KIDNEY CARE

FALL 2017

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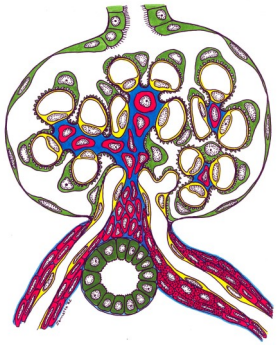
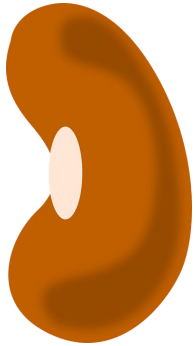


Health care professionals and patients working together to learn more about diseases that affect the filters (glomeruli) in the kidney.

I NEVER KNEW A KIDNEY WAS MORE THAN JUST A BEAN

By Debbie Sorensen



When I was a child and heard the word kidney, I always thought of the bean. You know the one I mean. The kind they put in chili or a bean salad. I never once thought I'd learn that kidneys were so much more!

When I was diagnosed with Chronic Kidney Disease, I was clueless as to what this really meant. My doctor sent me to a nephrologist (a what?) to have my kidneys evaluated. At first, they were working fairly well. My amazing nephrologist gave me great advice about what would help me keep my kidneys working at their best. I wish I had known right then the first of the important lessons I've learned: "Listen to your doctor!" I didn't follow all the advice and I didn't know what the real consequences would be. I soon learned many more valuable lessons I wish I'd known earlier.

I wish I'd known that a diagnosis of Kidney Disease does not mean you have been handed a death sentence. It was, and is, a disease that you can live with for years… and you can feel good and stay active. I wish I'd become more educated earlier about options and treatments. I wish I'd known that I could and should reach out to find more information. There are great organizations that provide valuable information.

I wish I'd known that trying to keep my family in the dark and not sharing everything that my doctors told me would only hurt me. My family members are my greatest supporters, and when I opened up after several years, they began to help me and cheer me on even at the most difficult times. I wish I'd been more open with my best friends. There were days I was feeling really sick, but never said anything or asked for help. All that this did was make them wonder why I was so aloof and didn't want to spend time with them doing the things we enjoyed. Once I opened up, I had a new group of supporters. I wish I'd known how many friends would give me their help and their hearts.

I also wish I'd known that being diagnosed would cause me to become depressed, and that realizing I was depressed would spur me to get help. The crazy thing was that once I had to go on Dialysis, the depression went away. I hadn't realized that the possibility of needing that treatment had affected me so deeply. The most amazing part is that Dialysis isn't a horrible thing…I certainly would have liked to have known that!

I also wish that I had known how strong I was emotionally and mentally. I wish I would have known that I would still be able to do physical activities and I wasn't going to be an invalid. I was scared of becoming "invalid" to other people; I wanted to continue to be an important part of their life. What I didn't know was that I would be able to become a patient advocate who helps others who are struggling like I did. I didn't know that I would meet a new group of friends who understood exactly what I was going through because so were they! Who knew that there were so many amazing people that would become important in my life. Talking to others who have the same disease helps a person to understand that they are not alone.

Continued on Page 2….

Remember to ask, "Hey Doc, how are my kidneys?"

After taking some time off, the Kidney Education Outreach Program (KEOP) is up and running again at the UNC Kidney Center. The mission of the KEOP is to reduce the burden of kidney disease on patients, families and the community in North Carolina.

Over the past few months, we have visited a few areas in the eastern part of the state to do outreach and education about chronic kidney disease. We have also conducted screenings for kidney disease, and will follow-up with participants in a few months to learn more about the impact of our visit. As we fine tune our program, we aim to achieve our goals specific to patients and their families, healthcare providers, and communities as a whole.

<u>For Patients and Families</u>

- Increase awareness and understanding about kidney disease and organ transplantation.
- Conduct targeted screenings to test for risk and presence of Kidney Disease.
- Overcome barriers and enhance facilitators for preventing and managing Kidney Disease.

