Visit 2: Eating for Your Brain - Part I

Objective: At this visit you have the opportunity to review how to keep a food record, calculate the phenylalanine in food, and complete an activity, "Learning the 'Real' Phe Content of Food."

In This Section:

- How to Record Your Food Intake – Accurately
- Rate Your Own Food Record
- Learning the "Real" Phe Content of Food
- Reading Labels

At This Visit:

- Nutrition assessment- bring your 3 day food record to clinic
- Physical assessment- a brief visit with PKU doctor
- Review how to keep a food record accurately, calculate phenylalanine
- Rate your food record
- Learning the "Real" Phe Content of Food
- Review label reading
- Confirm next visit

Who is involved:

- **You**
- Your support team:
  - Your parents
  - PKU clinic physician
  - PKU clinic nutritionist

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How To Record Your Food Intake—Accurately

It is important to keep a record of the food you eat and the formula you drink. It is also important to keep these records carefully and accurately. Why??

- Carefully kept records help your nutritionist monitor how your blood phe levels change with different amounts of phe from food. The information from food records is used to make formula changes and change your phe from food prescription.
- The information from food records helps your nutritionist to make sure you are getting the best, most nutritious foods possible.
- Finally, food records are an important way for you to learn about the phe in foods and how phe affects your body and blood phe level.

So, what information is important, anyway?

DATE

List the date of your food record. Clearly separate each day.

AMOUNT

Write down the amount of food that you ate…in grams, cups, ounces, tablespoons, teaspoons… Include the size (for example, a large banana or 2 small oranges).

TYPE

Write down *exactly* what type of food you ate—Campbell's tomato soup, frozen green beans, low protein bread from Bread Machine Mix. Was the carrot canned or fresh? Was the candy a lollipop or a cinnamon disk? List the brand name when available.

FORMULA

Include how your formula is made. List the amount of powder, the amount of water, and everything else (2% milk, evaporated milk) that goes into your formula. If you didn't finish all of your formula, write down how much you had.

FREE FOODS

Be sure to record all free foods and the amount of these foods eaten. These protein-free foods still contain energy (calories)—your nutritionist keeps track of your total daily energy intake too.

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Name_____ Date_____

RATE YOUR OWN FOOD RECORD

Give yourself one point for each of the following:

I have **three** days of food records	_____
My food records are clearly written or printed	_____
I have clearly marked each day	_____
My food records are dated	_____
I have recorded how my Phenyl-free is made	_____

For each day of your food record, give yourself one point if you have completed this information.

	Day 1	Day 2	Day 3
I recorded how much Phenyl-free I drank	_____	_____	_____
I described the foods I ate. (That is, whenever I needed to I listed brand names and how my food was prepared)	_____	_____	_____
I listed the gram weights of my foods. (That is, whenever it was the BEST MEASURE I used my gram scale to weigh foods)	_____	_____	_____
I listed measurements of my foods. (That is, whenever I needed to I listed diameters and sizes of my foods)	_____	_____	_____
I listed phe values of my foods.	_____	_____	_____
I recorded the free foods that I ate.	_____	_____	_____

I feel that these records are a true recording of what I actually eat. YES = 1 NO = 0 _____

Total Points _____

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Learning the "REAL" Phe Content of Foods

OBJECTIVES:

- Participants will be able to describe methods to estimate the phe content of foods
- Participants will be able to describe why it is important to accurately measure portion sizes
- Participants will be able to identify types of foods for which it is especially important to accurately measure portion sizes

METHOD:

- For each of the foods, participants will:
  - Estimate the portion size and amount of phe
  - Weigh and measure the food, then calculate the actual amount of phe
  - Compare the estimate to the actual value

- Then, discuss questions on page 3 of the worksheet.

- If time permits, discuss other situations in which it is important to identify a strategy for estimating portion sizes. What type of planning can be done ahead of time (e.g., measuring)? What are some strategies for "surprise situations" (e.g., eating at a friend's house or a new restaurant)?

