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Mexican Cookbook for People on Dialysis Treatment

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MEXICAN COOKBOOK FOR PEOPLE ON DIALYSIS TREATMENT

A Project

Presented to the

Faculty of

California State University,

San Bernardino

In Partial Fulfillment

of the Requirements for the Degree

Master of Science

in

Nutritional Science

by

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ABSTRACT

Dialysis is a treatment for patients with Chronic Kidney Disease (CKD) with nonfunctioning kidneys. Managing nutrition during dialysis is crucial for improving patients' quality of life and involves moderate consumption of protein, potassium, phosphorus, calcium, sodium, and fluids. The objective of this project was to develop a cookbook that used traditional recipes from Mexican culture and modify the ingredients to meet the unique dietary needs of persons receiving dialysis. A qualitative assessment was performed to ensure that traditional flavors were retained. The recipes were obtained from various internet sources and ingredients were modified to meet and ensure compliance with the dietary limitations consistent with a healthy diet for patients on dialysis. Each dish was prepared using the modified ingredients and a taste test was conducted with a panel of 3 participants. The recipes were evaluated for flavor, texture, and appearance. The participants were asked to rate the recipes on a scale of 1-5, with 5 indicating "extremely liked". The dishes that were rated above a score of 4 based on taste were shredded beef, breakfast chorizo, fruit salad, green beans, Mexican rice, Mexican zucchini, empanada, and mango smoothie. The dishes rated above a 4 based on texture were the breakfast chorizo, fruit salad, green beans, Mexican rice, Mexican zucchini, empanada, hibiscus, cucumber agua, mango smoothie, and watermelon agua. The dishes rated above a 4 based on appearance were the shredded chicken, shredded beef, breakfast chorizo, fruit salad, Mexican rice, Mexican zucchini, empanada, pan de polvo, hibiscus,

cucumber agua, horchata, mango smoothie, and watermelon agua. Limitations were the use of the online diet analysis tool Cronometer with limited ingredients, the participant's familiarity with the traditional dishes, a small sample size of taste testers, and the fat content that was not included in the analysis of the recipes.

Keywords: Dialysis, Chronic Kidney Disease, Taste, Texture, Appearance

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CHAPTER ONE

INTRODUCTION

Food is not only a necessity for the basic function and nourishment of one's body but is seen as a form of expression in culture, heritage, and traditions. Food brings people together, provides comfort, initiates conversations, stimulates memories, and for some, it is seen as a cherished tradition. Over time, food has evolved with each generation altering family recipes to introduce variety and modernize inherited recipes with available ingredients and cooking equipment. Traditional food has become part of our traditional ways, and convincing individuals to deviate from what they are familiar with can be extremely challenging. In the realm of nutrition, people have gradually honed the art of using a variety of ingredients to adapt to individuals' dietary needs. Although progress has been made, accommodating different cultures and traditions remains a work in progress (Nemec, 2020; McCabe et al., 2020). This is particularly true for diseases like Chronic Kidney Disease (CKD), which ultimately results in dialysis treatment. CKD is a major health problem that affects 8-16% of the population worldwide and 1 in 7 adults in the U.S. (Desai et al., 2019; Chronic Kidney Disease in the United States, 2023, 2023). The Hispanic population is one of the largest minority groups within the U.S., it is estimated that 57.5 million Hispanics currently live in the U.S. and the number is expected to double within 20 years (Desai et al., 2019). According to the Centers for Disease Control (CDC), 13.7 % of Hispanics have stage 1-4 CKD (Chronic Kidney Disease in the

United States, 2023, 2023). Acute kidney failure caused by chronic diseases like diabetes, injury, or other health-related problems usually results in the need for dialysis treatments. Dialysis is a medical procedure to remove waste products normally filtered by the kidneys. These include metabolites, urea, excess nutrients, and water. It often involves diverting this function to the machine to filter and clean the blood.

Managing nutrition during dialysis is complex, involving the moderate intake of protein, potassium, phosphorus, calcium, sodium, and fluids. Nutrition recommendations for individuals on dialysis can vary depending on their specific diagnosis, and individual needs, and they are important in preventing the accumulation of waste products between treatments. It is essential for individuals to consult a Registered Dietitian Nutritionist (RDN) for a personalized meal plan and to provide a balance between maintenance of body function and death due to the accumulation of waste products. Guidelines from the Kidney Disease Outcome Quality Initiative (KDOQI) offer valuable guidance for the management of the nutritional needs of patients with CKD and the guidelines are updated as new research emerges, and consequently, new dietary requirements.

The primary objective of this cookbook is to provide patients on dialysis with a means to enjoy traditional Mexican dishes that have been modified to meet their specific dietary requirements. This cookbook seeks to serve as a dependable reference guide for shopping and reducing complications related to dialysis and well-being. Additionally, it aims to collect qualitative data related to

the recipe and to assess satisfaction and enjoyment by consuming the dishes that are modified to meet the needs of people on dialysis treatment.

CHAPTER TWO

LITERATURE REVIEW

Chronic Kidney Disease

Dialysis is a treatment for Chronic Kidney Disease (CKD), a condition in which the kidneys are damaged and lose their normal function. The kidneys play a crucial role in filtering waste products from the blood and maintaining homeostasis of acid-base balance, fluids, hormones, minerals, hematopoiesis vitamin D activation, and electrolytes. When CKD occurs, the loss of these functions can lead to critical filtration issues, resulting in the accumulation of waste, fluid retention, uremia in the blood, and, in severe cases, death. Hence, dialysis treatment is crucial to maintain bodily functions, quality of life, and survival. Early symptoms of CKD include nocturia, foamy urine, reduced urine output, or flank pain. As CKD progresses, individuals may experience symptoms like nausea, vomiting, poor appetite, a metallic taste, itching on the skin, changes in mental status, peripheral edema, unintended weight loss, shortness of breath, and fatigue (Chen et al., 2019). Various factors can contribute to the development of CKD, including hypertension, recurrent urinary tract infections, uncontrolled diabetes, glomerulonephritis infection, family history, environmental exposure, history of nephrolithiasis, chronic infections, or autoimmune diseases (Risks for CKD in Hispanic Americans, 2024; Facts About Chronic Kidney Disease, 2020). CKD is diagnosed by assessing kidney structure abnormalities and kidney function. The glomerular filtration rate (GFR), albumin-to-creatinine

ratios (ACR), and cystatin C measurements are tests used to assess kidney function (Chen et al., 2019; Kovesdy, 2022). The stage of CKD is determined followed by identifying factors for prognosis. When ACR exceeds 300 mg per 24 hours, GFR falls below 30 mL/min per 1.73m2, and albuminuria exceeds 2200 mg, a referral is made for replacement therapy planning and transplant evaluation (Chen et al., 2019). Replacement therapy options include center hemodialysis, home hemodialysis, or peritoneal dialysis, with preferences and options discussed with the medical team.

Dialysis Treatments

Dialysis is a kidney function replacement therapy that assists in filtering waste products, excess fluids, and electrolytes from the blood. There are two primary types of dialysis. Patients may choose the most convenient type after the consultation with their physician, assuming they meet the criteria for the chosen type.

Peritoneal Dialysis

Peritoneal dialysis is a process that involves a surgical procedure where a tube is inserted into the abdomen to reach the peritoneal cavity. A sterile dialysate solution with added glucose and minerals is infused through the catheter to fill the peritoneal cavity (Peritoneal Dialysis, n.d.). After a prescribed period of dialysis, the excess fluid is drained from the abdominal catheter into an empty bag. The process is repeated several times a day. This type of dialysis is usually performed by patients outside of the clinic and can be completed at home

or work (“Dialysis in Chronic Kidney Disease,” 2018). The patient may decide whether they want to perform continuous ambulatory peritoneal dialysis (CCAPD) and do the 4 exchanges daily every 4-6 hours. They may also choose continuous cycling peritoneal dialysis (CCPD) during night or day for 8-10 hrs on a cycler (Wisdom, 2016). Nutrient recommendations for those undergoing Peritoneal Dialysis can be found in Table 1.

Hemodialysis

The other option is hemodialysis, which is usually done in a clinic using a Hemodialysis “machine” that directly filters the blood. This type of dialysis also involves a surgical procedure where a surgeon connects an artery to a vein (AV Fistula or AV Graft) before proceeding with hemodialysis (“Dialysis in Chronic Kidney Disease,” 2018). The AV Fistula access takes 1-3 months to heal, while AV Graft access for individuals is placed in smaller vessels and takes 3 to 6 weeks to heal. The AV Graft and AV Fistula are placed in the arm and the Central venous catheter access is in the chest. However, the Central venous catheter placement is temporary due to direct access to Superior vena cava entry and it is associated with increased complications and infections for long periods of time (Peterson, 2023; CDC, 2023). Hemodialysis offers four different sessions: clinic-based daytime sessions three days a week for approximately 4 hours, clinic-based nocturnal sessions 3 nights a week lasting 6-8 hours, home-based daily sessions lasting around 3 hours, or home-based nocturnal sessions lasting

6-8 hours. Nutrient recommendations for those undergoing Hemodialysis can also be found in Table 1.

Table 1. Nutritional Needs of Patients on Hemodialysis and Peritoneal Dialysis (Ikizler et al., 2020)

	Hemodialysis	Peritoneal Dialysis
Kcals per Kg body wt.	30-35 kcal	30-35 kcal (including diet and glucose from dialysate)
Protein	≥1.2 g/kg body weight	1.2-1.3 g/kg
Calcium	2000 mg: 500 mg/day with 1500 mg limit binders	2000 mg: 500 mg/day with 1500 mg limit binders
Potassium	2000-3000 mg/day	3000-4000 mg/day
Phosphorus	800-1000 mg/day	800-1000 mg/day
Sodium	2000-3000 mg/day	2000-3000 mg/day
Fluids	750-1000 ml/day plus 24 hr urine output	1000 ml per day plus urine output

Carbohydrates

Carbohydrates are carbon-containing compounds that provide energy, and they are essential to maintain the body's health and function. There are two major types of carbohydrates: simple and complex. Simple carbohydrate structures are composed of mono or disaccharides and are digested and absorbed quickly (McGuire, 2018; Berdanier, 2021). Foods consisting of simple carbohydrates include processed products containing glucose, fructose, sucrose, and lactose. Complex carbohydrates are longer-chained glucose molecules that take longer to break down and absorb. These foods include fruits, vegetables, whole grains, and legumes. Complex carbohydrates provide greater benefits and are the preferred carbohydrates for health. The energy intake recommendation

for those on Hemodialysis and Peritoneal dialysis is 30-35 Kcal/Kg and may be adjusted depending on age, weight, and physical activity (Ikizler et al., 2020). This requirement is essential to prevent catabolism of body proteins and lipids. If protein catabolism occurs, it will contribute to urea and ammonium production. High urea accumulations can cause infection and backup of proteins due to inefficient breakdown of waste products from amino acid metabolism and speed up kidney failure (Nahikian-Nelms, 2020). In addition, excess lipid catabolism may contribute to ketone body production and affect acid-base balance of the body.