<u>For Healthcare Providers</u>

- Increase current knowledge and understanding of Kidney Disease among health care providers.
- Be a resource to facilitate the care of patients with Kidney Disease.

<u>For Communities</u>

- Engage and empower communities to create efficient mechanisms and practices for preventing and managing Kidney Disease.
- Help communities develop community-based, sustainable programs to curb the burden of Kidney Disease.

Remember to ask your doctor, "Hey doc, how are my kidneys?" and tell your friends and family to do the same. Early detection is key! This is especially important for those with diabetes, high blood pressure, heart disease, and those with a family history of kidney disease. For more information about this program, please contact:

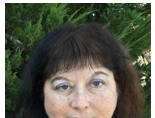
Jill Powell ,Program Coordinator
919-445-2618,
Jill_powell@med.unc.edu

I *Never Knew...(cont).*

I also wish I'd known what marvelous health professionals would come into my life and how caring they would be. Doctors, nurses, technicians, dieticians, social workers and so many others who work to help me manage my lab results, my diet, my weight and who answer my questions. I wish I'd known that I will never be alone.

Looking back over the years, what I wish the most was that I had not spent time being scared. I wish I had focused more on staying as healthy as I could, planning for the future, finding an organization that would provide me with information, and being more honest with myself and others about what I was facing. I wish I could have educated myself and others more fully, but that came with time.

So, I've learned that kidneys are a lot more than beans, and I am grateful to so many people who have helped educate me so that I can educate others.



Debbie Sorensen has been a teacher for 30 years. Debbie has been married to Eric Sorensen for 25 years and is the proud mother of three sons. She has had kidney disease for ten years and has received dialysis the past year at Fresenius Dialysis Center in Anaheim.

Thanks to your generous participation in our patient registries, we are able to conduct a wide range of studies to help further our understanding of glomerular (kidney) diseases. See below for some of our most recent publications. To read more, you can look up these articles on www.pubmed.com.

The clinical course of patients with Fibrillary Glomerulonephritis: UNC investigators reviewed the charts of 42 individuals diagnosed with fibrillary glomerulonephritis (GN) to better understand this very rare glomerular disease that frequently progresses to end-stage renal disease (ESRD). They found that in the UNC patient population, the disease was often associated with a secondary disease, such as autoimmune disorders, cancer, or infection. A high proportion of African-Americans were diagnosed with the hepatitis C virus, suggesting that the two diseases may be related, although the mechanism is not understood. This study highlighted the importance of screening and treating secondary diseases in Fibrillary GN patients.

Publication details: Payan Schober F, Jobson MA, Poulton CJ, Singh HK, Nickeleit V, Falk RJ, Jennette JC, Nachman PH, Pendergraft III WF . Clinical Features and Outcomes of a Racially Diverse Population with Fibrillary Glomerulonephritis. Am J Nephrol. 2017;45(3):248-256.

Collapsing FSGS and kidney outcomes : It is thought that patients diagnosed with collapsing FSGS typically reach end stage kidney disease (requiring dialysis or transplant) more often than patients with other types of FSGS. Because of this, doctors may not treat collapsing FSGS as aggressively. Chart review was performed on 187 patients to compare outcomes of patients with collapsing FSGS vs. all other FSGS. While patients with collapsing FSGS usually had more often severe kidney damage at diagnosis, their risk for reaching ESKD was similar to the other types of FSGS when treated early in disease history. This study highlights the importance of treating collapsing FSGS aggressively just like the other forms of the disease.

Publication Details: Laurin LP, Gasim AM, Derebail VK, McGregor JG, Kidd JM, Hogan SL, Poulton CJ, Detwiler RK, Jennette JC, Falk RJ, Nachman PH . Renal Survival in Patients with Collapsing Compared with Not Otherwise Specified FSGS. Clin J Am Soc Nephrol. 2016 Oct 7;11(10):1752-1759.

