BDA The Association of UK Dietitians
Renal Nutrition Specialist Group

PLANT-BASED Health Professionals UK
Promoting Sustainable Health and Nutrition

Eating a plant-based diet when having dialysis

Kidney failure and dialysis

Kidney failure (sometimes called **renal failure**) happens when the kidneys stop working and are unable to carry out all their vital jobs.

When this happens, harmful waste products build up in your body, which is fatal without treatment. Dialysis is the treatment given to remove these harmful waste products.

In the UK, there are almost 30,000 people receiving dialysis.

Benefits of a healthy plant-based diet

Eating a healthy plant-based diet may **prevent** or **reduce** the **complications** that people having dialysis often experience.

DIALYSIS COMPLICATIONS

These complications can include

PREVENT and Reduce

- High blood pressure
- Bone disease
- Cardiovascular disease (a condition that affects the heart and blood vessels)

CONTROL

- Diabetes
- Healthy weight

A healthy plant-based diet can also help with **controlling diabetes** and **reaching a healthy weight**, which is helpful if you **need to lose weight** to have a kidney transplant.

If you are currently having dialysis and wish to eat a plant-based diet, then you may find this information a useful guide.

It is important to understand that having **dialysis** can sometimes mean **more complex individual dietary needs**, and you should see a **kidney dietitian** as part of your dialysis care.

Eating a plant-based diet when having dialysis

Stage 1-5
(not receiving dialysis)

A healthy plant-based diet has a greater emphasis on...

What is a plant-based diet?

Few or no animal products

Low in ultra-processed foods

Animal products can be **high** in fat, are **absent** in fibre and **low** in the protective substances you find in plants. Additionally, processed food can have **added** fat, sugar, salt and chemical additives.'

What can I eat?

Eat a variety of vegetables and fruit every day.

5 Aim for at least **5 portions** every day, **more if possible.** +

Note: it is advisable that you **avoid star fruit**. Star fruit has a toxin, **caramboxin**, that can build up in the body and become **harmful** to those with kidney disease.

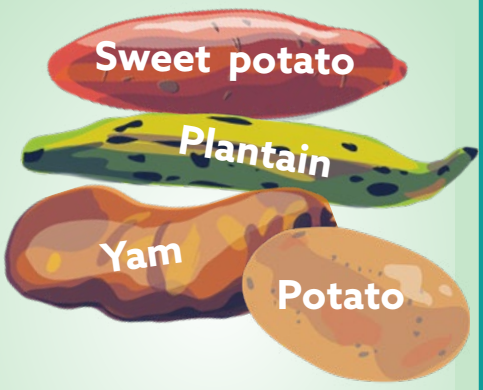
Enjoy a variety of starchy foods

Ideally choose whole grain, high fibre varieties such as whole wheat pasta, brown rice, and wholemeal breads or chapatis.

Or you could choose grains such as oats, barley, quinoa, buckwheat, bulgur wheat, millet or whole wheat couscous.

Porridge or cereals such as wheat biscuits, shredded whole grains or a no added sugar muesli are great options for breakfast.

You could also eat



Where possible **eat their skins** to benefit from the **extra fibre.**

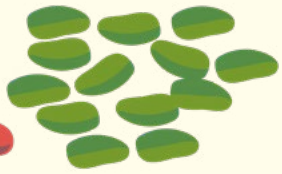
Limit ultra-processed potatoes such as chips, potato waffles or croquettes.

Instead opt for baked, boiled or mashed potatoes. It's best to keep the skins on.

Eat plant sources of protein

Peas

Beans, pulses (peas and beans)

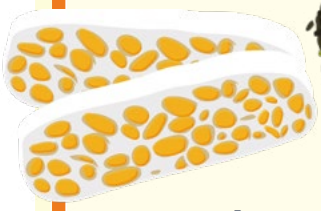


Soya / Edamame beans

Soya chunks

Seitan

Mycoprotein (e.g. **Quorn**) and other **meat alternatives** can also be included occasionally but **be careful** as these are often **high in fat and salt** and sometimes contain **additives**.



Tempeh

Lentils

Unsalted nuts and seeds

Tofu

People having dialysis will need to **eat more protein** than the general population. However, you **can still get all the protein you need from a plant-based diet. A kidney dietitian will be able to give you more advice on how much protein you need.**

Choose healthy sources of fat

such as avocado, nuts and seeds.

Eat some flaxseed, hemp seed, chia seed or walnuts daily in place of oily fish to ensure a source of omega-3 fats. You will need about one tablespoon of chia seed or ground flaxseed, two tablespoons of hemp seed or six walnut halves daily.

