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Dear CRIC Participants,

Happy Holidays and Happy New Year!

We hope your new year is off to a great start. The fifth and final Phase of CRIC is now in its second year of re-enrollment and follow-up, and we are delighted for your continued participation. As displayed in the figure to the left, as of January, 2025, 67.5% of participants from CRIC Phase 4 have re-enrolled in CRIC Phase 5. We are deeply appreciative of those CRIC participants who continue their activities in Phase 5. If you have not yet re-enrolled in Phase 5, please contact the staff at your CRIC center to schedule your study visit. The investigators and staff who have been with you every step of the way in CRIC would like to congratulate you on the milestone of completing your last study visits.

Over the past 20+ years, the information we have collected from CRIC study participants has resulted in publication of more than 350 scientific papers. We have summarized one of these important papers in this newsletter. Also, in this issue we are highlighting an article on loneliness and self-care, a section on new medications for persons with CKD, information about what we have learned in CRIC, a testimonial from a CRIC team member, a delicious recipe, and a fun game!

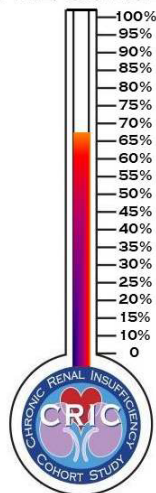
As always, we can't thank you enough for your continued participation. The success of the CRIC Study comes from your long-standing commitment to this important research. If you have any questions or comments about your participation in CRIC or about this newsletter, please contact the investigators and staff at your CRIC center.

Wishing you and your families a safe and happy new year.

Warm regards,  
Laura Dember, MD



### PHASE V CRIC RE-CONSENTED



## Adherence to Plant-Based Diets and Risk of CKD Progression and All-Cause Mortality: Findings From the Chronic Renal Insufficiency Cohort (CRIC) Study.

Am J Kidney Dis. 2024 May;83(5):624-635. doi: 10.1053/j.ajkd.2023.09.020. Epub 2023 Dec 14. PMID: 38103719; PMCID: PMC11034716.

Dietary factors play an important role in kidney disease onset and progression. Modifying one's diet can prevent disease from developing and slow the disease from worsening. In people without kidney disease, individuals who typically eat diets that are rich in plants have a slower decline in estimated glomerular filtration rate (eGFR), and are less likely to develop kidney disease, diabetes, hypertension, and cardiovascular disease over time. We have previously reported that, among people with kidney disease, higher adherence to healthy dietary patterns, such as the Dietary Approaches to Stop Hypertension (DASH) diet and Mediterranean diet, have a lower risk of chronic kidney disease progression and mortality. However, the impact of plant-based diets on clinical outcomes in patients with chronic kidney disease is not well known. In 2,539 CRIC participants, we examined the associations of adherence to 3 different types of plant-based diets with the risks of chronic kidney disease progression and all-cause mortality. The 3 plant-based diets were the: 1) overall plant-based diet, 2) healthy plant-based diet, and 3) unhealthy

plant-based diet. These plant-based diets were scored using information reported by CRIC study participants on how often they ate specific food items, including healthy plant foods (whole grains, fruits, vegetables, nuts, legumes, tea/coffee), unhealthy plant foods (fruit juice, sugar-sweetened beverages, refined grains, potatoes, sweets and desserts), and animal foods (animal fat, dairy, eggs, fish/seafood, poultry and red meat). We found that following an overall plant-based diet and a healthy plant-based diet was associated with a lower risk of all-cause mortality. Those in the highest tertile for adherence for the overall plant-based diet had a 26% lower risk of all-cause mortality compared to those with the lowest adherence. Similarly, those in the highest tertile of adherence to the healthy plant-based diet had a 21% lower risk of all-cause mortality compared to those in the lowest tertile. In contrast, following an unhealthy plant-based diet was associated with a higher risk of chronic kidney disease progression and all-cause mortality. For each 10 points higher on the unhealthy plant-based diet score, there was a 14% higher risk of chronic kidney

disease progression and 11% higher risk of all-cause mortality. In terms of specific food groups, higher intake of vegetables was associated with lower risk of mortality and higher intake of fiber was associated with lower risk of chronic kidney disease progression and all-cause mortality. Higher intake of sugar-sweetened beverages, dairy, and eggs was associated with higher risk of all-cause mortality. Among the subset of CRIC study participants without cardiovascular disease at baseline, per 10-point higher in the unhealthy plant-based diet score was associated with a 12% higher risk of incident cardiovascular disease. In the future, clinical trials should test the effect of a healthy plant-based diet on kidney disease outcomes and cardiovascular outcomes. In summary, these results suggest that the quality of plant-based diets may be important for chronic kidney disease management. Increasing dietary intake of high-quality, plant-based diets should be encouraged by promoting equitable access to healthy plant foods.

