

Kidney CARE



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Understanding Kidneys & its Functions



Tips to Keep Kidneys Healthy



Understanding Chronic Kidney Disease (CKD)



Lifestyle Management for CKD

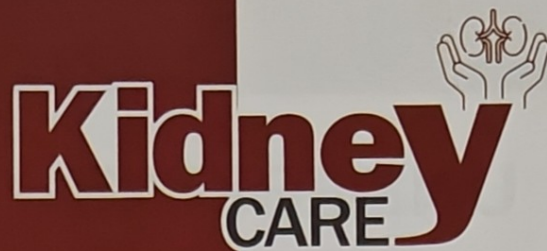


Nutritional Recommendations for the Management of CKD related Mineral and Bone Disorders



Exercise and Yoga for CKD Management

Kidney CARE



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the Kidneys
and their Functions

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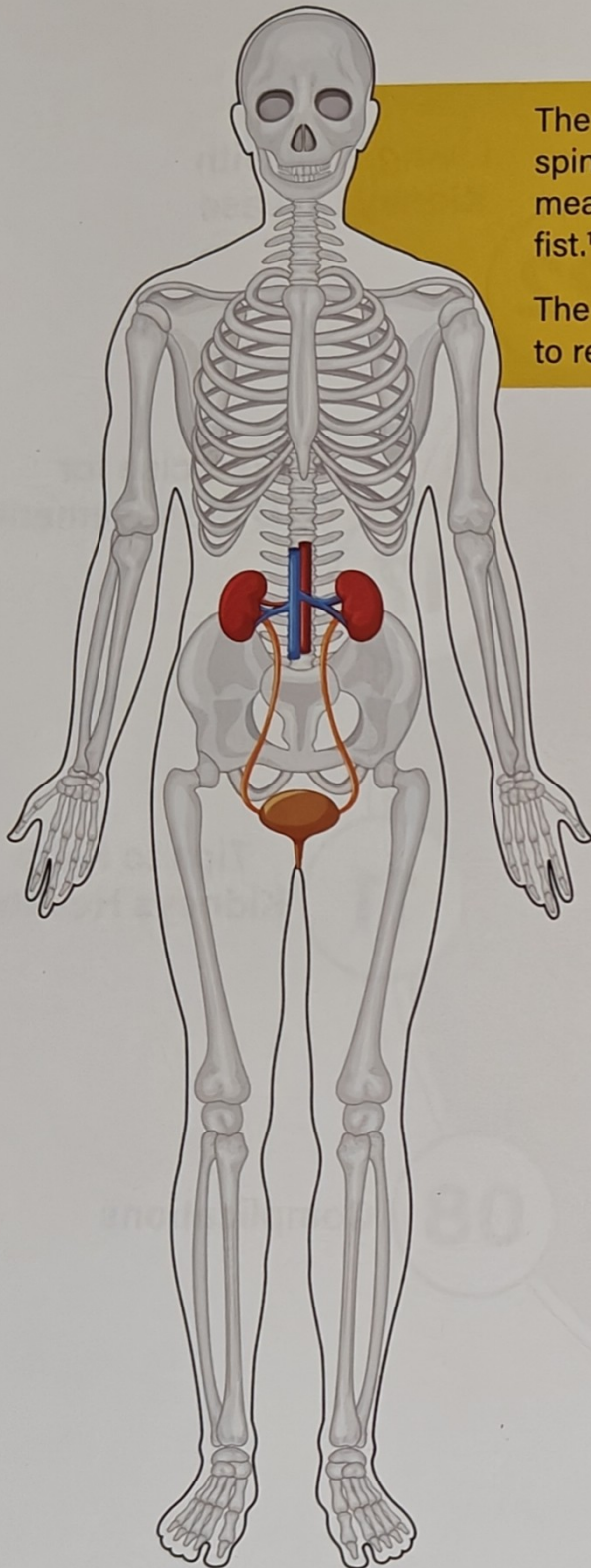
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UNDERSTANDING KIDNEYS



The kidneys are two bean-shaped organs on both sides of the spine, beneath the ribs, and in the back of the abdomen. They measure around 4-5 inches in length, similar to the size of a big fist.¹

The kidney's main function is to filter the blood up 40 times daily to remove impurities.^{1,2}

HOW KIDNEY WORKS?³

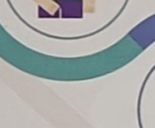
Blood enters the kidneys



Waste material passes through the ureter



When bladder becomes full, urine passes out of the body through urethra

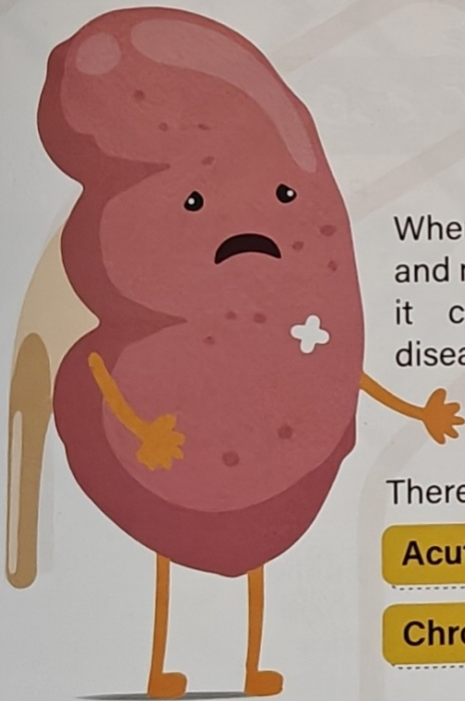
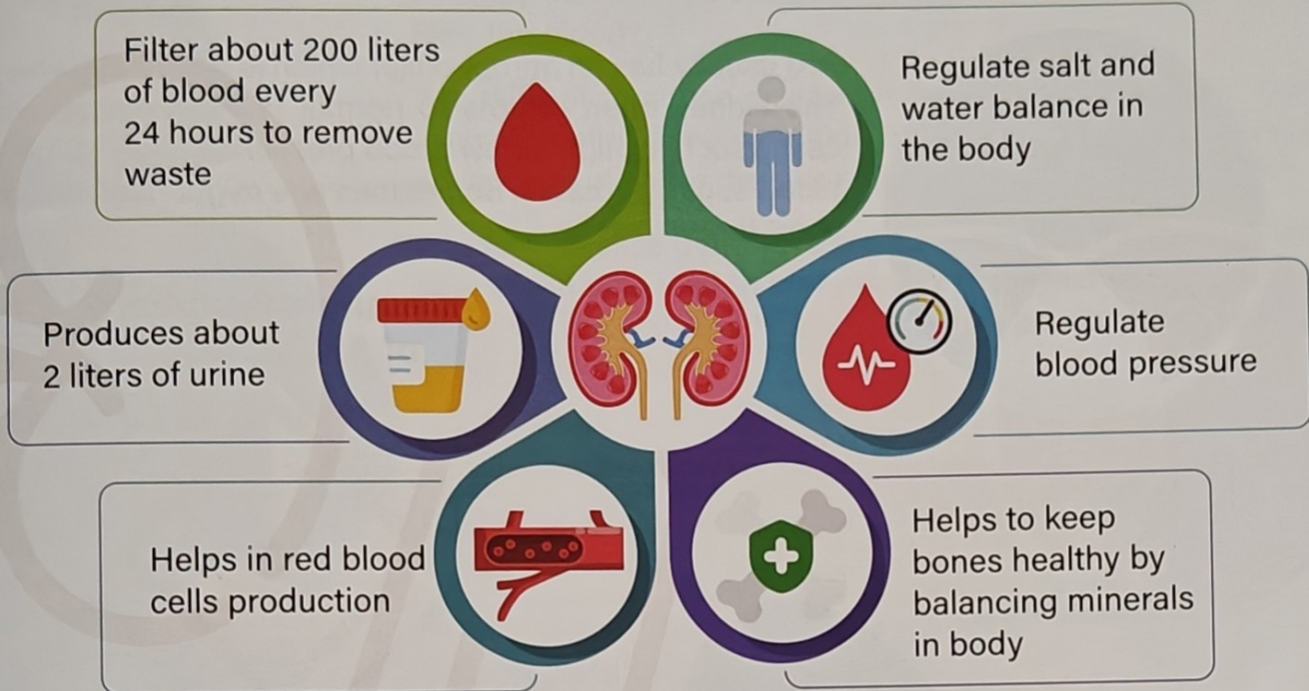