Protein

Proteins are complex molecules that are composed from smaller subunits referred to as amino acids. Proteins are vital for health and maintenance of body functions such as to aid in building and repairing tissue, enzymes and antibody production, maintain metabolic reactions, bone health, etc. (McGuire, 2018). Additionally, the dietary proteins are classified as complete or incomplete proteins (Berdanier, 2021). Complete proteins contain all essential amino acids while incomplete proteins are missing or low in one or more amino acids. Complete protein sources include animal proteins such as chicken, beef, pork, and fish. It is generally recommended to limit the consumption of red meats due to the saturated and cholesterol contents. Red meats are muscles from four-legged animals like lamb, veal, bison, beef, pork, goat, venison, and other game animals. For protein sources, chicken, fish, and legumes are preferable choices

for individuals on dialysis, because they reduce systemic inflammation, and are lower in saturated fat (DaVita Kidney Care, 2023; Huang et al., 2020). The recommended protein intake for hemodialysis patients is ≥ 1.2 g/Kg of body weight and 1.2-1.3 g/Kg for those on peritoneal dialysis (Ikizler et al., 2020). The reason for higher protein intake for these patients is due to increased losses from dialysis. These recommended values may vary based on individual needs. Insufficient amounts of protein consumption may result in muscle wasting, infection, malnutrition, and weight loss (Eating Right for Dialysis Patients – The National Kidney Foundation (NKF) Singapore, n.d.). If individuals are experiencing inflammation, increased glucocorticoid activity, decreased anabolism, infection, poor nutritional intake, or metabolic acidosis, and they are on hemodialysis, protein may need to be increased. The recommendation is to maintain a neutral or positive nitrogen balance and lower urea burden (Nahikian-Nelms, 2020; Peterson, 2023).

Calcium

Calcium plays a vital role in maintaining bone health, vision health, blood glucose levels, and cell division and differentiation (Berdanier, 2021). Low blood calcium levels can lead to abnormal neuromuscular functions such as muscle pain, muscle spasms, bone loss, and osteoporosis. Calcium also participates in pH balance by stimulating bone resorption. Calcium homeostasis involves 3 hormones calcitriol, calcitonin, and parathyroid hormone (Peterson, 2023). These 3 hormones regulate blood calcium levels and dietary calcium does not affect the

calcium levels in blood. When plasma calcium levels are high, the parathyroid glands release less parathyroid hormone (PTH), reducing vitamin D conversion to calcitriol in the kidneys and, subsequently, calcium absorption in the small intestine (McGuire, 2018). Excessive calcium can be deposited in soft tissues and interfere with the bioavailability of iron and zinc. The recommended daily calcium intake for both hemodialysis and peritoneal dialysis is 2000 mg, with a limit of 1500 mg from phosphorus binders that are calcium-based. (Ikizler et al., 2020).

Potassium

Potassium is essential for regulating blood pressure, fluid balance, acid-based balance, and other physiological functions. Inadequate potassium intake can lead to increased blood pressure, bone depletion, and a higher risk of kidney stones (Diet & Nutrition for Adults with Advanced Chronic Kidney Disease - NIDDK, n.d.; McGuire, 2018). Conversely, excess potassium can cause problems such as muscle weakness and irregular heartbeat (National Institute of Health, 2019; Berdanier, 2021). The recommended potassium intake per day for hemodialysis and peritoneal dialysis patients is 2000-3000 mg, with adjustments based on serum levels (Ikizler et al., 2020).

Phosphorus

Phosphorus is closely linked to calcium and is absorbed in the small intestine. Phytates found in seeds and grains can bind phosphorus in the gastrointestinal tract reducing bioavailability (Avenue et al., 2022). Regulation of

plasma phosphorus concentration involves calcitriol, and high phosphorus levels can stimulate bone resorption. Phosphorus plays a critical role in phospholipids, cellular structure, energy production, acid-base balance, and DNA and RNA. Deficiency can lead to loss of appetite, anemia, muscle weakness, poor bone development, and, in severe cases, death (Office of Dietary Supplements - Phosphorus, n.d.). The recommended daily phosphorus intake for both hemodialysis and peritoneal dialysis ranges from 800 to 1000 mg/day or 10-12 mg/g of dietary protein, depending on individual needs (Ikizler et al., 2020). It is important for patients on dialysis to read food labels and avoid additives with phosphorus. These ingredients include phosphoric acid, pyrophosphates, hexametaphosphate, monocalcium phosphate, sodium phosphate, or sodium triphosphate (Peterson, 2023). Phosphorus binders may be used to lower high phosphate levels. They are medications that help remove excess phosphate from the body by attaching to the phosphate in food and preventing absorption. Due to common symptoms of stomach-related side effects, they are usually given to individuals who continue to have high phosphorus readings (Phosphate Binders, 2023). Common phosphorus binders include TUMS, Auryxia, Calcium Acetate, Calcium Carbonate, Forenol, Phoslo, Phoslyra, Renagel, Revela, Velphoro, and Sensipar. There are some that are calcium based binders, they are PhoLo, Phoslyra, TUMS, Calci-chew, Calcimix. The choice of binder used is typically made by medical professionals based on the patient's specific requirements and condition (Peterson, 2023; Phosphate Binders, 2023).

Sodium

The recommended daily sodium intake for hemodialysis and peritoneal dialysis is 2000-3000 mg, but this can vary depending on individual needs (Ikizler et al., 2020). Although the US guidelines for those not on dialysis is to consume no more than 2300 mg, the recommendation differs due the dialysis treatment and the loss of sodium during treatment. Sodium plays a vital role in regulating osmotic pressure, pH balance, and fluid balance. It also aids in nerve and muscle functions, active transport of nutrients, and ionic balance (Berdanier, 2021). Maintenance and regulation of sodium balance is crucial to avoiding high blood pressure and excessive fluid retention in the body (Nahikian-Nelms, 2020). Although sodium deficiency is rare it can occur from severe diarrhea, vomiting, or endurance sports. Symptoms of deficiency are nausea, dizziness, muscle cramps, and in severe cases, coma (McGuire, 2018).

Fluid/Water

The recommended daily fluid intake for those on hemo- and peritoneal dialysis is 750-1000 ml in addition to the 24-hour urine output (Ikizler et al., 2020). Monitoring fluid intake is essential to prevent fluid overload, as the patients on dialysis do not have functioning kidneys to filter excess fluid, which can lead to edema, discomfort, shortness of breath, and potential cardiac issues (Fluid Overload in a Dialysis Patient, 2016). Strategies to avoid fluid overload include careful tracking of fluid intake, adhering to recommended ranges

provided by healthcare professionals, and managing thirst with items like ice chips, frozen grapes, or sugar-free candies (DaVita Kidney Care, 2023).

Mexican Culture and Traditions

Traditions are more than just rituals and practices; they encompass culture, family, history, and traditions passed on from one generation to another. Food often plays a central role in establishing traditions, making it a cornerstone of culture. Mexican cuisine is renowned for its vibrant, flavorful, and traditional dishes and food ingredients. Commonly used spices in Mexican dishes include chili powder, achiote, cilantro, anise seed, cumin, paprika, coriander, garlic powder, allspice, hoja santa, oregano, vanilla, and onion powder (Deno, 2020). Staple ingredients in Mexican cuisine include avocado, beans, corn, rice, peppers/chiles, onions, garlic, tomatoes, and tortillas. Popular Mexican dishes include Birria, Carnitas, burritos, menudo, ceviche, chilaquiles, flautas, enchiladas, huevos rancheros, carnitas, mole, tostadas, burritos, quesadillas, tacos, and tamales (DaVita, n.d.). Desserts range from cut fresh fruits to desserts such as churros, bread pudding, dulce de leche, flan, tres leches, rice pudding, cajeta, and pan dulce. Mexican beverages include atole, cinnamon, coffee, blended fruit water (agua naturales), smoothies, and hot chocolate (Deno, 2020). Some of the beverages contain added sugar contributing to higher energy content. Although not all the ingredients in traditional Mexican cuisine fit into the diet for those on dialysis treatment, a shopping list and modified recipes in this cookbook will allow for those individuals on dialysis treatment an opportunity to

eat traditional dishes they would otherwise have to avoid (refer to pg. 74-81). The goal of this cookbook is to adapt recipes for traditional Mexican dishes to align with the dietary guidelines provided by the Kidney Disease Outcome Quality Initiative (KDOQI) and be acceptable in taste, flavor, texture, and appearance. in

CHAPTER THREE

METHODS

Study Design

The objective of this cookbook is to provide individuals on dialysis treatment with healthy options for traditional Mexican dishes that adhere to the Kidney Disease Outcome Quality Initiative (KDOQI) guidelines. The cookbook will also include a list of acceptable ingredients that can be substituted as needed. The cookbook will also provide reliable information for people with chronic kidney disease on dialysis treatment to have options of food that can be included as well as those that should be limited or avoided. To assess the quality and flavor of the dishes created a survey to be completed by taste testers will be used to assess taste, flavor, texture, appearance, and overall acceptance.

Ethics and IRB approval

This study was approved by the California State University, San Bernardino Institutional Review Board IRB-FY2024-116.

Objectives

1) To develop 20 traditional Mexican dishes for people on dialysis treatment.

It is advised that individuals on dialysis treatment consult with a Physician and Registered Dietitian Nutritionist (RDN) to receive a range of specific nutrient

recommendations tailored to their individual needs. The 20 Mexican dishes chosen were adopted from the following sources: a). DaVita Kidney Care documents for dietitians on Mexican popular dishes, country facts, beverages, and food facts. (DaVita Inc., 2021) b). A Google search was used to find different varieties of Mexican recipes to be modified by substituting different amounts and ingredients suitable for people on dialysis treatment. Recipes were modified by substituting amounts and ingredients that were high in fluids, potassium, phosphorus, protein, sodium, kcals, or calcium. Some recipes were adjusted to comply with the recommended nutrient ranges. Ranges were determined by using the nutritional information provided by KDOQI guidelines and the DaVita Kidney Care website as a guide for the modification of recipes. The dishes were then prepared and tasted by the researcher; recipes were further modified as necessary based on the researcher's preference.