## What Have We Learned From CRIC

As we have previously discussed, your participation in this research study is important because observing people in real life over many years helps us to understand the long-term consequences of factors like improved diet and increased physical activity. You have helped us understand how CKD can progress over time, what other medical conditions develop in people with kidney disease, and what can happen with different treatments over time. In this issue of our newsletter, we want to share a few things we have learned about physical activity and healthy dietary patterns.

- We found that people who were more active were less likely to have serious health problems like heart attacks, strokes, or heart failure compared to

those who were less active. The recommended level of physical activity is 150 minutes per week, but there are benefits from lower amounts of activity as well. Remember to first review with your doctor what physical activities and amount of exercise are best for you and your overall health.

- Current dietary guidelines suggest that patients with CKD should limit certain nutrients like sodium, potassium, phosphorus, and protein. However, this can be hard for patients to follow and doesn't consider how these nutrients work together. Instead, focusing on overall healthy eating patterns can be a better way to improve diet.

- We found that eating a healthy diet was connected to a lower risk of CKD progression and death. These findings can help doctors suggest that patients with CKD follow a healthy diet rich in fruits, vegetables, nuts, beans, and whole grains, while eating less red meat, added sugars, and salt.

Want to learn more about what we have learned? Check out our website at [cristudy.org](http://cristudy.org). You can find more information in the section titled "For Participants" or our bibliography page for all of our published research.



## New Medications

National Kidney Foundation, Inc. (2023, March 21). *Game-changing medications for kidney disease and type 2 diabetes*. National Kidney Foundation. <https://www.kidney.org/news-stories/game-changing-medications-kidney-disease-and-type-2-diabetes>

In this section we provide information about new medications for people with kidney disease. The development of these medications is exciting, **but it is important to recognize that they are not right for everyone, and that your doctor can advise you about whether any of these is appropriate for you.**

In recent years, there have been multiple new developments in medications that have substantial benefits for patients with kidney disease. These medications not only help to protect the kidneys but improve other health outcomes as well. Two especially promising medications are SGLT2-Inhibitors, finerenone, and GLP-1 Receptor Agonists (RAs). These medications are prescribed for people with kidney disease whether or not they have type 2 diabetes. While SGLT2-Inhibitors, finerenone, and GLP-1 RAs work in different ways, they have all been producing groundbreaking improvements in kidney disease.

### SGLT2-Inhibitors (a.k.a. flozins)

- Brand names and generic names
  - Jardiance / empagliflozin
  - Farxiga / dapagliflozin
  - Invokana / canagliflozin
- Prescribed to
  - CKD patients with or without diabetes
- How they work

- Lower the amount of glucose and sodium in the blood
- Cause glucose and sodium to be excreted through the urine
- Reduce the amount of glucose and sodium the kidneys absorb
- Decrease the pressure in kidney blood vessels
- Benefits
  - Slow rate of kidney damage
  - Lower the risk of kidney failure
  - Reduce risk of hospitalization for heart failure and death
- Side Effects: diabetic ketoacidosis (rarely) and urinary tract infections

### Non-steroidal Mineralocorticoid Antagonist

- Brand name and generic name
  - Kerendia / finerenone
- Prescribed to
  - CKD patients with type 2 diabetes
- How it works
  - Prevents a steroid hormone, called aldosterone, from binding to mineralocorticoid receptors in the kidneys, heart, and blood vessels
  - Increases the amount of fluid and sodium excreted through the urine
  - Decreases inflammatory and fibrotic factors in the kidneys and heart
- Benefits
  - Slows rate of kidney damage
  - Helps prevent kidney fibrosis/scarring
  - Reduces the risk of hospitalization for heart failure

- Side Effect: Modest increase in serum potassium

### Glucagon-like Peptide-1 Receptor Agonists (GLP-1 RAs)

- Brand names and generic names
  - Ozempic - semaglutide
  - Trulicity - dulaglutide
  - Mounjaro - tiraglutide
- Prescribed to
  - CKD patients with type 2 diabetes
  - Especially useful in those with a history of coronary artery disease
- How they work
  - Help the body to produce insulin
- Benefits
  - Decrease blood glucose
  - Lower blood pressure, cholesterol, and albuminuria
  - Slow rate of kidney damage
  - Reduce risk of cardiovascular events
- Side Effects: Weight loss and some gastrointestinal side effects

While SGLT2-Inhibitors, finerenone, and GLP-1 RAs might sound enticing, they are not right for everyone. Your doctor will be able to give you a better idea of whether any of the medications could benefit you, and can explain side effects that may come along with their use. Your doctor will also be able to shed some light on the estimated costs of these medications, if they will be covered by health insurance, and if there is any financial assistance available to help with uncovered costs.

