



## Your Child's Hemodialysis Journey

children'shealth<sup>®</sup> 



## WELCOME

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Dear Parent/Caregiver,

Welcome to the Hemodialysis Program at Children's Health<sup>SM</sup>. We understand that this is a stressful and difficult time for you and your child.

We put this guide together as a resource to help answer questions you may have. Our medical team will support you through this journey by providing updates and information each step of the way.

**If you have any questions, please call:**

214-456-2780 or 214-456-2517

Monday through Saturday

6 a.m. to 4:30 p.m.

**For an after-hours emergency:**

Please call the Children's Health operator at 214-456-7000 and ask for the hemodialysis doctor or nurse on call.

Sincerely,

Your Child's Medical Team



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## Your Child's Medical Team

Your child will have lots of people taking care of them. Learn about each member of the medical team below:

### Doctor (M.D.)

Doctors that care for people with kidney problems are called nephrologists, or kidney doctors for short. Doctors make decisions about your medicines and dialysis routine, and they track your child's overall health.

### Nurse (RN)

Nurses work very closely with doctors. They teach you and your child about dialysis. Nurses care for your child during dialysis and are who you call when you have questions or concerns about your child's health.

### Dietitian (RD)

Dietitians make sure that your child is getting the right diet and nutrition to help them grow and stay healthy. They will teach you about your child's special dietary needs and talk to you about your child's diet at home during their visits.

### Social worker (LMSW)

Social workers help answer any questions about the cost of care and help connect you to resources that you and your child may need, including referrals, counseling services and community resources. They are here to support you and your child.

### Child life specialist

Child life specialists help children and teenagers learn about their health and the care they need. Child life specialists can help lessen their worries, give school referrals, talk about peer issues and support children throughout their care.

### Patient care technician (PCT)

Patient care technicians work closely with other members of the medical team. They often take your child's vital signs and help the nurse set up for dialysis.

### Financial counselors

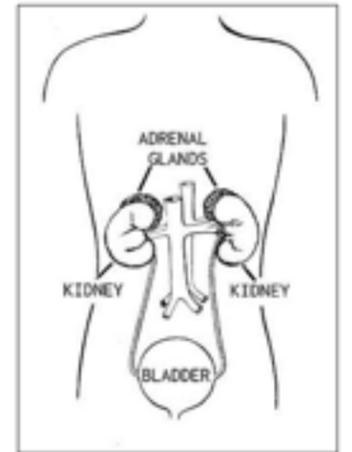
Financial counselors work with families to find programs or set up payment plans that will help you pay medical bills.

## How Do the Kidneys Work?

To understand why people need dialysis, let's first learn about the kidneys.

Most people are born with two kidneys. Each kidney is about the size of your fist. The kidney is shaped like a bean.

Kidneys are located below the ribs on each side of the backbone. Each kidney connects to the bladder by a special tube called a ureter. The ureters connect to the bladder, which holds pee. From the bladder, pee flows out of the body through a tube called the urethra.



### Why do we have kidneys?

1. The kidneys **clean our blood**. As blood flows through the body, it picks up waste from the body and goes through the kidneys. The kidneys get rid of the waste through pee. The kidneys also keep or get rid of extra chemicals in the body.

These chemicals are called:

- Potassium
- Sodium
- Phosphorous

2. The kidneys help **balance the fluid** level of the body. Body fluid is mainly removed in the form of pee.

3. Kidneys also **make important hormones** called:

- Renin to control blood pressure
- Erythropoietin to make red blood cells
- Calcitriol (vitamin D) for bone growth

## What Happens When Kidneys Fail?

Talk to your child's doctor to learn why your child's kidneys failed.  
Write down the reason(s) here:

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### When the kidneys don't work, the body:

- Builds up waste in the blood
- Can't control blood pressure
- Can't balance fluid
- Can't make red blood cells
- Develops weak bones

### What are signs that the kidneys have failed?

- Tired
- Nausea
- Weak
- Vomiting
- Loss of appetite
- Trouble concentrating
- Difficulty breathing
- High blood pressure
- Swelling
- Low red blood cell counts



## What Is Dialysis?

Dialysis is used when the kidneys stop working. Kidney failure may be temporary or last forever. Kidney failure is also known as end-stage renal disease, or ESRD for short. ESRD is diagnosed when there is permanent loss of 90% of total kidney function.

There are **two types of dialysis** used to clean the blood of waste products and remove the fluids:

1. Hemodialysis – A machine is used to clean blood outside the body.
2. Peritoneal dialysis – The lining of the belly is used to clean blood.

The type of dialysis your child will get is called **hemodialysis**. To start hemodialysis, your child needs vascular access through a central line, graft or fistula.

### How does hemodialysis work?

1. A dialysis machine uses a pump to remove blood from your child's vascular access (central line, graft or fistula).
2. As the blood goes through the tubing outside the body, it is cleaned by a fluid called dialysate (di-al-y-sate). The dialysate fluid removes the waste and fluid from the blood. Your child's doctor orders the dialysate based on your child's needs.
3. Once the blood is cleaned, the clean blood returns back to your child through their vascular access.

### How much blood is outside my child's body during hemodialysis?

The machine type is based on your child's size. For older children, no more than 2 cups (1 pint or 16 ounces) of blood are outside your child's body. For smaller children, the amount of blood outside the body is even less.