DNA Methylation and Disease Remission in ANCA Patients: Blood samples from registry participants with ANCA vasculitis and healthy controls were used for this study. Therapy to induce remission of ANCA-associated vasculitis is complicated by relapses caused by environmental triggers. Such environmental triggers have been associated with changes in the epigenome. The epigenome is a mix of chemical compounds that attach to DNA and can turn genes on and off; it is thought that environmental triggers may turn off or "silence" specific genes. DNA methylation is a type of epigenetic modification that can lead to gene silencing. This study explored the link between DNA methylation and expression of the autoantigen genes, myeloperoxidase (MPO) and proteinase 3 (PRTN3), and disease status in ANCA-associated vasculitis. Patients with active disease demonstrated less methylation of MPO and PRTN3 and increased expression of the autoantigen genes; in remission, DNA methylation generally increased. Following patients with ANCA-associated vasculitis over time revealed this cohort could be divided into two groups. In patients with increased DNA methylation, MPO and PRTN3 expression correlated with DNA methylation. Patients with increased DNA methylation at the PRTN3 gene promoter had a significantly greater probability of a relapse-free period, independent of ANCA serotype. Patients with decreased DNA methylation at the PRTN3 promoter had a greater risk of relapse. The results of this study suggest that changes in the DNA methylation status of the PRTN3 promoter may predict the likelihood of stable remission and explain autoantigen gene regulation.

Publication details: Jones BE, Yang J, Muthigi A, Hogan SL, Hu Y, Starmer J, Henderson CD, Poulton CJ, Brant EJ, Pendergraft WF 3rd, Jennette JC, Falk RJ, Ciavatta DJ. Gene-Specific DNA Methylation Changes Predict Remission in Patients with ANCA-Associated Vasculitis. J Am Soc Nephrol, 2016 Sept 19.

Ten years ago Carol Offen donated a kidney to her son. Today she works to demystify the process of live organ donation in the hopes that more people will give the gift of life.

Carol Offen, with Paul (right) and her husband Neil at the 2016 Kidney Walk

Raising a child means giving of yourself. For most of us, this idea means offering advice, guidance, encouragement and, when necessary, gentle reproach. But when Carol Offen's son Paul began to experience deterioration in his kidney function, what she needed to give became more concrete.

Paul needed a new kidney and Carol was a match.

It's been more than 10 years since Carol gave a kidney to her son and both have thrived since then. Carol describes the experience as "the best decision I have ever made – and I don't just mean for Paul. It's the most noble thing I've ever done."

In 1999, Paul was diagnosed with a form of glomerulonephritis called IgA nephropathy, a kidney disease that causes an antibody called immunoglobulin A to lodge in the kidney. Over time, buildup of this antibody can affect kidney function.

"It needed to be monitored" remembers Paul, "but they were not expecting it to lead to kidney failure in the near future. Then in 2004, during routine lab work, the numbers got a lot worse. I needed a kidney transplant but dialysis would keep me going in the meantime."

Life on dialysis was challenging and required Paul to spend part his day, three days every week, at the dialysis center.

"Dialysis was, at best, a temporary solution for Paul," said Carol, "and he had a really rough time with it – nearly half a day tethered to a machine three days a week. He had to watch how much liquid he took in, what kinds of foods he ate. He couldn't travel without making arrangements to find another dialysis center. He was very, very dependent on it. It was like he was under house arrest."

Dialysis kept Paul alive, but from the first his doctors knew that transplant was going to be a more viable option.

The whole Offen family jumped at the chance to help Paul and they wanted to be tested for compatibility. Carol's husband wasn't a good candidate because he had a history of kidney stones, and her daughter was too young to be considered. Her sister and brother-in-law were both ruled out because they were the wrong blood type – something that today might not have been a problem thanks to advances in transplant options, including kidney exchanges or paired donation.

But Carol, a self-described wimp who faints during flu shots, was a match. Her initial reaction was "of course!" but she admits that after her initial enthusiasm accepting the idea took a little time.

"I went through every stage of denial and acceptance," she said. "At about the same time I was considering donating my kidney to Paul, my elderly father came to live down here, and I was his primary caregiver. On top of that I was working full time and, of course, we had a teenage daughter. There were times that I wasn't sure I'd be able to do this and take care of all the things that I needed to."

Eventually, though, her doubt became resolve.