2) To create a reliable resource that individuals on dialysis treatment can use as a guide to follow the dietary recommendations to meet KDOQI guidelines.

The information for the ranges on fluids, potassium, phosphorus, protein, sodium, kcals, and calcium was obtained from the Kidney Disease Outcome Quality Initiative (KDOQI) guidelines (Ikizler et al., 2020).

3) To create a resource that can help the person or their family to assist in shopping and cooking for people on dialysis treatment.

4) To create a resource that provides evidence-based information for people on dialysis treatment or their caretakers.

Data Source and Collection

The target population for this project was individuals on dialysis treatment. The sample population used to test the recipes are family and friends, who are not on dialysis treatment. To aid in the creation of the recipes, the Cronometer (Cronometer.com) website was used to complete the nutrient analysis of the recipes. Further adjustments to the recipes were made if the nutrients were too high based on the analysis.

Limitation of this study: people on dialysis treatment may accept the dishes prepared using modified ingredients since they realize that the traditional method of preparation of dishes will affect their well-being. Whereas those not on dialysis treatment may want the taste with additional salt and flavors that are more authentic since they do not need to make a compromise on their taste preference.

Development of a Shopping List

The DaVita Kidney Care (kidney disease and dialysis information – DaVita) website was used to gather information on the lists for shopping, substitution, Mexican culture, and common foods consumed by Mexicans. Additionally, recipes from DaVita Kidney Care were incorporated into the project. Other relevant websites and databases were used to obtain additional information on recommended nutrient ranges, fact-checking, and supporting the information used.

Selection of Recipes

A Google search was conducted to identify recipes not previously included by DaVita Kidney Care. Once the dishes were identified, the recipes were modified by adjusting and substituting the ingredients that were not suitable for individuals on dialysis treatment. The modification of the ingredients were made to fit within the recommended nutrient ranges (see Table 2a &2b) and still have acceptable taste.

Table 2. Nutrient Comparison of Original and Modified Recipes

Recipe Name	Cal (Kcal)	Ca (mg)	P (mg)	K (mg)	PRO (g)	Na (mg)	CHO (g)
	O (M)	O (M)	O (M)	O (M)	O (M)	O (M)	O (M)
Ceviche	163 (45)	74 (41)	511 (93)	584 (166)	12 (6)	981 (347)	19 (5)
Shredded Chicken	151 (128)	13 (14)	423(150)	467 (194)	24 (21)	684 (67)	1 (1)
Shredded Beef	386 (149)	50 (15)	653 (134)	717 (198)	33 (21)	433 (64)	2 (1)
Breakfast Chorizo	122 (114)	33 (37)	103 (90)	181 (167)	7 (7)	126 (150)	5 (5)
Tamale Beef: Chicken:	347 (278) 531 (258)	47 (19) 247(18)	132 (157) 890 (173)	195 (220) 933 (216)	9 (23) 13 (23)	248 (131) 2466 (134)	23 (17) 39 (17)
Mexican Rice	203 (33)	18 (3)	61 (7)	63 (9)	3 (0.5)	16 (7)	38 (5)
Fruit Salad	60 (54)	15 (15)	20 (16)	196 (158)	1 (1)	2 (1)	15 (14)
Broccoli	120 (120)	59 (59)	83 (83)	369 (369)	3 (3)	157 (157)	10 (10)
Green Beans	111 (51)	26 (25)	17 (17)	90 (90)	1 (1)	1 (1)	5 (6)
Mexican Zucchini	164 (55)	163 (16)	188 (37)	401 (250)	6 (1)	333 (13)	6 (4)
Refried Beans	34 (34)	15 (15)	34 (34)	105 (105)	2 (2)	12 (4)	6 (6)
Empanada	201 (173)	9 (7)	33 (30)	51 (3)	3 (3)	6 (7)	27 (20)
Pan de Polvo	58 (52)	3 (3)	7 (7)	8 (8)	1 (1)	17 (17)	8 (7)
Bunuelos	128 (96)	33 (8)	27 (17)	19 (28)	2 (2)	120 (86)	19 (12)
Rice Pudding	108 (72)	38 (38)	23 (23)	28 (28)	1 (1)	3 (3)	23 (14)
Hibiscus Tea	539 (63)	173 (29)	4 (0)	205 (22)	2 (0.2)	37 (13)	133 (15)
Cucumber Agua	42 (20)	22 (23)	28 (28)	171 (175)	1 (1)	7 (7)	11 (5)
Horchata	186 (142)	240(278	148 (69)	223 (92)	6 (2)	109 (131)	28 (15)

Recipe Name	Cal (Kcal)	Ca (mg)	P (mg)	K (mg)	PRO (g)	Na (mg)	CHO (g)
Mango Smoothie	168 (84)	25 (19)	26 (20)	306 (236)	2 (1)	8 (4)	44 (21)
Watermelon agua	65 (28)	11 (12)	6 (10)	99 (103)	1 (1)	7 (7)	17 (7)

Note:(Cal=Calories; Ca =Calcium; P=Phosphorus; K= Potassium; PRO=Protein; Na= Sodium; CHO= Carbohydrate; O= Original; M= Modified)

Sensory Evaluation

After the recipes were modified, the dishes were prepared, and a taste test was conducted using a Likert scale of 1-5 (1= being extremely disliked, 2= disliked, 3= neither disliked or liked, 4= liked, and 5= extremely liked. The test taste was completed to assess individuals' evaluation of the taste, flavor, texture, and appearance of the prepared dish. The participants in the taste test were not patients on dialysis but they all were friends of the researcher with no known health issues. Ten participants were recruited to be on the taste panel. A text message was sent to the subjects to invite them to participate in the taste panel on March 1, 2024, at 1 pm. However, on the day of the taste test, only 3 participants were present to evaluate the dishes. The participants signed the consent form prior to the start of taste testing, and the forms were kept in a secure location accessible only by the researcher.

Twenty dishes were prepared using modified recipes and tasted by the participants; however, one of the participants declined to taste two of the dishes: the Ceviche and the Bunuelos. The other problem was the broccoli dish was

overcooked in the process of keeping the dish to remain within the safe temperature zone. Therefore, the scores for the broccoli dish may not reflect the actual product for the evaluation. During the taste testing process, the researcher presented each dish one at a time to the participants and gave the participants enough time in between to evaluate. They were provided with a survey to evaluate each dish. Researchers also ensured that participants were ready before they were served the next dish. After the completion of taste tests, participants were dismissed, and the evaluation scores were analyzed.

Data Management

Data sets were organized and analyzed using Google Forms. The backup tool used was IBM SPSS software. Due to the small number of taste testers, the scores were not analyzed using SPSS. The means of the 3 scores were taken and categorized as favored if the means were within 4 to 5, almost disliked if the mean scores were within 1-2.6 and the remainder were categorized as neutral if the means were within a 2.7-3.6. (Table 2)

Data Analysis

The website Cronometer (www.cronometer.com) was used to analyze both macro- and micro-nutrients of the original and modified dishes. After the taste test was conducted, the scores were analyzed using Google Forms (Mexican Cuisine Taste Survey - Google Forms).

CHAPTER FOUR

RESULT OF THE TASTE TEST

Table 3: Results and averages of the dishes prepared using modified recipes.

Name	Taste	Mean	Texture	Mean	Appearance	Mean
Ceviche	5,5	3.3	5,5	3.3	4,5	3
Shredded Chicken	3,4,4	3.6	3,4,4	3.6	3,4,5	4
Shredded Beef	3,5,5	4.3	2,4,5	3.6	4,5,5	4.6
Tamales	2,3,5	3.3	2,2,5	3	1,2,4	2.3
Breakfast Chorizo	5,5,5	5	4,5,5	4.6	4,5,5	4.6
Fruit Salad	5,5,5	5	5,5,5	5	5,5,5	5
Broccoli	1,2,4	2.3	1,3,4	2.6	1,2,3	2
Green Beans	3,4,5	4	3,5,5	4.3	2,3,5	3.3
Mexican Rice	3,4,5	4	4,4,5	4.3	5,5,5	5
Mexican Zucchini	3,5,5	4.3	4,5,5	4.6	5,5,5	5
Refried Beans	1,1,3	1.6	1,2,5	2.6	2,4,5	3.6
Bunuelos	3,5	2.6	3,5	2.6	3,5	2.6
Empanada	3,4,5	4	4,5,5	4.6	3,5,5	4.3
Rice Pudding	1,2,3	2	1,2,3	2	2,3,3	2.6
Pan de Polvo	3,3,5	3.6	2,4,5	3.6	3,4,5	4
Hibiscus	1,2,4	2.3	4,5,5	4.6	4,4,5	4.3
Cucumber Agua	3,3,4	3.3	3,4,5	4	5,5,5	5
Horchata	3,3,3	3	3,3,3	3	3,5,5	4.3
Mango Smoothie	5,5,5	5	3,5,5	4.3	4,5,5	4.6
Watermelon Agua	3,4,5	4	5,5,5	5	5,5,5	5

Note:(due to the small sample size, the raw scores and the means were presented in the table)

1= Extremely Disliked, 2= Disliked, 3= Neither Disliked nor Liked, 4= Liked, and 5= Extremely Liked. (n=3)

The evaluation was conducted to assess the acceptability of each dish prepared using the Likert rating scale of 1-5. Statistical analyses were not performed due to a very low number of participants evaluating the dishes. The raw scores are shown in Table 2 with an overall mean of each dish and components of the evaluation. The rating scale ranged from 1 being extremely disliked, 2 being disliked, 3 being neither disliked nor liked, 4 being liked, and 5 being extremely liked. The total number of participants was three (n=3). One participant refused the ceviche dish and bunuelos dishes. The means were calculated for each recipe tested for its taste, texture, and appearance. The participants rated the dishes with a score between a 4 and 5 if they liked the dish, they rated the dishes they disliked if the means were within 1-2.6 and the rest of the recipes were within a 3-3.6. The dishes that were rated above a score of 4 for taste were shredded beef, breakfast chorizo, fruit salad, green beans, Mexican rice, Mexican zucchini, empanada, and mango smoothie. The dishes rated above a score of 4 for texture were the breakfast chorizo, fruit salad, green beans, Mexican rice, Mexican zucchini, empanada, hibiscus, cucumber agua, mango smoothie, and watermelon agua. The dishes rated above a score of 4 for appearance were the shredded chicken, shredded beef, breakfast chorizo, fruit salad, Mexican rice, Mexican zucchini, empanada, pan de polvo, hibiscus, cucumber agua, horchata, mango smoothie, and watermelon agua. The recipes that were rated below a 3 for taste were broccoli, refried beans, bunuelos rice pudding, and hibiscus tea. The recipes that were rated below a 3 for texture were

broccoli, refried beans, bunuelos, and rice pudding. The recipes rated below a 3 for appearance were the tamale, broccoli, bunuelos, and rice pudding. The recipes rated at 3 for taste were ceviche, shredded chicken, tamales, pan de polvo, cucumber agua, and horchata. The recipes rated at 3 for texture were ceviche, shredded chicken, shredded beef, tamales, pan de polvo, and horchata. The recipes rated at 3 for appearance were ceviche, green beans, and refried beans.

