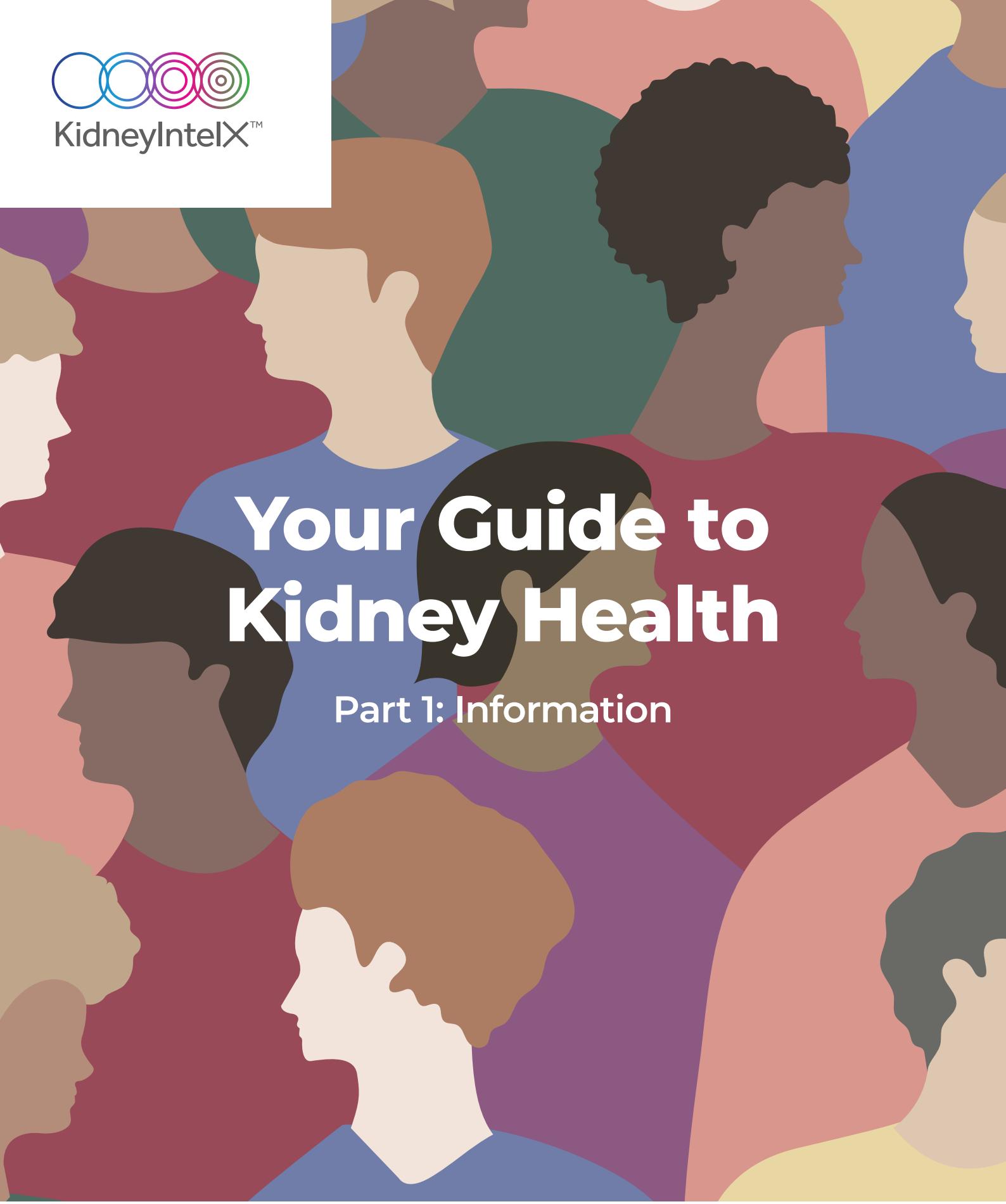
KidneyIntelX™



Your Guide to Kidney Health

Part 1: Information

Brought to you by renalytix™

About Renalytix

We are the leader in a new field: Bioprognosis™ for kidney health. Doctors use our new test to see which adults with type 2 diabetes are most at risk for loss of kidney function. Once you know, you can act when it counts most. You can take steps to slow kidney disease. You may be able to prevent kidney failure. We want to help you and others slow kidney disease.

Visit www.kidneyintelx.com or www.renalytix.com to learn more.

Disclaimer

This guide will help you learn about chronic kidney disease (CKD) and diabetes. It aims to help you work with your doctor to slow CKD and prevent end-stage kidney disease (ESKD).

A guide like this can only draw from the knowledge on hand at the time it is written. The authors made every effort to be thorough. But, we can make no warranty, expressed or implied, with respect to how current, complete, or accurate this guide is. Future advances, product updates, or changes to the law may occur. Renalytix is under no obligation to update this guide. To the extent permitted by law, Renalytix disclaims all liability for any damages or injury caused by any error, omission, deletion, defect, access to, alteration of, or use of Your Guide to Kidney Health. The contents, including, but not limited to text, graphics, and icons, are trademarked materials owned or controlled by Renalytix.

Use of this guide doesn't take the place of talking with your doctor.

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Welcome!

You are reading this guide because you have been diagnosed with chronic kidney disease (CKD). Hearing that you have a disease is scary. You might feel overwhelmed, with so many questions swirling in your head that you don't know what to ask your doctor first. You may feel numb or mad, or both! It is common to wonder why this is happening and how it will change your life.

How you feel is how you feel. There is no "right" way to feel. You can't control your feelings and you may feel different things at different times.

One thing you can always control is how you react to things that happen to you. **People can and do live well with CKD.**

You can live a full life with kidney disease.

Feeling hopeful can help you adjust to life with CKD. When you take care of yourself, you can have the best path possible.

Why should you have hope?

Because knowing you have CKD means you can act. You can take steps to protect your kidneys that may help slow your CKD. Knowledge really is power.

You may not always have smooth sailing. Rough seas can happen. And you may have them from time to time, even with your best efforts. Having hope in those times can get you through.

People with type 2 diabetes are more likely to have CKD. You can take steps to help protect your kidneys now!

How does hope help?

> *When my husband found out he had CKD, I was petrified and he was numb. There are so many unknowns when you start out. All the new terms to learn, to diet and fluids and meds. The only thing that seemed to help us was to start learning. We read all the pamphlets from the doctor and it helped to see how others dealt with the disease.*

> *I have a 7 yr old granddaughter I am helping to raise. She is MY hope, and I live to see her grown.*

> *I hoped and took action...and went from 14% kidney function up to 22% a few years ago. My family and friends helped me keep my positive attitude. I will never give up!*

You don't have to deal with CKD on your own. Your healthcare team is there to help you every step of the way. You may also want to talk about it with your family and friends. Their support can help you a great deal. Share this guide with them and talk about ways they can help you.

