

# Diet Therapy



## Dietary Patterns of the Puerto Rican People

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WITH THE steady increase of Puerto Rican population groups living in the continental United States, especially on the Eastern Coast, it seems quite timely that we write about our food habits in the hope that it will be of interest to physicians, nutritionists, and dietitians working with such groups, and of help in understanding the nutrition needs of their patients.

Puerto Ricans enjoy eating many foods that are used in the States as well as in France, Italy, or Spain. A good *biftec* (beefsteak) with fried potatoes, or baked ham, broiled fish, fried chicken, a piece of cake, apple pie, ice cream, and other dishes of the international cuisine are served every day in homes that can afford such delicacies, but this involves only a small proportion of Puerto Rican families.

### TYPICAL DIETARY

Rice, legumes, *viandas* (starchy vegetables), milk, *bacalao* (dry salted codfish) are used by everyone in Puerto Rico. The low-income group will use large amounts of the first three—rice, beans, *viandas*—but little milk and codfish. With increase in income more milk is used and more dried codfish. Meat is liked very much, but being expensive is taken only once in a while by the low-income groups; the well-to-do, however, use large quantities of it every day for both lunch and dinner. Pork and chicken are favorite meats with all income groups.

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*Viandas* are boiled whole or in large pieces and served hot with boiled dry codfish plus oil and vinegar. This is a one-dish meal for the poor, especially in the rural areas. We have many different *viandas* (see Table I) but the most popular ones are green bananas and green plantain. The ripe bananas eaten in the United States are used in Puerto Rico as a vegetable when green, before any sugar is formed. We think they are delicious with fish or meats in place of potatoes. The other most frequently used *viandas* are sweet potatoes (a grayish-white vegetable), ripe plantain and white *ñame* and white tanier. Bread fruit (panapén) is used quite a bit in some sections of the Island. *Yuca* (cassava) is not eaten as frequently due to fear of getting the variety which contains a poison. This is unfortunate for *yuca* is very nutritious (see Table I). When *viandas* are eaten as the only dish, the serving is a plateful. Some codfish is always added. When avocado is in season it is a fine addition, and when income permits, hard boiled eggs are also added. Sliced raw onions are frequently one of the ingredients used in this dish. It is a humble dish, but it has a romantic name, for it is called *serenata* (serenade).

*Viandas* are low in protein, calcium, and vitamin A with one exception, the plantain, which is fairly good in vitamin A; 100 grams will furnish 1,400 i.u. However, the *viandas* supply fair or good amounts of the B vitamins and iron when eaten in quantities. For example, when 1,000 or more calories are consumed in a day, as is not uncommon, these

TABLE I  
Nutritional Value of Viandas\*  
(Per 100 g of Food)

	Water %	Calo- ries	Pro- tein g	Fat g	Carbo- hydrate g	Ca mg	Fe mg	Vitamins				
								A i.u.	Thia- mine mg	Ribo- flavin mg	Nia- cin mg	Ascorbic acid mg
Apio (arracacha)	74.8	93	1.4	0.1	21.7	59	1.0	286	0.07	0.06	—	—
Batata blanca (white sweet potato)	71.0	110	0.13	0.15	26.9	18	0.9	53	0.09	0.03	0.7	28 (11)
Batata amarilla (yellow sweet potato)	68.2	122	0.51	0.28	29.4	22	0.8	200	0.10	0.04	0.8	39 (23)
Batata mameya (deep yel- low sweet potato)	70.2	113	1.6	0.1	26.3	29	0.4	12000	0.09	—	0.7	17 (9)
Malanga (dasheen)	75.0	88	2.0	tr.	20.0	25	1.0	40	0.05	0.06	0.4	tr.
Piche verde (variety of green banana)	69.3	121	1.1	0.3	28.5	4	0.8	tr.	0.03	0.02	0.6	16 (4)
Ñame blanco (white yam)	69.3	116	2.9	0.2	25.7	11	1.2	5	0.05	0.03	0.4	8 (4)
Panapén (breadfruit)	67.9	122	1.6	0.4	28.0	15	0.8	50	0.10	0.07	1.0	23 (12)
Papa (potato)	77.8	83	2.0	0.1	19.1	11	0.7	20	0.11	0.04	1.2	17 (15)
Plátano maduro (ripe plantain)	67.5	125	1.0	0.1	30.1	3	0.9	1080	0.05	0.04	0.7	11 (3)
Plátano verde (green plantain)	57.5	165	1.1	0.2	39.8	3	0.5	1400	0.08	0.05	0.5	20 (7)
Yautía blanca (white tanier)	67.5	126	1.7	0.3	29.0	9	0.5	25	0.13	0.03	0.5	10 (3)
Yautía amarilla (yellow tanier)	61.4	155	2.8	1.4	32.9	13	0.7	350	0.40	0.04	0.9	18
Yuca (cassava)	57.2	165	2.0	0.1	38.9	27	0.9	tr.	0.09	0.03	0.4	29 (16)