### How does the dialysis machine help keep my child safe?

The dialysis machine has special monitors that tell the nurse:

- Your child's blood pressure during dialysis
- How fast the blood moves through the machine
  - Your child's doctor orders the flow rate that is best for your child
- If there are air bubbles
  - It is important to keep air out of your child's blood

## How Do We Know Dialysis Is Working?

Each hemodialysis treatment lasts about four hours. They are done three or more times a week. The doctor will give you a prescription that tells you how much treatment your child needs to keep them healthy.

My child's hemodialysis treatment schedule is:

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### How do we know dialysis is working?

The dialysis care team tests your child's blood levels often. The blood test results show how dialysis is removing the waste and fluids. This tells us if your child is getting the right amount of dialysis. Blood tests may be drawn each week, each month and each year depending on your child's needs.

### What blood tests are checked?

Your child's dialysis care team may measure:

- Urea reduction ratio (URR)
- Kt/V (kay-tee-over-vee)

To make sure your child is getting enough dialysis, the:

- URR should be at least 65%
- Kt/V should be at least 1.2

Other lab tests that we check often are:

- Blood urea nitrogen (BUN) and creatinine – To measure the amount of waste
- Sodium (Na) and potassium (K) – To measure chemical amounts in the body
- Hemoglobin and hematocrit (H&H) – To measure red blood cell counts

Other important things we watch closely:

- Weight and blood pressure before and after dialysis

Ask your dialysis care team what they plan to measure, and write it here:

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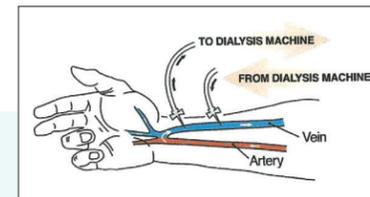


**It is very important for your child to get their full dialysis treatments as prescribed.**

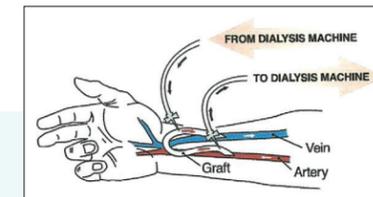
## What Is Vascular Access?

Vascular access is a way to reach the blood vessels for hemodialysis. Your child's vascular access is their dialysis lifeline. There are **three** types:

- A **fistula** is an artery and vein sewn together. Blood from the artery makes the vein thicker so it can be used for dialysis. A fistula is often the longest-lasting access.
- A **graft** is a piece of man-made blood vessel. It is used to connect an artery and a vein together.
- A **catheter** is a plastic tube placed into a large vein.

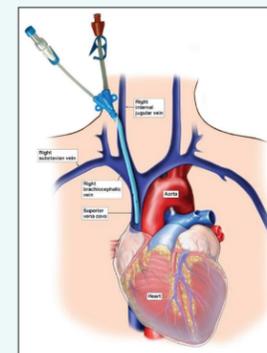


**Fistula**



**Graft**

A **fistula** or **graft** is most often placed in an arm, but sometimes in a leg. Your child's doctor will recommend which type of access will work best for your child. **Ask your doctor** if a fistula will work for your child.



A **catheter** is most often placed in the neck, but it may also be in the chest or groin.

Catheters may be used for a short time while waiting to get a fistula or graft or waiting for a fistula or graft to heal.

There are only a few sites for vascular access. **It is important to care for your child's access so it will last as long as possible.**

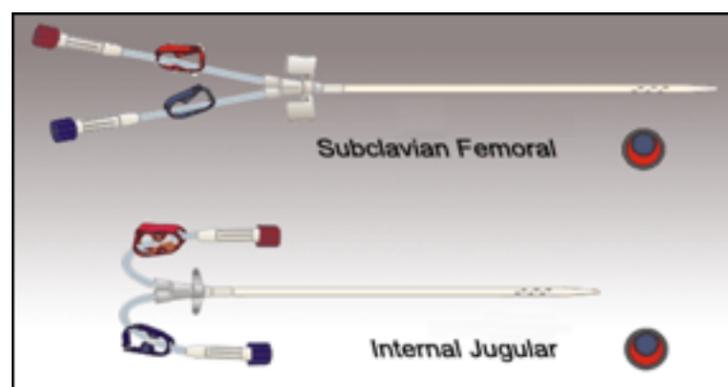
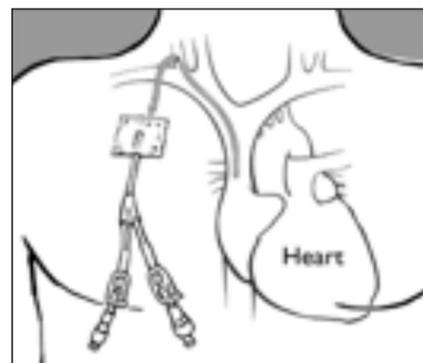
## What Is a Hemodialysis Catheter?

A hemodialysis catheter is used for **dialysis**. It is a soft plastic tube. The hemodialysis catheter is put in a large vein, and the tip of it is near the heart. The other end of the catheter is outside of the body.

Your dialysis team will be the **ONLY** people to use the hemodialysis catheter.

These catheters have **two** tubes:

- **Red tube** - Draws blood from the vein and out of the body into the dialysis pathway
- **Blue tube** - Returns clean blood to the body



All hemodialysis catheters **should have**:



Clear dressing covering the catheter

Stop sign sticker on the dressing

## How Can I Help in My Child's Care?

As a dialysis patient, your child is at risk for infections. In the hospital and at home, cleanliness is a key factor in lowering chances of infection.

### 1. Make sure everyone has clean hands

Clean hands are the best way to keep your child from getting an infection.

- Everyone must wash hands with soap and water or use hand sanitizer.
- Doctors and nurses must clean hands and put on gloves before touching your child's hemodialysis catheter.
- Remind family, guests and your child's doctors and nurses if you notice they didn't clean their hands.