And is cleaned by passing through millions of tiny blood filters

Stored in the bladder as urine

AND THEIR FUNCTIONS

FUNCTIONS OF KIDNEYS:²⁻⁵

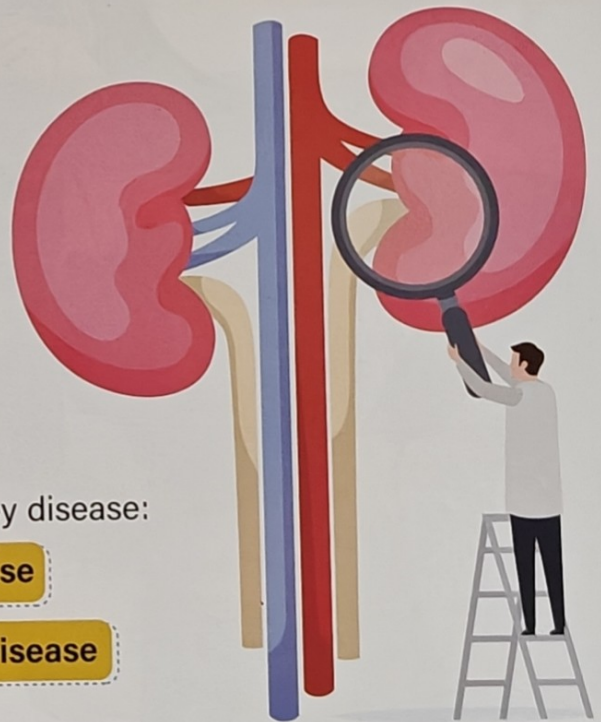


When kidneys are damaged and not functioning normally, it could lead to kidney disease.^{6,7}

There are 2 main types of kidney disease:

Acute (sudden) Kidney Disease

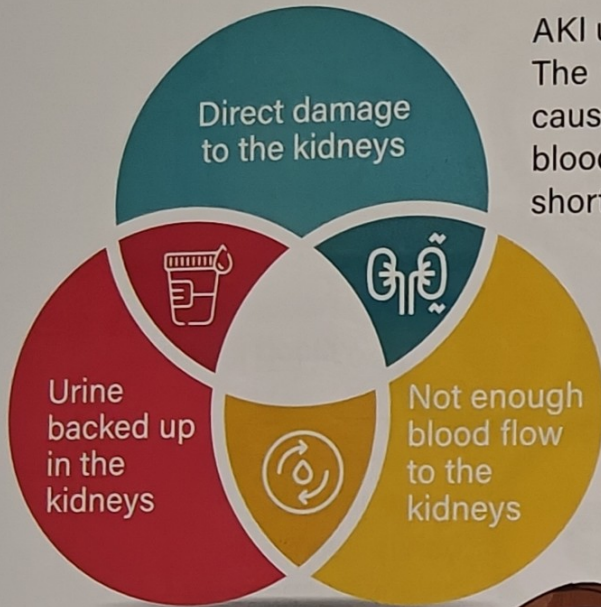
Chronic (over time) Kidney Disease



ACUTE KIDNEY DISEASE

Also called **"Acute Kidney Injury"** (AKI) or **"Acute Renal Failure"**.

It occurs when the kidneys suddenly stop working or stop filtering waste products from the blood. AKI could occur due to^{-8,9}



AKI usually has an abrupt onset which is potentially reversible.¹⁰ The kidney often returns to normal or near-normal when the cause such as high or low blood pressure, kidney stone, or high blood sugar is treated. Sometimes one might need dialysis for a short time.⁸

Common symptoms of AKI include-¹⁰



CHRONIC KIDNEY DISEASE (CKD)

"Chronic Kidney Disease is also known as **Chronic Renal Disease**."



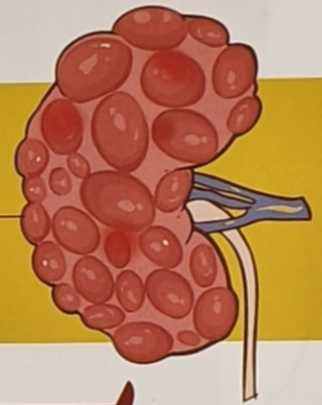
In CKD, the kidneys are damaged which reduces their ability to filter the blood.

It is difficult to notice disease in the early stages since these are asymptomatic. If the condition is detected and treated early, the advancement of the disease can be delayed or prevented.^{11,12}

If kidney disease gets worse, wastes can build and make you feel sick. It can also lead to other health problems such as high blood pressure, low red blood cell count, weak bones, poor nutrition, and nerve damage.¹¹

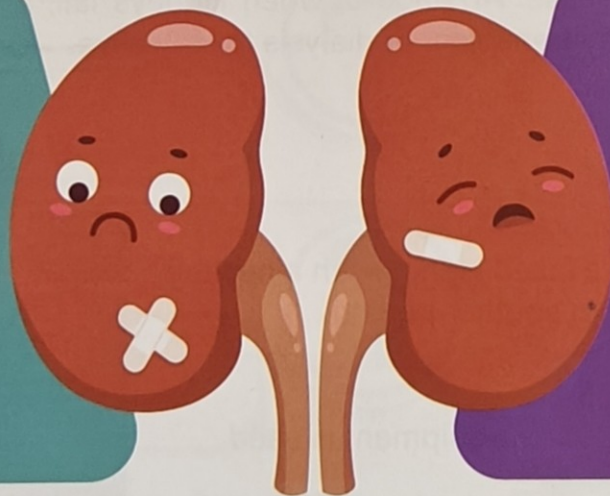
People with kidney damage for ≥ 3 months usually have CKD¹²