"I don't know exactly when it happened; coming to this decision was a process. But at some point I knew that this was something I wanted to do and that I needed to do."

Once she had made her decision, Carol was put in touch with a donor coordinator. The coordinator's job is to serve as the donor's advocate from the moment an interest is expressed in donating until two years after the transplant.

Amy Woodard, RN, who currently serves as the living donor coordinator at the UNC Center for Transplant Care, explains the process required to be approved as a living donor.

"Donors answer a few screening questions and fill out a health questionnaire. If they pass those we give them a compatibility test. The donor then has to meet with a social worker, a transplant psychologist and consult with some of the same specialists the recipient meets with.

"All of these consultations are in place to make sure that they are safe to donate – physically, psychologically, financially. Once the donor completes all their evaluations, I review their case with the donor committee. If the committee approves them, I make the arrangements for donation."

All these tests – which, for Carol, included EKGs, pulmonary function tests, a CT angiogram, stress tests and "lots and lots of blood tests" – were made easier by "this whole team of people at the hospital who are rooting for you," said Carol.

But despite this support, there were some parts of the process that continued to be challenging for her. "The nurse coordinator would prescribe lidocaine to rub on my arm before a blood draw. I certainly got better at it but it was never easy for me."

Then the day finally came. Carol's kidney was transplanted to Paul.

Carol's recovery was relatively quick, which was made possible in part by the fact that surgeons are able to remove a donor kidney laparoscopically – i.e., through a small incision that can be easier to bounce back from than a large abdominal incision. She was able to go home after just a few days.

After surgery, Carol had access to a donor coordinator by phone 24/7; she had one post-op checkup at the transplant clinic after a month. After that she was cleared to go back to work and resume a normal schedule.

Paul's road to recovery was slightly longer but he knew it was necessary for him if he wanted the dialysis treatments to come to an end. "I stayed in the hospital around five days. Over the days and weeks after the procedure, the tubes were gradually removed and my life got closer and closer to normal."

Because he is a transplant recipient, Paul still takes immunosuppressants to ensure that his immune system and his mother's kidney are getting along, and he needs to have a blood draw every six weeks to monitor his kidney function. Carrie Frueauf, RN, has been Paul's post-transplant coordinator since he received his mother's kidney.

"He has made tremendous progress in the decade since his transplant. He was very anxious when he was first transplanted; it was a whole new routine he had to learn, and he has done great. His kidney works very well," said Frueauf.

Today Paul says his mother's kidney has improved his life.

"I'm able to work more, travel more, enjoy life more. By no means is it easy – there are a lot of things to keep track of, like medicines, appointments, protection from getting sick – but it is so much better than dialysis. I'm glad that she was willing and able to do so. It strengthens our bond."

Carol has also recovered well.

"My kidney function is fine. When you have one kidney the remaining kidney gets bigger and stronger to take over the function. It really isn't much of a factor in my life other than that I have my kidney function checked once a year during my annual physical with my primary care provider," she said.

Much of Carol's time these days is taken up with advocacy for the cause of live donation. She participates in kidney walks along with her husband and Paul, writes op-eds and is working on a book with a kidney recipient to share their experiences with organ donation and what they learned.

Her goal, she says, is to demystify the process and encourage others to consider becoming a donor.

"I always like to admit that I'm a wimp when it comes to medical stuff, because I figure if I can do it, anyone who is healthy enough can do it. That's my message and I feel very strongly about it. Anyone who is remotely interested should look into it."

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RENAL SUPPORT NETWORK RSNhope.org

For more kidney disease information,
internet links, podcasts, and printable copies of this newsletter, check

The Cure Glomerulonephropathy Network (CureGN) is a study of 2,400 children and adults with glomerular disease. The glomerular diseases this study focuses on are minimal change disease (MCD), focal segmental glomerulosclerosis (FSGS), membranous nephropathy (MN), and IgA nephropathy (IgAN). You may be eligible for this study if you have been diagnosed with one of these four diseases and had your first kidney biopsy in the past 5 years. Enrollment is now closed for IgAN.