\* In the column for ascorbic acid numbers in parentheses indicate the probable value after vegetable is cooked as determined by C. F. Asenjo *et al.* The values are taken from a table prepared by the Home Economics Dept. of the University of Puerto Rico except for potato which have been taken from *Composition of Foods—Raw, Processed, Prepared*, Handbook No. 8, Bureau of Home Economics and Agriculture, Washington, D. C., 1950.

foods supply at least protective amounts of thiamine and niacin and very fair amounts of riboflavin. They even furnish enough vitamin C to prevent scurvy, as shown by the analyses made by Dr. C. Asenjo *et al.* of our School of Tropical Medicine. Sometimes the *viandas* are cooked with meat into a sort of soup called *sancocho* which is inexpensive and satisfying.

The next most popular foods are rice and beans. These foods are used extensively twice a day by most families except the very poor rural families, who have them only once. The higher income households also use them daily. The per capita consumption per day for rice is nearly seven ounces, which shows how much we depend on this cereal for our daily food; the per capita for beans is three to four ounces a day. Rice is cooked in small amounts of salted water and lard is added. It is called white rice (*arroz blanco*). Shiny, polished rice is pre-

ferred, but this has to be enriched according to the Puerto Rican law. It is eaten along with stewed legumes (*granos*), such as chick-peas, navy beans, pigeon peas, dried peas, and red kidney beans, the latter being preferred. They are boiled until tender and then cooked with *sofrito*. This is a tasty mixture of tomatoes, green pepper, onion, garlic, salt pork, lard, and cooking herbs (*recao*). Rice is prepared in many other ways, one of the most popular one being with legumes added, or with chopped vienna sausages, pork sausages, or dry codfish. This recipe calls for *achiote* (*annato*) coloring, which gives a yellowish color to the rice.

When rice is cooked with chicken it is called *arroz con pollo*. This is one of our superb dishes and is usually eaten with red stewed beans as an accompaniment. This dish is often prepared with an ample amount of water

so that its final consistency is that of a thick soup. This is called *asopao*.

#### *Other Cereals*

Wheat flour in the form of bread, noodles, and spaghetti as well as oatmeal are used extensively by all income groups. Cornmeal, made into mush with water or milk added, is very popular. When rice is not available cornmeal is used as a substitute and is then eaten along with beans or stewed with codfish. Oatmeal is used as breakfast food. It is always cooked with milk and is much thinner than the continental variety. Cream of wheat and other popular breakfast cereals in the States are used only by the higher income families.

#### *Milk and Coffee*

Practically all Puerto Ricans like milk and will use it when they can get it. Upper income groups use it liberally, but many among the low-income groups cannot afford it except in small amounts. Most of the milk, except for children, is used in coffee.

Puerto Rican coffee is very different from that used in the United States. It is made from finely ground, actually pulverized, coffee. It is of the Mocha variety, as this is the kind grown in Puerto Rico. We never use blends. Puerto Ricans consider coffee brewed in the United States to be extremely weak. In well-to-do homes a coffee concentrate *tinta* is made by percolating coffee with very little water. This is kept tightly covered in a glass bottle until used. A small amount of this *tinta* is added to a cup of hot milk to make *café con leche*. In the homes of the poor the coffee generally is made by putting the coffee powder into a cloth bag and pouring boiling water through it. It is not brewed as strong as it is in the well-to-do homes, but it is always much stronger than the coffee in the United States, or looks so because of its black color. It can be seen that one of the difficulties for a Puerto Rican living in the States is the acceptance of coffee prepared in the American way.

The largest part of our milk intake is thus in the form of *café con leche*. The milk is always boiled, so this insures a sanitary drink, and consequently there are few milk-borne diseases,

particularly since refrigerators are being used more frequently, and because sanitary conditions have improved. People drink *café con leche* for breakfast, at three o'clock in the afternoon, and at other meals if they can afford it. A cup will have from two to five ounces of milk, the amount depending largely on the income.

Puerto Rican coffee, ground and roasted in Puerto Rican style, is available in the New York markets in the Spanish section of the city, but at a higher price than the American blends.

