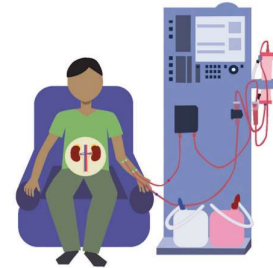


Healthy Eating Guide for Hemodialysis

Hemodialysis (HD) is a procedure to remove waste, toxins and excess fluid in a person with kidney disease through a dialysis machine. Most people on hemodialysis get treatments 3 times a week for about 3 or more hours each time.



In the days between your HD treatments, waste, toxins and excess fluid will build up in your blood. You can reduce waste buildup by controlling what you eat and drink. This booklet provides information that is important to your diet, including:



Tip 1:

Getting the right amount of calories and protein



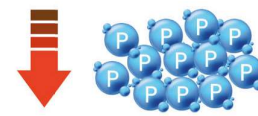
Tip 2:

Controlling your sodium and fluid intake



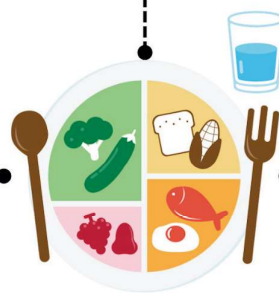
Tip 4:

Limiting foods high in potassium



Tip 3:

Limiting foods high in phosphorus



Getting the right amount of calories

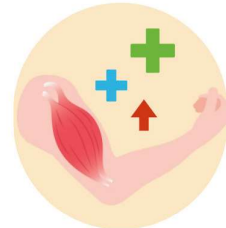
Calories come from the food you eat. It is important to eat the right amount of calories to:



Have energy to do the activities you enjoy



Prevent you from losing weight



Help your body use protein for building muscles

If you are experiencing weight loss or poor appetite, speak to your dietitian about how to safely add calories to your diet.

Getting the right amount of protein

Before you started dialysis, you may have been on a low protein diet to limit the amount of waste products in your blood. Now that you have started HD, your treatments will remove some of these waste products.

Unfortunately, this process also removes some protein that your body needs. Following a higher protein diet can help you replace the protein lost during HD.

Your body needs the right amount of protein to:



Keep your muscles strong











Repair your tissues



Help prevent and fight infections

Sources of Protein in Food

Animal proteins		Plant proteins	
 <p>Fish and seafood</p>	 <p>Poultry and meat</p>	 <p>Wholegrains</p>	 <p>Nuts and seeds</p>
 <p>Eggs</p>	 <p>Dairy products</p>	 <p>Legumes (beans, lentils)</p>	 <p>Soy products</p>

How much protein do I need?

Most people on dialysis may need to eat at least 6 to 9 exchanges of protein each day. Your dietitian will advise you on the amount or exchanges of protein you need.

Here are some tips to achieve your protein intake goals:

- Start with protein-rich food at each meal before you have the chance to feel full
- Include protein-rich food in each meal and snack. Your body needs protein throughout the day.
- Introduce variety by switching up your protein sources

Do you know?

You can use your hand as a guide to estimate your protein intake. One palm-size of meat is approximately 3 exchanges.



1 palm size

=



3 matchbox size

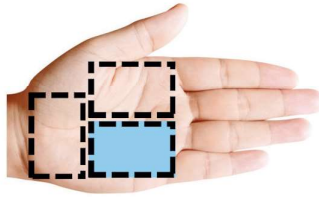
Protein Exchanges

Each of the following foods contain 1 exchange (7g) of protein.

Meat/ Fish/ Poultry (without bones and skin)



1 matchbox size
40g raw
(30g cooked)



1/3 palm size
40g raw
(30g cooked)



2 tablespoons
40g raw
(30g cooked)

Shellfish (without shell)



4 medium prawns
50g raw (40g cooked)



1 medium squid
50g raw (40g cooked)

Egg

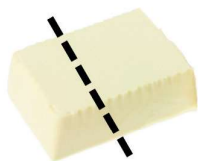


2 egg whites
(50-60g)



1 medium egg
(70g)

Beancurd/ Tempeh



1/3 block soft tofu
(90-100g)



1/2 square taukwa
(60g)



1 piece tempeh
(50g)

The following foods are higher in potassium and phosphorus - minerals you may need to control in your diet. Your dietitian will advise on the portions best for you.