MATERIALS:

Worksheet
Scale
Ruler
Calculator
Low Protein Food List
Selected foods: banana, orange, Russet potato, red potato, diced potatoes (frozen), French fries, potato chips, cereal

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Learning the "REAL" Phe Content of Foods

Objective
To improve your knowledge of portion sizes and phe values by comparing sizes and weights of selected foods

Items needed
gram scale, ruler, selected foods, small paper plates, pencil or pen, calculator, Low Protein Food List

Directions
For each of the foods on this worksheet:
- Estimate the portion size and amount of phe
- Weigh and measure the food, then calculate the actual amount of phe
- Compare your estimate to the actual values

Then answer the questions on page 3.

FOOD #1: Banana

	Your Estimation	Actual	Difference
Portion size	x-small small medium large x-large	x-small small medium large x-large	
Weight	_____ grams	_____ grams	_____ grams
Phe	_____ milligrams	_____ milligrams	_____ milligrams

FOOD #2: Orange

	Your Estimation	Actual	Difference
Portion size	small medium large	small medium large	
Weight	_____ grams	_____ grams	_____ grams
Phe	_____ milligrams	_____ milligrams	_____ milligrams

FOOD #3: Potato A

	Your Estimation	Actual	Difference
Portion size	small medium large	small medium large	
Weight	_____ grams	_____ grams	_____ grams
Phe	_____ milligrams	_____ milligrams	_____ milligrams

FOOD #4: Potato B

	Your Estimation	Actual	Difference

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Portion size	small medium large	small medium large	
Weight	_____ grams	_____ grams	_____ grams
Phe	_____ milligrams	_____ milligrams	_____ milligrams

FOOD #5: Diced Potatoes

	Your Estimation	Actual	Difference
Portion size	½ cup 1 cup 1½ cup	½ cup 1 cup 1½ cup	
Weight	_____ grams	_____ grams	_____ grams
Phe	_____ milligrams	_____ milligrams	_____ milligrams

FOOD #6: French Fries

	Your Estimation	Actual	Difference
Portion size*	½ cup 1 cup 1½ cup small medium large	½ cup 1 cup 1½ cup small medium large	
Weight	_____ grams	_____ grams	_____ grams
Phe	_____ milligrams	_____ milligrams	_____ milligrams

*Use 2 ways of estimating portion sizes. (Small, medium and large correspond to McDonald's French fries serving sizes; pick the size that you think is closest to what is on the plate.)

FOOD #7: Chips

	Your Estimation	Actual	Difference
Portion size*	½ cup 1 cup 1½ cup lunch pack 1 oz big grab	½ cup 1 cup 1½ cup lunch pack 1 oz big grab	
Weight	_____ grams	_____ grams	_____ grams
Phe	_____ milligrams	_____ milligrams	_____ milligrams

*Use 2 ways of estimating portion sizes

FOOD #8: Cereal

	Your Estimation	Actual	Difference
Portion size	1 cup 1½ cup 2 cups	1 cup 1½ cup 2 cups	
Weight	_____ grams	_____ grams	_____ grams
Phe	_____ milligrams	_____ milligrams	_____ milligrams

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Brand	Food	Measure	Weight (gm)	Phe (mg)	No. of Exch.	Mg Phe/ Gm Food	Pro. (gm)	Energy (kcal)
	Apples, fresh, sliced	1 cup	110	8	0.5	0.07	0.3	53
	Apples, fresh, whole, medium	1 apple	182	11	0.7	0.06	0.5	95
	Banana, fresh, peeled, medium	1 banana	118	58	3.9	0.49	1.3	105
	Orange, fresh, medium peeled	1 orange	131	28	1.9	0.21	1.2	62
	Orange, fresh, sections or pieces	½ cup	120	25	1.7	0.21	1.1	57
	Potatoes, all colors, baked, diced	¼ cup	41	36	2.4	0.88	0.8	38
	Potatoes, all colors, boiled, diced	¼ cup	39	38	2.5	0.97	0.9	38
	Potatoes, all colors, raw, chopped	½ cup	75	53	3.5	0.71	1.3	52
Ore-Ida	Potatoes, Golden Fries	16 pieces	84	76	5.1	0.90	1.8	140
Ore-Ida	Potatoes, O'Brien	¾ cup	85	59	3.9	0.69	1.4	60
Ore-Ida	Potatoes, Steak Fries	9 pieces	84	84	5.6	1.0	1.9	110
	Potato Chips, Plain or Barbeque	3 chips	5	16	1.1	3.20	0.3	28
Frito-Lay	Tostitos, Restaurant Style	1 ounce	28	95	6.3	3.39	2.0	140
General Mills	Corn Chex Cereal	1 cup	31	103	6.9	3.32	2.1	120
General Mills	Rice Chex Cereal	1 cup	27	90	6.0	3.33	1.7	100
LoProfin	Low Protein Breakfast Cereal Loops	1 cup	28	2	0.1	0.07	0.1	108
McDonald's	French Fries, large order	1 serving	154	200	13.3	1.30	6.0	500
McDonald's	French Fries, medium order	1 serving	117	152	10.1	1.30	4.0	380
McDonald's	French Fries, small order	1 serving	71	92	6.1	1.30	3.0	230

