به نام خدا

Nutrition On Hemodialysis

WHY IS YOUR DIET IMPORTANT?

The wastes generated in the body through breakdown of muscle tissues and food are excreted by the kidneys. When the kidneys do not function as well as they should, these wastes start building up in the body and can be dangerous. They can also make us feel sick. It is therefore important to restrict the foods that have high amounts of such substances. we will see which foods we must restrict and why.

Diet

Have small, light meals five to six times a day. Try to introduce variety in your meals. Try something new. You will soon be convinced that food can be tasty despite following your diet plan!

Diet

There are four main things all dialysis patients need to be careful about in their diet.

- POTASSIUM
- SODIUM
- PHOSPHORUS
- FLUIDS

Potassium

- Potassium is a very important mineral for the body. It controls the functioning of the nerves and the muscles. The most important muscle in the body is the heart. If the Potassium becomes too high, among other things, it can cause irregular heartbeats, heart failure and sudden death. It is therefore, very important to restrict foods that contain high levels of Potassium.
- To control potassium levels, limit potassium-rich foods such as avocados, bananas, kiwis, and dried fruit. Choose fruits and vegetables that are lower in potassium. Have very small portions of foods that are higher in potassium, such as one or two cherry tomatoes on a salad or a few raisins in your oatmeal.

To remove some of the potassium from potatoes:

Dice potatoes into small pieces

To remove some of the potassium from potatoes:

or,grate potatoes into shreds

To remove some of the potassium from potatoes:

And then boil potatoes in a full pot of water

Potassium

Normal Potassium Value: 3.5 to 5.1 mEq/l

Foods high in Potassium:

- Mango, Banana
- Coconut
- Potatoes, Tomatoes, Palak
- Dry fruits, Chocolates
- Fruit juices, Sauces

Foods low in Potassium:

- Cabbage, Cauliflower
- Cucumber, Carrots, Beans
- Apples, Grapes
- Pineapple, Watermelon
- Rice, Wheat
- Dals

Sodium

Sodium is an important electrolyte present in the body.

Sodium also helps the following functions in the body:

- Regulation of blood pressure and blood volume
- Helps to transmit impulses for nerve function and muscle contraction
- Regulates the acid-base balance of the blood and body fluids

Sodium

Although sodium is necessary for body functions, consuming too much sodium can be harmful for the body especially for people with kidney disease since the kidneys are not able to filter the excess sodium from the body. This causes the sodium to build up in the body. Excess sodium in the body can cause the following:

- High Blood Pressure
- Edema (swelling in the legs, hands and face)
- Shortness of breath
- Stress on the heart which can lead to heart failure

Sodium

People with kidney disease should therefore, restrict the amount of sodium in their food. Common salt used in the food is a major source of Sodium in the food.

Normal Sodium: 135 to 145 mEq/l

Foods high in Sodium

- Breads
- Biscuits
- Butter
- Processed foods
- Cheese
- Aerated drinks
- Commercial masalas
- Chips (Lays etc.)
- Pickles
- Papa

Foods low in Sodium

- Fresh foods
- Fresh vegetables
- Herbs and spices
- Poha
- Paneer
- Fresh and canned fruits

Phosphorus

Phosphorus is a mineral which is present in almost all foods we eat. Phosphorus is essential for the production and storage of energy in the human body. Our body requires phosphorus to use vitamins and minerals. Phosphorus along with calcium is vital for the formation of strong bones and teeth.

Limiting phosphorus can be hard because foods that contain phosphorus, such as meat and milk, also contain the protein you need.

Phosphorus

- Too much phosphorus in your blood pulls calcium from your bones. Losing calcium may make your bones weak and likely to break.
- Also, too much phosphorus may make your skin itch

You may need to take a phosphate binder.

The phosphorus binder “seals” the phosphorus from food and moves it out through stool so the phosphorous does not enter the bloodstream.

Phosphorus

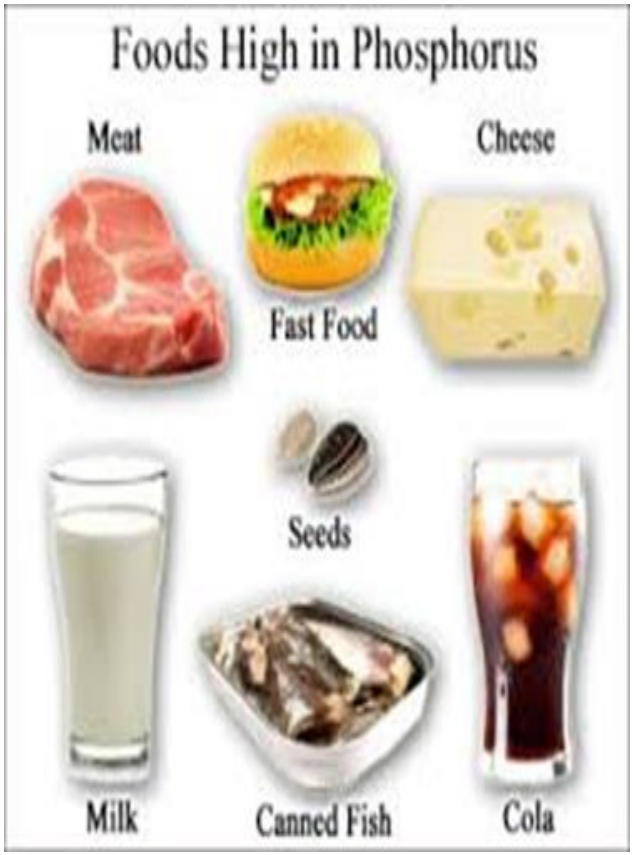
Normal kidneys filter the excess phosphorus and maintain the needed balance of phosphorus in the blood. Dialysis can remove some phosphorus but cannot remove all of the excess phosphorus in the body. Since dialysis alone cannot manage levels of phosphorous, managing what you eat becomes all the more important. Otherwise, there can be raised blood levels of phosphorus.

