Patient Information

Nutrition and Dietetics

Kidney Disease - Peritoneal Dialysis and diet

This information should only be used by patients on peritoneal dialysis (PD) and should only be followed with supervision from a dietitian.

Introduction

Healthy kidneys work to remove excess fluid and waste products from the blood. When your kidneys are not working properly, waste products like urea, excess phosphate and potassium can build up in your bloodstream.

Peritoneal dialysis (PD) helps to remove these waste products and together with your diet will help to keep you well. Your dietitian will provide personalised dietary requirements based on your blood test results and fluid needs.

1. Protein

Protein is needed to repair and maintain your body tissue and for building muscles. Since some protein is lost from your body through the dialysis process, it's important to eat plenty of protein to replace what is lost. This will make sure you do not become malnourished.

Good sources of protein include meat, chicken, turkey, fish, eggs, cheese and milk. Protein is also found in plant-based sources, such as beans, lentils, nuts, seeds, tofu and soya products (ask your dietitian for more information on plant-based diets and dialysis).

Individual protein requirements

To meet your protein needs, you should aim for …… portions of protein per day.

One protein portion is equal to:

- 30g (1oz) meat or chicken (cooked weight), such as a small chicken breast (4-5 protein portions), or 2 slices of roast meat (3 protein portions)
- 30g (1oz) fish (cooked weight), such as 1 fishcake or 2 fish fingers
- 30g (1oz) hard cheese (a matchbox-sized piece)
- 60g (2oz) cottage cheese about 2 tablespoons
- 1 egg
- 200ml (1/3 pint) milk (dairy or soya)
- 1 tub of yogurt (dairy or soya)
- 90g (3oz) peas, beans or lentils (cooked weight)
- 30g (1oz) dried or raw beans or lentils (1 heaped tablespoon)
- 60g (2oz) Quorn (equivalent to 1 Quorn steak)
- 60g (2oz) cooked soya beans (2 tablespoons)
- 90g (3oz) tofu (cooked weight) - about 1/3 of a standard pack of firm tofu
- 30g (1oz) fried tofu
- 30g (1oz) unsalted nuts/seeds
- 30g (1oz) peanut butter

The following foods are rich in phosphate, therefore may need to be limited in the diet:

- Milk: Limit to 300mls (½ pint) per day (or an equivalent amount of yogurt)
- Eggs: Up to …… per week
- Cheese: Matchbox size, up to …… per week

Important Note on Listeriosis

Avoid ready-to-eat smoked or cured fish products, such as smoked salmon or gravlax due to an increased risk of listeriosis.

Listeriosis is an infection caused by bacteria called listeria. You are at higher risk of serious illness from listeriosis if:

- You have kidney disease
- You are taking medicines or having treatments that weaken your immune system

You can find out more information on how to reduce the risk of listeriosis at:

- NHS: Listeriosis: www.nhs.uk/conditions/listeriosis
- Food standards agency - Listeria: www.food.gov.uk/listeria

2. Phosphate

It is important to control the phosphate and calcium levels in the blood. High phosphate levels can lead to issues like itchy skin, bone damage and hardening of the blood vessels. Phosphate is not cleared well through peritoneal dialysis (PD), so it's important to monitor its levels.

- **Recommended phosphate level (for those on PD): 1.1 – 1.7 mmol/L**

Not everyone with kidney disease who is on PD needs a low phosphate diet. Your renal dietitian will discuss with you if a phosphate restriction is necessary and provide you with more information.

Diet

The majority of phosphate we consume comes from processed foods. Processed meat can contain nearly 70% more phosphate than fresh options. The information below gives some guidance to help manage your phosphate intake:

- If your blood phosphate levels are high and you have a good appetite, it may be beneficial to reduce your intake of high-phosphate foods
- Reduce your intake of processed foods and try to cook from fresh ingredients whenever possible
- Limit or stop drinking dark-coloured fizzy drinks, such as cola or Dr Pepper
- Avoid processed cheese, such as cheese slices, spreads or triangles, such as Dairylea, Primula & Laughing Cow
- Limit milk intake to 300ml (½ pint) per day
- Limit cheese intake to no more than 90g (3oz) per week

Phosphate binders

You may be prescribed tablets called phosphate binders, which along with a low phosphate diet, can help reduce phosphate levels in your blood. These tablets work by soaking up some of the phosphate from the food in the stomach, so it is not absorbed.

For these tablets to work it is important to take them with the right foods and at the right time. Your renal dietitian can provide you with further information about this.

- Calcichew should be chewed about 10 minutes **before** eating
- Renacet and Phosex (calcium acetate), Renagel (sevelamer hydrochloride) and Renvela (sevelamer carbonate) should be taken **with** food
- Fosrenol or Lanthanum should be chewed **after** food

3. Potassium

Potassium is a naturally occurring mineral found in most foods. The amount present in your blood is normally controlled by your kidneys. The peritoneal dialysis (PD) process removes a lot of potassium, however, it may still be necessary for you to control the amount of potassium in your diet.

A raised blood potassium level can lead to muscle weakness and can seriously affect your heart. A low potassium level can also be dangerous for the heart.

Your renal dietitian will advise you on whether you need to follow a potassium restriction, or if you need to increase your dietary intake of potassium.

- **Recommended potassium level (for those on PD): 3.5 – 5.5 mmol/L**

4. Fluid

As your kidneys are not working properly, you may not be able to get rid of all the fluid that you drink. Not drinking enough fluid will make you dehydrated, while drinking too much can cause fluid overload, which will put more strain on your heart and lungs.