CHAPTER FIVE

DISCUSSION

The recipes provided in the cookbook have been evaluated for taste, texture, and appearance; and they were modified to fit within the Kidney Disease Outcome Quality Initiative (KDOQI) guidelines. The objective of this cookbook is to offer traditional recipes that have been modified to meet the specific dietary requirements of individuals undergoing dialysis. This cookbook seeks to serve as a dependable guide for reference as a shopping aid and to reduce misinformation. Additionally, it aims to assess whether participants in the taste test panel were satisfied and enjoyed the modified recipes. Even though a total of 10 participants expressed interest in being a part of the study, only three attended and participated in the evaluation process. During the study, one of the participants refused to taste the ceviche dish and bunuelos. Despite the refusal of these two dishes, the rest of the evaluation scores from this participant were recorded. It is important to note that the broccoli recipe may not have been accurately judged as it was over cooked while making sure that the dish did not reach the danger zone for temperature (40-to-140-degree F).

Based on the evaluation of the dishes, the shredded beef, breakfast chorizo, fruit salad, green beans, Mexican rice, Mexican zucchini, empanada, and mango smoothie received the highest rating for taste. The breakfast chorizo, fruit salad, green beans, Mexican rice, Mexican zucchini, empanada, hibiscus, cucumber agua, mango smoothie, and watermelon agua were rated to have the

best texture. The shredded chicken, shredded beef, breakfast chorizo, fruit salad, Mexican rice, Mexican zucchini, empanada, pan de polvo, hibiscus, cucumber agua, horchata, mango smoothie, and watermelon agua were rated to have the best appearance. The dishes that were the least favored based on taste were broccoli, refried beans, bunuelos, rice pudding, and hibiscus tea. The least favored based on texture was broccoli, refried beans, bunuelos, and rice pudding. The least favored based on appearance were the tamale, broccoli, bunuelos, and rice pudding. The other recipes were rated as neutral (the mean score reflected that the dishes were neither liked nor disliked). The dishes that were rated to have a neutral taste score were the ceviche, shredded chicken, tamales, pan de polvo, cucumber agua, and horchata. The dishes with a neutral rating on the texture were ceviche, shredded chicken, shredded beef, tamales, pan de polvo, and horchata. The dishes that were rated as being neutral in appearance were ceviche, green beans, and refried beans. Low ratings for these dishes might have been due to the dietary restriction causing the dishes to be bland and lack the flavors which could have contributed to substitutions and the amount of seasonings and ingredients. Additional modifications and taste testing may be needed to improve the acceptance of the modified dishes.

Strengths

The study's strengths were the development of recipes that meet the restriction of those who are on dialysis, to assist in alleviating kidney stress. The cookbook broadened the food choices available to individuals and ensured the

inclusion of traditional Mexican dishes. Efforts were made to preserve traditional flavors, techniques, and ingredients without extensive change to the acceptance of the dish. The researcher also maintained an unbiased and neutral approach to tasting during the presentation and evaluation of dishes.

Limitations

The study faced several limitations: these include the nutrition tracking and analysis tool, Cronometer. Due to its incomplete database, some of the ingredients in the recipes had to be substituted by others in the nutrient analysis. Participants' familiarity with the traditional dishes posed a challenge with the possible altered taste in the modified recipes. The small sample size of 3 participants limited the comprehensiveness of statistical analysis of the evaluation scores. Additionally, the researcher mistakenly did not include the fat content of the recipes in the nutrient analysis. Only one taste test was conducted, not allowing for further adjustments, and tasting to be made, if needed. The comments section and the overall acceptance of the dish were not included in the survey; therefore, the reason for participants' dislike or likeness of dishes is unknown to the researcher.

Future Research Study

Although the recipes were modified to fit within the range of individuals on dialysis, the fat contents of the recipe were not included. Olive oil and vegetable oil were substitutes for lard or shortening to provide a healthier fat, and in some

recipes, the amount of oil used was reduced to alter the energy content, but the amount of fat in the dish was included in the nutrient analysis. For future studies, altering and reporting the fat content in the recipe should be included using professional nutrient analysis software. The use of a more comprehensive nutrient analysis tool with a broader ingredient list and measurement database would also enhance the accuracy of the nutrient analysis. A larger sample size of taste tasting panel, as well as information about individuals' ethnicity may also be useful to assess their exposure to traditional Mexican dishes. Providing advanced notice to the taste test panel members and a reminder of the taste testing date and time may also improve turnout. Additionally, conducting multiple taste tests for each modification of recipes would allow the ability to perfect the recipes. Lastly, adding a comments section and overall acceptability of the dish on the data collection tool/evaluation form would be useful in determining why individuals did or did not like the taste, texture, or appearance of the recipes to make further adjustments as necessary.

CHAPTER SIX

CONCLUSION

This cookbook makes a significant contribution to provide dialysis-friendly dishes within the context of Mexican heritage. A taste test participants assessed the taste, texture, and appearance of the modified recipes identifying the favorites and least favorite modified dishes. The best-tasting dish according to the taste testers was the shredded beef, breakfast chorizo, fruit salad, green beans, Mexican rice, Mexican zucchini, empanada, and mango smoothie. The best-textured dish according to the taste testers was the breakfast chorizo fruit salad, green beans, Mexican rice, Mexican zucchini, empanada, hibiscus, cucumber agua, mango smoothie, and watermelon agua. The appearance of the prepared dishes according to the 3 taste testers was the shredded chicken, shredded beef, breakfast chorizo, fruit salad, Mexican rice, Mexican zucchini, empanada, pan de polvo, hibiscus, cucumber agua, horchata, mango smoothie, and watermelon agua. According to the 3 taste testers, the least favorite dishes based on taste were broccoli, refried beans, bunuelos rice pudding, and hibiscus tea. The least favorite dish on texture was broccoli, refried beans, bunuelos, and rice pudding, and the least favorite based on the scores on the appearance of the dishes were the tamale, broccoli, bunuelos, and rice pudding. The other recipes were rated as neutral (neither liked nor disliked). The strengths of the study were that the recipes met the dietary restrictions, the broadening of food choices, and the preservation of the traditional flavors, techniques, and ingredients of dishes

during the study. In addition, the researcher maintained an unbiased approach to presenting the dishes during the evaluation of dishes. Limitations were the use of the online diet analysis tool Cronometer with limited ingredients, the participant's familiarity with the traditional dishes, a small sample size of taste testers, and the fat content that was not included in the analysis of the recipes. For future studies, consider these items to improve the findings: to expand the number of taste testers, utilize a more detailed nutritional analysis software, add a comment section and a rating for the overall acceptability of the dish to the evaluation tool, include fat content to the nutrient analysis of the dishes, send a month's notice and a reminder for the taste testing, include an assessment for individuals' familiarity with Mexican dishes, and have multiple taste tests after each recipe modification to ensure the accuracy of the evaluation of the recipes for acceptability of the dish and nutrient contents of the recipes in the cookbook.

APPENDIX A

COOKBOOK

Entrée

Ceviche

Makes: 3 servings (1 serving = ½ cup)

Ingredients

1 cucumber, diced
1/4 medium red onion, diced
1 serrano pepper, seeded and deveined, and chopped
¼ cup finely, coarsely cilantro
¼ tsp salt
2 medium limes (juiced)
½ tsp ground black pepper
½ cup frozen cooked shrimp

Instructions

1. Combine cucumber, red onion, serrano peppers, and cilantro in a bowl. Add 1/4 teaspoon salt and squeeze 1 lime. Gently mix and set aside.
2. For the shrimp thaw quantity needed overnight in the refrigerator, or remove shrimp from the bag and thaw in a colander or strainer under cold running water for about 3 minutes and chop. Use immediately.
3. Mix chopped shrimp and mix into cucumber mix.
4. Serve cold, any leftovers can be stored in an airtight container in the refrigerator for 1 day.

Calories: 45 kcal; **Calcium:** 41 mg; **Phosphorus:** 93 mg; **Potassium:** 161 mg; **Protein:** 6 g; **Sodium:** 347 mg; **Carbohydrates:** 5 g; **Fluid:** 100 ml
Recipe modified from Keonar (2023)

Shredded Chicken

Makes: 8 servings (1 serving = 1/4 cup).

Ingredients

2 tsp chili powder
½ tsp paprika
1 tsp garlic powder
1 tsp onion powder
½ tsp cumin grounded
½ tsp black pepper
½ tsp oregano
32 oz chicken breast (raw)
1 Tbsp olive oil
1 cup low-sodium chicken broth

Instructions

- 1. In a small bowl combine all of the ingredients, (except chicken, oil, and broth) to make the chicken taco seasoning. Stir to combine.
- 2. Coat the chicken on both sides with the chicken taco seasoning.
- 3. Drizzle the olive oil and heat in a large skillet over medium heat.
- 4. Add the chicken and cook for 2-3 minutes on each side. Pour in the chicken stock. Cover the skillet and let the chicken cook in the broth for about 15-20 minutes, until the chicken registers 165 degrees internally and is cooked through.
- 5. Remove the chicken from the skillet, shred using a fork, then return to the skillet. Stir to coat the chicken in the remaining sauce in the skillet. Let sit and keep warm on low heat for about 3-5 minutes, to get good flavor throughout the chicken.
- 6. Serve hot, any leftovers can be stored in an airtight container in the refrigerator for 2-3 days.
-

Calories: 128 kcal; **Calcium:** 14mg; **Phosphorus:** 150 mg; **Potassium:** 194 mg; **Protein:** 21g; **Sodium:** 67 mg; **Carbohydrates:** 1 g; **Fluid:** 59 ml

Recipe modified from Serene (2023)

Shredded Beef

Makes: 10 servings (1 serving = 1/4 cup)

Ingredients

2.5 lbs. beef chuck
1 ½ Tbsp olive oil
¾ tsp black pepper
14 oz low sodium beef broth
1 ½ Tbsp chili powder
½ Tbsp ground cumin
½ Tbsp onion powder
1 tsp garlic powder
1 lime

Instructions

1. Heat olive oil in a large pot over medium-high heat. Dab both sides of beef dry with paper towels.
2. Season beef with 3/4 tsp black pepper and sear in a pot until browned on both sides, about 3 minutes on each side.
3. Transfer beef to a 6 or 7-quart slow cooker. Pour beef broth over roast.
4. Sprinkle chili powder, cumin, onion, and garlic powder evenly over roast. Cover the slow cooker and cook on low heat for 8 hours (high-heat cooking is not recommended here).
5. Remove roast from slow cooker, shred beef (remove fat), and return shredded beef to slow cooker (season with a little more salt if needed).
6. Add in lime juice, cover with lid, and cook on low for an additional 5 - 10 minutes while preparing toppings and tortillas.
7. Remove beef from slow cooker with tongs to remove juices when plating or drain in a colander.
8. Serve hot, any leftovers can be stored in an airtight container in the refrigerator for 2-3 days.