Be specific! People want to help—but may not know what to do. It might be someone going to medical appointments with you so that you have another pair of ears to listen or going on walks together to get moving more.

KEEP IN MIND...

Talking about CKD can also help others. Diabetes and CKD tend to run in families. Talking about CKD can encourage others to talk to their doctor about their kidney health.

Kidney Basics

It is good to know the basics about kidneys, like where they are and what they do.

Where are my kidneys?

Your kidneys are in the middle of your back, just below your ribcage. They are about the size of a fist and most of us have 2 – one on either side of our spine.

What do my kidneys do?

Kidneys may be small, but they have big jobs. Your kidneys' main job is to filter waste and extra water from your body. These are removed from your body in your urine (pee).

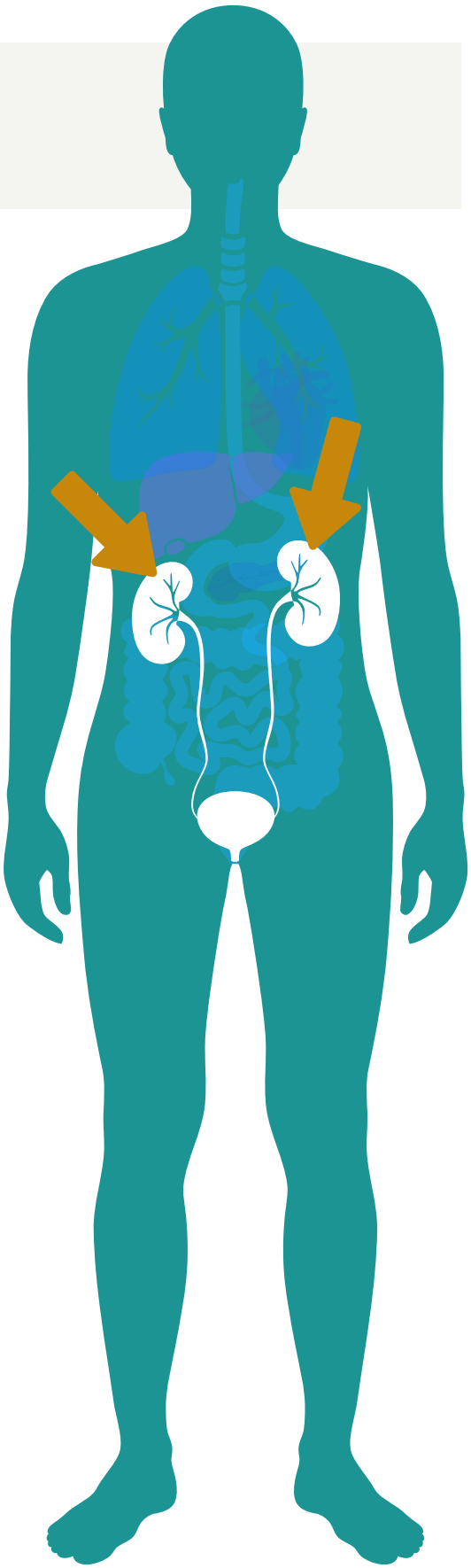
OTHER KIDNEY JOBS ARE TO:

- Keep your acid base balance.
- Control your blood pressure.
- Help your body make red blood cells.
- Help keep your bones healthy.

WHEN YOUR KIDNEYS DON'T WORK WELL:

- Your body can't get rid of wastes and water.
- Wastes and water build up in your body.
- Your blood pressure can go up.
- Your body may make fewer red blood cells (anemia).
- Your bones may become weak and can break.

Location of the Kidneys



When your kidneys do not work as well as they should, you may be told you have **c**hronic **k**idney **d**isease (CKD). “Chronic” means it does not go away. Your doctor expects you to have it for a long time. Kidney disease tends to get worse over time unless steps are taken to slow it down.

CKD has 5 stages by percent of kidney function. In early CKD stages, kidneys can still do most of their jobs, but not as well. In later stages, they try to work overtime, but just can’t keep up. Kidney failure happens when they don’t work at all. This is called **e**nd **s**tage **k**idney **d**isease (ESKD) or **e**nd **s**tage **r**enal **d**isease (ESRD). People with ESKD need dialysis or a kidney transplant to live. Kidneys don’t start to work again once they stop due to CKD.

What are the symptoms of kidney disease?

With so many vital jobs, it may seem like you would know if your kidneys did not work well. Not true! Many people have few symptoms of CKD until it is very far along. Or, they have symptoms—like these—but do not know that their kidneys were the reason:

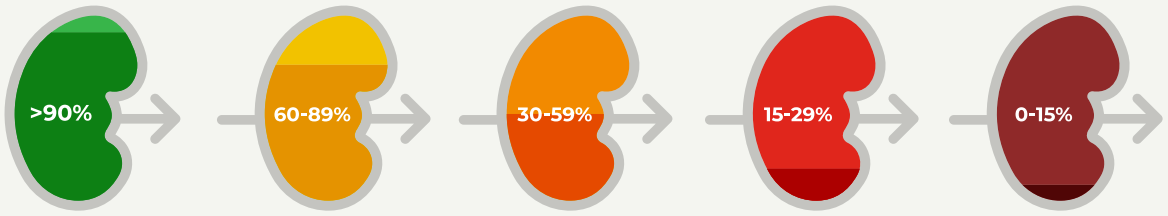
- Severe fatigue.
- Itching.
- Muscle cramps.
- Sick to stomach, throwing up.
- Not hungry (loss of appetite).
- Swelling in the hands, feet, face, or belly.
- Peeing a lot—or not peeing much at all.
- Shortness of breath.
- Trouble sleeping.

What are the main causes of kidney disease?

Diabetes (high blood sugar) is the leading cause of CKD. CKD due to diabetes may be called diabetic kidney disease (DKD). The Centers for Disease Control and Prevention (CDC) says that about 1 in 3 adults with diabetes have CKD. That is roughly 11.4 million in the United States.

High blood pressure (hypertension) is the second leading cause of CKD. The CDC says that 1 in 5 adults with high blood pressure have CKD. Over time, high blood pressure can damage your heart. This can lead to heart disease or heart failure—and either one can cause CKD and make it worse.

Percentage of Kidney Function



STAGE 1: Normal function but evidence of kidney damage

STAGE 2: Mild loss of kidney function

STAGE 3: Moderate to severe loss of kidney function

STAGE 4: Severe loss of kidney function

STAGE 5: Kidney failure now requires treatment to live

Both diabetes and high blood pressure can harm the tiny blood vessel filters in the kidneys. Once these are damaged, the kidneys will not work as well as they once did. The damage does not heal or get better and can lead to kidney failure.