People with a GFR < 60 for ≥ 3 months usually have CKD¹²



STAGES OF CHRONIC KIDNEY DISEASE

There are 5 stages of CKD disease based on the status of kidney function. Glomerular filtration rate (GFR) is the test used to measure kidney function. This number states how well the filtering unit is filtering waste and extra fluid.¹²



As the stage of the disease progresses, kidney disease gets worse and kidney function reduces. The stages range from very mild (stage 1) to kidney failure (stage 5).^{6,12}

CHRONIC KIDNEY DISEASE (CKD) ...continued

STAGES OF
CHRONIC KIDNEY DISEASE

		GFR*	% of Kidney Function
Stage 1	Kidney damage with normal kidney function	90 or higher	90-100%
Stage 2	Kidney damage with mild loss of kidney function	89 to 60	89-60%
Stage 3a	Mild-to-moderate loss of kidney function	59 to 45	59-45%
Stage 3b	Moderate-to-severe loss of kidney function	44 to 30	44-30%
Stage 4	Severe loss of kidney function	29 to 15	29-15%
Stage 5	Kidney failure	Less than 15	less than 15%

*Your GFR number tells you how much kidney function you have. As kidney disease gets worse, the GFR number goes down.

The majority of the kidney functions are disturbed before you notice any symptoms of kidney disease. At stage 5, when kidneys fail, a person would require a kidney transplant or dialysis to stay alive.

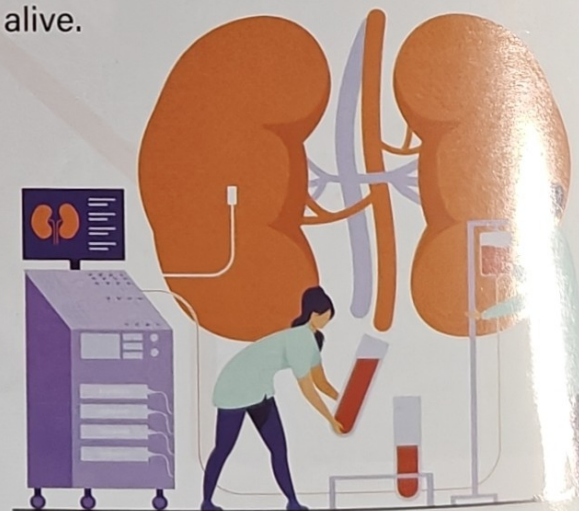


Kidney transplant:

Replaces a failed kidney with a healthy kidney from another person.

Dialysis:

A machine or other equipment is used to filter the blood.¹²



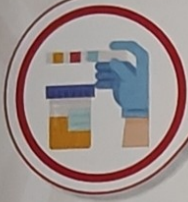
SIGNS & SYMPTOMS^{4,6,11}

In the early phase of CKD, one might not have any symptoms, despite the damage. As the kidneys are doing enough work so that the person can feel well. As kidney disease gets worse, a person may have the following symptoms -



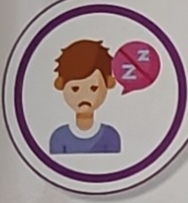
Swelling or edema in legs, feet, ankles, & less often in hands or face

Chest pain



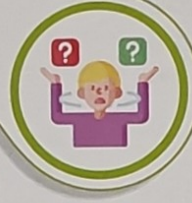
Increased or decreased urination

Feeling tired



Sleep problems

Trouble concentrating



Muscle cramps

Dry or Itchy skin



Loss of appetite

Nausea and Vomiting

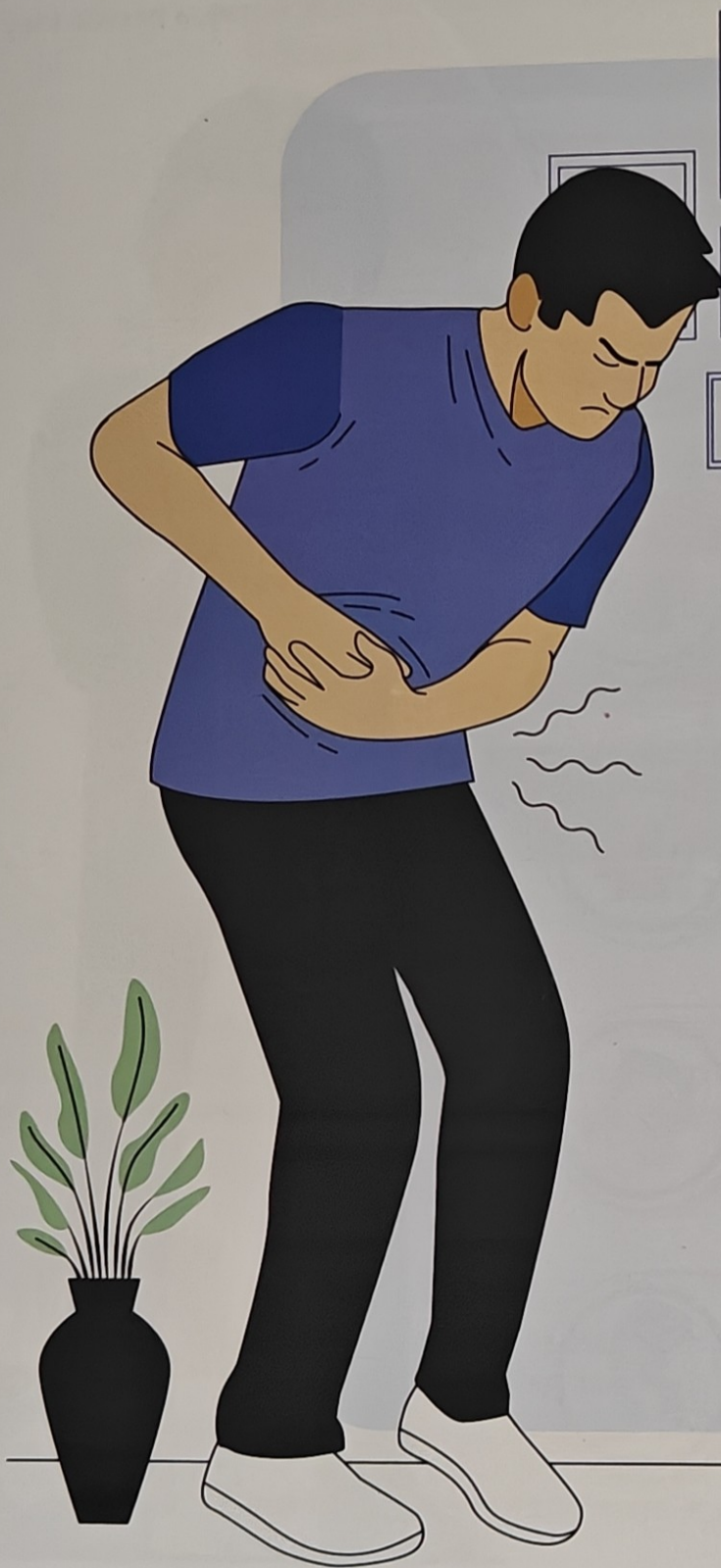


Shortness of breath



RISK FACTORS

You are more at risk for chronic kidney disease if you:⁶



Have diabetes



Have high blood pressure



Have heart disease



Have a family history of kidney disease



Age: Risk increases with age, over 60 years of age



Are African-American, Hispanic, Native American or Asian



Have a long history of taking painkillers such as Aspirin and Ibuprofen

COMPLICATIONS

DID YOU KNOW?