Food	Portion Size	Weight
Apple, raw, with skin	small (2 ¾ inch diameter)	149 g
Apple, raw, with skin	medium (3 inch diameter)	182 g
Apple, raw, with skin	large (3 ¼ inch diameter)	223 g
Banana, raw	extra-small (less than 6 inches long)	81 g
Banana, raw	small (6 to 6 7/8 inches long)	101 g
Banana, raw	Medium (7 to 7 7/8 inches long)	118 g
Banana, raw	Large (8 to 8 7/8 inches long)	136 g
Banana, raw	Extra-large (longer than 9 inches)	152 g
Oranges, raw	Small (2 3/8 inch diameter)	96 g
Oranges, raw	Medium (2 5/8 inch diameter)	131 g
Oranges, raw	Large (3 1/16 inch diameter)	184 g
Potatoes	Small (1¾ to 2¼ inch diameter)	170 g
Potatoes	Medium (2¼ to 3¼ inch diameter)	213 g
Potatoes	Large (3 to 4¼ inch diameter)	369 g

Data from USDA National Nutrient Database for Standard Reference; http://ndb.nal.usda.gov/ndb/foods/list

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For which of the foods was your estimation MOST accurate? _____

For which of the foods was your estimation LEAST accurate? _____
What was the difference between your estimation and the actual amount of phe? _____
Did you over-estimate or under-estimate? _____

For which foods do you think it is most important to be accurate in estimating portion sizes? _____
Why? _____

What would you do if…

? You are at McDonald's with some friends and know that you have 100 mg phe from food left. What do you order? _____

? You are going to go out to eat with your family. You've saved up 150 mg—enough to order French fries, and you're excited because the restaurant serves big steak fries. You only know how much phe is in a serving of small French fries. How will you know how many fries to eat? _____
_____
_____

? You are visiting your Auntie Annie's apple farm, and she offers you a GIGANTIC apple. It looks delicious, but you aren't sure how much phe to record on your food record. What do you do? _____
_____

? Last month at clinic, the nutritionist asked you how much cereal you ate for breakfast. Your reply was, "a bowl, but I don't know how many cups or grams it was." You want to have an answer for her this month. How do you find out how much cereal you've eaten? _____
_____

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Reading Labels

Some people think it's fun . . . Some people think it's boring . . . What is it? Label Reading! Label reading is a valuable skill to learn, because **it is the only way you can be sure of exactly what you are eating.** Take this short "quiz." The answers are on the next few pages.

1. If the label says the product contains "0" grams protein, is it actually a free food?
   ____ YES ____ NO

2. On average, 1 gram of protein contains how many milligrams of phe?
   _____ 5 mg _____ 25 mg _____50 mg _____ 100 mg

3. The serving size listed on the label is always an entire package of food.
   _____ TRUE _____ FALSE

4. Check the ingredients which contain phe:

__ Agar	__ Autolyzed yeast	__ BHA and BHT
__ Calcium caseinate	__ Calcium carbonate	__ Carob
__ Citric acid	__ Cracker meal	__ Dry whey
__ Gelatin	__ Glycerine	__ Malt
__ Mannitol	__ Methylcellulose	__ Monosodium glutamate
__ Nonfat dry milk	__ Sodium caseinate	__ Soy protein isolate
__ Tumeric	__ Whey solids	__ Xanthan gum