#### *Other Beverages*

Other favorite drinks are chocolate and cocoa. Both are made by boiling with milk and adding a lot of sugar, but no cream. Tea is not liked by the average Puerto Rican and is used only at social affairs by people of higher-income levels. Many "tea parties" are really coffee parties. One of the reasons tea is not enjoyed is that herb (green leaves) teas are used as remedies for colds or other medical purposes.

As a rule, no wine or alcoholic drinks are used at meals, but malt beer has a reputation for being very nutritious, and many ignorant mothers give it to their children, especially if they are considered to be underweight. For lactating women it is also used very generally because of the current belief that it produces milk.

#### *Typical Day's Menu*

A typical day's menu would start with *café con leche* with or without bread. This is breakfast for a high percentage of our population. Butter and an egg may be added when income permits. Oatmeal is very popular. Fruits are included at this meal only by the more educated group. In the country where bread is not available daily the inhabitants do without or will eat a piece of white sweet potato cooked in ashes. For lunch a big meal of *viandas* with codfish and oil is a very typical dish for the rural families. In the city it would be rice and stewed beans. For dinner both in the urban and the rural communities rice and beans are eaten. *Viandas* instead of bread may be an



accompaniment at this time or, when income permits, both are served.

Thus far we have been talking about the very, very poor. More prosperous families may eat stewed meat or beefsteak and add smaller servings of the *viandas*. Boiled green bananas or green plantain are used in preference to potato. Ripe plantain is quite popular as well as egg plant, and squash prepared as fritters.

Dessert is not a necessary part of a meal. Families in the urban areas may have fruit cooked in syrup or served fresh. The rural, and, as a whole, all the poor families do not have desserts. Housewives with higher incomes will serve guava paste (*pasta de guayaba*) which is made of guava pulp with a lot of sugar, or other fruit *pastas* such as *naranja* (bitter orange), *batata* (white sweet potato), *piña* (pineapple), and *mangó* (mango). These *pastas* are often served with native *queso blanco* (white cheese). Between-meal eating is quite frequent. Fruits are used at this time and also *café con leche* or some fruit drink. There is a modern trend to use carbonated drinks, which is very unfortunate as their food value is limited to calories.

#### Use of Vegetables and Fruits

One very weak point in our food habits is the little use made of succulent vegetables. Greens are hardly used and there is a preference for beets, eggplant (*chayote*), for example, which are among the less nutritious ones. The better ones, such as okra, green beans, tomatoes, and carrots, are used in small amounts. Intensive educational programs are trying to make the people conscious of the high nutritional value of the greens and all supermarkets are now carrying them. Only spinach and chard are seen in the regular markets but are not available daily.

Of the yellow vegetables, squash or *calabaza* is very much used, but in small amounts, for example in the preparation of soups and for stews. Everyone likes it made into fritters and into a delicious dessert called *cazuela*. The yellow sweet potato is not used very much. The whitish one is preferred because it is eaten with codfish and being less sweet is a better accompaniment for it.

Of fruits we have plenty and they are of the highest nutritional value. Here is the home of the *acerola* (West Indian or Barbados cherry), which is the highest known food source of as-

TABLE II  
Typical Diet That May Be Served to Puerto Ricans Living in the U. S. A.\*

Foods	Amount g	Calo- ries	Pro- tein g	Ca mg	Fe mg	Vitamins				
						A i. u.	Thia- mine mg	Ribo- flavin mg	Niacin mg	Ascorbic acid mg
Milk (boiled)	488	330	17	575	0.5	780	0.19	0.83	0.50	—
Meat, round	50	91	9	5	1.4	—	0.04	0.08	2.40	—
Potatoes	120	100	2	13	0.8	24	0.13	0.05	1.40	18
Tomato	50	10	1	6	0.3	550	0.03	0.02	0.25	12
Lettuce	10	2	—	6	0.1	162	—	0.01	0.02	1
String beans	50	17	1	33	0.5	315	0.04	0.05	0.25	5
Sweet pot. (yams)	100	123	2	30	0.7	7,700	0.09	0.05	0.60	20
Rice, enriched	168	600	12	4	4.9	—	0.74	0.05	5.90	—
Beans, red kidney	80	268	18	130	5.5	—	0.46	0.18	2.00	—
Bread, enriched	60	160	5	14	1.1	—	0.15	0.09	1.30	—
Oatmeal	25	98	3	13	1.1	—	0.15	0.04	0.25	—
Orange	150	68	1	50	0.6	280	0.12	0.04	0.30	76
Total		1,867	71	879	17.5	9,810	2.13	1.49	15.17	132
N.R.C. (woman)		2,100†	55	800	12	5,000	1.2	1.4	12	70

\* Food values are based on *Composition of Foods—Raw, Processed, Prepared*, Agriculture Handbook, No. 8, Bureau of Human Nutrition and Home Economics, Washington, D. C., 1950.