Participants in CureGN are included in a registry of patients who provide data via blood and urine samples as well as clinical information, pathology reports and health histories, similar to the way the GDCN registry is organized. De-identified data collected from patients is stored in two central locations (National Institutes of Health and Arbor Research Collaborative for Health) and researchers will be able to look at the information obtained in different ways in order to be able to learn more about glomerular disease, hopefully leading to better care for patients affected by these conditions.

For more information, please contact Maggie D'Angelo at 919-445-2682 or maggie_dangelo@med.unc.edu. You can also visit **www.curegn.org**.

CureGN Participant Profile

Karin, diagnosed with IgA nephropathy (IgAN) in November 2015, is glad to be a patient at the University of North Carolina Kidney and Hypertension Clinic. She recalls that after finding out about her diagnosis, she was afraid and had many questions and concerns about how IgAN would affect her and her family's lives. She spoke openly with her doctors at the clinic, and they were able to lessen her concerns and give her a solid understanding of IgAN.

Karin was pregnant with her first child when she started having symptoms of IgAN. At first, she thought the swelling in her hands and legs was simply due to being pregnant. She also had elevated blood pressure and migraine headaches. When the symptoms didn't improve as her pregnancy progressed, physicians decided to perform a C-section in the hopes that Karin's condition would improve. However, her symptoms persisted after the birth of her son and she was referred to the University of North Carolina.

Karin was hospitalized for a kidney biopsy and a series of various treatments. She admitted she was afraid at first and concerned how the disease would affect her in every aspect of life. This anxiety was magnified by the excitement and stress of becoming a new mother and concerns about how IgAN would affect this new role. Karin recalls being worried about her and her husband's careers; they were pursuing jobs that required moving internationally. The idea of finding nephrologists in all of those locations was scary and potentially an impossible task. Karin continued to come to all of her appointments, take her medications as prescribed and make lifestyle changes recommended by her physicians. Over time and after many office visits, Karin is much more comfortable with having IgAN and is an active participant in CureGN.

Today, Karin is doing very well and has adjusted to both living with IgAN and being a parent. When asked how her life has changed, Karin states that daily medication is one of the biggest adjustments. Regular doctor's visits have become a part of her life, but Karin is ok with that, especially because she is now doing well and the appointments have become less frequent. Becoming more aware of her health and making changes to maintain a healthy lifestyle have been positive outcomes. One of the biggest changes she has made is her diet. As a result, her family's diet has also changed as Karin has started to choose different healthy foods and prepare them for herself and her family. She is thankful for the support of her family; her diagnosis of IgAN has led her to bond with a family member who has a similar condition. At her last visit, Karin said that she and her family are relocating to the western part of the United States so her husband can pursue a job opportunity. Though it is not overseas, Karin is happy for the adventure that moving across the country will bring.

The GDCN and the UNC Kidney Center are actively recruiting patients into the studies listed below and on the next page. Please contact the study coordinator listed at the bottom of page 9 if you are interested in learning more.

ANCA VASCULITIS:

Study name and sponsor	*Study Doctor*	*Study coordinator*	*More about the study*
ADVOCATE (ChemoCentryx)	Patrick Nachman	Brenda Meier	Patients with new or relapsing disease will be treated with standard of care (Rituximab or Cyclophosphamide) plus either oral study drug (avacopan) or steroids.

NEPHROTIC SYNDROME

Study name and sponsor	*Study Doctor*	*Study coordinator*	*More about the study*
C-NEPTUNE (NIH)	Keisha Gibson	Sandy Grubbs	Observational study of children newly diagnosed with Nephrotic Syndrome. Before renal biopsy and < 30 days of treatment.
CureGN (NIH/NIDDK)	Ronald Falk	Maggie D'Angelo	Observational study of children and adults with MN, FSGS, IgA, or Minimal Change Disease biopsied in the last 5 years.
APIXABAN	Vimal Derebail	Anne Froment	Study to understand how Apixaban (a blood thinner) works in patients with nephrotic syndrome. Blood and urine are tested before, 0.5, 1,3,4,6,8,and 24 hours after taking one dose of Apixaban.
ECHO Study for CureGN/ NEPTUNE participants	Keisha Gibson	Sandy Grubbs	Observational study: evaluating cardio-vascular health in children already en-rolled in NEPTUNE and CureGN study. Will have echocardiogram and 24 hour BP monitoring.