Calories: 149 kcal; **Calcium:** 15 mg; **Phosphorus:** 134 mg; **Potassium:** 198 mg; **Protein:** 21g; **Sodium:** 64 mg; **Carbohydrates:** 1 g; **Fluid:** 56 ml
Recipe modified from Jaclyn (2018)

Breakfast Chorizo
Makes: 1 servings

Ingredients

¼ cup chopped onion
1 Tbsp soy chorizo
1 egg
1 Tbsp avocado, diced
1 Tbsp chopped cilantro
1 wedge lime

Instructions

1. In a pan cook the onion until light brown.
2. While the onion is cooking, scramble an egg in a bowl and set aside.
3. Once onions are light brown, add soy chorizo and cook till brown all around. Add the egg into the chorizo and onion mixture until the egg is no longer moist.
4. Plate with the egg, chorizo, and onion mixture.
5. Top with the diced avocado, cilantro, and the lime wedge.
6. Serve hot.

Calories: 114 kcal; **Calcium:** 37 mg; **Phosphorus:** 90 mg; **Potassium:** 167 mg; **Protein:** 7 g; **Sodium:** 150 mg; **Carbohydrates:** 5 g; **Fluid:** 70 ml

Tamale

Beef Makes: 20 servings (1 serving = 2 Tamale)
Chicken Makes: 16 servings (1 serving = 2 Tamale)

Ingredients

3 cups all-purpose flour	1-1/8 cups warm water
1/2 tsp salt	choice of beef or chicken filling
1/2 cup vegetable oil	

Instructions

1. In a large bowl mix flour and salt together.
2. Add vegetable oil and 1 cup of warm water.
3. Begin mixing by hand squeezing flour and oil through fingers or mix with a spoon and knife crisscrossing through flour and oil until mixed thoroughly.
4. Form masa (dough) into a large ball.
5. Remove clinging flour from the sides of the bowl by rolling the masa around the bowl.
6. Add the remaining ⅛ cup of warm water if the masa is too dry.
7. Turn masa onto a board or tabletop and knead for one minute into a smooth ball.
8. Cover with a bowl or a towel for at least five minutes and allow to rest.
9. In a corn husk or parchment paper, scrape a portion of the masa then add 1/4 cup of choosed meat (look at shredded chicken or beef recipe) and top with masa again.
10. Wrap the tamale firmly in a corn husk or parchment paper.
11. Once done, set the oven to 350 and cook for 10 mins on each side.
12. Serve hot, any leftovers can be stored in an airtight container in the refrigerator for 2-3 days.

Beef

Calories: 278 kcal; **Calcium:** 19 mg; **Phosphorus:** 157 mg; **Potassium:** 220 mg; **Protein:** 23 g; **Sodium:** 131 mg; **Carbohydrates:** 17 g; **Fluid:** 74 ml; **Carb Exchange:** 1

Chicken

Calories: 258 kcal; **Calcium:** 18 mg; **Phosphorus:** 173 mg; **Potassium:** 216 mg; **Protein:** 23 g; **Sodium:** 134 mg; **Carbohydrates:** 17 g; **Fluid:** 77 ml; **Carb Exchange:** 1

Recipe modified from Maria (2024)

Brunch Nacho

Makes: 6 servings (1 serving = ⅙ recipe)

Ingredients

1 small bell pepper (any color)
¼ cup chopped red onion
2 Roma tomato chopped
½ cup chopped cilantro
4 slices cooked turkey bacon
2 limes
½ cup sour cream (lite)
4 oz unsalted large-size tortilla chips (about 30 chips)
½ tsp garlic powder
½ tsp onion powder
½ cup shredded sharp cheddar cheese
4 large eggs

Instructions

1. Preheat the oven to 375 F. Cut bell pepper into thin strips. Dice red onion. Chop tomatoes and cilantro. Cut bacon into small pieces.
2. To make pico de gallo, combine chopped tomato, onion, and cilantro in a small bowl. Squeeze juice from 1 lime on top and stir.
3. Place sour cream in a bowl and add the juice of one lime. Whisk together and refrigerate until ready to serve.
4. Spray the baking sheet with cooking spray.
5. Place tortilla chips in one layer on a baking sheet. Top chips with dried seasoning, bell peppers, and shredded cheese.
6. Bake until the cheese is melted.
7. Serve hot, any leftovers can be stored in an airtight container in the refrigerator for 2-3 days.

Calories: 260 kcal; **Calcium:** 159 mg; **Phosphorus:** 193 mg; **Potassium:** 260 mg; **Protein:** 10 g; **Sodium:** 195 mg; **Carbohydrates:** 19 g; **Carb Exchange:** 1
Retrieved from Elyse (2023)

Shrimp Quesadilla
Makes: 2 servings

Ingredients

5 oz raw shrimp, shelled and deveined
2 Tbsp chopped cilantro
1 Tbsp lemon juice
1/4 tsp ground cumin
1/8 tsp cayenne pepper
2 flour tortillas, burrito size
2 Tbsp sour cream
4 tsp salsa store-bought
2 Tbsp shredded jalapeno cheese

Instructions

1. Shell and devein shrimp. Rinse and cut into bite-size pieces. Chop cilantro.
2. Combine cilantro, lemon juice, cumin, and cayenne pepper in a zip-lock bag to make the marinade. Add shrimp pieces and set aside to marinate for 5 minutes.
3. Heat a skillet to medium heat and add shrimp with marinade. Stir-fry 1 to 2 minutes until shrimp turns orange. Remove skillet from heat and remove shrimp using a spoon, leaving marinade.
4. Add sour cream to the marinade in skillet and stir to mix.
5. Heat tortillas in a large skillet or microwave. Spread 2 teaspoons of salsa onto each tortilla. Top with 1/2 shrimp mixture and sprinkle with 1 tablespoon cheese.
6. Spoon 1 tablespoon sour cream marinade mixture on top of shrimp. Fold tortilla in half, turn over in skillet to heat, then remove from pan. Repeat with a second tortilla and the remaining shrimp, cheese and marinade.
7. Cut each tortilla into 4 pieces. Garnish with cilantro and lemon wedge when ready to serve.

Calories: 318 kcal; **Calcium:** 139 mg; **Phosphorus:** 243 mg; **Potassium:** 276 mg; **Protein:** 20 g; **Sodium:** 398 mg; **Carbohydrates:** 26 g **Carb Exchange:** 2
Retrieved from Sarah (2024)

Fish Tacos

Makes: 6 servings (1 serving=2 tacos)

Ingredients

1-1/2 cups cabbage	1/2 tsp chili powder
1/2 cup red onion	1/4 tsp black pepper
1/2 bunch cilantro	1 Tbsp olive oil
1 garlic clove	1/2 cup mayonnaise
2 limes	1/4 cup sour cream
1 pound cod filets	2 Tbsp milk
1/2 tsp ground cumin	12 corn tortillas 6-inch size

Instructions

1. Shred cabbage and chop onion and cilantro.
2. Set aside, Mince garlic.
3. Place the fish filets in a dish and squeeze the juice of half a lime over the fish.
4. Sprinkle filets with minced garlic, cumin, chili powder, black pepper, and olive oil.
5. Turn the filets to coat with marinade and refrigerate for 15 to 30 minutes.
6. Make salsa blanca by combining mayonnaise, sour cream, milk, and juice of half a lime.
7. Stir to combine and place in the refrigerator to chill.
8. Turn the oven on to broil.
9. Cover the broiler pan with foil.
10. Broil fish until the flesh turns opaque and white and the fish flakes easily for about 10 minutes.
11. Remove from the oven, cool slightly, and flake fish into large pieces.
12. Heat the corn tortillas one by one in a pan until soft and warm.
13. Wrap them in a clean dish towel to keep them warm.
14. To assemble tacos: place a piece of fish on a tortilla and top with salsa blanca cabbage red onion cilantro and lime wedges.
15. Serve, and add low sodium hot sauce if desired, any leftovers can be stored in an airtight container in the refrigerator for 1-2 days.

Calories: 363 kcal; **Calcium:** 138 mg; **Phosphorus:** 327 mg; **Potassium:** 507 mg; **Protein:** 18 g; **Sodium:** 194 mg; **Carbohydrates:** 30 g; **Carb Exchange:** 2
Retrieved from Sarah (2024)

Chicken Fajitas

Makes: 4 servings (1 serving=2 fajitas)

Ingredients:

8 flour tortillas, 6” size
1/4 cup green pepper
1/4 cup red pepper
1/2 cup onion
1/2 cup cilantro
2 Tbsp canola oil
12 oz raw boneless chicken breasts
1/4 tsp black pepper
2 tsp chili powder
1/2 tsp cumin
2 Tbsp lemon juice

Instructions

1. Preheat the oven to 300° F. Wrap tortillas in foil; heat in the oven for 10 minutes.
2. Chop the peppers, onion and cilantro. Cut chicken breasts into 1-inch strips.
3. Place oil in a nonstick frying pan over medium heat; add chicken, seasonings and lemon juice. Cook for 3 to 5 minutes.
4. Add peppers and onion to the frying pan; cook for 3 to 5 minutes more or until chicken is no longer pink and juice runs clear. Add cilantro to the chicken mixture.
5. Divide chicken mixture between tortillas, fold tortillas over.
6. Serve hot, any leftovers can be stored in an airtight container in the refrigerator for 2-3 days.