† This amount is obtained after deducting the 8 per cent recommended by the N.R.C. for Puerto Rico. Calories may be completed with the addition of sugar and fats.



corbic acid. Conservative estimates give 1,000 or more milligrams per 100-gram portion. It is very tiny and looks like a miniature apple, but is sour. We grow oranges which are very juicy and tasty as well as pineapples, grapefruit, papaya, and mango. We have many others generally unknown in the United States and most have proven to be very good sources of vitamin C.

The tropical fruits are the highest in vitamin C. Up to a few years ago the orange and grapefruit were hailed as the best sources of ascorbic acid. It is true that they are high in vitamin C, for one medium-size fruit will furnish the 70 to 75 milligrams that are recommended per day. However, this amount will be furnished by average or even smaller servings of other tropical fruits; for example:

- One average serving of papaya
- One or two mangos
- Two or three slices of fresh pineapple
- One or two West Indian cherries (7 grams)
- One medium guava
- One medium cashew nut fruit.

In Puerto Rico fruit is mainly eaten between meals. Those in the higher socioeconomic strata are more and more including fruit as part of the regular meals. Fruit juices mixed with water and sugar generally are used to quench thirst in the middle of the afternoon. If people serve fruit for dessert, they often choose the imported ones as pears, apple, grapes, which in vitamin content are inferior to tropical ones.

**Foods for the Holidays**

During religious festivities, especially at Christmastime, a good table is prepared in almost every home. Even the very poor enjoy some of the special dishes of the season.

The most prized one is *lechón asado*. This is a young pig roasted slowly on a spit over an open fire. The animal's vital organs are chopped and stewed into *gandinga*. From the blood, highly seasoned blood sausage is made. This, as well as the roasted meat, is accompanied by boiled (or baked in ashes) green bananas or green plantains. Rice is eaten along with it, either as *arroz blanco* or *arroz con gan-*

*dules* or *arroz con pollo*. A salad may or may not be added, but another dish called *pasteles* is an indispensable part of the menu. They are made by grating green bananas or green plantains and *yautías* into a sort of dough to which lard colored with annato seeds is added. This dough is spread thin over a banana leaf, a stuffing made of minced pork. *Sofrito*, olives, raisins, and boiled chick peas are put over it and the whole is shaped into a rectangle, tied and boiled.

Typical desserts for such occasions are *dulce de lechosa* (green papaya cooked in syrup); *cazuela*; *arroz con dulce* (rice cooked with spices and sugar and many times with coconut milk); *almo jábanas* (rice flour and cheese made into fritters); and *manjar blanco* which is a sort of blanc mange made from rice flour,

TABLE III  
Additions for Meal Exchange Lists\*

Vianda exchanges for diabetics as used at the Veterans Hospital

List No. 2, vegetables, Group A

Add  
Chayote

List No. 3, fruits

Add  
Guava 3 medium  
Papaya 1/3 medium  
Nispero 1 medium  
Jobo de la India 1 medium  
Acerola 10 large  
Mamey 1/4 cup

List No. 4, bread and starchy foods

Add		grams
Garbanzos or gandules	1/2 cup	
Sweet potato	1 slice—1 1/2 in. x 2 in. diameter or 1/4 cup mashed	60
Ñame cocido	1 slice—1/2 in. x 3 in. diameter or 1/4 cup mashed	60
Green plantain	1/4 medium plátano	40
Ripe plantain	1/3 medium	approx. 50
Tanier	1 small—2 1/2 in. long x 2 in. diameter or 1/4 cup mashed	50
Breadfruit	1/4 cup	50
Apio	1/3 cup mashed or cubed	70

\* Meal Exchange Lists, The American Dietetic Association, Chicago.

milk, and sugar flavored with lemon rind or orange leaves.

Fruits and nuts are also served when income permits. They are all imported—English walnuts, filberts, dry figs, dates and raisins and Spanish nougat and other *turrone*s made of nuts, almonds, and the like. All this makes a tremendous meal, hard to digest, so everyone will take some alcoholic drink. The preferred drinks are sweet Spanish wine, Puerto Rican rum, light beer and brandy.