### 2. Help us with daily care

Daily care is important to keep infection away from your child's hemodialysis catheter.

- Tell/call your child's nurse right away if your child's:
  - Line is leaking or comes out (do not reconnect)
  - Hemodialysis catheter cover or dressing is loose, wet or looks dirty
  - Hemodialysis catheter tubing or dressing gets body fluids like stool, vomit or mucus on it
  - Hemodialysis catheter looks red or hurts
- Help give your child a bath each day and change their clothing.
  - Make sure the dressing and the catheter do not get wet.
- Remind our staff to always "Scrub the Hub" - Cleaning the hemodialysis catheter caps before use with alcohol for 15 seconds and letting it dry for 15 seconds helps kill the germs.
- Make sure everyone, even your child, wears a mask when the hemodialysis catheter caps or dressing is changed.

### You can also help by learning:

- When your child should get the hemodialysis catheter caps or dressing changed next
- About extra cap covers that protect and keep the central line caps clean

### 3. Please speak up

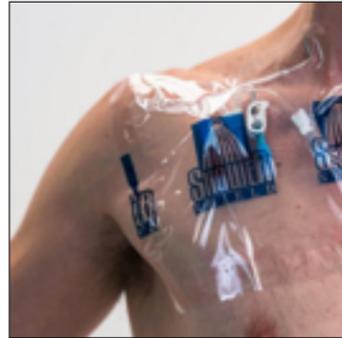
We want you to be our partner and help keep your child safe.

## How Does My Child Bathe?

Your child may take baths or showers, but you **must cover** all of the catheter dressing and connections.

Ask your child's nurse to go over any special instructions with you about bathing. It is important to **NOT** get the catheter dressing or connections wet.

- During a shower, keep your child's back to the water to keep the central line and tubing from getting wet.
- Take short showers to keep steam from getting into the dressing.
- During a bath, do **NOT** let the central line or tubing go under the water.
- Do **NOT** swim with the central line.



### To cover the catheter dressing and connections:

1. Place the connections in a plastic bag and seal the bag around the connections or cover them with a protective plastic covering and tape.
2. Then cover the connections and catheter dressing with a plastic covering like AquaGuard® or Press 'N Seal®.

**If the catheter dressing gets wet or loose, the dressing should be changed right away.**

**Call the hemodialysis nurse for a plan to get the dressing changed.**

### Hemodialysis Clinic Nurses

214-456-2780 or 214-456-2517

Monday through Saturday

6 a.m. to 4:30 p.m.

### After-hours Emergency Number

Call the Children's Health operator at **214-456-7000** and ask for the hemodialysis doctor or nurse on call.

## What Are Other Helpful Catheter Tips?

**Look at the catheter and dressing many times a day: Morning, afternoon, night and when concerned.**

- Check that the catheter is still in place. Check that there is no redness, swelling, bleeding or drainage under the dressing
- Check that the dressing is sealed completely and not peeling up. If the dressing is peeling up a small amount, you may use tape on the edges to keep the dressing on
- Check that the clamp on the line is closed
- Check that the caps are on tight

**Hemodialysis catheter care will be done in the hemodialysis clinic.**

Care includes:

- Catheter dressing changes once every seven days and as needed
- Cap changes before and after hemodialysis
- Use of medicines called heparin and tissue plasminogen activator (TPA) to keep the catheter from clotting

**You should have emergency supplies everywhere your child goes.**

Supplies you should have:

- Clear dressing or tape in case reinforcement is needed
- Alcohol wipes
- Sterile gauze and tape
- Plastic clamps in case of accidental line break

**Ways to keep your child's catheter safe:**

- Do not let your child do activities that could bend or pull the catheter out (contact sports, rough play).
- Do not use pins or scissors near the hemodialysis catheter.
- Do not scratch or pull at hemodialysis catheter dressing.
- Do not put anything in the hemodialysis catheter.

## What Should I Do in a Catheter Emergency?

Accidents can happen. We want you to be ready. When you are traveling or at home with your child, you should always have an emergency bag of equipment with you. Your bag should always be ready to use. The table below has a list of possible problems and what to do in case they happen.

PROBLEM	POSSIBLE CAUSE	WHAT TO DO
<ul style="list-style-type: none"> <li>Fever, chills</li> <li>Tenderness, redness or pus at hemodialysis catheter site</li> </ul>	<ul style="list-style-type: none"> <li>Infection</li> </ul>	<ul style="list-style-type: none"> <li>Check your child's temperature</li> <li>Call the hemodialysis team right away</li> </ul>
<ul style="list-style-type: none"> <li><b>Fluid leaking from the hemodialysis catheter</b></li> </ul>	<ul style="list-style-type: none"> <li>Injection cap not screwed on securely</li> <li>A hole in the hemodialysis catheter</li> </ul>	<ul style="list-style-type: none"> <li>Tighten the injection cap</li> <li>If you see a leak in the line, clamp it (or fold it over and pinch it) between the damaged area and the skin and call your hemodialysis team, or go to the emergency room right away</li> </ul>
<ul style="list-style-type: none"> <li>Skin redness where the dressing was</li> </ul>	<ul style="list-style-type: none"> <li>Sensitivity to the dressing</li> </ul>	<ul style="list-style-type: none"> <li>The nurse may need to change the type of dressing or tape used</li> </ul>
<ul style="list-style-type: none"> <li>Part of the hemodialysis catheter comes out</li> </ul>	<ul style="list-style-type: none"> <li>The hemodialysis catheter was not secured under the dressing, or it was tugged or pulled on</li> </ul>	<ul style="list-style-type: none"> <li>Do not push the catheter back in or pull on the catheter. Secure with tape and go to the emergency room right away</li> </ul>
<ul style="list-style-type: none"> <li><b>Hemodialysis catheter comes completely out</b></li> </ul>	<ul style="list-style-type: none"> <li>The hemodialysis catheter was not secured under the dressing, or it was tugged or pulled on</li> </ul>	<ul style="list-style-type: none"> <li>Place a sterile gauze pad on the site and press firmly until the bleeding has stopped (two to five minutes)</li> <li>After the bleeding has stopped, apply a bandage snugly</li> <li>Save the hemodialysis catheter and call your hemodialysis doctor, or go to the emergency room</li> </ul>