Can other things cause kidney disease?

While the main causes of kidney disease are diabetes and high blood pressure, kidney disease can be caused from other diseases or health problems. For example, CKD can be caused or made worse by infections, like COVID-19, strep or repeated urinary tract infections (UTI). Inherited diseases (also called genetic disease), injury, recurring kidney stones and kidney cancer are some other causes of CKD.

1 in 3

Approximately 1 in 3 adults with diabetes (and 1 in 5 adults with high blood pressure) may have chronic kidney disease.

Can I get CKD?

Anyone can have kidney disease. However, some people may be more likely to develop CKD than others. The traits, conditions or characteristics that make them more likely to develop CKD are called “risk factors.”

According to the CDC, the risk factors for kidney disease are:

- Diabetes.
- High blood pressure.
- Heart disease.
- Family history of diabetes or CKD.
- Family member who has needed dialysis or a kidney transplant.
- Obesity.

KEEP IN MIND...

It is not too late to start managing diabetes and high blood pressure. Managing them now may prevent more damage. The “Kidney Health” section of this Guide (page 18) will give you tips to help.

Testing Your Kidney Health

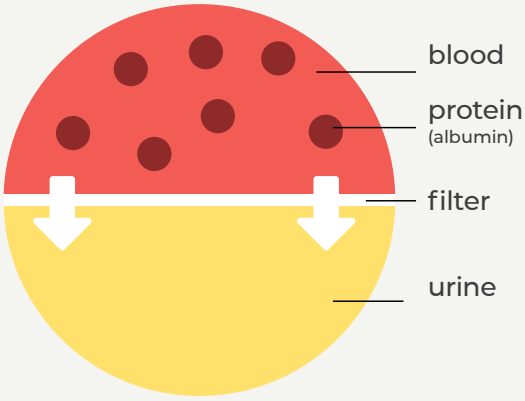
The first step in taking charge of your health is to know where you are - your "starting point."

Kidneys are our body's filters. They keep in things we need, like proteins, and filter out wastes and water. Urine and blood tests check protein and waste levels. Protein in the urine or wastes in the blood are signs of kidney damage.

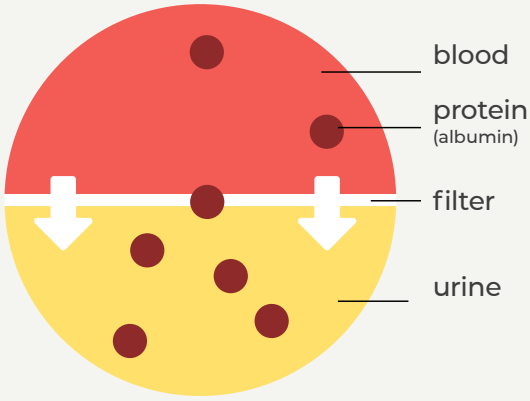
Albumin (Protein) in Urine

Protein in your urine is a sign of kidney disease.

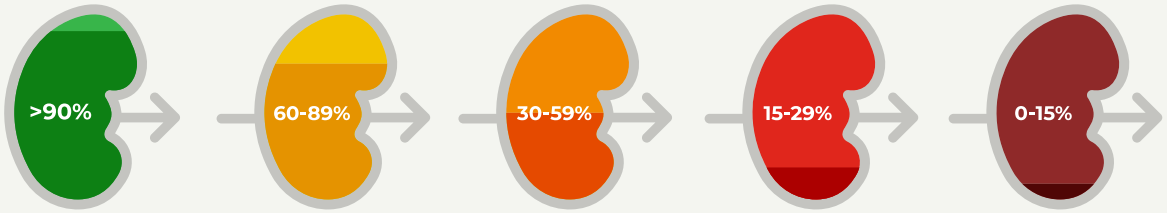
Inside a healthy kidney



Inside a damaged kidney



Percentage of Kidney Function



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STAGE 5: Kidney failure now requires treatment to live

Urine Test – Urine Albumin-to-Creatinine Ratio (UACR)

- Protein in your urine is a sign that your kidneys do not work well.
- UACR compares albumin (protein) to creatinine (a waste).

Blood Test – estimated Glomerular Filtration Rate (eGFR)

- eGFR is the test that is used most often to check kidney function.
- Serum creatinine (sCr) is a waste that healthy kidneys remove.
- The eGFR math equation uses the creatinine level to see how well kidneys work.
- Your eGFR is about the same as your percent (%) kidney function.

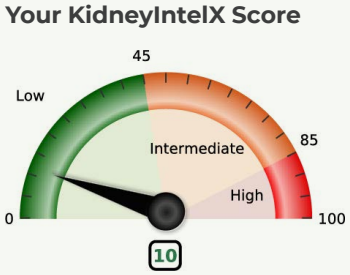
Both blood and urine must be tested. The first signs of kidney damage tend to be seen in urine. This is why the **A**merican **D**iabetes **A**ssociation (ADA) says those with diabetes need a urine test at least once a year. The UACR and eGFR are a "snapshot" of how well your kidneys work.

A single UACR and eGFR result is not enough to make a diagnosis. These tests must be done more than once to diagnose CKD. But, even so, neither test can predict if kidney disease will get worse or lead to kidney failure.

A prognostic test can help. This type of test looks forward and predicts how CKD may affect you over time. Knowing how CKD may affect you gives you the chance to take steps to protect your kidneys. The steps are specific to you, based on your health status and risk of progression.

KidneyIntelX helps you take the right steps at the right time to improve your kidney health.

Results from blood test (three proteins linked to kidney function) + **Results from urine test** (UACR) + **Data from your medical record** (including eGFR) =



KidneyIntelX

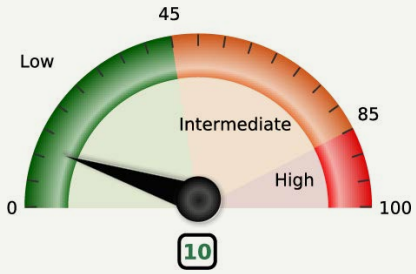
- KidneyIntelX is for adult patients with diagnosed type 2 diabetes and existing CKD stages 1-3b. Your score predicts your risk of progressive kidney function decline over the next 5 years.
- KidneyIntelX uses results from a blood sample along with data in your medical health record, to determine your risk score.
- KidneyIntelX can be done alone. Or, it can be done at the same time as other lab tests your doctor orders. You do not need to fast. No prep is needed. Results are sent to your doctor in about 5-7 days.
- You may be able to get KidneyIntelX free or at a lower cost if your health plan does not cover it. Call Renalytix at 1-844-508-9409 to find out.
- KidnelyIntelX risk scores are low, intermediate (medium), or high. Your action steps will depend on your risk score, your health, and your doctor's advice. They could include:

A change in health habits.
(e.g., what you eat, how active you are, smoking or vaping).