LUPUS

Study name and sponsor	*Study Doctor*	*Study coordinator*	*More about the study*
AURORA (Aurinia)	Will Pendergraft	Brenda Meier	Patients with active lupus nephritis will be treated with standard of care (MMF/Cellcept) plus oral study drug (Orelvo/Voclosporin) or placebo.
TULIP (Astra Zeneca)	Will Pendergraft	Brenda Meier	Patients with active lupus nephritis (Class III or IV) will be treated with standard of care (MMF/ Cellcept) plus monthly IV infusions of study drug (Anifrolumab) or placebo
GS-US-437-4093 (Gilead)	Will Pendergraft	Brenda Meier	Patients with active Lupus Membranous Nephropathy (Class V) will be treated with either oral Arm 1 study drug (Filgotinib) or oral Arm 2 study drug (GS-9876) for 16 weeks. If proteinuria is not decreased by 35%, therapy will be switched to the other arm.
DIVINE (RILITE Foundation)	Will Pendergraft	Brenda Meier	Patients scheduled to have a kidney biopsy will have an MRI of the kidney prior to the biopsy and 6 month after the biopsy. A variety of renal imaging modalities will be used to evaluate the intra-renal blood flow, perfusion, cellularity, fibrosis and atrophy within the kidneys compared to renal biopsy findings.
PEARL (Accelerating Medicines Partnership)	Will Pendergraft	Brenda Meier	A specimen collection study devoted to molecular analysis of kidney tissue, blood and urine of patients with lupus nephritis .
Boehringer Ingelheim – 1293.10 (BI 655064)	Will Pendergraft	Brenda Meier	Subcutaneous injection each week (self-administered at home after training) plus mycophenolate mofetil (cellcept) and steroids for treatment of lupus nephritis .
MSCs in SLE Trial	Will Pendergraft	Brenda Meier	Patients with moderate to severely active treatment refractory lupus (renal and non-renal) will receive an infusion of mesenchymal stromal cells (stem cells known to possess significant immunosuppressive properties) or placebo.

STUDY COORDINATOR CONTACT INFORMATION:

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Brenda Meier

Maggie D'Angelo

Jennifer Hawley, RN, MSN, FNP
Nurse Practitioner, UNC Kidney Center, Chapel Hill, NC

When you have chronic kidney disease (CKD), what over-the-counter (OTC) medicines should you avoid taking to "protect" your kidneys? What medicines and other substances could cause harm to your kidneys? It is a good idea to be aware of these potentially harmful medicines and substances so you can be sure to avoid them. In addition, what medicines are safe to take if you have common health issues such as pain, "cold" symptoms, indigestion or constipation?

A common group of pain medicines that you should avoid are NSAIDs or Non-Steroidal Anti-Inflammatory Drugs, such as Ibuprofen (Advil or Motrin), Naproxen (Naprosyn or Aleve), and Aspirin (unless prescribed by your primary care or heart doctor). These medicines are often included in over-the-counter (OTC) combination cold and cough remedies. Carefully check the entire list of ingredients on OTC medication labels. If you have pain or a headache, you can take Acetaminophen (Tylenol) or products containing Tylenol safely, as long as you do not exceed the recommended total daily dosage listed on the medicine label.

During cold and flu season, it is best to avoid decongestants like Pseudoephedrine (Sudafed) if you have high blood pressure (hypertension) since this medicine can raise your blood pressure (BP). It is safe to take Coricidin HBP products since they do not elevate your BP. Another tip is to try using saline nose drops or spray for a stuffy nose.