## When Should I Call the Hemodialysis Team?

Call your child's hemodialysis team if you find any of the problems below with your child's catheter:

- The skin around the catheter looks red or swollen
- Your child complains of pain around the catheter site
- There is blood or drainage coming from the catheter site
- The dressing has peeled up along the edges and is letting air get into the dressing
- The catheter is pulled out or broken
- The cap has come off
- If your child has a fever of 100.5°F (38°C) or greater, or chills

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## What Should I Know About Fluids and Dialysis?

One of the jobs of normal kidneys is to remove extra fluid from the body. When the kidneys fail, dialysis can help remove some of the fluid. Kidney failure patients need to eat a low-salt diet and drink less fluid because their kidneys have trouble removing salt and fluid.

### What counts as a fluid?

Anything you drink is a fluid. This includes water, juice, soda, milk, etc. Some foods count as fluids too, including foods that melt like popsicles or ice cream, and watery foods like watermelon, soups and thin stews.

If your child comes to dialysis with too much fluid, the child may feel bad during the dialysis treatment. They may:

- Feel dizzy or faint
- Have muscle cramps
- Have headaches
- Experience nausea
- Pass out during treatment

Over time, too much fluid can harm your child's body. Too much fluid can cause:

- A type of heart failure
- Your child's feet or legs to swell up with fluid
  - This is called edema (e-DEE-ma)
- Your child to feel short of breath if extra fluid goes to the lungs

Signs and symptoms of having too much fluid in your child's body:

- Trouble breathing
- High or low blood pressure
- Swelling from fluid in the tissue and/or puffiness, commonly in hands, feet, face and ankles
- Lower percent of red blood cells, or hematocrit (HCT), than usual
- Low energy
- Heart problems

### How much fluid can your child have?

The amount of fluid depends on how much pee your child makes. **Talk to your hemodialysis care team about how much salt and fluid your child can have.** Measuring fluids for a while will help your child get used to the limit.

## How Can I Help My Child with Thirst?

### Follow these tips for helping your child when they are thirsty:

- Limit sodium (salt). See tips on next page.
- Ask the dialysis team how much fluid your child can drink each day.
  - To feel their best, you need to limit their fluids so that they gain no more than 2-4 pounds (1-2 kilograms) between treatments.
- Choose the right fluids for them to drink:
  - Sugar-free, caffeine-free drinks like diet 7UP, ginger ale, lemonade or caffeine-free tea.
- Have your child chew sugarless gum, sugar-free hard candy and especially sour candy, if they are old enough and able to.
- In hot weather:
  - Use a mist bottle with a fan to cool your child down.
  - Giving a spoonful of chilled applesauce may help.
  - Give a frozen piece of your child's favorite fruit (ask dietitian for a list of low-potassium fruits).
  - Stay out of the sun, and stick to shady areas if you can.
  - In hot weather, wear lightweight clothing.
  - Give crushed ice if your child is old enough and able to eat it.
  - Quench their thirst with lemon wedges.

### Measure and record the amount of salt and fluid your child eats and drinks each day.



## How Can I Help My Child Limit Sodium (salt)?

Our body needs minerals to be healthy. When the kidneys fail, some minerals build up in the blood. **Your child should eat less:**

- Sodium (salt)
- Phosphorus
- Potassium

### Six tips for lowering sodium:

#### 1. Do not add salt to foods.

- Take the salt shaker off the table. The most common form of sodium is sodium chloride (table salt).
- One teaspoon of table salt contains 2,300 mg of sodium.

#### 2. Do not eat foods where you can see salt on top. Avoid these foods or look for lower sodium versions:

- Pretzels, potato chips, nuts, crackers

#### 3. Use other seasonings instead of salt when cooking foods.

There are many herbs and spices that can make food taste great. Try adding these seasonings instead of salt. (Do not use salt substitute.)

- Herbs (basil, thyme, oregano, parsley, etc.)
- Spices (black pepper, anise, cumin, sage, etc.)
- Garlic, onions or peppers
- Lemon or lime juice

#### 4. Prepare foods at home so you can control the amount of sodium.

- Eat fresh and frozen foods instead of canned, processed or pickled foods.
- If using canned foods, rinse under water to remove some of the sodium.
- Select no-sodium or low-sodium foods when available.
- Do not cook with mixes or instant products that already have sodium.

#### 5. Choose carefully when eating away from home.

- Check on sodium content before ordering.
- Order foods that are baked, broiled or grilled.
- Remove any skin from meats.
- Choose fresh vegetables.
- Watch out for salad dressing. This can be very high in sodium.

#### 6. Learn to read the food label.

Some foods may have a lot of sodium, even if they do not taste salty.