Legumes (Lentils/ Beans/ Peas)



2 tablespoons or ¼ cup
or 30g raw beans



3 tablespoons or ½ cup
or 90g cooked lentils

Milk/ Soymilk/ Yogurt/ Cheese



1 cup milk/ soymilk
(250ml)



4 tablespoons milk powder
(30-40g)



1 small tub yogurt
(150ml)



1.5 slices cheese (30g)

Limit cheese due
to high sodium
content

Nuts/ Seeds (plain, unsalted)



¼ cup or 1 small handful
(30g)





2 tablespoons nut butter
(30g)

Limiting foods high in phosphorus

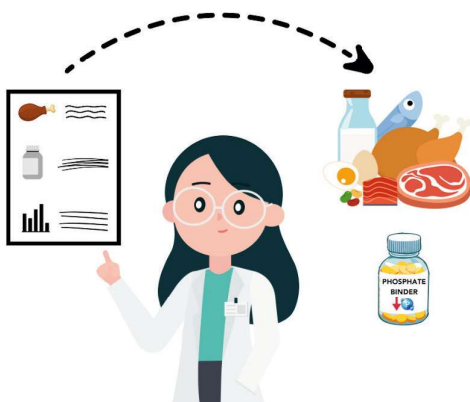
Phosphorus, along with other minerals, helps to keep your bones and teeth strong.

There are 2 main sources of phosphorus found in our diet:

Organic phosphorus	Inorganic phosphorus
<p>Found naturally in protein-rich food such as meat, fish, poultry, beans, lentils and dairy.</p> 	<p><u>Phosphate additives</u> added to food and beverages such as processed and marinated meats, fast food and shelf stable canned food.</p> 

Eating food high in phosphorus will increase the amount of phosphorus in your blood. As HD cannot remove phosphorus completely, phosphorus may build up in your body and cause complications such as itchy skin, weak bones, joint pain and hardening of your blood vessels.

You can help to improve your blood phosphorus level by:



- Keeping protein-rich food intake within the recommended amounts
- Opting for fresh food instead of processed food
- Taking phosphate binders as prescribed by your medical team

Limiting foods high in potassium

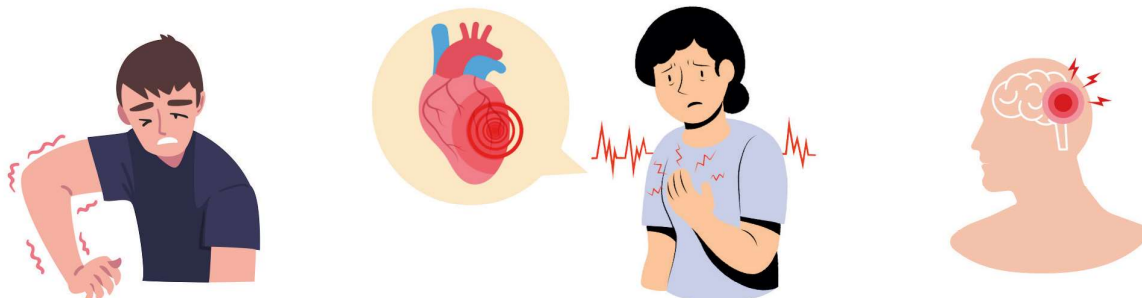
Your heart, muscles and nerves need potassium to work well.