Medicines to help control diabetes and high blood pressure.

Seeing a doctor that specializes in kidney disease, diabetes or heart problems.

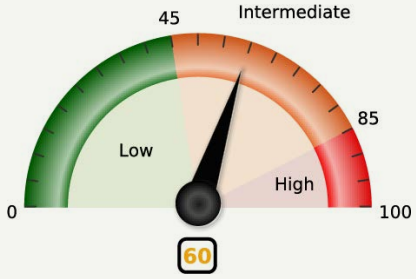
KidneyIntelX Results



LOW RISK: MAINTAIN

Patients with a low KidneyIntelX score have a low risk of progressive decline in kidney function.

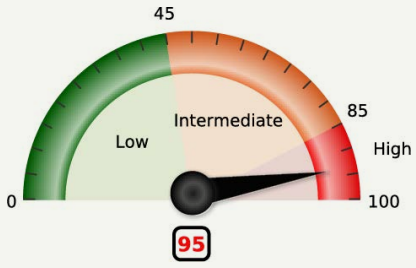
The guideline-recommended clinical pathway includes lifestyle modifications, metformin and pharmacologic strategies to reduce the risks of CKD progression and cardiovascular disease that include maintaining the current treatment regimen, which could include ACEi or ARB, antihypertensives, SGLT2i, GLP-1 RA or non-steroidal MRA. Consider monitoring low risk patients for eGFR and UACR at least once annually.



INTERMEDIATE RISK: MONITOR

Patients with an intermediate KidneyIntelX score have an intermediate risk of progressive decline in kidney function.

The guideline-recommended clinical pathway includes lifestyle modifications, metformin and pharmacologic strategies to reduce the risks of CKD progression and cardiovascular disease (Titrate ACEi or ARB to the maximum tolerated dose and consideration of SGLT2i (or GLP-1 RA if SGLT2i is not tolerated or contraindicated) and non-steroidal MRA. Consider monitoring intermediate risk patients for eGFR and UACR up to 2 times per year.



HIGH RISK: ACT!

Patients with a high KidneyIntelX score have an elevated risk of progressive decline in kidney function.

The guideline-recommended clinical pathway includes lifestyle modifications, metformin and pharmacologic strategies to reduce the risks of CKD progression and cardiovascular disease (Titrate ACEi or ARB to the maximum tolerated dose and strong consideration of SGLT2i (or GLP-1 RA if SGLT2i if not tolerated or contraindicated) and non-steroidal MRA). Consider monitoring high risk patients for eGFR and UACR up to 3 times per year and a specialist consultation.

Tests to Monitor Diseases that Can Damage Your Kidneys

TYPE 2 DIABETES:

Managing diabetes can help prevent or slow CKD. Blood tests can show how well you are doing and if you need any changes.

A1C (ALSO CALLED HEMOGLOBIN A1C, OR HBA1C):

- A1C is a 2-3 month average blood sugar level.
- The test is done at least 2 times per year, or when changes are made in your diabetes management plan.
- Ask your doctor what your target range is and how often you should have an A1C test.
- Make a note in your calendar when you had the test, your results and when you should have the test again.

Diabetes is the #1 cause of kidney disease.

FASTING BLOOD SUGAR (DONE AT A MEDICAL OFFICE OR LAB):

- Fasting blood sugar is drawn when you have not eaten for at least 8 to 12 hours.
- Do not eat or take any medicines for diabetes before this test. These will change the results. The test will need to be done again.
- Ask your doctor what your target range is and how often you should have a fasting blood sugar test.
- Make a note in your calendar when you had the test, your results and when you should have the test again.

Your doctor may tell you to check your blood sugar at home. You can learn more about this in Section 4: Take Action for Your Kidney Health section.

BLOOD PRESSURE:

Controlling high blood pressure can help prevent kidney damage or keep it from getting worse.

Your kidneys and heart both work to remove wastes and water from your body. Your heart is a pump that moves blood through your body. Heart problems can lead to kidney problems and vice-versa.

It may help to think of a fish tank. A fish tank has a pump— like your heart. The pump pushes water through filters to clean it— like your kidneys. Clean, filtered water goes back to the tank.

If the pump pushes water through the filters with too much force, it can harm the filters. When the filters don't work well, wastes will start to slip through into the tank. These wastes can harm the fish.

This is why **kidney disease can also cause high blood pressure and heart problems (cardiovascular disease).** High blood pressure can cause a heart attack, stroke, or damage to your heart.

High blood pressure is the 2nd leading cause of CKD.

CKD can cause high blood pressure and heart problems.

Blood Pressure (taken by a medical professional):

- Blood pressure is taken using a cuff that inflates and deflates.
- Blood pressure is most often checked with the cuff on an upper arm. A wrist or ankle can be used, too.
- Blood pressure has two numbers: a top number over a bottom number.
- ***Systolic*** is the top number. This is how much force is in your arteries when your heart ***beats***.
- ***Diastolic*** is the bottom number. This is how much force in your arteries ***between*** heart beats.
- Ask your doctor what your blood pressure goal is and how often you should have it checked.
- Jot down your results along with when it should be taken again.

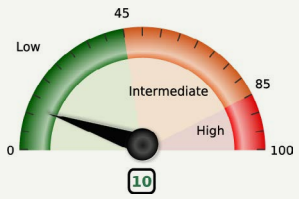
Your doctor may tell you to check your blood pressure at home. You can learn more about this in Section 4: Take Action for Your Kidney Health section.

Working with your doctor to keep your blood pressure in a safe range is ***good for your heart and your kidneys!***

Take Action for Your Kidney Health

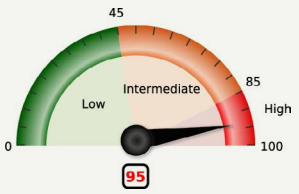
There are things you can do to protect your kidneys. Your KidneyIntelX score helps your doctor create a **kidney health action plan**. This plan is specific to ***you and your health***.

LOW RISK: MAINTAIN



INTERMEDIATE RISK: MONITOR

HIGH RISK: ACT!



You can take action for your kidney health by:

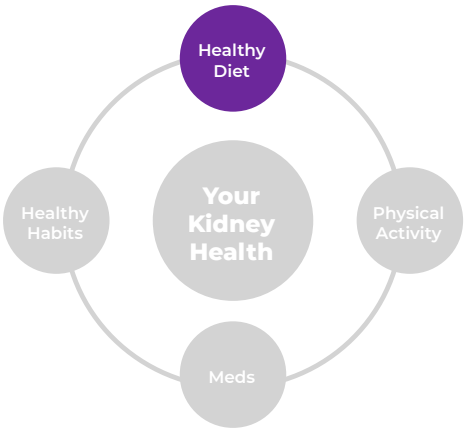
- Making healthy food choices.
- Moving your body.
- Taking medicines on time and as your doctor tells you. AND, avoiding medicines that can harm your kidneys.
- Practicing healthy habits (e.g., not smoking, seeing your doctor, easing stress).