Diabetes:

- Leading cause of CKD.
- Almost 1 in 3 people with diabetes has CKD.



High BP:

- 2nd leading cause of CKD.
- Almost 1 in 5 adults with high blood pressure has CKD.



Kidney disease often can get worse over time and may lead to kidney failure.
Some of the complications of CKD include:^{4,11}

01

High blood pressure

Weak and brittle bones

02

03

Metabolic acidosis; chemical imbalance in blood

High phosphorus (hyperphosphatemia)

04

05

Low red blood cell count (anemia)

Gout

06

07

High potassium (hyperkalemia) affects heart's ability to function correctly

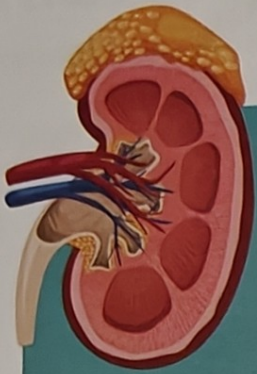
Fluid buildup or swelling in feet, ankles and hands

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FACTS:

High blood pressure (BP) can be both a cause and a result of kidney disease.

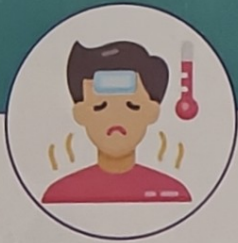
High BP damages the kidneys, and damaged kidneys don't work as well to help control the BP.



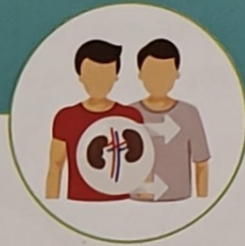
Long-term Complications:

As kidney disease progresses, complications occur more frequently and with higher severity. It can also lead to poor quality of life and increased ill health and death.

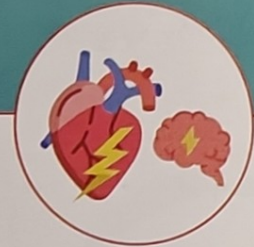
Some of the long-term complications are:¹³



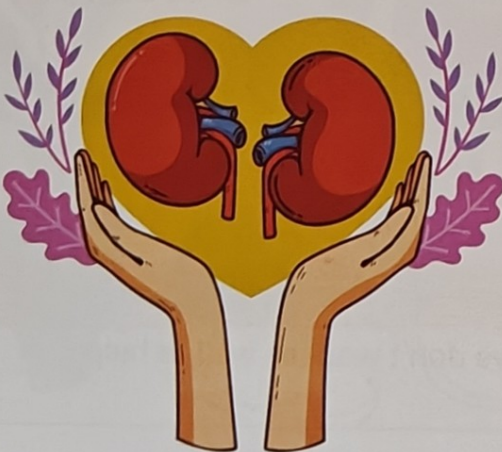
Weakened immune system
Increased risk of infection and illness.



Kidney failure
Requires dialysis or a kidney transplant for survival.



Heart disease
Increased risk of stroke and heart attack.
Leading cause of death in people with kidney disease, particularly those on dialysis.

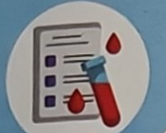


One can take steps to protect the kidneys from more damage and also help prevent heart disease and improve health overall. It is worth making these changes when symptoms are not there.^{7,13}

Diagnosis or Detection

To check for kidney disease, doctors can use – ^{2,14}

Blood Test



- Checks how well kidneys are filtering blood by testing GFR
- One cannot raise their GFR but, can try to keep it from going lower

Urine Test

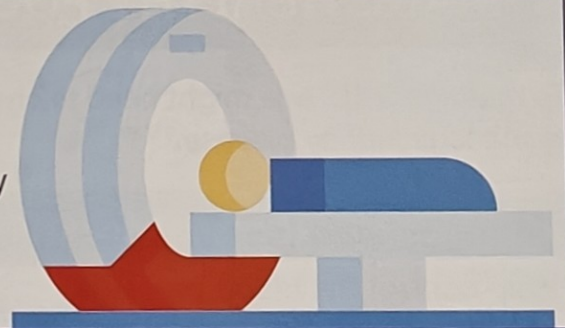


- Check for albumin - a protein that pass into urine when kidneys are damaged
- Check for creatinine - As kidney disease gets worse, the level of creatinine goes up.
- 'Albumin- creatinine ratio' can be calculated.

Other Tests



- Finding blood in the urine
- X-rays, scans and biopsies of the kidney



Though CKD is generally progressive and irreversible, one can take the following steps to slow progression and protect the kidneys. This will also enable the patients to live longer without complications or the need for kidney transplants thus, improving their health overall. ^{13,15}



TIPS TO KEEP KIDNEYS HEALTHY

Below are a few steps that could help keep the kidneys and the whole body healthy.^{7,14-16}

Control High Blood Pressure



Manage Blood Sugar Levels



Aim for healthy weight



Exercise regularly



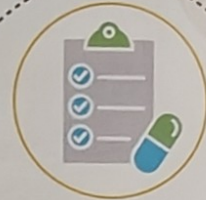
Make healthy food choices



Talk with doctor for kidney health



Avoid smoking



Take medicine as prescribed

1

MAKE HEALTHY FOOD CHOICES

To manage CKD, one might need to change food choices. Some of the steps that help one eat right are to manage kidney disease.^{9,17,20}

Eat foods with less salt or sodium

Help control the blood pressure

- Buy fresh food as sodium (salt) is usually added to prepared or packaged foods.
- Use spices, herbs, & sodium-free seasonings instead of salt.
- Look for food labels with words - sodium or salt-free; low, or unsalted.
- Check for sodium levels on the label of food packages. High sodium - daily value of >20%.
- Rinse canned vegetables, beans, meats, and fish with water before eating.
- Cook foods from scratch instead of eating prepared foods that are higher in sodium.^{9,17,20}

Diet should contain
<2,300 milligrams
of sodium each day



Choose heart-healthy foods

Prevent fat build-up in blood vessels, heart, and kidneys.