Phosphorus

Normal Phosphorus: 2.5 to 4.5 mg/dl

Foods high in Phosphorus

- Milk
- Paneer, tofu, cheese
- Curd
- Chicken, eggs, fish
- Cola drinks
- Chocolate
- Nuts
- Soya foods
- Oats
- Ready to eat foods



Foods low in Phosphorus

- Fresh foods
- Fresh vegetables
- White bread

Fluids

Restricting fluid is probably the toughest part about dialysis for most people.

It is important not to gain more than 2 kg between each treatment

The amount of fluid that can be removed during dialysis is limited. Removing more than roughly 400 ml of fluid per hour from the blood during dialysis can cause a number of unpleasant symptoms such as cramping, low Blood Pressure etc. To avoid this, we must not remove too much fluid during dialysis. It is therefore important to restrict the quantity of fluid consumed between dialysis sessions

What foods count as liquid and why?

Foods that are liquid at room temperature, such as soup, contain water. Gelatin, pudding, ice cream, and other foods that include a lot of liquid in the recipe also count. Most fruits and vegetables contain water, such as melons, grapes, apples, oranges, tomatoes, lettuce, and celery. When you count up how much liquid you have in a day, be sure to count these foods

Fluids

Any food that is liquid at room temperature contains water. Some foods, like most fruits and vegetables, are not liquid at room temperature but also add to the total liquid amount you eat.

Fluid facts and guidelines for the person on dialysis

For a person on dialysis, fluid is usually restricted or limited. One job of healthy kidneys is to remove excess fluid from the body.

When your kidneys are not working properly, dialysis can

remove some of the fluid, but you will also need to drink or eat less fluid.

Having “too much” fluid can cause problems, some of which are serious.

It is very important for you to follow the fluid restrictions your health care team prescribes for you.

What happens if I have too much fluid?

- Swelling in your ankles and feet called edema (a-dee’-ma)

- Weakened heart muscle, and eventually heart failure caused from too much fluid stretching the heart muscle

What happens if I have too much fluid?

- Shortness of breath caused from too much fluid around the lungs.
- High blood pressure
- Sudden drop in blood pressure causing you to feel faint or dizzy
- Chest pain
- Cramping during dialysis

What happens if I have too much fluid?

- Headaches, nausea and overall “bad” feeling during and after your treatment

- If you have continuous high fluid gains, you may be required to stay longer or come back for an extra treatment

How can I control my fluid intake?

- 1. Avoid salt and salty foods. Salt can make you thirsty and can cause your body to retain fluid.
- 2. Measure all fluid with standard measuring cups.
- 3. Chew sugar-free gum.
- 4. Take medications with applesauce instead of liquid.
- 5. Suck on sugar free hard candy, especially sour candy

How can I control my fluid intake?

- 6. Prepare a spray bottle with water and lemon juice or cherry juice and use to lightly spray your mouth.
- 7. If you have diabetes, control your blood sugar.
- 8. Rinse your mouth with cold mouthwash (don’t swallow!).
- 9. Stay out of the heat in the summer time.
- 10. Use a smaller glass with meals.

How can I control my fluid intake?

- 11. Brush your teeth more often.
- 12. A frozen lemon slice or a couple of frozen grapes (4 or less) can take the edge off your thirst.
- 13. Keep a daily fluid/food diary.
- 14. Follow the fluid allowance that has been prescribed for you and do not hesitate to ask for help.
- 15.Keep track of what you drink in a day. Start with an empty liter-sized bottle or a quart jar.

Each time you drink, pour the same amount that you just drank into the bottle. When that bottle is full, you have used your fluid allowance for the day.

Protein

- Renal dietitians encourage most people on hemodialysis to eat high-quality protein because it produces less waste for removal during dialysis.
- High-quality protein comes from meat, poultry, fish, and eggs. Avoid processed meats such as hot dogs and canned chili, which have high amounts of sodium and phosphorus.

Calories

- All foods contain calories, and you need calories for energy. Many people on hemodialysis do not have a good appetite and do not get enough calories.

- Vegetable oils—such as olive oil, canola oil, and safflower oil—are good sources of calories and are the healthiest way to add fat to your diet if you need to gain weight. Use them generously on breads, rice, and noodles only if your renal dietitian tells you to add calories to your diet.

Calories

- Butter and margarines are rich in calories; however, they are mainly saturated fat. Saturated fats and trans fats can clog your arteries. Use them less often.
- Vegetable oils—such as olive oil, canola oil, and safflower oil—are good sources of calories.

Calories

- If you have diabetes, be careful about eating sweets and talk with your renal dietitian before adding sweets to your food plan.
- If you are overweight, your renal dietitian can work with you to reduce the total calories you eat each day.

Summary

Predialysis	Dialysis
Restriction of protein, salt (sodium), phosphorus, potassium (if necessary)	Diet rich in **protein**
Sufficient amount of energy (calories)	Restriction of **fluid** (mainly HD) If necessary, restriti-on in **salt** (sodium), **phosphorus**, **potassium**
	Sufficient amount of energy (calories)