Remember...

Talk to your doctor before you make any changes that may affect your health.

Let's focus on each of these actions for kidney health. Small changes can make a big difference.

These changes are likely to become habits that last over time.

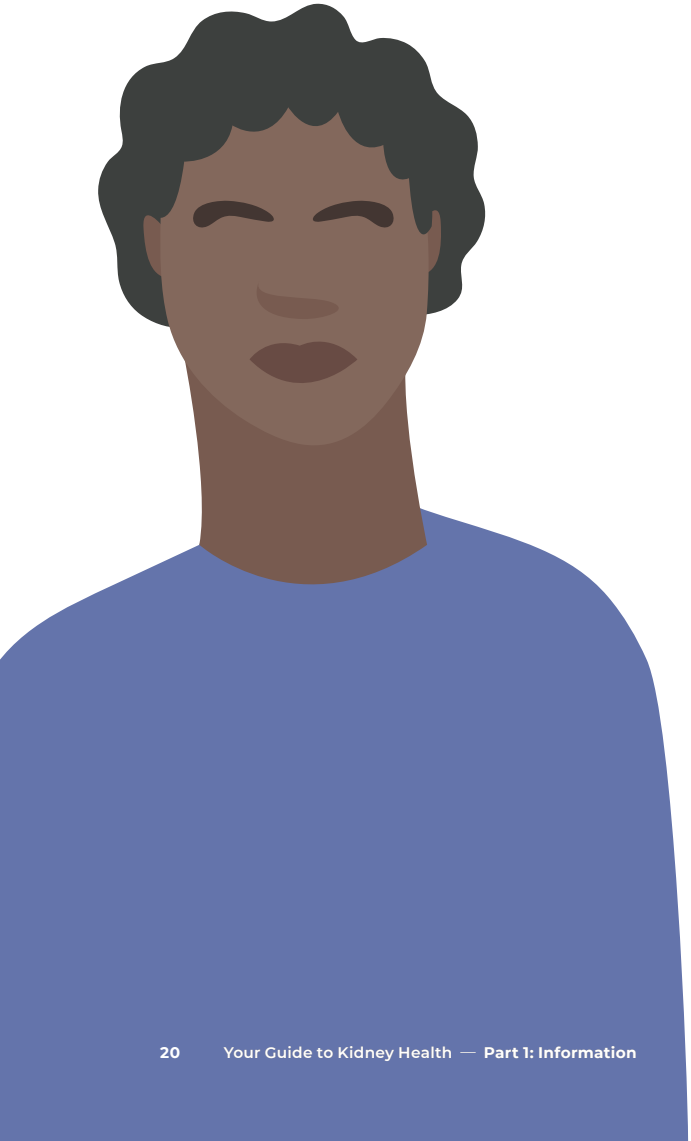


Make Healthy Food Choices

Food gives you energy. It nourishes your body. But, eating a lot of sugary or salty foods can cause weight gain and health problems.

With healthy eating, you can:

- Have more energy.
- Lower your blood sugar and help keep it within your goal.
- Lower your blood pressure and protect your heart.
- Maintain or lose weight.
- Prevent other problems, like heart disease, heart attack or stroke, worsening CKD.



It's best to limit:

- Sugars.
- Carbohydrates.
- Salt or sodium.
- How much you eat (portion size).

What you eat and drink (or don't eat or drink) matters more with type 2 diabetes.

Sugars & Carbs

Diabetes means that your body does not process sugar well. Sweets and foods that

break down quickly into sugar, like carbohydrates (carbs) raise your blood sugar. High blood sugar can cause lasting harm to your eyesight, heart, and kidneys. Eating less sugar and carbs can lower your blood sugar.

Salt

Limiting salt (sodium) in your diet matters, too. Cutting back on salt may lower your blood pressure, which is good for your heart. The best way to cut back on salt is to **avoid fast food and processed foods** (in boxes, cans, jars, and bags) and cook from scratch. Food labels list sodium. Look for foods with 140 mg. or less per serving. Take the saltshaker off your table or counter, too. Fresh herbs, spices, or lemon juice can add in new flavors and help you adjust to less salt. Try experimenting and have fun tasting different low-salt recipes.

Portion Sizes

Food labels list serving size as well as calories, sugars, carbs, and sodium in a serving. A food scale and measuring cups/spoons can help you measure servings.

Measuring portions helps you see how much a serving looks like.

Knowing what a serving looks like helps when you aren't able to measure your food, like when eating out. For example, eating too much fruit can raise your blood sugar. And, even sugar-free candy has calories!

Healthy food choices for people with diabetes include:

- Fresh vegetables—eat a rainbow.
- Fresh fruit (Fruit has natural sugars. Ask your doctor if you should limit what you eat.)
- Beans (i.e., black beans, pinto beans, kidney beans, and navy bean), lentils, chickpeas, and peas.
- Whole grains, such as brown rice, whole wheat bread, and oatmeal.
- Low-fat dairy, like milk and cheese.
- Poultry and fish.

Do you best to limit processed foods, foods high in saturated fat, or high in calories.

Limit or Avoid	Examples
Sugary Foods & Drinks	• Candy, hard candy, and gum. • Baked goods (cookies, cupcakes, cake). • Ice cream. • Yogurt. • Cereals and cereal bars sweetened with sugar. • Drinks sweetened with sugar like soda, sports drinks, juices, smoothies, and coffee drinks. • Condiments, sauces, and syrups (ketchup, honey, maple syrup).
Carbohydrates	• Potatoes. • White rice. • White bread. • Pasta/noodles.
Salt and Sodium	• Foods in jars or cans, like soups, vegetables, broth, spaghetti sauce, gravy. • Sauce mixes. • Frozen foods like pizza, frozen meals or TV dinners, meats. • Cured or packaged meats/lunch meat.
Saturated Fats	• Butter. • Sausage and bacon. • Hot dogs.
Processed Foods	• Microwave or ready-made meals. • Cured or packaged meats (bacon, ham, jerky, hot dogs). • Packaged cookies, chips and crackers. • Restaurant food.
Extreme Portion Sizes/High Calorie Foods	• Fried foods (fried chicken, fries, onion rings, fried fish). • Fast food (burgers, breakfast sandwiches, pancakes). • Sugary smoothies, sodas, and coffee drinks.