- Grill, broil, bake, roast, or stir-fry foods, instead of deep-frying.
- Cook with nonstick cooking spray or a small amount of olive oil instead of butter.
- Trim fat from meat and remove the skin from poultry before eating.
- Try to limit saturated and trans fats. Read the food label.
- Heart-healthy foods - poultry without skin, fish, beans, fruits, and vegetables, or low-fat or fat-free milk, yogurt, & cheese.^{9,17,20}

Eat the right amount and types of protein

Help protect the kidneys.^{9,17,20}

Protein produces waste which is removed by the kidneys. Thus, eating more protein makes the kidneys work harder. Eat small portions of protein foods.



Animal-protein foods

Plant-protein foods

Some of the protein sources-

Example	Chicken, Fish, Meat, Eggs, or Dairy	Beans, Nuts, or Grains
Portion	<ul style="list-style-type: none"> ■ Cooked chicken, fish, or meat - About 2-3 ounces or the size of a deck of cards. ■ Dairy foods - half a cup of milk or yogurt, or one slice of cheese. 	<ul style="list-style-type: none"> ■ Cooked beans - About ½ cup, ■ Cooked nuts - ¼ cup. ■ Bread - Single slice ■ Cooked rice or cooked noodles - ½ cup

TIPS TO KEEP KIDNEYS HEALTHY ...continued

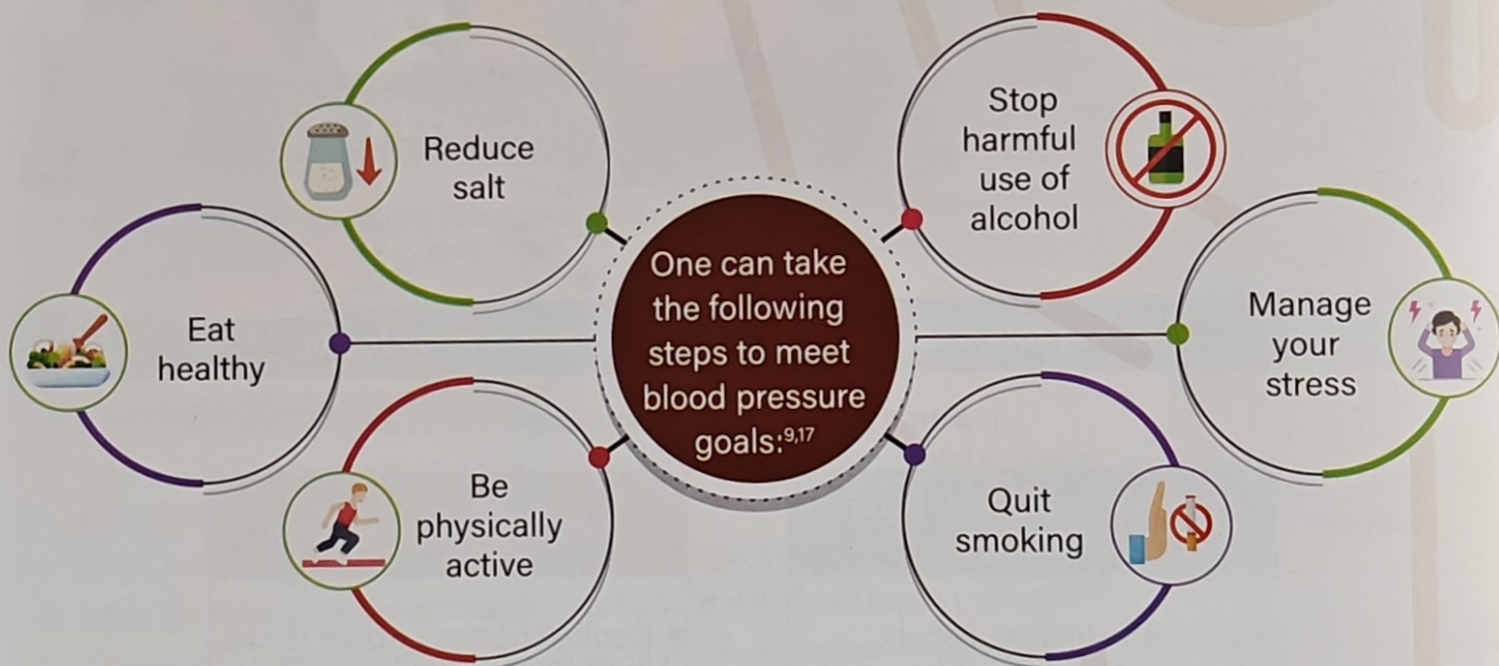
Choose foods with the right amount of potassium and phosphorus



One might need to eat foods with less phosphorus and the right amount of potassium as kidney function goes down. As damaged kidneys increase the potassium levels in the blood can cause serious heart problems. Food and drink choices can help lower the potassium level such as salt substitutes can be very high in potassium and drain canned fruits and vegetables before eating.^{9,17,20}

2 CONTROL HIGH BLOOD PRESSURE (BP)

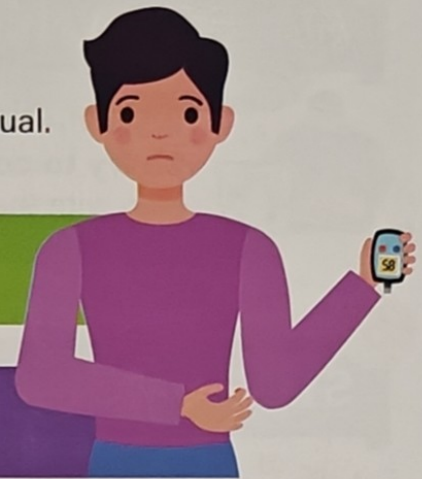
Controlling or lowering high BP is the most important step to treat CKD. Ask your doctor about what should be the blood pressure goal and how it can be achieved. Try to keep the blood pressure numbers close to the goal which is usually <140/90 mmHg for most people.



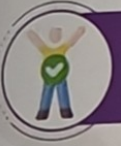
Reaching the blood pressure goal will help protect the kidneys."