**Children on hemodialysis should get between 2,000 to 3,000 milligrams (mg) of sodium per day.**

# How Do I Read Food Labels?

The food label will help you know how much sodium food contains. The food label is also called Nutrition Facts.

## Look at the serving size

- Are you eating the same amount that is on the label? If you eat double the serving listed, you have to double the sodium value.

## Look at the milligrams (mg) of sodium

- Try to eat foods with less than 140 mg of sodium per serving.

*Example:*

## Look at the label on the right

- The serving size is 1 ounce (oz), which is about 21 pieces.
- This label also tells you there are two servings in the container.

## Find the sodium value

- One serving has 250 mg of sodium, which is more than the recommended 140 mg of sodium per serving.

## Calculating sodium intake by pieces

- If you eat 42 pieces, you would eat two servings (double your servings).
  - Now you have to double the amount of sodium, so  $250 \text{ mg} \times 2 = 500 \text{ mg}$ .
- If you eat 11 pieces, you would eat about half of one serving.
  - Now you have to divide the amount of sodium by 2, so  $250 \text{ mg} / 2 = 125 \text{ mg}$ .

**Nutrition Facts**  
Serving Size 1 oz. (28g/About 21 pieces)  
Servings Per Container About 2

Amount Per Serving		% Daily Value*	
<b>Calories</b> 170	Calories from Fat 110		
<b>Total Fat</b> 11g			17%
Saturated Fat 1.5g			8%
Trans Fat 0g			
<b>Cholesterol</b> 0mg			0%
<b>Sodium</b> 250mg			10%
<b>Total Carbohydrate</b> 14g			5%
Dietary Fiber less than 1g			2%
Sugars 0g			
<b>Protein</b> 2g			
Vitamin A 2%	Vitamin C 0%		
Calcium 0%	Iron 4%		
Vitamin E 6%	Thiamin 4%		
Riboflavin 2%	Niacin 4%		
Vitamin B <sub>5</sub> 2%	Phosphorus 2%		

\* Percent Daily Values are based on a 2,000 calorie diet. Your daily values may be higher or lower depending on your calorie needs:

	Calories:	2,000	2,500
Total Fat	Less than	65g	80g
Sat Fat	Less than	20g	25g
Cholesterol	Less than	300mg	300mg
Sodium	Less than	2,400mg	2,400mg
Total Carbohydrate		300g	375g
Dietary Fiber		25g	30g

Calories per gram:  
Fat 9 • Carbohydrate 4 • Protein 4

## Label Lingo

You may see words on the label that can help you choose lower-sodium foods. **Always** read the Nutrition Facts to see exactly how much sodium is in the food.

• Sodium-free or salt-free	• Less than 5 mg sodium per serving
• Very low sodium	• 35 mg or less of sodium per serving
• Low sodium	• 140 mg or less of sodium per serving
• Reduced or less sodium	• At least 25% less sodium than the regular version
• Light in sodium	• 50% less sodium than the regular version
• Unsalted or no salt added	• No salt added to the product during processing (it does not mean it is a sodium-free food)

## Fresh Foods

Some fresh foods do not have a food label. They are usually low in sodium. Use this table as a guide:

FOOD	SODIUM (MG)
• <b>Vegetables</b> - Fresh or frozen, ½ cup	• 1-70 mg
• <b>Fruit</b> - Fresh or frozen, ½ cup	• 0-5 mg
• <b>Meats and Beans</b> - Dried beans, ½ cup prepared - Fresh meat, fish or poultry, 3 oz.	• 0-5 mg • 30-90 mg

## How Can I Help My Child Limit Phosphorus?

Phosphorus is found in your bones. Having high phosphorus in your blood will pull calcium out of your bones, making them weak and break easily. The calcium then deposits in the heart, blood vessels and lungs, causing them to harden. Children on hemodialysis should eat less phosphorus.

### Keeping phosphorus levels low

Keep the phosphorus in your blood low by:

- Eating less phosphorus
- Taking a phosphorus binder with your meals and snacks

### Phosphorus in foods

- Phosphorus is found naturally in most foods. The foods below are very high in phosphorus.

TRY TO EAT <i>LESS</i> OF THESE FOODS				
DAIRY PRODUCTS	DRIED BEANS AND PEAS	WHOLE GRAINS	NUTS, SEEDS AND PEANUT BUTTER	OTHER FOODS AND FLUIDS
				
<ul style="list-style-type: none"> <li>• Milk</li> <li>• Cheese</li> <li>• Yogurt</li> <li>• Pudding</li> <li>• Ice cream</li> <li>• Cream soups</li> <li>• Custard</li> </ul>	<ul style="list-style-type: none"> <li>• Kidney beans</li> <li>• Split peas</li> <li>• Lentils</li> <li>• Pinto beans</li> </ul>	<ul style="list-style-type: none"> <li>• Bran</li> <li>• Whole wheat</li> <li>• Brown rice</li> <li>• Wild rice</li> </ul>	<ul style="list-style-type: none"> <li>• All nuts, nut butters and seeds</li> </ul>	<ul style="list-style-type: none"> <li>• Chocolate</li> <li>• Molasses</li> <li>• Dark-colored colas like Coke®, Pepsi®, Dr Pepper® (root beer is OK)</li> </ul>
<ul style="list-style-type: none"> <li>• Try non-dairy creamer, cream cheese, sour cream, gelatin, popsicles or sherbet instead</li> </ul>	<ul style="list-style-type: none"> <li>• Try green beans or wax beans instead</li> </ul>	<ul style="list-style-type: none"> <li>• Try white bread, white rice, refined wheat or pasta instead</li> </ul>	<ul style="list-style-type: none"> <li>• Try jam, jelly, cream cheese, butter or margarine instead</li> </ul>	<ul style="list-style-type: none"> <li>• Try sugar cookies, vanilla wafers, hard candy or jelly beans instead of chocolate</li> <li>• Try sugar-free and caffeine-free cream soda, lemon-lime soda, grape soda, lemonade or decaf tea instead of dark-colored sodas</li> </ul>



## How Can I Help My Child Limit Potassium?

Potassium is found naturally in most foods. Foods with the most potassium are fruits, vegetables, meats and milk. We measure the potassium we eat in milligrams (mg). Try to eat foods with less than 200 mg of potassium per serving.