Stronger dialysis bags (referred to as green bags) may be used occasionally to help remove excess fluid weight. It is important to avoid overusing theses stronger bags because they contain more calories and glucose. Overuse can lead to an increase in dry weight (putting on flesh), higher blood sugar levels (especially if you have diabetes), and greater strain on your peritoneum. Using stronger bags may also make you feel thirstier, making it even harder to stick to a fluid restriction.

You should restrict your fluid intake to ..... daily.

Remember to count the fluid in foods such as soups, gravies, sauces, milk puddings, ice cream, custard, jelly, and yogurt. Solid foods like fruits and vegetables are not included in this count.

5. Salt

If you consume too much salt it will make you thirsty, making it harder for you to stick to your fluid allowance. It can also make your body retain fluid and can contribute to high blood pressure.

How to reduce your salt intake:

- Avoid adding salt at the table
- Avoid very salty foods, like tinned and packet soup, Oxo, Bovril, Marmite, stock cubes, and salted snacks such as crisps and nuts
- Check food labels – foods with more than 1.5g of salt per 100g are high in salt, so look for an alternative
- Experiment with other seasonings, such as herbs, spices, garlic, vinegar and pepper

Try to limit the following foods:

- Cheese
- Bacon, tongue, tinned meat, like corned beef, Spam
- Sausages
- Beef burgers
- Smoked fish, smoked cheese and smoked or cured meats
- Ready meals
- Salted biscuits

Salt substitutes, such as Lo Salt or Pan Salt **should be avoided** as **they contain potassium**.

6. Fibre

It is important to try and prevent constipation from occurring if you are on PD. Constipation can affect the quality of your dialysis and can cause your tube to be displaced. Ideally, you should have your bowels open at least once a day. You may have already been prescribed laxatives, but increasing the fibre in your diet can further help avoid constipation. It is best to slowly increase your intake of high fibre foods to allow your digestive system to adjust.

To increase the fibre content of your diet:

- Choose wholemeal or soft grain (high fibre) white bread instead of regular white bread
- Eat high-fibre breakfast cereals such as Weetabix, Shredded Wheat, Bran Flakes, Porridge or Puffed Wheat

- Choose wholemeal pasta and brown rice
- Choose wholemeal biscuits and crisp breads such as digestives, rye crisp breads
- Increase your intake of fruit, vegetables and pulses

An increase in physical activity can also help to relieve constipation.

7. Diabetes

Peritoneal dialysis (PD) uses glucose (sugar-based solutions) to perform dialysis, which often cause a rise in blood glucose levels for people with diabetes. When you start dialysis or change your dialysis regime (swapping from daytime to night-time dialysis), your diabetes medication may need adjusting.

It is very important to keep regular check of your blood sugar levels and to inform your doctor or diabetes nurses of any changes to your dialysis regime.

8. Healthy eating

The dialysis bags you are using contain sugar, which your body will absorb. Stronger dialysis bags contain more sugar and therefore provide more calories.

If you gain too much body weight, your dietitian can discuss how to make your diet healthy and help you lose body weight.

Additionally, Kidney Beam is a free online service designed to support people living with kidney disease through movement, education and wellbeing support. All classes have a fitness rating, so you can choose the right one for you.

For more information, visit: www.kidney.org.uk/kidney-beam

9. Eating well

Having dialysis fluid in your peritoneum may make it difficult to eat large meals, as it can create pressure on your stomach, which can make you

feel full. If you feel that you not eating enough, it may be easier to eat smaller meals and have regular snacks.

Your dietitian can provide you with further advice. If you talk to your PD team, it may be possible for there to be flexibility in the timing of your dialysis exchanges.

10. Peritonitis

During periods of infection your body loses large amounts of protein during your dialysis. It is very important that you **increase the amount of protein** eaten at these times.

You may find it difficult to eat bigger meals, so try smaller, more frequent meals. In addition, try also having nutritious drinks and snacks, which can be made at home, such as fortified milkshake, fortified fruit juice, or fortified puddings. Your dietitian can provide recipes for these options.

You may also be advised to take nutritional supplement drinks, which can be trialled via your dietitian and are available on prescription. Please discuss this option with your dietitian.

Vitamins and mineral supplements

Discuss with your consultant or member of the renal team before taking a vitamin and mineral supplement that hasn't been prescribed. Some supplements can be harmful for people with kidney disease.

- Avoid standard multivitamin preparations – they contain too much vitamins A and E. If you wish to take a multivitamin, the most suitable types are those produced for pregnancy.
- Avoid fish **liver** oil however, fish oil can be taken as an alternative.
- Avoid glucosamine if you have advanced kidney disease.

If you are eating a fully plant-based or vegan diet, you should get a regular source of vitamin B12, vitamin D and iodine. Ask your renal doctor, dietitian or pharmacist which supplement is best for your needs.

Herbal tablets, remedies, and homeopathic medicines

Avoid taking herbal tablets, remedies, and homeopathic medicines unless you have discussed these with your consultant or a member of the renal team.

Avoid star fruit

Star fruit contains a chemical which can be extremely dangerous for people with kidney problems.

Summary

- It is important that you eat well being on dialysis.
- Eat generous portions of protein foods.
- Make sure you do not become constipated.
- Do not add salt to your food and avoid salty foods.
- Eat healthily and watch your weight.
- Keep to your fluid allowance.
- If you have peritonitis, you should increase your protein intake.
- Your diet plan may change over time.

More information

If you'd like more information, or have any questions, contact us on 024 7696 6151. You can also follow the Renal Dietitians on X (formerly known as Twitter) @UHCW_RenalDiet.

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