3 MANAGE BLOOD SUGAR LEVELS

The blood glucose level should be under control in a diabetic individual. To reach the blood glucose goal-



Check the blood glucose level regularly



Use the results to guide decisions about food, physical activity, and medicines

"Reaching the blood glucose goal numbers will help protect the kidneys."^{9, 17}

4 MAKE PHYSICAL ACTIVITY PART OF YOUR ROUTINE



Physical activity can help reduce stress, manage weight, and achieve blood pressure and blood glucose goals. **Be active for ≥ 30 minutes.** Ask the doctor about the types and amounts of physical activity that are right for you.^{9,17}



Walking/
Jogging



Running



Cycling



Swimming

5 AIM FOR A HEALTHY WEIGHT



When the person is obese, the kidney needs to work harder which can damage them. So **try to control your weight, if you are obese** by making a realistic weight-loss plan with the doctor.^{9,17}

6 STOP SMOKING



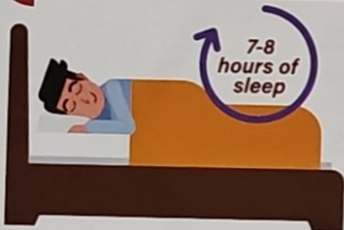
Quitting smoking would help meet blood pressure goals, which is good for the kidneys. So, **stop smoking or using other tobacco products**. One can ask for help if one cannot do it alone.^{7,15}

7 LIMIT ALCOHOL INTAKE

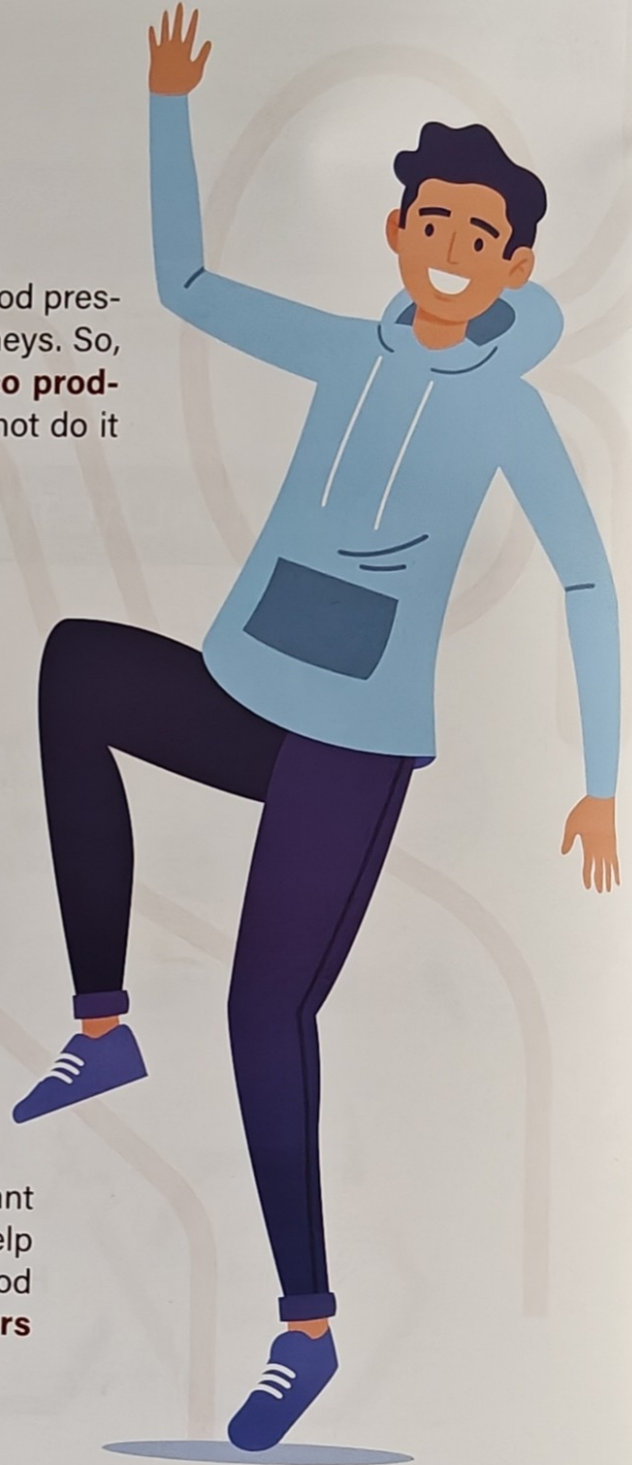


Drinking too much alcohol increases blood pressure and adds extra calories that can cause weight gain. Thus, **one should limit alcohol consumption**.^{7,15,17}

8 GET ENOUGH SLEEP



Getting enough sleep is important for overall health and can also help to meet blood pressure and blood glucose goals. Aim for **7 to 8 hours of sleep each night**.^{7,15}



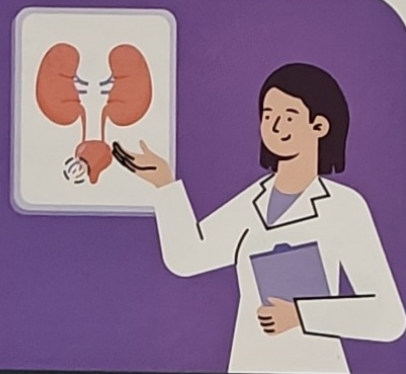
9
BE CAREFUL ABOUT TAKING OVER-THE-COUNTER PAIN MEDICINES



Be careful about the daily use of over-the-counter pain medications. Regular use of NSAIDs that is, commonly used pain relievers and cold medicines can damage the kidneys and lead to AKI, especially in those with kidney disease, diabetes, and high blood pressure. So, if you are on NSAIDs regularly to control chronic pain, ask the doctor about other ways to treat pain, such as meditation or other relaxation techniques.^{7,15}

10
TALK WITH THE DOCTOR TO MONITOR KIDNEY HEALTH

Consult doctor for the kidney test and ask questions about what tests are being done, what test results mean, or the changes that need to make to the diet and medicines. The physician might also check the blood pressure and glucose level.^{7,15}



As known, kidneys help in maintaining the bone strong and balance the right amount of minerals like phosphorus and calcium in the blood. But, when the kidneys are damaged, these function gets affected and one might develop mineral and bone disorder.²¹

EXERCISE FOR CKD MANAGEMENT

Proper exercise is beneficial for kidney patients and helps in maintaining overall health and well-being. Exercise has several benefits:²²⁻²⁴



Increase your energy levels

Reduce stress



Increase in dialysis efficiency

Reduce risk of heart problems by lowering 'bad' cholesterol



Keep your muscles strong

Improve your sleep and quality of life



Maintain body weight

Ease muscle cramps



Control blood pressure & blood sugar



Staying active may become more difficult as the disease progresses, but it is very important. Before starting one should discuss it with their doctor.