## Loneliness and Self Care

<https://www.davita.com/education/ckd-life/support/managing-feelings-of-loneliness-people-kidney-disease> and <https://www.kidney.org/news-stories/8-self-care-ideas-people-kidney-disease>

Many situations can trigger loneliness. It's common for people to be lonely from time to time. Fortunately, there are things we can do to stay positive and care for our mental health. Here are some Self-Health Care Ideas:

- Make sure you are sleeping well. Lack of sleep can present a big problem in your daily life.
- Try to move a little every day. Take a gentle walk outside, stretch or even exercise if you feel up to it.
- Do something fun: 1) listen to some favorite music and sing out loud 2) try a free online yoga video 3) laugh everyday 4) watch comedies or read funny stories
- Stay connected to family and friends: Try calling a loved one once a day. Even

the smallest conversation can help us feel connected.

- Find a new community group, hobby or class (in person or online).
- Organize old photos, videos or keepsakes
- Spend time with your partner, friends and family: 1) Plan a BBQ, picnic or dinner party 2) play a round of mini golf or go bowling 3) Go to a museum or art gallery
- Remember your medications. Taking your medications as directed is crucial for maintaining your physical and mental health.
- Take a break from the news. While being an informed citizen is important, the news can leave us feeling down and anxious.

- Perform random acts of kindness, such as writing a letter to a neighbor, friend or loved one.
- Spend time outside in a park or a nature setting.
- Create a plan to increase your physical activity. Start small by picking one activity you enjoy and do it for a few minutes every day. You can also break a thirty-minute workout into 3 10-minute sessions throughout the day (dancing in your living room, hiking, swimming or just walking around the block).

If you're feeling lonely, you're not alone. Experts say recognition and awareness are important first steps to reducing feelings of loneliness.

## Eggplant Provencal <https://ncoa.org/article/debunking-the-myths-of-older-adult-falls>

### INGREDIENTS

- 1 medium eggplant
- 2 tablespoons olive oil
- ¼ cup onion, chopped
- ½ cup red pepper, diced
- ½ cup yellow pepper, diced
- ¼ cup water
- ½ lb extra lean ground beef
- 2 garlic cloved, chopped
- 2 teaspoons paprika
- 1 tablespoon wine vinegar
- 1 teaspoon dried oregano
- ¼ cup cheddar cheese, grated
- ½ cup white rice, dry



### Nutrition Facts *per serving*

Calories	333Kcal
Carbohydrates	24 g
Protein	16 g
Dietary Fiber	2 g
Sodium	88 mg
Potassium	367 mg
Phosphorus	190 mg

### PREPARATION

1. Preheat the oven to 400°F. Line a baking tray with parchment paper.
2. Cut the eggplant in half lengthwise. Rub 1 tablespoon of olive oil on the cut surface of each half. Place the eggplant halves, cut side down, on the tray and bake for approximately 35 minutes. When done, the inside of the eggplant should be soft while the outside should be able to hold its shape.
3. In a non-stick pan, heat the olive oil over medium heat. Add the onion and the peppers and fry for 5 minutes, stirring occasionally. Add the water and continue cooking until the liquid evaporates. Transfer to a plate and set aside.
4. In the same pan, add the ground beef, garlic and paprika and fry until the meat is browned. Add the vinegar, oregano, onion and peppers from step 3. Combine all and remove the pan from the heat.
5. Cook the rice following the instructions on the package.
6. Remove the eggplant halves from the oven. Carefully remove the flesh with a spoon while leaving the skin and a thin layer of flesh on the inside intact so the eggplant halves can hold the stuffing.
7. Add ¼ cup of eggplant flesh to the stuffing mixture from step 4 and stir to combine. Discard the remaining eggplant flesh.
8. Divide the stuffing between the two eggplant halves and sprinkle with grated cheese. Return the eggplant halves to the oven for a few minutes until the cheese is melted.
9. Cut the eggplant halves into 4 portions and serve with the cooked rice.

### Hamburger Meat Substitutes:

Consuming the right amount of protein with chronic kidney disease is important to maintaining good health.

Many people with reduced kidney function also have heart problems and should follow a heart-healthy diet, which is low in fat and cholesterol. Working with a registered dietitian can help determine your specific protein needs and the best choices of protein for your health.

If you are supposed to follow a heart-healthy diet, use extra lean ground beef. You may also consider other substitutions.

Plant-based protein sources include ground tofu or vegetable burgers. Cumin, garlic and black pepper can add excellent flavor to these choices. Read product labels and select those lowest in sodium and potassium.

Ground chicken, turkey and pork are also good protein options. Basil, garlic, sage, thyme and dried savory are just a few spices for adding low-sodium and low potassium flavor. Choose fresh ground meat without added salt and low in fat as a healthy option.