5. Look at the food label and ingredient list below. Circle the ingredients that have phe.
   How many milligrams of phe does this food have? _____
   What do you think this label is describing? _____

Nutrition Facts
Serving Size 1 bar (34g)
Servings Per Container 6

Amount Per Serving	
Calories 130	**Calories from Fat** 20
	% Daily Value *
Total Fat 2.5g	**4**%
Saturated Fat 1g	**5**%
Cholesterol 0mg	**0**%
Sodium 70mg	**3**%
Total Carbohydrate 27g	**9**%
Dietary Fiber 3g	**12**%
Sugars 13g	
Protein 1g	

Vitamin A 0%	Vitamin C 0%
Calcium 2%	Iron 8 %

INGREDIENTS:
RICE FLOUR, HIGH FRUCTOSE CORN SYRUP, ROLLED OATS, ROLLED BARLEY, RICE BRAN, SUGAR, MALT, CORN SYRUP, SUGAR, PARTIALLY HYDROGEN-ATED VEGETABLE OIL, APPLES, FIGS, DATES, PLUMS, CORN BRAN, NATURAL FLAVORS, ACACIA GUM, BARLEY, WHEY, BEET JUICE COLOR, DRIED STRAWBERRIES, GUAR GUM, FRUIT PECTIN, NONFAT MILK, NONFAT YOGURT (WHEY, NON- FAT MILK CULTURES), CITRIC ACID,LETHICIN, GLYCERINE,COLOR, DRIED RASPBERRIES, DRIED CRANBERRIES.

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Phenylalanine-Containing Ingredients

(Foods with these ingredients are not "free.")

autolyzed yeast
barley, malt, or rice flour
beef extract
beef fat
carob
casein
calcium caseinate
chicken extract
cracker meal
cracked wheat
dried whey
dry yeast
gelatin
hydrolyzed vegetable
nonfat dry milk
sodium caseinate
soy protein isolate
vegetable protein
wheat gluten or bran
whey or whey solids
yeast extract

Phenylalanine-Free Ingredients

(Foods with these ingredients are "free,"
if the other ingredients on the food label are "free.")

acetylated monoglycerides
adipic acid
agar
algin or alginate
alpha-tocopherol
artificial color or flavor
ascorbate or ascorbic acid
BHA and BHT
calcium carbonate
calcium proprionate
calcium steryl-2-lactylate
caramel color
carotene
carrageenan
cellulose gum or gel
citric acid
cyteine hydrochloride
dextrose
disodium guanlyate
disodium inosinate
disodium phosphate
EDTA
ferric orthophosphate
ferrous sulfate
folic acid
fumaric acid
glycerine
glycerol monostearate
guar bean gum
hydrogenated oils
(ex. cottonseed, soy)
invert sugar
lactic acid
lactose
lecithin
locust bean gum
malic acid
maltodextrins
mannitol
methylcellulose
modified food starch
mono and diglycerides
mono calcium phosphate
monostearate
natural flavors
niacin/niacin hydrochloride
partially hydrogenated
vegetable shortening
pectin
polysorbate 60
potassium citrate/carbonate
propylene glycol
pyridoxine hydrochloride
reduced iron
resinous glaze
riboflavin hydrochloride
sodium acid pyrophosphate
sodium alginate
sodium aluminum phosphate
sodium ascorbate
sodium benzoate
sodium bisulfite
sodium carbonate
sodium citrate
sodium metaphosphate
sodium phosphate
sodium proprionate
sodium silico aluminate
sodium triphosphate
sorbitol or sorbitan
THBQ
thiamine mononitrate
titanium dioxide
tocopherol
tricalcium phosphate
tumeric
vegetable fat, gum or colors
vitamin A palmitate
vitamin B6 hydrochloride
xanthan gum
xylitol

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READING LABELS: ANSWERS

Question 1: If the label says the product contains 0 grams protein, is it actually a free food? ____ YES __X__NO

The fact is, 0 may be a rounded-off figure, and the item may contain *nearly 0.5 to 0.9 grams* of protein per serving, a significant source of phe. By carefully reading the food label and knowing which ingredients contain phe, you can learn to identify foods that are truly "free." Remember, while the food label will include information about the protein content of food, it will not include specific information regarding phenylalanine.