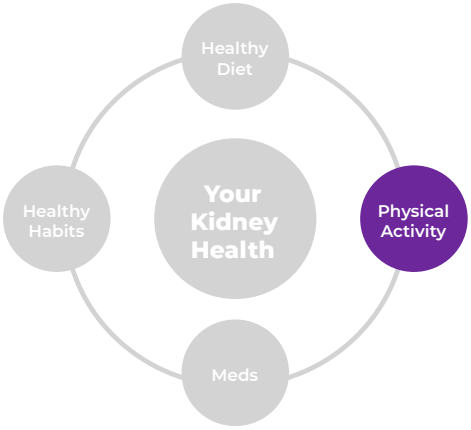
Remember... Be kind to yourself as you make changes to improve your health. If you eat something high in sugar or salt, get back on track the next time you eat. Don't let a "slip up" or "cheat" discourage you and snowball into many.

Make Healthy Food Choices

No matter what, making changes to eating habits is hard! Tell your doctor if you have trouble. They have many tips that can help and may suggest you work with a dietitian. Dietitians are nutrition experts. They will work with you on an eating plan that meets your needs. Many health plans cover this. Medicare Part B has a "medical nutrition therapy (MNT)" benefit. Your doctor can tell you more and refer you to a dietitian. Even small changes can get you started and make a difference. Here are some tips:

Tip	How Does this Help?
Eat meals at the same time each day.	• Helps keep your blood sugar on an even keel and avoid spikes • A schedule may make it easier to follow your eating plan
Drink water	• Water helps your body digest food • It can help with weight loss by making you feel full • It's a no-calorie way to quench thirst • Sugar-free flavorings can give water many different flavors
Eat ice chips	• Gives the sensation of chewing • No calorie way to quench thirst • Use sugar-free flavorings to make no calorie snow cones
Use herbs to season foods	• Helps you avoid adding salt to your food
Drain, strain, or rinse canned vegetables and beans	• Rinsing helps to remove extra salt

Healthy eating can improve diabetes and high blood pressure—which is good for your kidney health. A healthy diet can help you stay at a good weight or lose weight if you need to. If you are overweight, losing even a few pounds can boost your health. Ask your doctor what weight range is best for you.



Move More (Physical Activity and Exercise)

Moving more often goes hand-in-hand with healthy eating. When you feel good and have more energy, it is a bit easier to get started.

Like healthy eating, moving more can help:

- Lower your blood sugar and keep it in range.
- Lower your blood pressure and protect your heart.
- Maintain or lose weight.
- Prevent other problems, like heart disease, heart attack or stroke, worsening CKD.

Staying active helps your joints and bones. Moving more can improve flexibility and balance, two things that tend to decrease as we get older. Best of all, it helps you feel good. (Yes, we said that already, but it doesn't hurt to repeat it!)

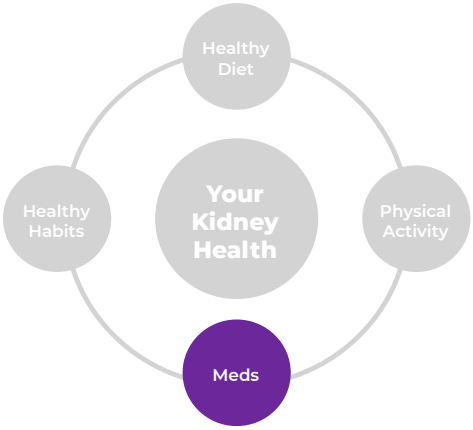
You may feel a bit out of shape if you haven't been active. You don't have to go join a gym or work out an hour each day. (You can build up to that, if you like.) Start with something that is easy for you, like a walk or swim. Increase the amount of time or distance over time. When you start slowly, with a small change,

you are more likely to succeed. That helps keep you motivated.

It also prevents the biggest excuse we may have for not exercising—aches and sore muscles the next day. Do more of the things you do anyway. Park further away from shops, or take the stairs if you can. Even housework counts as an activity. Running a vacuum and mopping can burn quite a few calories!

Find ways to move that you like (or, at least don't hate) and fit your schedule and life. Activities only get us moving when we do them. Some like to walk in a park, others may like to garden or learn new dances. You could jog in place or stretch while you binge watch a favorite show. There are many things you can do by yourself or with friends that don't need a membership or special gear. In fact, exercising with a buddy can help keep you both on track.

Remember... Moving is what matters! Try to include more physical activity into your daily routine, chores, and errands.



Take Medicines as Your Doctor Tells You

Healthy eating and exercise are the best things you can do for kidney health. However, medicines may help when diet and exercise aren't quite enough.

Medicines can help treat diabetes and high blood pressure. For them to help, you MUST take them as your doctor tells you. **Missing or skipping doses can make diabetes, high blood pressure, or both worse.** This raises the risk of lasting kidney damage.

Tell your doctor if you have any side effects. And, ***always*** talk to your doctor before you stop a prescription drug.

Medicines for Diabetes and High Blood Pressure

One of the **most important things** you can do to protect your kidney health is keep your blood sugar within the target range your doctor tells you. You may need medicine to treat diabetes when diet and exercise are not getting you within your target range.

There have been many advances in diabetes medicines just in the last 10 years. Many of these

medicines do more than treat diabetes. **They may also protect your heart and kidneys.** Research has shown 3 types, or classes, of diabetes medicines help to slow kidney damage:

- SGLT2i (**S**odium-**Gl**ucose Co**t**ransporter **2 i**nhibitors)
- GLP-1 RA (**G**lucagon-**l**ike **P**eptide **1 R**eceptor **A**gonists)
- Non-steroidal MRAs (**M**ineralo-corticoid **R**eceptor **A**ntagonists)

Some of these medicines may also help you lose weight. Weight loss can help you keep your blood sugar and blood pressure within your target ranges.

Keeping your blood pressure within the range your doctor tells you is also **very important**. High blood pressure can cause kidney disease **and** it can make it worse. If you have high blood pressure, you may also need medicines to help you get it within range. Research has shown 2 types, or classes, of high blood pressure medicines can help protect kidney function and lower the risk of heart disease:

- ACEi (**A**ngiotensin-**C**onverting **E**nzyme **i**nhibitor)
- ARB (**A**ngiotensin II **R**eceptor **B**lockers)

Medicines, especially newer medicines, tend to cost a lot. Health plans may not cover them. Companies that make these new drugs may have programs to give you the medicine free or at a lower price. Your doctor or pharmacy can help you enroll in these programs.

As your *health* needs change, your *health plan* needs may change, too. Review the list of medicines your health plan covers each year before you enroll. (This is a "drug formulary.") If medicines you need are not in your plan, you may want to try to find a plan that does have them. You may just have one chance a year to change health plans at "open enrollment" in the fall. You

Talk to your doctor to see if any of these medicines might help you.