Exercise that could benefit CKD patients includes -

aerobic exercise or resistance training.²²

1 FLEXIBILITY - STRETCHING EXERCISES²⁴



Neck Stretch

- Slowly lower right ear to right shoulder
- Bring your head back up and lower left ear
- Repeat few times until neck muscles feel looser



Hamstring Stretch

- Sit upright
- Place towel under foot and straighten leg lifting it off floor
- Gently pull ends of towel towards you flexing your foot
- Put foot back to floor and repeat using the other leg



Chest & Upper Back Stretch

- Put hands on shoulders and elbows out to side
- Touch elbows together in front of chest
- Move elbows out wide again and squeeze shoulder blades together

2 DEVELOP MUSCLE STRENGTH - RESISTANCE EXERCISES²⁴



Side Leg Lift

- Lie on your side
- Use arm underneath to support head and the other in front for support
- Slowly raise your top leg and replace back down to the floor
- Turn-over and repeat with the other leg

EXERCISE FOR CKD MANAGEMENT ...continued



Wall Push up

- Stand straight facing a wall and Place both hands on wall
- Lean forwards bending elbows until nose nearly touches the wall
- Push away from the wall until you are upright. Repeat



Shoulder Press

- With arms raised bend elbows at shoulder height
- Push arms straight up in the air
- Then move them back down to start position with elbows bent. Repeat

3

HOW OFTEN TO EXERCISE



Exercise for at least 30 minutes three days a week. active, if you feel like walking for 45 to 60 minutes, go ahead. To get the most benefit out of exercising you need to 'push' yourself. Just be sure to follow the advice and look for the signs when exercise needs to stop.^{23,24}

Signs that I should stop exercising if you feel

Chest pain

Irregular or rapid heart beats

Sick to your stomach

Dizzy or light-headed

Get leg cramps

Become short of breath^{23,24}

4 EXERCISE AND DIALYSIS



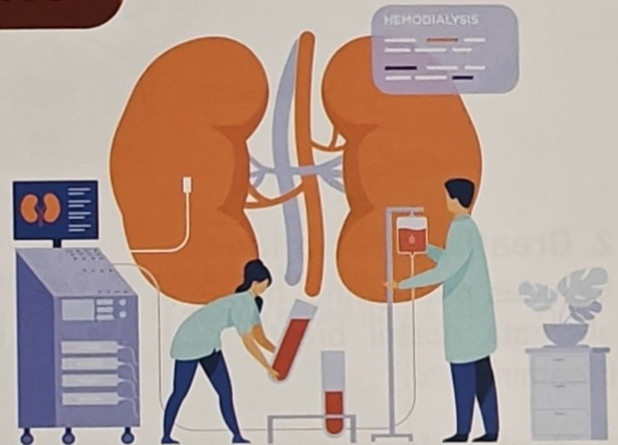
Physical activity is beneficial for people on dialysis as it helps prevent the negative side effects related to treatment. But, take care if you have a catheter, it is recommended to not swim. Also, physical activity could be uncomfortable or cause a leak if your stomach is full of dialysis fluid.

Exercise equipment such as a pedal machine or resistance bands is available at the dialysis unit that you can use. Talk to your doctor for advice on how you can stay safe.²⁵

5 POST-TRANSPLANT PRECAUTIONS

One must be able to do most forms of exercise if they are generally well after kidney transplantation. But, it is advised to avoid 'contact' sports such as, boxing, hockey, football, etc as the transplanted kidneys are less protected.

With protective padding and extra caution some activities can be made safer but, always seek advice first from your transplant team.²⁶



5 YOGA FOR CKD

Yoga is an ancient traditional science that might help in the prevention of CKD in patients with diabetes and hypertension, the main causes of CKD. It is an effective, accessible, and low-cost intervention that could significantly change the overall health and well-being of transplant recipients. Some of the Yogic Practices for CKD include^{27,28}



EXERCISE FOR CKD MANAGEMENT ...continued

1. Physical postures or Asanas



2. Breathing techniques

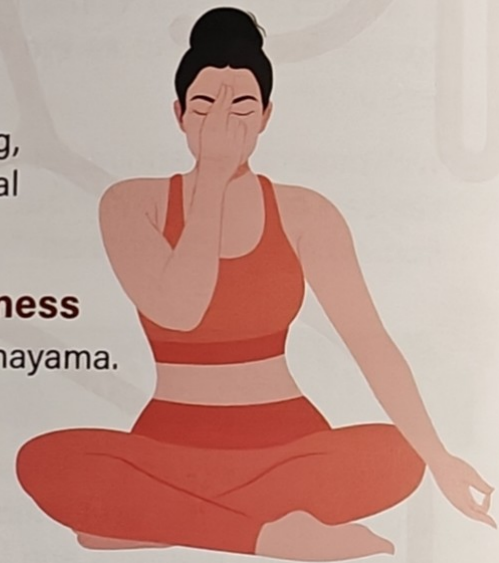
Includes pranayama, hands in and out breathing, tiger breathing, alternate nostril breathing, humming bee breathing, abdominal breathing, etc.

3. Yogic relaxation techniques with imagery or mindfulness

Based stress reduction for 20 minutes at the end of asanas and pranayama.

4. Meditations

Includes mindfulness meditation, yogic counselling, etc.²⁷

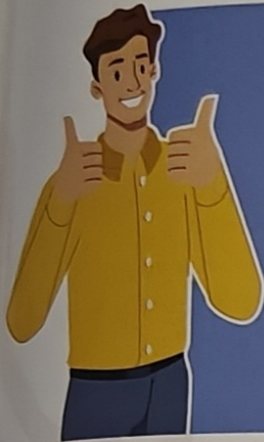


Yogic Practices
to be avoided in CKD



Few components of yoga such as sirsasana, kapalabhati, and bhasrika should be avoided as they can increase blood pressure. Along with it, the yogic cleansing procedure of laghushankha praskhalana and vaman dhauti should be avoided as it can cause electrolyte imbalances and increase the load on kidneys.²⁷

LIVING WELL WITH KIDNEY DISEASE^{6,7,26}



Most people are anxious after the diagnosis of kidney disease as they think that they have to go through dialysis. But, in reality, dialysis is not required in most people with kidney disease.

Most people with CKD can live long lives without being affected by the condition.

Only a small proportion of people with CKD reach an advanced stage. One might need to change their eating habits and add healthy habits to their daily routine to help protect the kidneys.

MYTHS VS FACTS

MYTH 01

Testing for kidney disease is a long and costly process

Testing for kidney disease is surprisingly easy. It can be done with two simple, inexpensive tests.

MYTH 02

If you are at risk for kidney disease, there is nothing you can do about it.

Not everyone who is at risk will get kidney disease. You can help protect your kidneys.

Not everyone with kidney disease needs dialysis.

The only treatment for kidney disease is dialysis.

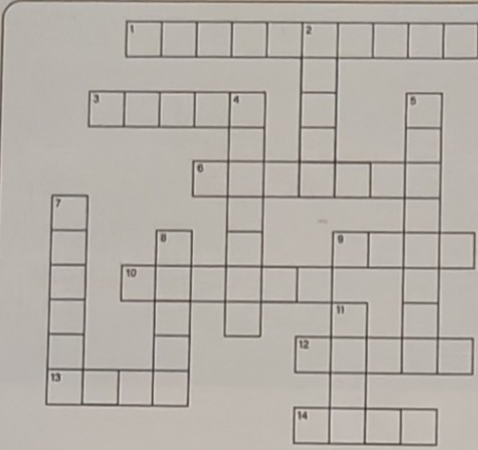
MYTH 03

A kidney stone may temporarily affect kidney function. Sometimes, that effect on function continues and raises the risk of CKD.

