manufacturer for Phe/protein content

3.3 Guide for meeting protein goals with PKU explore

The following table is an example of how an infant's protein goals are met throughout the progression from a liquid to a varied diet, and the transition to PKU explore. Every infant will progress at a different pace. It is up to the healthcare professionals' clinical judgment to manage this progression based on what is appropriate for each patient and family.

Weight	6 kg	7 kg	8 kg	9 kg	10 kg	11 kg	12 kg
Approximate age	4–6 months → 24 months						
Phe-free infant formula	24 fl oz 14 g PE	20 fl oz 12 g PE	20 fl oz 12 g PE	20 fl oz 12 g PE	14 fl oz 8 g PE	7 fl oz 4 g PE	–
PKU explore	–	4 g PKU explore x 3 = 5 g PE	7 g PKU explore x 3 = 8 g PE	8 g PKU explore x 3 = 10 g PE	12.5 g PKU explore x 3 = 15 g PE	17 g PKU explore x 3 = 20 g PE	25 g PKU explore x 3 = 30 g PE
Intact protein tolerance*	3.5 g protein	3.5 g protein	3.5 g protein	3.5 g protein	4.0 g protein	4.0 g protein	4.0 g protein
Total protein goal 2.5 g/kg/day ¹³	15 g	17.5 g	20 g	22.5 g	25 g	27.5 g	30 g

* Intact protein tolerance varies between individuals with PKU.

3.4 Example meal plans



10 month old boy

9.5 kg (25–50th percentile*)

		Intact protein and PE	kcal
Wake-up	8 fl oz (240 ml) phe-free infant formula	5.2	168
Breakfast	1 packet PKU explore5	5	43
	¼ cup rice milk	0.1	30
	3 Tbsp low protein cereal	0.1	100
	½ cup sliced strawberries	0.6	27
Lunch	1 packet PKU explore5	5	43
	1 slice low protein toast	0.1	130
	2 tsp butter	–	34
	2 Tbsp pureed avocado	0.6	48
	½ cup cooked carrots	0.6	26
Afternoon	1 low protein cheddar cheese stick	0.6	60
	¼ cup sliced pears	0.1	20
Dinner	¼ cup cooked low protein pasta	0.1	87
	1 Tbsp olive oil (drizzle on pasta)	–	120
	¼ cup tomato sauce	0.7	15
Bedtime	8 fl oz (240 ml) phe-free infant formula	5.2	168

Solids

697 kcal

3.6 g intact protein
30 g fat

Phe-free infant formula

16 fl oz (480 ml)

336 kcal
10.4 g PE
16 g fat

PKU explore

2 packets

10 g PE
86 kcal
0.3 g fat

	Estimated Requirements†	Actual Intake
Total kcal/day	760–1280 (80–135 kcal/kg)	1119 kcal
Total protein/day	19–24 (2–2.5 g/kg)	24 g
Intact protein/day	3.5 g	3.6 g
Total fat/day	30 g	46 g

Daily volume of medical food in meal plan		Daily volume of medical food <u>without</u> PKU explore
		
16 fl oz 10 g PE Phe free infant formula	8 teaspoons 10 g PE PKU explore	32 fl oz 20 g PE Phe free infant formula

Meal plan calculated using MetabolicPro, Howmuchphe and manufacturer's food labels.

* 2006 WHO Child Growth Standards from birth to 24 months

† Institute of Medicine for calorie requirements and GMDI PKU Nutrition Management Guideline for protein requirements



18 month old girl

11.5 kg (50–75th percentile*)

		Intact protein and PE	kcal
Breakfast	1 Cook for Love pancakes	0.3	98
	1 Tbsp maple syrup	–	52
	½ cup chopped pear	0.3	40
	1 packet PKU explore5	5	43
Lunch	2 Veggie patties	1	77
	1 Tbsp mayo	0.1	100
	1 container strawberry yogurt alternative	0.5	120
	1 packet PKU explore5	5	43
Snack	½ cup sliced apple	0.1	27
	4 cinnamon crackers	0.1	54
Dinner	1 portion Zoodles Bolognese**	2.4	150
	1 packet PKU explore5	5	43
Bedtime	1 scoop PKU trio mixed with water	5	67

Solids

718 kcal

4.8 g intact protein
41 g fat

Medical food

196 kcal
20 g PE
3.3 g fat

	Estimated Requirements†	Actual Intake
Total kcal/day	899 (78 kcal/kg)	914 kcal
Total protein/day	17–24 (1.5–2.1 g/kg)	25 g
Intact protein/day	5 g	5 g
Total fat/day	30–40%	41 g (40%)

Daily volume of medical food in meal plan		Daily volume of medical food <u>without</u> PKU explore
		
~3 fl oz 5 g PE PKU trio	4 tablespoons 15 g PE PKU explore	~12 fl oz 20 g PE PKU trio

Meal plan calculated using MetabolicPro, Howmuchphe and manufacturer's food labels.

* 2006 WHO Child Growth Standards from birth to 24 months

** Recipe available here: <https://www.vitafriendspku.com/us/recipes/>

† Institute of Medicine for calorie requirements and GMDI PKU Nutrition Management Guidelines for protein requirements



30 month old boy

13.5 kg (50th percentile*)

		Intact protein and PE	kcal
Breakfast	5 Tbsp low protein cereal	0.2	210
	½ cup rice milk	0.2	60
	½ cup chopped melon	0.5	31
	1 packet PKU explore5	5	43
Lunch	½ cup cauliflower rice with 1 Tbsp olive oil	1	133
	Veggie chili (tomato sauce, bell peppers, baked beans, cumin, chili powder and olive oil)	4.7	156
	¼ cup pineapple chunks	0.4	40
	1 packet PKU explore5	5	43
Dinner	½ cup sweet potato fries with ¼ cup smashed avocado	0.8	260
	Pulled BBQ Jackfruit		
	½ cup canned jackfruit, ½ Tbsp olive oil, ¼ cup red onion, 1 tsp cumin / cinnamon / paprika, ¼ canned tomatoes and		
	1 Tbsp BBQ sauce	3.7	225
	1 packet PKU explore5	5	43

Solids

1115 kcal

11.5 g intact protein
56 g fat

Medical food

129 kcal
15 g PE
0.9 g fat

	Estimated Requirements†	Actual Intake
Total kcal/day	1121 (83 kcal/kg)	1244 kcal
Total protein/day	17–24 (1.5–2.1 g/kg)	26.5 g
Intact protein/day	12 g	11.5 g
Total fat/day	30–40%	57 g (39%)

Daily volume of medical food in meal plan	Daily volume of medical food without PKU explore
 <p>4 tablespoons 15 g PE PKU explore</p>	 <p>~9 fl oz 15 g PE PKU trio™**</p>

Meal plan calculated using MetabolicPro, Howmuchphe and manufacturer's food labels.

* 2006 WHO Child Growth Standards from birth to 24 months

** Calorie concentration and dilution instructions vary among products

† Institute of Medicine for calorie and fat requirements and GMDI PKU Nutrition Management Guidelines for protein requirements

4.0 References

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