### Foods high in potassium

- Foods high in potassium have more than 200 mg of potassium in a serving.

AVOID THE HIGH-POTASSIUM FOODS BELOW		
FRUITS	VEGETABLES	OTHER FOODS
<ul style="list-style-type: none"> <li>• Apricot, raw (2 medium)</li> <li>• Apricot, dried (5 halves)</li> <li>• Avocado (¼ whole)</li> <li>• Banana (½ whole)</li> <li>• Cantaloupe (½ cup)</li> <li>• Dates (5 whole)</li> <li>• Dried fruits (½ cup)</li> <li>• Figs (½ cup)</li> <li>• Grapefruit juice (½ cup)</li> <li>• Honeydew (½ cup)</li> <li>• Kiwi (1 medium)</li> <li>• Mango (1 medium)</li> <li>• Nectarine (1 medium)</li> <li>• Orange (1 medium)</li> <li>• Orange juice (½ cup)</li> <li>• Papaya (½ whole)</li> <li>• Pomegranate (1 whole)</li> <li>• Pomegranate juice (½ cup)</li> <li>• Prune juice (½ cup)</li> <li>• Prunes (½ cup)</li> <li>• Raisins (½ cup)</li> </ul>	<ul style="list-style-type: none"> <li>• Artichoke (½ cup)</li> <li>• Bamboo shoots (½ cup)</li> <li>• Beets (½ cup)</li> <li>• Broccoli, cooked (½ cup)</li> <li>• Brussels sprouts (½ cup)</li> <li>• Chinese cabbage (½ cup)</li> <li>• Carrots, raw (½ cup)</li> <li>• Greens, except kale (½ cup)</li> <li>• Mushrooms, canned (½ cup)</li> <li>• Parsnips (½ cup)</li> <li>• Potatoes (½ cup)</li> <li>• Pumpkin (½ cup)</li> <li>• Rutabagas (½ cup)</li> <li>• Spinach, cooked (½ cup)</li> <li>• Sweet potatoes (½ cup)</li> <li>• Tomatoes/Tomato products (½ cup)</li> <li>• Vegetable juices (½ cup)</li> <li>• Winter squash (acorn, butternut, etc.) (½ cup)</li> </ul>	<ul style="list-style-type: none"> <li>• Beans (baked, refried, black, etc.) (½ cup)</li> <li>• Dried beans and peas (½ cup)</li> <li>• Lentils (½ cup)</li> <li>• Legumes (½ cup)</li> <li>• Bran/Bran products</li> <li>• Granola (½ cup)</li> <li>• Nuts/Seeds (1 oz)</li> <li>• Peanut butter (2 Tbsp.)</li> <li>• Milk (limit to 1 cup/day)</li> <li>• Yogurt (limit to 1 cup/day)</li> <li>• Molasses (1 Tbsp)</li> <li>• Chocolate (1½ - 2 oz)</li> </ul>

All serving sizes above are equal to 200 mg of potassium.

### Foods low in potassium

- Foods low in potassium have less than 200 mg potassium in a serving. Look at the serving size. Eating more than the serving could make it a high-potassium food.

EAT LOW-POTASSIUM FOODS AT THE RECOMMENDED SERVING SIZE		
FRUITS	VEGETABLES	OTHER FOODS
<ul style="list-style-type: none"> <li>• Apple (1 medium)</li> <li>• Apple juice (½ cup)</li> <li>• Applesauce (½ cup)</li> <li>• Apricots, canned in juice (½ cup)</li> <li>• Blackberries (½ cup)</li> <li>• Blueberries (½ cup)</li> <li>• Cherries (½ cup)</li> <li>• Cranberries (½ cup)</li> <li>• Fruit cocktail (½ cup)</li> <li>• Grape juice (½ cup)</li> <li>• Grapefruit (½ whole)</li> <li>• Grapes (½ cup)</li> <li>• Mandarin oranges (½ cup)</li> <li>• Peaches, fresh (1 small)</li> <li>• Peaches, canned (½ cup)</li> <li>• Pears, fresh (1 small)</li> <li>• Pears, canned (½ cup)</li> <li>• Pineapple (½ cup)</li> <li>• Pineapple juice (½ cup)</li> <li>• Plums (1 whole)</li> <li>• Raspberries (½ cup)</li> <li>• Strawberries (½ cup)</li> <li>• Tangerine (1 whole)</li> <li>• Watermelon (1 cup)</li> </ul>	<ul style="list-style-type: none"> <li>• Alfalfa sprouts (½ cup)</li> <li>• Asparagus (6 spears)</li> <li>• Beans, green or wax (½ cup)</li> <li>• Cabbage, green and red (½ cup)</li> <li>• Carrots, cooked (½ cup)</li> <li>• Celery (1 stalk)</li> <li>• Corn, fresh (½ ear)</li> <li>• Corn, frozen (½ cup)</li> <li>• Cucumber (½ cup)</li> <li>• Eggplant (½ cup)</li> <li>• Kale (½ cup)</li> <li>• Lettuce (½ cup)</li> <li>• Mixed vegetables (½ cup)</li> <li>• Mushrooms, fresh (½ cup)</li> <li>• Okra (½ cup)</li> <li>• Onions (½ cup)</li> <li>• Parsley (½ cup)</li> <li>• Peas, green (½ cup)</li> <li>• Peppers (½ cup)</li> <li>• Radish (½ cup)</li> <li>• Rhubarb (½ cup)</li> <li>• Summer squash (yellow, zucchini, etc.) (½ cup)</li> </ul>	<ul style="list-style-type: none"> <li>• Bread and bread products (not whole grains)</li> <li>• Noodles (½ cup)</li> <li>• Pasta (½ cup)</li> <li>• Rice (½ cup)</li> <li>• Cake, angel of yellow</li> <li>• Pies without chocolate or high-potassium fruits</li> <li>• Cookies without nuts, seeds or chocolate</li> <li>• Decaf coffee (limit to 8 oz/day)</li> <li>• Decaf tea (limit to 16 oz/day)</li> </ul>