#### *Modifications for Therapeutic Diets*

Even for diets where carbohydrates must be low some *viandas* may be included. The dietitians at our Veterans Hospital have added exchanges to the Diabetic Exchange Lists prepared in the States. The patients are highly

pleased to be able to select some of their well-liked foods (see Table III).

For low-sodium diets the *viandas* that are acceptable to the patients are ripe plantain, green plantain (if baked), pumpkin, and baked sweet potato. *Arroz con pollo* is a dish well liked without salt. A sort of sauce called *ajilimójili* when added to unsalted *viandas* makes them very palatable. It is prepared by adding chopped green peppers to vinegar and oil, *aji dulce* (sweet chili pepper), raw onions, and a tiny amount of garlic. When allowed to stand for one or more days, the flavor improves. The sodium content of *viandas* is not yet known, but analyses are being made by the research department of the Veteran's Hospital. *Viandas* are a boon to low-fat diets. When used as an accompaniment for stewed meat, codfish or salmon,

#### GLOSSARY OF TERMS

Achiote (Annato)	Yellow coloring used with rice	Lechón asado	Roasted pig over open fire
Ajilimójili	Sauce made of oil and vinegar and seasonings	Manjar blanco	Dessert made of rice, flour, milk, sugar, and flavoring
Aji dulce	Sweet chili pepper	Morcilla	Blood sausage
Almojábanas	Fritters of rice flour and cheese	Ñame	One of the viandas
Arroz blanco	White rice cooked in water with lard and salt	Naranja	Bitter orange
Arroz con dulce	Dessert made of rice with sugar and spices and coconut milk	Panapén	Breadfruit
Arroz con habichuelas	Rice stewed with beans and sofrito	Pasteles	Dish made of grated viandas with meat stuffing and boiled in banana leaves
Arroz con pollo	Dish of rice with chicken, olives, Spanish red pepper and sofrito	Pasta de grayaba	Guava paste
Asopao	Thick soup of chicken and rice	Piña	Pineapple
Avellanas	Filberts	Plantain	Starchy banana
Bacalao	Dried, salted codfish	Queso blanco	White Puerto Rican cheese
Batata	White or yellow sweet potato	Recao	Seasoning herbs
Café con leche	Black coffee and milk	Sancocho	Stew made from viandas and meat
Calabaza	A cross between squash and pumpkin	Serenata	Dish of boiled viandas, dry codfish and served with oil, etc.
Cazuela	Dessert made of grayish-white sweet potato and calabaza with eggs, butter, sugar, spices, cows milk, or coconut milk	Sofrito	Sauce made sautéing tomato (or tomato sauce), onion, garlic, smoked ham, and green pepper in fat. Used as the basis of Puerto Rican cooking
Dulce de lechosa	Green papaya cooked in syrup	Sopón	Sort of stew made with meat, or codfish, or legumes and rice
Gandinga	Stew of liver and other organs	Tinta de café	Coffee extract
Gandules	Pigeon peas	Turrón alicante	Spanish nougat
Granos	Local name for dry legumes	Viandas	Starch vegetables like green bananas, taniers, etc.
Habichuelas guisadas	Stew beans made with sofrito	Yautía	A vianda
Leche de coco	Coconut milk made from grated fully mature coconuts	Yuca	A vianda



the patients relish them. *Ñame*, *yautía*, and *plátano amarillo* are the best for this purpose. They are preferred to potato. Patients with ulcer like cream of *yautía* or *calabaza* soup very much, and mashed *ñame* and *yautías* are better liked than mashed potato. This is especially true if the patients come from the low-income or rural groups.

In the dietetic treatment of tropical sprue, research workers in Puerto Rico have observed that potato starch is not tolerated but green and ripe plantain, green bananas, *yautías*, and *ñame* are, regardless of the fact that they have a higher carbohydrate content (19 per cent for potatoes and from 25 to 39.8 per cent for the others). No scientific explanation for this difference has yet been found.

It is realized that most dietitians in the United States will be unable to feed *viandas* to their patients, but those who work with Puerto Rican groups in New York City, Miami, Philadelphia, and other big centers will find them in the Puerto Rican markets. Florida grows

many of the same fruits and vegetables we grow in Puerto Rico, and with all the modern facilities for the marketing of fresh products as well as for quick transportation it is not unreasonable to hope that *viandas* as well as tropical fruits will soon be available to dietitians everywhere.

#### ACKNOWLEDGMENT

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