Calories: 343 kcal; **Calcium:** 23 mg; **Phosphorus:** 196 mg; **Potassium:** 331 mg; **Protein:** 24 g; **Sodium:** 281 mg **Carbohydrates:** 33 g; **Carb Exchange:** 2
Retrieved from Colman (2023)

Mexican Rice

Makes: 19 servings (1 serving = 1/3 cup)

Ingredients

2 Tbsp olive oil
2 cups long-grain white rice
4 cups water
1 Tbsp chicken bouillon
1 Tbsp tomato puree

Instruction

1. Heat the oil in a large skillet over medium/high heat.
2. Add the rice and stir to coat in the oil.
3. Cook while stirring for about 7-10 minutes, the rice will turn very white as it cooks.
4. Continue cooking until the rice starts to toast and turn slightly golden on the edges.
5. Pour in the water and add in the chicken bouillon and tomato paste.
6. Use a whisk to combine. Keep the heat at medium.
7. Let the rice cook in the water until it starts to boil, stirring occasionally.
8. Once boiling, let the rice continue to cook for 2-3 minutes. Then place the lid tightly over the skillet.
9. With the lid on the skillet, turn the heat to the lowest setting and let the rice cook undisturbed for 20 minutes.
10. After 20 minutes, remove the rice from the heat, but keep on.
11. Keep the lid on and let it sit for 10 minutes. After this time, lift the lid and fluff the rice using a fork.
12. Serve hot, any leftovers can be stored in an airtight container in the refrigerator for 2-3 days.

Calories: 33 kcal; **Calcium:** 3 mg; **Phosphorus:** 7 mg; **Potassium:** 9 mg; **Protein:** 0.45 g; **Sodium:** 7 mg; **Carbohydrates:** 5 g; **Fluid:** 60 ml;
Recipe modified from Serene (2023)

 (Fisher, 2013)

Fruit Salad
Makes: 5 (1 serving= ½ cup)

Ingredients

1 cup strawberries
¼ pineapple
½ mango
1 lime

Instructions

1. Wash and cut strawberries, pineapple, and mango into same size ½ inch cubes.
2. In a medium bowl, add pineapple, strawberry, mango cubes, and lime.
3. Cover the bowl with plastic and refrigerate.
4. Serve cold, any leftovers can be stored in an airtight container in the refrigerator for 2-3 days.

Calories: 54 kcal; **Calcium:** 15 mg; **Phosphorus:** 16 mg; **Potassium:** 158 mg; **Protein:** 1 g; Sodium**:** 1 mg; **Carbohydrates:** 14 g; **Fluid:** 98 ml; **Carb Exchange:** 1
Recipe modified from Izzy (2023)

Broccoli

Makes: 3 servings (1 serving = ½ cup)

Ingredients

12 oz fresh broccoli crowns
2 Tbsp olive oil
1 Tbsp chili powder
1 tsp garlic powder
1 tsp onion powder
1 tsp oregano
½ tsp cumin
¼ tsp red pepper
⅛ tsp black pepper
⅛ tsp salt

Instructions

1. Preheat the oven to 400F/204C degrees.
2. In a large bowl, combine 12 ounces of broccoli florets, 2 tablespoons of oil, 1 tablespoon chili powder, 1 ½ teaspoons garlic powder, 1 teaspoon each of onion powder and dried oregano, ½ teaspoon ground cumin, and ¼ teaspoon crushed red pepper. Toss until all pieces are evenly coated.
3. Place seasoned broccoli in a single layer on an ungreased baking sheet. Put in the oven and bake for 20 minutes, stirring once after 10 minutes.
4. Remove cooked broccoli to a serving bowl.
5. Serve hot, any leftovers can be stored in an airtight container in the refrigerator for 2-3 days.

Calories: 120 kcal; **Calcium:** 59 mg; **Phosphorus:** 83 mg; **Potassium:** 369 mg; **Protein:** 3 g; **Sodium:** 157 mg; **Carbohydrates:** 10 g; **Fluid:** 90 ml
Recipe modified from Karrie (2017)

Green Beans

Makes: 4 servings (1 serving= 1/4 cup)

Ingredients

1 cup fresh green beans
1/2 lemon sliced thinly
1 Tbsp olive oil
⅛ tsp red pepper flakes

Instructions

1. Preheat the broiler. Place the oven rack 4 to 5 inches from the heat source.
2. Spread the green beans evenly on a baking sheet. Add lemon slices, drizzle with olive oil, and toss well.
3. Broil green beans for 3 to 4 minutes, on each side. Transfer to a plate, and season with red pepper flakes.
4. Serve hot, any leftovers can be stored in an airtight container in the refrigerator for 2-3 days.

Calories: 51 kcal; **Calcium:** 25 mg; **Phosphorus:** 17 mg; **Potassium:** 90 mg; **Protein:** 1 g; **Sodium:** 1 mg; **Carbohydrates:** 6 g; **Fluid:** 56 ml

Recipe modified from Pati Jinich (2023)

Roasted Mexican Zucchini
Makes: 6 servings (1 serving= ½ cup)

Ingredients

3 medium zucchinis (½ in cubes)
2 Tbsp olive oil
½ tsp chili powder
½ tsp garlic powder
⅛ tsp cayenne
⅛ tsp black pepper
1 lime
2 Tbsp cilantro

Instructions

1. Preheat the oven to 425 degrees F and line a rimmed baking sheet with parchment paper.
2. In a medium bowl, mix the cut zucchini, olive oil (2 tablespoons), chili powder (1/2 teaspoon), garlic powder (1/2 teaspoon), cayenne pepper (1/8 teaspoon), and pepper until well coated.
3. Spread evenly on a baking sheet and roast for 25 minutes, or until the zucchini is browned.
4. Serve sprinkled with lime juice and chopped fresh cilantro.

Calories: 55 kcal; **Calcium:** 16 mg; **Phosphorus:** 37 mg; **Potassium:** 250 mg; **Protein:** 1 g; **Sodium:** 13 mg; **Carbohydrates:** 4 g; **Fluid:** 91ml
Recipe modified from Lindeman (2016)

Refried Beans

Makes: 12 servings (1 serving= ½ cup)

Ingredients

16 oz dried Pinto beans
8 cups water
¼ cup chopped onion
2 cloves garlic
2 bay leaves

Instructions

1. Put the beans in a strainer and rinse well under running water. While rinsing, pick out any rocks, pebbles and dirt and discard.
2. Put the rinsed beans in a pot along with all the other ingredients and bring to a boil.
3. Reduce heat to low.
4. Cover and simmer for about 2 hours or until beans have softened.
5. Remove from heat and mash the beans until the desired consistency of refried beans.
6. Serve hot, any leftovers can be stored in an airtight container in the refrigerator for 2-3 days.

Calories: 34 kcal; **Calcium:** 15 mg; **Phosphorus:** 34 mg; **Potassium:** 105 mg; **Protein:** 2 g; **Sodium:** 4 mg; **Carbohydrates:** 6 g; **Fluid:** 111 ml
Recipe modified from Carissa (2021)

Dessert

Empanada

Makes: 16 servings (1 serving=1 empanada)

Ingredients

2 ¾ cups all-purpose flour
½ Tbsp granulated sugar
⅛ tsp salt
¾ cup unsalted butter chilled and cubed
½ cup cold water
1 can (20 oz) no sugar added apple pie filling cut coarsely

Instructions

1. In a food processor fitted with a dough blade or a large bowl, combine the flour, sugar, and salt.
2. Pulse in the cubed butter or cut in using a pastry blender or your fingers to create a crumbly texture with no pieces larger than a pea.
3. Mix in enough water just to bring together the pieces and create a smooth dough. Form the dough into a disc, wrap in plastic, and refrigerate while you prepare the filling.
1. On a lightly floured surface, roll the dough into a thin sheet. Use a 3 1/2 inch circular cutter to cut out 16 circles of dough.
2. Place 1-1 1/2 tablespoons of the apple filling into the center of one of the circles. Fold the dough over the filling and press the edges together to seal.
3. Seal completely using the tines of a fork or create a rope appearance by pulling the edge out slightly and folding over, starting from one end and finishing at the opposite side. Repeat with remaining empanadas.
4. Place the empanadas two inches apart on a parchment-lined baking sheet. Refrigerate for 20 minutes.
5. Preheat the oven to 375˚F. In a small bowl, beat together the egg and water. Brush the egg wash over the tops of the chilled empanadas.
6. Bake in a preheated oven until the empanadas are golden brown, 20-25 minutes. Allow you to rest for 5 minutes before serving.
7. Serve at room temperature, any leftovers can be stored in a container for 1-2 days.

Calories: 173 kcal **Calcium:** 7 mg **Phosphorus:** 30 mg **Potassium:** 29 mg **Protein:** 3 g **Sodium:** 7 mg; **Carbohydrates:** 20 g **Fluid:** 13 ml; **Carb Exchange:** 1

Recipe modified from Isabel Eats (201

Pan de Polvo

Makes: 36 servings (1 serving=2 cookies)

Ingredients

½ stick cinnamon	½ cup butter
½ anise star	¼ cup sugar
½ cup water	¼ tsp salt
1 ¾ cup all-purpose flour	½ tsp of artificial sweetener such as Splenda
1 ½ Tbsp cornstarch	¾ tsp ground cinnamon

Instructions

1. Add water, the cinnamon stick, and anise star in a small saucepan.
2. Bring to a boil, then reduce the heat to low and simmer for 3 minutes.
3. Allow the cinnamon tea to cool completely.
4. Place flour, cornstarch, butter, sugar, and salt in a large mixing bowl.
5. Mix with the flat beater attached to the mixer (or with your hands) until the ingredients are loosely combined.
6. Add ½ cup of the cinnamon tea and knead until everything is combined into a dough.
7. Transfer the dough to a floured surface and form a ball. Wrap it in plastic film and place it in the fridge to chill for 20 minutes.
8. Preheat the oven to 360°F/180°C and line a large baking sheet with parchment paper.
9. Lightly flour a work surface. Roll the dough ball into a sheet about ¼ inch thick.
10. Cut the dough with a 1 ½ inch round cookie cutter and then transfer the raw cookies onto the prepared baking sheet.
11. Gather the dough scraps, roll them, and cut out more cookies until all of the dough is used.
12. Bake for between 18 and 20 minutes or until the cookies are slightly golden and puffed.
13. Carefully, remove the cookies with a spatula and coat them on all sides with the cinnamon-sweetener mixture.
14. Place cookies on a wire rack and allow them to cool completely.
15. Serve once cool, any leftovers can be stored in a container for 2-3 days.