If you develop indigestion or heartburn symptoms or for constipation, avoid taking antacids or laxatives containing magnesium, phosphorus or aluminum such as Mylanta, Milk of Magnesium, Amphogel, or Fleets products. Also, you need to refrain from taking Alka Seltzer and its products due to their heavy sodium content. For indigestion, try Tums or OTC Zantac (Ranitidine). For constipation issues, you can start with stool softeners taken daily and can use Miralax if needed. Some persons need to take a small dose of Miralax daily to stay regular, especially if taking medicines that can cause constipation such as iron supplements.

It is best to avoid taking any herbal medicines or remedies, high-dose vitamins (other than Vitamin D if prescribed by your kidney doctor), or diet or food supplements since there is little research to tell us how these substances could cause harm to your kidneys. Some herbal medicines can interact with prescribed medications and cause problems. So, it would be better to refrain from taking them.

If you become sick and need to have an imaging study such as a CT scan or MRI with contrast (IV dye in your vein), you would need to alert doctors and nurses that you have kidney disease. Contrast should usually be avoided in persons with chronic kidney disease and low kidney function because it can cause damage to the kidneys. You should communicate that you have kidney disease if you go to an Emergency Room (ER or ED) for an urgent issue when you are out of town or if you go to see another doctor who may be unaware of your kidney disease.

Most persons with kidney disease need to limit their intake of salt or sodium, especially if they have high blood pressure (hypertension) or swelling issues. If you are limiting salt (sodium) in your diet, be sure to avoid using salt substitutes such as LoSalt or NoSalt. These products contain a high level of potassium and could cause your potassium to become elevated. High potassium levels in your blood can lead to heart arrhythmias and can be a serious health issue. Instead, you can try seasoning foods with Mrs. Dash products or can season with herbs, garlic, onions, lemon or lime juice.

If you develop an infection, caution should be taken if you need to receive any antibiotics. The antibiotic dosage may need to be adjusted and will likely be decreased to match your lower kidney function. Some antibiotics are safe to take when you have

Cauliflower is not only one of the most versatile vegetables around, it is also low in potassium. It can replace rice and mashed potatoes, be grilled, roasted, and even made into a steak or burger.

Diet type: ☑ CKD non-dialysis ☑ Dialysis ☑ Diabetes

Recipe submitted by DaVita renal dietitian Jackie from Virginia.

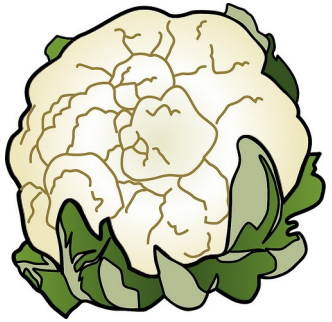
Portion: 4

Serving Size: 1 steak

Ingredients:

- 1 medium head cauliflower
- 3 tablespoons olive oil
- 1/4 teaspoon garlic powder
- 1/4 teaspoon onion powder
- 1/8 teaspoon salt
- 1/4 teaspoon pepper

Nutrients per serving
Calories 119
Protein 2 g
Carbohydrates 6 g
Fat 10 g
Cholesterol 0 mg
Sodium 106 mg
Potassium 335 mg
Phosphorus 50 mg
Calcium 26 mg
Fiber 2.3 g



Preparation

1. Preheat the oven to 400°F. Please parchment paper on a roasting pan.
2. Trim the leaves off the cauliflower and cut off the bottom of the stem. Cut the cauliflower head in half. Cut each half into 1" to 3/4" slices, leaving the core in place. Cut off the smaller ends of the cauliflower and save for another recipe. There should be 4 cauliflower steaks.
3. Mix olive oil, garlic powder, onion powder, salt and pepper.
4. Lay the cauliflower on the parchment lined baking sheet. Using half of the olive oil mixture, brush onto the steaks. Place in the preheated oven for 20 minutes. Remove from the oven and flip the steaks over. Brush steaks with remaining olive oil and roast for about 20 more minutes, until they are golden brown on the edges.

Renal and renal diabetic food choices: 2 vegetable, medium potassium; 2 fat

Carbohydrate choices: 1/2

Helpful hints: The leftover cauliflower can be used in an omelet, cut into small pieces to boil as a substitute for rice or eaten raw with a dip made from sour cream and Mrs. Dash®

UNC Kidney Center

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