You can find potassium in almost all foods. Higher amounts of potassium are found in:

- Certain fruits and vegetables (like bananas, melons, potatoes, tomatoes and some juices)
- Milk, yogurt and soymilk
- Nuts, seeds and legumes
- Most salt substitutes (like Pan Salt, NU-Salt and other potassium-salt)
- Meat, poultry and fish



HD removes potassium but it will build up in your blood again on non-dialysis days. High potassium levels can cause dangerous complications, including an irregular heartbeat, severe muscle weakness, paralysis or even sudden death.



You can help to improve your blood potassium level by:

- Choosing low-potassium foods more regularly

- Paying attention to the portion size of your food. Potassium can add up quickly if you eat a large portion, even if the food is low in potassium.



- Opting for fresh foods instead of processed foods



- Leaching some vegetables to reduce the amount of potassium:



1
Cut or slice
into smaller
pieces



2
Boil in
abundant
water



3
Discard the
boiling
water



4
Continue to
cook the food
as usual

Did you know?

- All vegetables are different and do not lose the same amount of potassium when soaked or boiled
- Not all vegetables need to be soaked or boiled to prevent water-soluble vitamins from being lost in the process
- Do not reuse the drained water, and refrain from consuming the soup or gravy in dishes as they can be high in potassium

Controlling your sodium and fluid intake

Sodium is a part of salt. It is found naturally in most foods. However, most of the sodium in our diet comes from:

Seasonings	Processed/ Preserved food products
<ul style="list-style-type: none">• Soy sauce• Salt• Monosodium Glutamate (MSG)• Teriyaki/ Oyster sauce• Chilli/ Tomato sauce	<ul style="list-style-type: none">• Ham• Sausages• Seaweed chicken• Sardine• Salted egg/ fish• Preserved vegetables

Eating too much sodium can make you thirsty and cause your body to retain more fluid. The extra sodium and fluid can cause:



Swelling around eyes/ hands/ feet



Shortness of breath



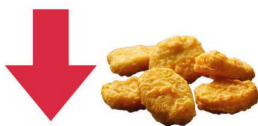
Fluid weight gain



Rise in blood pressure

You can reduce your sodium intake by:

- Minimising the consumption of canned and processed foods
- Limiting the amount of salt/ sauces added during cooking
- Flavoring your food with herbs and spices instead of sauces and seasonings



It takes 4-6 weeks for your taste buds to adapt to the flavour of lower sodium food. When you limit sodium intake, it will be easier for you to cut down on your fluid intake.





How much fluid can I consume in a day?

How much fluid you can consume in a day depends on your urine output, remaining kidney function and body size. You may keep track of weight gain in between two dialysis sessions as a gauge.



It is important to adhere to your fluid allowance so that excess fluid does not build up in your body. There is a limit on how much fluid can be safely removed from your body during a HD session. If you exceed your fluid allowance, an extra HD session may be required to remove the extra fluid.



Examples of Fluids	
 Ice	 Porridge, gravy and soup
 Beverages (e.g. coffee, tea, juices, milk and water)	 Snacks and desserts (e.g. ice-cream, sherbet, popsicles, agar-agar, yogurt)

Remember to check with your doctor on your daily fluid allowance!

Putting it all together

For each meal, you can include something from these food groups and enjoy the food in the portions advised by your dietitian.



Eat the recommended amount of grains. Include some wholegrains in your diet.

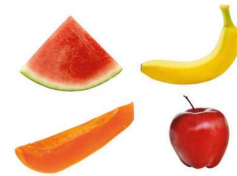


Include fresh and lean protein food at each main meal. Some protein food is higher in phosphorus – so watch the portion and frequency of intake.

Drink within the recommended amount advised by your doctor.



Enjoy 2 servings of fruit each day.



1 serving = 1 small apple, 1 wedge of papaya or 10 grapes



Control the portion size to limit potassium intake



Enjoy 2 servings of vegetables each day.



1 serving = $\frac{3}{4}$ cup of cooked vegetables

Season your food with herbs and spices. Always choose foods with lower sodium content.



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Your diet may change depending on your blood test results. Your dietitian will review your results and make suggestions if needed.

Contributed by Nutrition & Dietetics Service, Allied Health Services

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