Calories: 52 kcal; **Calcium:** 3 mg; **Phosphorus:** 7 mg; **Potassium:** 8 mg; **Protein:** 1 g; **Sodium:** 17 mg; **Carbohydrates:** 7 g; **Fluid:** 3 ml

Recipe modified from Avalos (2022)

Bunuelos

Makes: 16 servings (1 serving = 1)

Ingredients

2 cups all purpose flour
1 ½ tsp Phosphorus-Free Baking Powder
½ tsp salt
¾ cup warm water
4 Tbsp vegetable oil (divided)
1 Tbsp cinnamon
¼ tsp of artificial sweetener such as Splenda

Instructions

1. Make the dough by adding all-purpose flour, baking powder, and salt into a large bowl. Mix together until combined. Add warm water and 3 tablespoons of oil.
2. Mix together with a fork until the dough comes together into a ball.
3. Transfer the dough onto a clean work surface and knead the dough for 8 to 10 minutes, until the dough is smooth and elastic. Roll the dough into a ball, place it in a bowl, cover it with a kitchen towel, and let it rest for 30 minutes.
4. Roll out the dough by dividing it into 8 pieces and rolling each piece into a ball.
5. On a lightly floured surface, use a floured rolling pin to roll out each ball into an 8 to 10-inch circle.
6. Lightly brush circles with remaining oil and cook in an air fryer at 350 degrees for 5 mins or till puffed and golden brown.
7. sprinkle cinnamon sweetener mixture onto hot bunelos.
8. Serve at room temperature, any leftovers can be stored in a container for 1-2 days.

Calories: 96 kcal; **Calcium:** 8 mg; **Phosphorus:** 17 mg; **Potassium:** 28 mg; **Protein:** 2 g; **Sodium:** 86 mg; **Carbohydrates:** 12 g; **Fluid:** 13 ml
Recipe modified from Isabel (2018)

Rice Pudding

Makes: 7 servings (1 serving = 1/3 cup)

Ingredients

1 can (13.5 oz) coconut milk
¼ tsp nutmeg
1 tsp cinnamon (divided into ½ tsp each)
½ packet of artificial sweeteners such as Splenda
2 cups cooked white rice (a great way to use up the leftover rice)
1 tsp vanilla extract

Instructions

1. Bring coconut milk, nutmeg, ½ tsp cinnamon, and sweetener to a boil.
2. Add cooked rice - reduce heat, let simmer and let cook for 10 mins until liquid is mostly absorbed.
3. Take rice pudding off the stove, add vanilla extract when cooled, and remaining ½ tsp.
4. Serve warm or chilled, any leftovers can be stored in an airtight container in the refrigerator for 2-3 days.

Calories: 72 kcal; **Calcium:** 38 mg; **Phosphorus:** 23 mg; **Potassium:** 28 mg; **Protein:** 1 g; **Sodium:** 3 mg; **Carbohydrates:** 14 g; **Fluid:** 84 ml; **Carb Exchange:** 1

Recipe modified from Morgan lynzi (2023)

Cream Cheese Thumbprint Cookies
Makes: 24 servings (1 serving = 3 cookies)

Ingredients

1 cup unsalted butter, softened
8 oz cream cheese, softened
2 cups all-purpose flour
2 Tbsp graduated sugar
2 tsp baking powder
1 tsp vanilla extract
½ cup strawberry jam
2 Tbsp powdered sugar

Instructions

1. Set butter and cream cheese to soften.
2. In a medium bowl, combine flour, sugar and baking powder.
3. In a large bowl, combine butter, cream cheese, and vanilla, beat until light and fluffy.
4. Add dry ingredients to the cream cheese mixture and mix well to form dough, wrap the dough in a plastic film and chill for 2 hours.
5. Preheat oven to 350 F roll the chilled dough to ¼ inch thickness on a lightly floured surface,
6. Roll the chilled dough using a rolling pin into a 1-½ inch fluted or round cutter.
7. Place cookies 2 inches apart on an ungreased baking sheet. Press the center of each cookie slightly with your thumbs and fill the center with ¼ tsp jam.
8. Bake for 10-12 minutes.
9. Remove from the baking sheet and place on a wire rack to cool completely.
10. Sift powdered sugar over the top of the cookie, if desired.
11. Serve at room temperature, any leftovers can be stored in a container for 1-2 days.

Calories: 16mg; **Carbohydrates**:8 mg; **Phosphorus:** 31 mg; **Potassium:** 33 mg; **Protein:** 2 g; **Sodium:** 74 mg; **Carbohydrates:** 15 g; **Carb Exchange:** 1
Retrieved from Jackie (2024)

Classic Honey Flan
Makes: 4 servings (1 serving = ½ cup)

Ingredients

2 warm water
1 large egg
½ cup egg substitute
1 ½ cups milk (skim)
¼ cup plus 3 tbsp honey, divided
½ tsp lemon zest, finely grated
1 tsp vanilla
½ tsp ground cinnamon

Instructions

1. Preheat the oven to 325°F.
2. Spray 4 ovenproof custard cups with nonstick cooking spray.
3. In a cake baking dish add the water and place in the preheated oven.
4. Meanwhile, in a mixing bowl combine the whole egg, egg substitute, milk, ¼ cup plus 1 tablespoon of honey, grated lemon zest, and vanilla. Beat until mixed, but not foamy.
5. In a separate bowl, combine 2 Tbsp of honey and cinnamon, and mix to blend well.
6. Place the custard cups in a baking dish that is large enough to accommodate them and ensure that the water only reaches half of the custard cups.
7. Spoon ½ tablespoon of honey and cinnamon mixture into each custard cup. Divide the egg mixture equally into each custard cup.
8. Place the baking dish on the middle rack in the oven and pour the boiling water into the baking dish to a depth of 1 inch, taking care not to let the water splash into the custard cups. Bake for 45 minutes or until a knife blade comes out clean when inserted.
9. Serve warm or chilled. Before serving, loosen the edges of the custard cups with a knife or spatula and invert onto individual dessert plates.
10. Any leftovers can be stored in an airtight container in the refrigerator for 2-3 days.

Calories: 199 kcal; **Carbohydrates:** 40 g; **Protein:** 8 g; **Sodium:** 114 mg; **Calcium:** 134 mg; **Phosphorus:** 120 mg; **Potassium:** 235 mg; **Carb Exchange:** 2
Retrieved from Kidney Kitchen (2023)

(Abigail, 2023)

Hibiscus Tea

Makes: 12 servings (1 serving = 1 cup)

Ingredients

1 cup dry hibiscus flower
12 cups water
3 packets of artificial sweeteners such as Splenda

Instructions

1. In a pot boil 8 cups of water.
2. Once boiled add hibiscus flowers to water and let it steep for 5 mins or to preferred strength.
3. When tea is done steeping, strain flowers, add 4 cups water, and sweetener (optional).
4. Serve warm or chilled, any leftovers can be stored in a container in the refrigerator for 2-3 days.

Calories: 63 kcal; **Calcium:** 29 mg; **Phosphorus:** 0 mg; **Potassium:** 22 mg; **Protein:** 0.22 g; **Sodium:** 13 mg; **Carbohydrates:** 15 g; **Fluid:** 221 ml; **Carb Exchange:** 1

Cucumber Agua Fresca
Makes: 9 servings (1 serving =1/2 cup)

Ingredients

3 lager cucumber (peeled and cut into ½ inch slices)
2 limes (juiced)
2 packets of artificial sweeteners such as Splenda
4 cups cold water

Instructions

1. Add cucumber slices, sweetener, and water into a large blender and blend until smooth.
2. Using a fine-meshed strainer, collect the liquid into a pitcher to remove any seeds and pulp.
3. Stir in the lime juice, taste, and add more sweetener, if preferred.
4. Serve immediately over ice or chill in the refrigerator for up to 3 days.

Calories: 20 kcal; **Calcium:** 23 mg; **Phosphorus:** 28 mg; **Potassium:** 175 mg; **Protein:** 1 g; **Sodium:** 7 mg; **Carbohydrates:** 5 g; **Fluid:** 233 ml
Recipe modified from Isabel Eats (2024)

Horchata

Makes: 6 servings (1 serving = 1 cup)

Ingredients

½ cup white rice (uncooked)
1 cup water
8 oz coconut milk
2 cinnamon sticks
¾ tsp cinnamon ground
⅛ tsp salt
1 ½ tsp vanilla extract
1 packet of artificial sweeteners such as Splenda
4 cups almond milk (plain)

Instructions

1. In a medium-sized pot, combine the rice, water, coconut milk, cinnamon sticks, cinnamon, and salt. Bring to a boil.
2. Reduce the heat to a low simmer, cover, and allow it to cook for 25 minutes. Remove from heat and let the mixture cool to room temperature.
3. Remove the cinnamon sticks and add the rice mixture to a high-powered blender along with the remaining ingredients.
4. Blend on high for 1 to 3 minutes until very smooth.
5. If you prefer a smooth consistency, pour it through a mesh sieve/ fine mesh strainer into a large pitcher, or leave it as-is. Chill until ready to serve.
6. Any leftovers can be stored in a container in the refrigerator for 1-2 days.

Calories: 142 kcal; **Calcium:** 278 mg; **Phosphorus:** 69 mg; **Potassium:** 92 mg; **Protein:** 2 g; **Sodium:** 131 mg; **Carbohydrates:** 15 g; **Fluid:** 179 ml; **Carb Exchange:** 1

Recipe modified from Bautista (2021)

Mango Smoothie

Makes: 1.2 servings (1 serving = 1 cup)

Ingredients

½ ripe mango or frozen
¼ lime (juiced)
¼ tsp of artificial sweetener such as Splenda
½ cup cold water

Instructions

1. Use frozen mango or fresh mango that has been cut into 1/2-inch cubes and frozen overnight.
2. Once the mango cubes are frozen put them in a blender, along with lime Sweetener, and water, and blend till smooth or desired consistency,
3. Serve chilled.

Calories: 84 kcal; **Calcium:** 19 mg; **Phosphorus:** 20 mg; **Potassium:** 236 mg; **Protein:** 1 g; **Sodium:** 4 mg; **Carbohydrates:** 21 g; **Fluid:** 216 ml; **Carb Exchange:** 1

Recipe modified from Crowded Kitchen (2023)

Watermelon Agua Fresca
Makes: 5 servings (1 serving = 1 cup)

Ingredients

4 cups watermelon (cut into ½ inch cubes)
3 cups cold water
1 lime (juiced)
1 packet of artificial sweeteners such as Splenda

Instructions

1. Blend together the watermelon cubes with 1½ cups of the water, the lime juice, and the sweetener at high speed until smooth.
2. Strain through a medium strainer into a large pitcher or bowl.
3. Stir in the remaining water.
4. Refrigerate for 1 hour or longer.
5. Serve chilled, any leftovers can be stored in a container in the refrigerator for 1-2 days.

Calories: 28 kcal; **Calcium:** 12 mg; **Phosphorus:** 10 mg; **Potassium:** 103 mg; **Protein:** 1 g; **Sodium:** 7 mg; **Carbohydrates:** 7 g; **Fluid:** 232 ml
Recipe modified from Rose (2018)

APPENDIX B

SHOPPING LIST

Fruits

A serving size is ½ cup or 1 small piece unless specified.