Kidney stones lead to kidney disease

MYTH 04

CROSSWORD



ACROSS

- 1 Food pipe
- 3 The hard part/s of our body
- 6 The position of our body when we sit, stand or walk
- 9 An organ that helps us to see
- 10 The soft part/s of our body
- 12 A place where two bones meet
- 13 An organ of hearing
- 14 Heart is situated on the ___ side of the body

DOWN

- 2 An organ that pumps blood in our body
- 4 The sac-like organ where the food is digested
- 5 The framework of bones
- 7 An organ that is responsible for the sense of taste
- 8 An organ that helps us to breathe
- 11 An organ that is responsible for the sense of smell

SUDOKU

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REFERENCES:

1. Kidney Cancer: Introduction, available at <https://www.cancer.net/cancer-types/kidney-cancer/introduction>, last accessed on 6th December, 2023.
2. CKD Health Check: Look after your kidneys and keep yourself well, available at https://www.kidneycareuk.org/media/documents/CPL_0364_CKDHC_3e_A4_UPDATE_PROOF_9ovnx7a.pdf last accessed on 6th December, 2023.
3. How Your Kidney works, available at <https://www.kidney.org/atoz/content/howkidneyswork> last accessed on 6th December, 2023.
4. Chronic Kidney Disease (CKD), available at https://www.kidneycareuk.org/documents/549/KCUK_Chronic_Kidney_Disease_2021_web.pdf, last accessed on 6th December, 2023.
5. Keeping your kidneys healthy, available at <https://www.nhs.uk/live-well/healthy-body/keeping-your-kidneys-healthy/>, last accessed on 6th December, 2023.
6. Kidney Disease / Chronic Kidney Disease, available at <https://my.clevelandclinic.org/health/diseases/15096-kidney-disease-chronic-kidney-disease>, last accessed on 6th December, 2023.
7. What is Chronic Kidney Disease?, available at <https://www.niddk.nih.gov/health-information/kidney-disease/chronic-kidney-disease-ckd/what-is-chronic-kidney-disease>, last accessed on 6th December, 2023.
8. What is Kidney (Renal) Failure?, available at [https://www.urologyhealth.org/urology-a-z/k/kidney-\(renal\)-failure](https://www.urologyhealth.org/urology-a-z/k/kidney-(renal)-failure), last accessed on 6th December, 2023.
9. Kidney Disease, available at <https://www.webmd.com/a-to-z-guides/understanding-kidney-disease-basic-information>, last accessed on 6th December, 2023.
10. End-Stage Renal Disease (ESRD), available at <https://www.hopkinsmedicine.org/health/conditions-and-diseases/end-stage-renal-disease-esrd>, last accessed on 6th December, 2023.
11. Chronic Kidney Disease (CKD) Symptoms and Causes, available at <https://www.kidney.org/atoz/content/about-chronic-kidney-disease>, last accessed on 6th December, 2023.
12. Learn About Kidneys and Kidney Disease, available at <https://www.kidney.org/sites/default/files/11-10-0101.pdf>, last accessed on 6th December, 2023.
13. Complications of Chronic Kidney Disease: Anemia and More, available at <https://www.healthline.com/health/kidney-disease/complications-of-chronic-kidney-disease#complications>, last accessed on 6th December, 2023.
14. Chronic Kidney Disease Tests & Diagnosis, available at <https://www.niddk.nih.gov/health-information/kidney-disease/chronic-kidney-disease-ckd/tests-diagnosis>, last accessed on 6th December, 2023.
15. Managing Chronic Kidney Disease, available at <https://www.niddk.nih.gov/health-information/kidney-disease/chronic-kidney-disease-ckd/managing>, last accessed on 6th December, 2023.
16. Preventing Chronic Kidney Disease, available at <https://www.niddk.nih.gov/health-information/kidney-disease/chronic-kidney-disease-ckd/prevention>, last accessed on 6th December, 2023.
17. 6 Tips To Be "Water Wise" for Healthy Kidneys, available at <https://www.kidney.org/content/6-tips-be-water-wise-healthy-kidneys>, last accessed on 6th December, 2023.
18. Eating Right for Chronic Kidney Disease, available at <https://www.niddk.nih.gov/health-information/kidney-disease/chronic-kidney-disease-ckd/eating-nutrition>, last accessed on 6th December, 2023.
19. Healthy lifestyles for patients with hypertension, A non-communicable disease education manual for primary health care professionals and patients, available at <https://apps.who.int/iris/bitstream/handle/10665/254746/9789290617983-hyp-mod2-eng.pdf?sequence=2&isAllowed=y>, last accessed on 6th December, 2023.
20. Living with chronic kidney disease, available at <https://www.nhs.uk/conditions/kidney-disease/living-with/>, last accessed on 6th December, 2023.
21. MINERAL AND BONE DISORDER: If you have kidney disease or kidney failure, available at https://www.kidney.org/sites/default/files/11-10-0477_mineralbonedisor.pdf, last accessed on 6th December, 2023.
22. LET'S GET ACTIVE! EXERCISE FOR KIDNEY PATIENTS, available at https://www.kidney.org/sites/default/files/11-10-0477_mineralbonedisor.pdf, last accessed on 6th December, 2023.
23. Exercise and keeping fit: Patient Information, available at https://www.kidneycareuk.org/documents/179/Keeping_fit.pdf, last accessed on 6th December, 2023.
24. Exercise for Kidney Patients; Renal Services: Information for Patients, available at <https://www.le.ac.uk/iii/kidney/downloads/ExerciseforKidneyPatientsLeafletMay09.pdf>, last accessed on 6th December, 2023.
25. Exercise and kidney disease, available at <https://kidney.org.au/your-kidneys/living-with-kidney-disease/health-and-wellbeing/exercise>, last accessed on 6th December, 2023.
26. Kidney disease ends here, available at <https://www.kidneyresearchuk.org/kidney-health-information/living-with-kidney-disease/how-can-i-help-myself/exercise/>, last accessed on 6th December, 2023.
27. Kashinath GM, Hemant B, Prerna C, Nagarathna R, Nagendra HR (2014) Role of Yoga in Chronic Kidney Disease: A Hypothetical Review. J Nephrol Ther.2014;4: 167. last accessed January 2022.
28. Is Yoga Good For Kidney Disease?, available at <https://www.kidney.org/blog/kidney-care/yoga-good-kidney-disease#:~:text=Yoga%20can%20be%20an%20excellent,the%20risk%20of%20kidney%20cancer>, last accessed on 6th December, 2023.
29. Living with chronic kidney disease, <https://www.nhs.uk/conditions/kidney-disease/living-with/>, available at last accessed on 6th December, 2023.
30. Six Common Myths About Kidney Disease, available at <https://www.kidney.org/newsletter/six-common-myths-about-kidney-disease>, last accessed on 6th December, 2023.
31. Kidney health myths debunked, available at <https://www.kidneycareuk.org/about-kidney-health/kidney-health-myths-debunked/>, last accessed on 6th December, 2023.