Question 2: On average, 1 gram of protein contains how many milligrams of phe?
_____ 5 mg _____ 25 mg __X__50 mg _____ 100 mg

On average, **1 gram of protein contains 50 mg phe.** This means that a food label that reads 0 grams of protein could actually contain 25-50 mg phe per serving!

⇒ If a food label said the food contained 1 gram of protein per serving, how much phe would you estimate? _____

Question 3: The serving size listed on the label is always an entire package of food.
_____ TRUE __X__FALSE

Don't forget to think about serving sizes! The amount you eat is not always the same as what the food label will call a "serving size." For example, 1 serving of soda is 8 ounces, but most people drink an entire can of soda, which is 12 ounces.

⇒ How many 8 ounce servings would be in a 24 ounce soda? _____

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Question 4: Check the ingredients, which contain phe:

__ Agar	_X_ Autolyzed yeast	__ BHA and BHT
_X_ Calcium caseinate	__ Calcium carbonate	_X_ Carob
__ Citric acid	_X_ Cracker meal	_X_ Dry whey
_X_ Gelatin	__ Glycerine	_X_ Malt
__ Mannitol	__ Methylcellulose	__ Monosodium glutamate
_X_ Nonfat dry milk	_X_ Sodium caseinate	_X_ Soy protein isolate
__ Tumeric	_X_ Whey solids	__ Xanthan gum

There are many ingredients added to prepared foods, including vitamins and chemicals that act as thickeners, emulsifiers, stabilizers, and color maintainers. Use the next page as a reference to check unfamiliar ingredients. Add to it when you come across a new ingredient. (Be sure to check with your nutritionist first!)

5. Look at the food label and ingredient list below. Circle or underline the ingredients that have phe.
   How many milligrams of phe does this food have? 50 mg x 1 gram = about 50 mg
   What do you think this label is describing? Fibar Low-Fat Snack Bars

Nutrition Facts
Serving Size 1 bar (34g)
Servings Per Container 6

Amount Per Serving	
Calories 130	**Calories from Fat** 20
	% Daily Value *
Total Fat 2.5g	**4**%
Saturated Fat 1g	**5**%
Cholesterol 0mg	**0**%
Sodium 70mg	**3**%
Total Carbohydrate 27g	**9**%
Dietary Fiber 3g	**12**%
Sugars 13g	
Protein 1g	

Vitamin A 0%	Vitamin C 0%
Calcium 2%	Iron 8 %

INGREDIENTS:
RICE FLOUR, HIGH FRUCTOSE CORN SYRUP, ROLLED OATS, ROLLED BARLEY, RICE BRAN, SUGAR, MALT, CORN SYRUP, SUGAR, PARTIALLY HYDROGENATED VEGETABLE OIL, APPLES, FIGS, DATES, PLUMS, CORN BRAN, NATURAL FLAVORS, ACACIA GUM, BARLEY, WHEY, BEET JUICE COLOR, DRIED STRAWBERRIES, GUAR GUM, FRUIT PECTIN, NONFAT MILK, NONFAT YOGURT (WHEY, NON- FAT MILK CULTURES), CITRIC ACID,LETHICIN, GLYCERINE,COLOR, DRIED RASPBERRIES, DRIED CRANBERRIES.

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Assessment of PKU Adolescent Transition Curriculum

Session 2.

Objective: At this visit you will have the opportunity to review how to keep a food record, calculate phenylalanine in food, and complete and activity 'Learning the 'Real' Phe Content of Food.

Post Session Objective: Each participant will be able to explain how to keep a food record to a parent or friend, have completed the calculate phenylalanine in food and 'Learning the 'Real' Phe Content of Food activities.

I. Please tell us three things that you have learned during this visit

1) _____

2) _____

3) _____

II. What is the most important part of keeping and accurate food record?

_____

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