For cooking, choose a **vegetable oil** such as rapeseed or olive oil but **only use small amounts.**

Limit processed foods high in sugar and white flour such as cakes, pastries, biscuits, and sweets, even if they claim to be plant-based.

Limit palm oil and coconut oils, as these are high in saturated fats which are less healthy.

Fluid

When your kidneys stop working as well, you usually gradually produce less urine.

This means you will need to **reduce the amount of fluid you drink**. A kidney doctor, nurse, or dietitian can **guide you** on the **amount of fluid you can drink**.

This is often known as a fluid allowance.

What you drink is still important.

It is best to limit sugary drinks (particularly cola style drinks), and avoid adding sugar to your drinks.

If you drink fruit juice or smoothies then **limit to 150ml a day.**

Tea and coffee will contribute to fluid but **limit caffeine to 300mg a day** or consider decaffeinated drinks.

Caffeine can **increase your blood pressure. 300mg** is approximately **2-3 coffees** depending on strength, or **5-6 teas**.

Consider choosing a **plant-based dairy alternative**. Soya and pea milks are high protein options. Where possible, choose unsweetened varieties with added calcium and vitamin D. It is best to limit **plant milks** and **dairy alternatives** (such as yoghurt), to **300ml (1/2 pint) a day if they have phosphate additives listed in the ingredients. Note: Any milk or yoghurts are alsoincluded in the amount you will be advised to drink.**

Alcohol

There is no safe level of drinking, however, if you do consume alcohol, then to **lower your risk of harm** you should **keep within the government guidance of no more than 14 units per week for both men and women.**

Spread your drinking evenly over **three or more days** and have **several alcohol-free days per week (always check alcohol consumption is safe with your medication).**

Any alcohol should be included in the amount of fluid you are advised to drink.

If you do not consume alcohol **there is no health benefit to starting now.**

Reducing salt

Limit using salt and eating salty foods as this may help to **lower your blood pressure.** Eating less salt can also help if you need to drink less fluid, because **salty foods can make you thirsty.** It is best to have **no more than 5g** (one teaspoon) of salt a day. This **includes** salt that is already in many everyday foods.

Tips to reduce salt in your diet include:

Limit processed foods (including meat alternatives), convenience foods and **takeaway** foods.

Cook meals from scratch wherever possible.

Reduce or avoid adding salt to home cooking or at the table. This includes all types of salt, e.g. rock, sea, Himalayan pink, garlic and kosher.

Where recipes call for **stocks or sauces**, choose low salt or the reduced salt alternatives that are widely available.

Give your tastes buds time to adapt to less salt. This may take **4-6 weeks**.

Check and compare food packaging and labels to find those with the **lowest amount of added salt**.

Note: there are several brands and supermarket own brands that sell **reduced sodium salts**, such as 'LoSalt'. These are **not suitable for people with kidney failure**. This is because they contain an additive called **potassium chloride**.

Reducing salt from packaged foods

Most packaged foods have a colour coded 'Traffic Light Symbol' on the front of their packaging. If buying packaged foods then it is best to **avoid or limit those that are coloured red for salt**, which means the food is **high** in salt.
Choose more greens and ambers instead.

Not all foods carry the traffic light symbols. In which case, you may need to **check the nutritional information.** This is often found on the **back of food packaging.**

What to look for on the nutritional information:
Check the **'per 100g' section** on the nutritional information table for salt and compare with the table below:

Per 100g	Low	Medium	High
Salt	0-0.3g	0.3-1.5g	More than 1.5g
Sodium	0-0.1g	0.1-0.6g	More than 0.6g

Other diet and lifestyle considerations

Potassium and phosphate

Sometimes people having **dialysis** will need to **limit foods rich in potassium and phosphate. If this is advised, then a kidney dietitian can help you do this alongside your plant-based diet.**

Loss of appetite

Sometimes people lose their appetite when having dialysis. If you notice any **nausea, vomiting** or **taste changes**, or have **lost weight without meaning to**, then **you may need some advice from a kidney dietitian.**

Constipation

This is a common problem when having dialysis so it's important to eat plenty of fibre rich foods found in a plant-based diet, speak with your Kidney Dietitian if you need support increasing fibre in your diet.

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Exercise:

Being active may help to maintain a healthy weight, as well as having many other benefits.

The weekly exercise guidance for adults is:

At least 150 minutes moderate intensity e.g. a 30-minute brisk walk 5 times a week, or 75 minutes vigorous activity, or a mixture of both. As well as muscle strengthening activities on two days a week.

Dialysis can make exercising more difficult, so seek support and do what you can, within your own limitations.