Limit to 1 serving	Avoid
Apple Pears Applesauce Pineapple Apricots (2) Plums Blackberries Prunes (2) Blueberries Raspberries Boysenberries Rhubarb Cherries Strawberries (5) Coconut Tangerine (1) Cranberries Watermelon (1 cup) Cranberry Sauce Figs (2) Fruit Cocktail Grapefruit (½)* Grapes Kumquats Lemon Lime Mandarin Oranges Mango Papaya **Juices** • Apple • Apricot Nectar • Cranberry • Cranapple • Grape • Grapefruit* • Peach Nectar • Pear Nectar	Bananas Cantaloupe Casaba Melon Dates Dried Fruits Guava Honeydew Melon Kiwi Nectarine Oranges Persimmons **Juices** Orange Prune Coconut Water

• Pineapple Peaches	

Vegetables

A serving size is ½ cup unless specified.

Limit to 1 serving	Limit/Avoid
Alfalfa Sprouts Mushrooms* Asparagus Mustard Greens Bean Sprouts Okra Beets (canned) Onion Broccoli Peas* Brussels Sprouts Peppers Cabbage Radishes Carrot Summer Squash Cauliflower Spaghetti Squash Celery Spinach (raw) Collards Snow Peas Corn* Turnips Cucumber Turnip Greens Eggplant Wax Beans Endive Zucchini Green Beans Kale Potatoes (soaked or	Artichokes Avocado Beans Beets (fresh) Beet Greens Chard Chinese Cabbage Kohlrabi Nuts Peas (dried) Pickles Potatoes Pumpkin Rutabaga Sauerkraut Seeds Spinach (cooked) Succotash Sweet Potatoes Tomatoes Tomato Sauce or Paste Winter Squash Yams **Juices** • Carrot • Tomato • Vegetable • V-8 Juice Cocktail

Leeks double-boiled only) Lettuce	

Protein

A serving size is 3 oz unless specified.

Limit to 1 serving	Limit/Avoid
Bass Game Meat Rabbit Beef Haddock Salmon Chicken Halibut Tilapia Codfish Lamb Tuna Eggs (1) Perch Turkey Egg subs Pollock Veal Fish Pork **Vegetarian** Dried Beans Peanut Butter Dried Peas Pumpkin Seeds Greek Yogurt Sunflower Seeds Nuts Tofu	Bacon Bologna Corned beef Dried beef Enhanced Meats Frozen Dinners Frozen Pot Pies Ham Hot Dog Liver Pastrami Salami Sardines Sausage Smoked Salmon

Fat

A serving is 1 Tbsp unless specified.

Limit to 1 serving	Limit/Avoid
Butter Cream Cheese (1 tbsp) Low Sodium Salad Dressing (2 tbsp) Margarine Mayonnaise Oil Shortening	Bacon Canned Gravy Gravy Mixes Nuts Olives Regular Salad Dressing Salad Dressing Mixes Salt Pork Seeds

Starches

A serving is shown below unless specified.

Limit to 1 serving	Limit/Avoid
Bread Bagel (1) Dinner Roll (1) English Muffins (1) French (1 slice) Italian (1 slice) Muffins small (1) Pumpernickel Rye (1 slice) Sourdough (1 slice) Tortilla (6") Vienna (1 slice) Wheat (1 slice) White (1 slice) Whole grain (1 slice) Whole wheat (1 slice) **Pasta (1 Cup)** Macaroni Noodles **Snacks** Crackers (unsalted) Graham Crackers (5 crackers)	Amaranth Angel Food Cake Bran Bread Biscuits **Cereals Containing:** Bran Granola Nuts Wheat Germ Cornbread **Desserts Containing:** Chocolate Cream Filling Nuts Instant Cooked Cereals Millet Pancakes Quinoa Spelt Trail Mix Waffles

Matzo (1) Melba Toast (1) Popcorn (unsalted) (1 cup) Pretzels (unsalted) (1 cup) Rice Cakes (1) Tortilla Chips (unsalted) (12 Chips) **Cereal (1 Cup)** Cold Cereals (except those on the limit/avoid list) Cream of Rice® Cream of Wheat® Grits Oatmeal **Sweets (1/12 of the cake)** Cake (yellow, white) Coffee Cake Crispy Rice Treat Donut (raised, cake) (1) Fruit Pies Shortbread Cookies (4 small) Sugar Cookie (1) Toaster Pastry Buckwheat Vanilla Wafers **Grains (½ Cup)** Barley Bulgur Couscous Rice	

Dairy

Serving size is ½ cup or 4 oz unless specified.

Limit to 1 serving	Limit/Avoid
Cheese (1 ounce) Brie Cream Cheese Goat (soft) Ricotta	Cheese American Pimento Processed Cheese Products Romano

Cottage Cheese (1/4 cup) Half & Half Heavy Whipping Cream Ice Cream/Ice Milk (1/2 cup) Light Cream Milk (1/2 cup) Skim 1% 2% Whole Sherbet Sour Cream Yogurt (1/2 cup) Fruit-Flavored Greek Plain	Velveeta® Creamer (with phosphorus additives) Custard Frozen Yogurt Milk Buttermilk Calcium-Fortified Sweetened, Condensed Evaporated Chocolate Malted Pudding

Fluids

1 cup = 8 oz = 240 milliliters

Limit to 1 serving	Limit/Avoid
Allowed Juices (see fruits) Capri Sun Coffee Crystal Light (without calcium) Fruit Ice Fruit Punch Gelatin Ice/Ice Cream Kool-Aid (except powder) Lemonade Limeade Popsicles Root Beer (without phosphates) Soda Citrus-Flavored Soda Club Soda or Seltzer Cream Soda Ginger Ale Grape Soda	Beer Coffee Drinks (made with milk) Cappuccinos Lattes Hawaiian Punch Hot Chocolate Kool-Aid (powdered) Soda Coca Cola (including diet) Fanta Hires Root Beer Mountain Dew Code Red Pepper-Type (including diet) Pepsi (including diet) Soup Bouillon Broth Canned Packaged Soup Mixes

Lemon-Lime Soda Orange Soda Tonic Water Soup (low sodium) Teas Made from Tea Bags Instant, Powdered Tea	Sports Drinks Tang Teas with Added Phosphorus Tropicana Fruit Drinks Wine (red, white)

Herbs

A serving is 1 tsp unless specified.

Limit to 1 serving	Limit/Avoid
Allspice Lemongrass Basil Mustard Bay Leaf (prepared, 1 tsp) Caraway Seeds Mustard (dry) Cardamom Mustard Seeds Celery Seed Nutmeg Chili Powder Onion Powder Chives Onion Flakes Cilantro Oregano Cinnamon Paprika Cloves Pimientos Coriander Seed Poppy Seeds Cumin Parsley	Celery Salt Commercial BBQ Sauce Garlic Salt Molasses Morton Salt Substitute No Salt Nu-Salt Onion Salt Salt Seasoned Salt Seasoning Packets Soy Sauce Steak Sauce Teriyaki Sauce

Curry Pepper Dill Rosemary Extracts Saffron Fennel Sage Fenugreek Savory Ginger Sesame Seeds Garam Masala Tabasco Garlic Powder Tarragon Herb & Season Thyme Blends Turmeric Horseradish Root Vinegar Ketchup (1 tbsp) * Worcestershire Lemon Juice Sauce (1 tsp) * Lime Juice Liquid Smoke	

APPENDIX C

KIDNEY DISEASE OUTCOME QUALITY INITIATIVE GUIDELINES

KDOQI Clinical Practice Guideline for Nutrition in CKD: 2020 Update - American Journal of Kidney Diseases (ajkd.org

APPENDIX D

IRB APPROVAL LETTER

February 27, 2024

CSUSB INSTITUTIONAL REVIEW BOARD
Administrative/Exempt Review Determination
Status: Determined Exempt
IRB-FY2024-116

Prof. Dorothy Chen, Prof. Neal Malik, and Ms. Abigail Ellenich
CNS - Health Science
California State University, San Bernardino
5500 University Parkway
San Bernardino, California 92407

Dear Prof. Dorothy Chen, Prof. Neal Malik, and Ms. Abigail Ellenich:

Your application to use human subjects, titled “Mexican Cookbook for People on Dialysis Treatment” has been reviewed and determined exempt by the Chair of the Institutional Review Board (IRB) of CSU, San Bernardino. An exempt determination means your study had met the federal requirements for exempt status under 45 CFR 46.104. The CSUSB IRB has weighed the risks and benefits of the study to ensure the protection of human participants.
This approval notice does not replace any departmental or additional campus approvals which may be required including access to CSUSB campus facilities and affiliate campuses. Investigators should consider the changing COVID-19 circumstances based on current CDC, California Department of Public Health, and campus guidance and submit appropriate protocol modifications to the IRB as needed. CSUSB campus and affiliate health screenings should be completed for all campus human research-related activities. Human research activities conducted at off-campus sites should follow CDC, California Department of Public Health, and local guidance. See CSUSB's COVID-19 Prevention Plan for more information regarding campus requirements.
You are required to notify the IRB of the following as mandated by the Office of Human Research Protections (OHRP) federal regulations 45 CFR 46 and CSUSB IRB policy. You can find the modification, renewal, unanticipated/adverse event, study closure forms in the Cayuse IRB System. Some instructions are provided on the IRB Online Submission webpage toward the bottom of the page. Failure to notify the IRB of the following requirements may result in disciplinary action. The Cayuse IRB system will notify you when your protocol is due for renewal. Ensure you file your protocol renewal and continuing review form through the Cayuse IRB system to keep your protocol current and active unless you have completed your study.

Ensure your CITI Human Subjects Training is kept up-to-date and current throughout the study.
Submit a protocol modification (change) if any changes (no matter how minor) are proposed in your study for review and approval by the IRB before being implemented in your study.
Notify the IRB within 5 days of any unanticipated or adverse events are experienced by subjects during your research.
Submit a study closure through the Cayuse IRB submission system once your study has ended.

If you have any questions regarding the IRB decision, please contact Michael Gillespie, the Research Compliance Officer. Mr. Michael Gillespie can be reached by phone at (909) 537-7588, by fax at (909) 537-7028, or by email at mgillesp@csusb.edu. Please include your application approval number IRB-FY2024-116 in all correspondence. Any complaints you receive from participants and/or others related to your research may be directed to Mr. Gillespie.

Best of luck with your research.

Sincerely,

King-To Yeung

King-To Yeung, Ph.D., IRB Chair
CSUSB Institutional Review Board

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