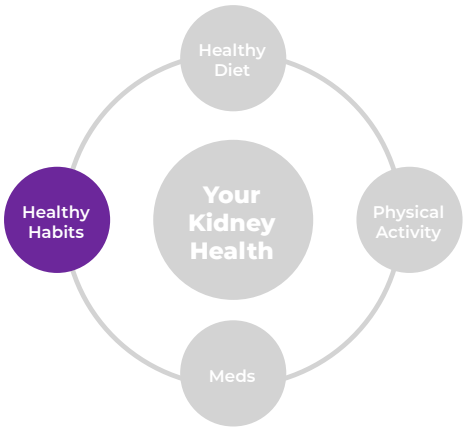
may be able to switch if you have a qualifying event, such as job change or a move.

Avoid Medicines that Can Harm Kidneys

Some products can harm the kidneys. **Review all medicines and supplements** you take with your doctor at each visit. Bringing an updated list to each visit makes it quicker and easier. Ask if anything you take could harm your kidneys. There are free computer or phone apps that help you track medicines, or simply use a pen and paper. You can also use Worksheet 1: My Medicines & Supplements in the workbook that you may have been given with this guide.

You can buy some medicines, vitamins, or supplements with no prescription. These are "**o**ver **t**he **c**ounter" or **OTC** medicines. Some are not safe for those with CKD. For example, **NSAIDs** (**n**on-**s**teroidal **a**nti-**i**nflammatory **d**rugs) can harm kidneys. Examples of NSAIDs include ibuprofen and naproxen sodium. NSAIDs can also be in some OTC cold and flu or sleep medicines.

Always ask your doctor or pharmacist before taking any OTC medicine or supplement.



Healthy Habits

Make healthy food choices! Move more! Take medicines as prescribed and avoid things that can harm kidneys!

All of these steps are ***essential*** to slow CKD. They help treat diabetes and high blood pressure (if you have it), the two leading causes of CKD.

Your doctor may also suggest you:

- Check and track your blood sugar at home.
- Check and track your blood pressure at home.
- Don't smoke or vape.
- Report any new symptoms or health changes.
- Get check ups, based on your KidneyIntelX score and health status.
- Manage stress.

Check & Track Blood Sugar

Your doctor may ask you to check your own blood sugar one or more times a day. This helps you learn how different foods impact your blood sugar and if your medicine is helping.

Your doctor will tell you how often to check your blood sugar. Some common times are:

- When you first wake up before you eat or drink anything (water is okay).
- Before a meal.
- 2 hours after the first bite of a meal.
- At bedtime.

You can use an app, jot down your blood sugar results in a notebook, or use **Worksheet 2: My Blood Sugar Results** at Home in the workbook that you may have been given with this guide. Bring your results to your next doctor visit.

Check & Track Blood Pressure

Your doctor may ask you to check your own blood pressure one or more times a day, too. You will see what makes your numbers go up or down and if your medicine is helping. Track your home readings and share them with your doctor.

Jot them down in a notebook or use **Worksheet 3: My Blood Pressure Readings** at Home in the workbook that you may have been given with this guide.

Don't Smoke or Vape

Most of us know that smoking or vaping isn't good for health and can cause cancer. You may not know that they can cause other serious health problems, like high blood pressure.

Smoking and vaping can slow blood flow and make heart and kidney problems worse. Each cigarette you smoke in a day may make your blood pressure go up. and, blood pressure medicines don't work as well in those who smoke or vape. So, high blood pressure can rise even higher, leading to lasting heart and kidney damage. Smoking and vaping raise the risk of a stroke or heart attack in those with high blood pressure. And, smoking or vaping can slow wound healing in those who have diabetes. A sore or wound that does not heal is a risk for infection and limb loss.

Ask your doctor about ways to quit smoking. It may never be

easy, but there are many tools (e.g., medicines, gums, patches, and programs) to help.

Go to Follow-Up Medical Visits

YOU manage your health each day. Your doctor is your partner in care. Follow-up visits can help you stay in tune with your health and feel your best. They give you time to discuss your concerns and get advice. This can keep small issues from becoming big problems.

Report Any New Symptoms or Health Changes

YOU know your body best. Pay attention to how you feel. When you are in tune with your body and how you feel, you will notice when something doesn't feel right. See your doctor as soon as you notice new symptoms.

Be sure to let your doctor know if:

- Feel more tired and have less energy.
- Upset stomach or don't feel like eating.
- Feel short of breath or have problems breathing.
- Feel bloated or swollen.

Remember... You can live a full life with kidney disease. Your medical team is there to help.

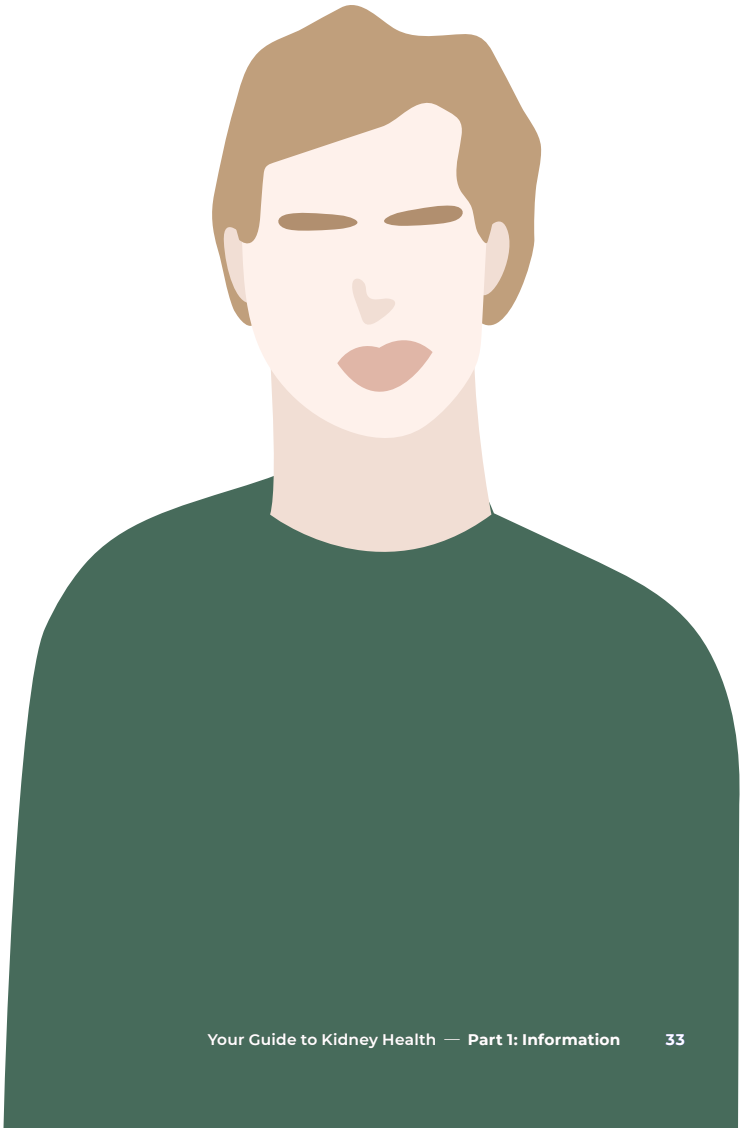
Manage Stress

YOU have stress in your life. We all do! Stress can cause health problems—or make them worse. And, of course, having health issues can be stressful. You may not be able to avoid stress, but you can manage it. Mindfulness techniques, yoga, meditation, or breathing exercises can help. Health plans may even help pay. Or, some are simple and you can do them at home. For example, take a moment to focus on your breathing. Take a deep breath in through your nose and slowly exhale. Take 2 more deep breaths and exhale. How do you feel? Do you think an exercise like this might help you?