All serving sizes above are equal to 200 mg of potassium.

# Hemodialysis Food Guide Table

The table below will help you know what foods to eat in each food group. Refer to the food label when possible.

FOOD GROUP	FOODS ALLOWED <i>(Lower-sodium, phosphorus and potassium foods)</i>	FOODS NOT ALLOWED <i>(Higher-sodium, phosphorus and potassium foods)</i>
<b>Vegetables</b>	<ul style="list-style-type: none"> <li>Fresh or frozen vegetables, except those listed in "Foods Not Allowed"</li> <li>Low-sodium, canned vegetables except those listed in "Foods Not Allowed"</li> </ul>	<ul style="list-style-type: none"> <li>Sauerkraut</li> <li>Pickles, pickle relish</li> <li>Olives</li> <li>V8® juice, tomato or vegetable juice</li> <li>Canned tomato sauces</li> <li>Marinated artichokes</li> <li>Any vegetable that has been pickled</li> <li>Canned vegetables</li> <li>Artichoke</li> <li>Bamboo shoots</li> <li>Beets</li> <li>Broccoli</li> <li>Brussels sprouts</li> <li>Chinese cabbage</li> <li>Carrots, raw</li> <li>Greens, except kale</li> <li>Mushrooms, canned</li> <li>Parsnips</li> <li>Potatoes</li> <li>Pumpkin</li> <li>Rutabagas</li> <li>Spinach, cooked</li> <li>Sweet potatoes</li> <li>Tomatoes/Tomato products</li> <li>Winter squash (acorn, butternut, etc.)</li> </ul>
<b>Fruits</b>	<ul style="list-style-type: none"> <li>All fresh or frozen fruits except those listed in "Foods Not Allowed"</li> </ul>	<ul style="list-style-type: none"> <li>Apricot</li> <li>Avocado</li> <li>Banana</li> <li>Cantaloupe</li> <li>Dates</li> <li>Dried fruits</li> <li>Figs</li> <li>Grapefruit</li> <li>Grapefruit juice</li> <li>Honeydew</li> <li>Kiwi</li> <li>Mango</li> <li>Nectarine</li> <li>Orange</li> <li>Orange juice</li> <li>Papaya</li> <li>Pomegranate</li> <li>Pomegranate juice</li> <li>Prune juice</li> <li>Prunes</li> <li>Raisins</li> </ul>
<b>Grains</b>	<ul style="list-style-type: none"> <li>Breads</li> <li>English muffins</li> <li>Cold cereals (refined)</li> <li>Low-sodium chips, crackers and popcorn</li> <li>Regular cooked hot cereals, such as oats, Cream of Wheat® and grits</li> </ul>	<ul style="list-style-type: none"> <li>Potato and corn chips</li> <li>Saltine crackers, pretzels, pork skins and any crackers with salted tops</li> <li>Chow mein noodles</li> <li>Salted popcorn</li> <li>Stuffing mixes</li> <li>Instant quick-cooking cereals</li> <li>Bran</li> <li>Whole wheat/whole grains</li> <li>Brown and wild rice</li> </ul>