Vitamin and mineral supplements

Some vitamin supplements are unsafe to take when having dialysis, so you should discuss all your supplement needs with a kidney dietitian.

Your kidney team will check your level of **calcium, vitamin D, B12,** and **iron** and, if needed, you will receive a supplement for these.

Depending on the type of dialysis you have, **you may need extra vitamins.** Your **kidney dietitian will guide you** on this. You should discuss, with your dietitian, if you need to take a supplement for the mineral **iodine**.

Smoking

If you currently smoke, then it is strongly advisable that you stop.

Links to other useful resources

BDA The Association of UK Dietitians

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NHS

Kidney Kitchen

PLANT-BASED Health Professionals UK

- Plant-Based Eatwell Guide
- BDA Food factsheet Plant-Based diet
- Vegetarian, vegan and plant-based diets
- BMI calculator
- Weight loss tips
- Hypertension factsheet
- Type 2 diabetes factsheet
- High cholesterol factsheet
- Kidney Kitchen
- Kidney Beam

References

Adair KE, Bowden RG. Ameliorating Chronic Kidney Disease Using a Whole Food Plant-Based Diet. **Nutrients.** 2020 Apr 6;12(4):1007. doi: 10.3390/nu12041007. PMID: 32268544; PMCID: PMC7230354.

Babich JS, Kalantar-Zadeh K, Joshi S. Taking the Kale out of Hyperkalemia: Plant Foods and Serum Potassium in Patients With Kidney Disease. **J Ren Nutr.** 2022 Nov;32(6):641-649. doi: 10.1053/j.jrn.2022.01.013. Epub 2022 Feb 5. PMID: 35131414.

Bach KE, Kelly JT, Palmer SC, Khalesi S, Strippoli GFM, Campbell KL. Healthy Dietary Patterns and Incidence of CKD: A Meta-Analysis of Cohort Studies. **Clin J Am Soc Nephrol.** 2019 Oct 7;14(10):1441-1449. doi: 10.2215/CJN.00530119. Epub 2019 Sep 24. PMID: 31551237; PMCID: PMC6777603.

Carrero J et al, Plant-based diets to manage the risks and complications of chronic kidney disease, **Nat Rev Nephrol.** 2020 Sep;16(9):525-542 doi: 10.1038/s41581-020-0297-2. Epub 2020 Jun 11. PMID: 32528189.

Cases A et al, Vegetable-based diets for chronic kidney disease? It is time to reconsider, **Nutrients.** 2019 Jun; 11(6);1263 doi: 10.3390/nu11061263. PMID: 31167346; PMCID: PMC6627351.

Joshi S, McMacken M, Kalantar-Zadeh K. Plant-Based Diets for Kidney Disease: A Guide for Clinicians. **Am J Kidney Dis.** 2021 Feb;77(2):287-296. doi: 10.1053/j.ajkd.2020.10.003. Epub 2020 Oct 16. PMID: 33075387.

Joshi S, Hashmi S, Shah S, Kalantar-Zadeh K. Plant-based diets for prevention and management of chronic kidney disease. **Curr Opin Nephrol Hypertens.** 2020 Jan;29(1):16-21. doi: 10.1097/MNH.0000000000000574. PMID: 31725014.

Kalantar-Zadeh K, Joshi S, Schlueter R, Cooke J, Brown-Tortorici A, Donnelly M, Schulman S, Lau WL, Rhee CM, Streja E, Tantisattamo E, Ferrey AJ, Hanna R, Chen JLT, Malik S, Nguyen DV, Crowley ST, Kovesdy CP. Plant-Dominant Low-Protein Diet for Conservative Management of Chronic Kidney Disease. **Nutrients.** 2020 Jun 29;12(7):1931. doi: 10.3390/nu12071931. PMID: 32610641; PMCID: PMC7400005.

KDIGO 2020 Clinical practice guideline for diabetes management in CKD, vol 98, issue 45, October 2020

KDIGO 2021 Clinical practice guideline for the management of glomerular disease, vol 100, issue 45, October 2021 doi: 10.2215/CJN.12391018. Epub 2019 Apr 25. PMID: 31023928; PMCID: PMC6500948.

Kim H et al, Plant-based diets and incident CKD and kidney function, **CJASN.** May 2019, 14 (5) 682-691

Moore J. Whole-Food Low-Protein Plant-Based Nutrition to Prevent or Slow Progression of Chronic Kidney Disease. **J Ren Nutr.** 2021 Mar;31(2):e1-e4. doi: 10.1053/j.jrn.2020.03.005. Epub 2020 Jun 23. PMID: 32586713.

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