These tips may help you get started:

- Check with your health insurance plan to see if there is a program you can try as part of your coverage. If not, ask if your plan covers the cost of such programs.
- Try out an app or online program to see what you like. Many of them offer free trial periods.
- Ask your doctor to give you some simple exercises you can try out on your own.

Find ways to ease your stress that you can do often. Reducing stress can lower your blood pressure and heart rate. It can reduce inflammation and anxiety. And, it can improve your quality of life.



Summary

Let's review the key points.

What do my kidneys do?

- Your kidneys have a few key jobs and are important to your overall health.
- They filter out waste and extra fluid from your body so that your body can get rid of it when you urinate.
- Your kidneys control your blood pressure, make and regulate hormones, and help keep your bones strong.

What causes kidney damage or CKD?

- Diabetes (high blood sugar) is the leading cause of kidney disease. High blood pressure is its second leading cause.
- Both diabetes and high blood pressure can cause damage to the blood vessels and tiny filters within the kidneys. This damage can be worse if your diabetes or high blood pressure is not controlled.
- Once the blood vessels and filters are damaged, your kidneys will not work as well as they once did.

When your kidneys aren't working well:

They don't filter your blood properly and your body can't get rid of wastes as well as it should.

Wastes and fluids build up in your body.

Your blood pressure can go up.

Your body may make fewer red blood cells.

Your bones may become weak.

I feel fine. Wouldn't I know if I have kidney disease?

Most people with CKD don't know they have it until it is very far along. CKD happens over time so people don't notice any symptoms.

Kidney disease can lead to kidney failure. People with kidney failure need dialysis or a kidney transplant to live. The first step in getting to know your kidneys is to have **both your urine and blood tested**.

The most common tests are Urine Albumin-to-Creatinine Ratio (UACR) and estimated Glomerular Filtration Rate (eGFR). Together UACR and eGFR give a "snapshot" of how well your kidneys work.

However, UACR and eGFR can't predict if kidney disease will get worse or cause kidney failure. This is where KidneyIntelX can help.

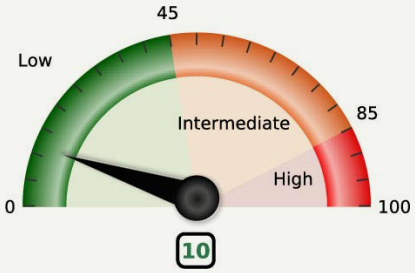
What is KidneyIntelX?

KidneyIntelX is a blood test that assesses if you are at low risk, intermediate (medium) risk or high risk to lose kidney function or experience kidney failure within the next 5 years.

Your KidneyIntelX risk score is calculated using information in your medical health record and the levels of 3 biomarkers in your blood.

Chronic Kidney disease does not get better or go away. You can take steps to stop it from getting worse.

What does my KidneyIntelX score mean?



LOW RISK: MAINTAIN

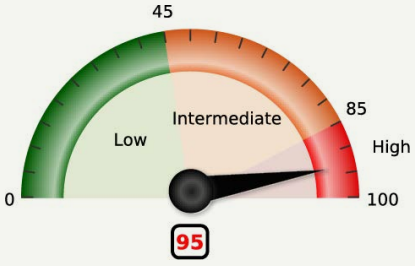
Patients with a low KidneyIntelX score have a low risk of progressive decline in kidney function.

The guideline-recommended clinical pathway includes lifestyle modifications, metformin and pharmacologic strategies to reduce the risks of CKD progression and cardiovascular disease that include maintaining the current treatment regimen, which could include ACEi or ARB, antihypertensives, SGLT2i, GLP-1 RA or non-steroidal MRA. Consider monitoring low risk patients for eGFR and UACR at least once annually.

INTERMEDIATE RISK: MONITOR

Patients with an intermediate KidneyIntelX score have an intermediate risk of progressive decline in kidney function.

The guideline-recommended clinical pathway includes lifestyle modifications, metformin and pharmacologic strategies to reduce the risks of CKD progression and cardiovascular disease (Titrate ACEi or ARB to the maximum tolerated dose and consideration of SGLT2i (or GLP-1 RA if SGLT2i is not tolerated or contraindicated) and non-steroidal MRA. Consider monitoring intermediate risk patients for eGFR and UACR up to 2 times per year.



HIGH RISK: ACT!

Patients with a high KidneyIntelX score have an elevated risk of progressive decline in kidney function.

The guideline-recommended clinical pathway includes lifestyle modifications, metformin and pharmacologic strategies to reduce the risks of CKD progression and cardiovascular disease (Titrate ACEi or ARB to the maximum tolerated dose and strong consideration of SGLT2i (or GLP-1 RA if SGLT2i if not tolerated or contraindicated) and non-steroidal MRA). Consider monitoring high risk patients for eGFR and UACR up to 3 times per year and a specialist consultation.

What's next?

- Your doctor will review your KidneyIntelX score with you along with action steps for your kidney health. This is your kidney health action plan and it is specific to you and your health.
- Your action steps depend on your KidneyIntelX score, your health, and your doctor's advice.

SECTION 5

Resources

Your Guide for Kidney Health was developed using information and resources available from patient associations, governmental agencies, and scientific research publish in peer-reviewed medical journals. You can access links to specific pages and journal articles via the Renalytix website at **https://www.kidneyintelx.com/resources-and-support/**

American Kidney Fund (AKF)
https://www.kidneyfund.org/all-about-kidneys

Centers for Disease Control and Prevention (CDC)
https://www.cdc.gov/kidneydisease

Life Options
https://lifeoptions.org/

National Institute of Diabetes and Digestive and Kidney Diseases (NIDDK)
https://www.niddk.nih.gov/health-information/kidney-disease/chronic-kidney-disease-ckd

National Kidney Foundation (NKF)
https://www.kidney.org/kidney-basics

Remember, you can do this! And, your medical team is with you at every step.

KidneyIntelX™

Ask your doctor

if KidneyIntelX can help you take action for your kidney health.

Brought to you by renalytix™