FOOD GROUP	FOODS ALLOWED <i>(Lower-sodium, phosphorus and potassium foods)</i>	FOODS NOT ALLOWED <i>(Higher-sodium, phosphorus and potassium foods)</i>
<b>Protein Foods</b>	<ul style="list-style-type: none"> <li>Fresh meats</li> <li>Low-sodium canned fish</li> <li>Eggs</li> </ul>	<ul style="list-style-type: none"> <li>Smoked, cured, salted and canned meats, such as bacon, sausage or ham</li> <li>Hot dogs</li> <li>Lunch meat (bologna, salami, etc.)</li> <li>Corned beef</li> <li>Canned fish (tuna, salmon, sardines, etc.)</li> <li>Nuts, peanut butter and seeds</li> <li>Beans, peas and legumes</li> </ul>
<b>Dairy</b>	<ul style="list-style-type: none"> <li>None</li> </ul>	<ul style="list-style-type: none"> <li>Yogurt</li> <li>Ice cream</li> <li>Pudding</li> <li>Milk (all varieties)</li> <li>Cheese (all varieties)</li> </ul>
<b>Condiments</b>	<ul style="list-style-type: none"> <li>Pepper</li> <li>Mrs. Dash®</li> <li>Lemon wedges</li> <li>Jelly or honey</li> <li>Low-sodium salad dressings</li> <li>Other herbs, such as basil, oregano, cumin, etc.</li> </ul>	<ul style="list-style-type: none"> <li>Ketchup and BBQ sauce</li> <li>Bacon bits</li> <li>Salad dressings</li> <li>Bouillon cubes and canned broth</li> <li>Gravy mixes</li> <li>Soy sauce, Worcestershire sauce, steak sauce, Tabasco sauce and tartar sauce</li> <li>Onion, garlic and celery salt</li> </ul>
<b>Desserts</b>	<ul style="list-style-type: none"> <li>Gelatin</li> <li>Sherbet</li> <li>Fruit ice</li> <li>Angel food cake</li> <li>Salt-free baked goods</li> <li>Homemade pudding</li> </ul>	<ul style="list-style-type: none"> <li>Ready or store-made and packaged baked goods</li> <li>Chocolate</li> <li>Instant puddings</li> <li>Molasses</li> <li>Cookies with nuts, seeds or chocolate</li> </ul>
<b>Beverages</b>	<ul style="list-style-type: none"> <li>Water</li> <li>Low-sodium, clear carbonated beverages that are sugar-free and caffeine-free</li> </ul>	<ul style="list-style-type: none"> <li>Gatorade®, Powerade®</li> <li>Dark-colored sodas</li> </ul>
<b>Miscellaneous</b>		<ul style="list-style-type: none"> <li>Frozen dinners</li> <li>Meat tenderizers</li> <li>Hidden forms of sodium: MSG, sodium nitrite, sodium saccharin, baking soda (sodium bicarbonate) and sodium benzoate</li> </ul>

# What Medicines Will My Child Need?

The following medicines are often prescribed for hemodialysis patients. Your child's doctor will prescribe the right medicines for your child based on their needs. Please ask us any questions you have about your child's medicines.

## Phosphate binders

*Phoslo, Renagel, Tums, Auryxia, Renvela*

Phosphorus levels get high when the kidneys no longer work well. High phosphorus levels can cause your child's bones to become weak and brittle. Phosphate binders help lower the amount of phosphate in the foods your child eats.

The phosphate binders should be taken with meals and snacks.

## Vitamin D

*Calcijex, Calcitriol, Hectorol, Zemplar*

When your child's kidneys fail, the active form of vitamin D is low. There is not enough vitamin D to work with the calcium in your child's body to keep their bones strong and healthy.

Vitamin D medicines are available as tablets, which may be taken each day at home. These are also available as shots and will be given by the hemodialysis nurse when prescribed during hemodialysis.

## Multivitamins and mineral supplements

*Nephro-Vite, Nephronex, Poly-Vi-Sol*

During the hemodialysis treatment, water-soluble vitamins are removed. These multivitamins replace the vitamins that are removed. Multivitamins are usually taken one time a day after a dialysis treatment.

## Iron

Iron works in the body to help make red blood cells. Your child may need to take extra iron supplements to increase the amount of iron in the blood. Hemodialysis patients are prescribed iron medicine:

- As a shot directly into the blood stream during their dialysis
- As oral tablets to take by mouth

To get the full benefit of the oral iron, your child must take it exactly as prescribed.

**Iron pills work best when taken on an empty stomach. Iron pills should not be taken with phosphate binders, antacids (Tums, Rolaids, etc.) or milk.**

- If your child gets an upset stomach, check with their doctor or primary nurse.

## Stool softeners

Stool softeners help your child have soft and easier bowel movements. Stool softeners do not prevent constipation. If your child becomes constipated, call their nurse.

## Blood pressure medicines

Blood pressure medicines help lower the extra pressure of blood flowing through the body. It is important to give your child their BP (blood pressure) medicine in time to have the best control.

## Antibiotics

Antibiotics are used to prevent or treat infections caused by bacteria. We will give your child antibiotics after their dialysis treatment is done. That way they cannot be removed during dialysis. A blood sample for culture and sensitivity is taken before starting antibiotics.

- Signs of a reaction are:

- Rash
- Fever
- Chills
- Fullness and/or ringing in the ears

**Tell the doctor or nurse right away if your child has a reaction to any antibiotics.**

## Heparin

Heparin is used to prevent blood clotting during dialysis. It also keeps hemodialysis catheters from clotting when not in use. Do NOT give your child over-the-counter medicine with aspirin in it because they may cause the heparin to not work properly. The dose varies for each patient based on your doctor's order.

- It is important to regularly check your child for signs of bleeding, such as:

- Bleeding gums
- Bruises on arms or legs
- Small red spots on the body
- Nose bleeds
- Blood in the urine or vomit
- Black, tarry stools

**If you see any of the above, call or tell the hemodialysis nurse right away.**

## Epogen® (EPO)

When kidneys fail, they no longer make enough of a hormone called erythropoietin (EPO). EPO is needed to help make more red blood cells. Lack of red blood cells may cause anemia. Anemia can make your child tired and weak. If monthly blood tests show that your child's blood count is low, your kidney doctor will prescribe Epogen® for your child.

- The hemodialysis nurse will give your child Epogen by a shot in their vein, through their dialysis lines or under their skin.
- Epogen should be stored in the refrigerator. (Do not put it in the freezer).







**Thank you for choosing Children's Health<sup>SM</sup> for your child's health care needs.  
For more information, visit [childrens.com/nephrology](https://childrens.com/nephrology) or call the Hemodialysis Clinic:**

214-456-2780 or 214-456-2517  
Monday through Saturday  
6 a.m. to 4:30 p.m.

**For the after-hours emergency number, please call:**

Children's Health operator at 214-456-7000 and ask for the hemodialysis doctor or nurse on call.