Eating a plant-based diet with Chronic Kidney Disease (CKD)

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What is CKD?
Chronic Kidney Disease (CKD) is a condition where the kidneys don’t work as well as they should.

Stage 1-5 (not receiving dialysis)

CKD is classified into stages, stage 1 being the early stage and stage 5 being the most advanced.

The stage of your CKD is mostly determined by your ‘Estimated Glomerular Filtration Rate’, also called eGFR.

When CKD progresses beyond stage 5, then this is known as kidney failure (or renal failure). To sustain life, dialysis or a kidney transplant will be needed.

Managing these conditions may help slow down the progression of CKD.

A healthy plant-based diet can help manage high blood pressure, diabetes and reduce the risk of developing type 2 diabetes, cardiovascular disease as well as help with weight loss.

If you have been diagnosed with CKD, and you would like to eat a plant-based diet, then you may find the following information a useful guide.

There are lots of different reasons for someone to develop CKD, but, the risk of progression through the stages to end stage can be related to: High blood pressure, Uncontrolled diabetes, Obesity, Smoking, Cardiovascular disease (a condition that affects the heart and blood vessels, which is common when you have CKD).

Why eat a plant-based diet?

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

Vegetables
Nuts and seeds
Fruits
Legumes
Whole grains

What is a plant-based diet?

Few or no animal products
Low in ultra-processed foods
These are high in added fat, sugar and salt

What can I eat?

Eat a variety of vegetables and fruit every day

Vegetables and fruit should make up a third of the food you eat every day.

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 CKD.
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**Enjoy a variety of starchy foods**

- **Aim for a third of your daily diet from these 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:

- Sweet potato
- Plantain
- Yam
- Potato

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 such as**

- Beans, pulses (peas and beans)
- Soya beans
- Soya chunks
- Tempeh
- Lentils
- Unsalted nuts and seeds
- Mycoprotein (eg Quorn) and other meat alternatives can also be included occasionally but be careful as these are often high in fat and salt.

Tofu
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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.

Consider choosing a plant-based dairy alternative such as oat or soya milk. 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.

Reducing salt

Limit using salt and eating salty foods as this may help to lower your blood pressure and slow the progression of your CKD. It is best to eat no more than 5g (one teaspoon) of salt a day. This includes salt already added to foods.

Tips to reduce salt in your diet include:
- Limit processed, convenience and take away 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.
- Limit the use of high salt condiments such as sauces, soy sauce, miso.

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

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.

Flavour food using a variety of spices, herbs (dried and fresh), lemon or lime juice. Be careful with seasoning mixes as these can contain a lot of salt.

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.

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:

<table>
<thead>
<tr>
<th>Per 100g</th>
<th>Low</th>
<th>Medium</th>
<th>High</th>
</tr>
</thead>
<tbody>
<tr>
<td>Salt</td>
<td>0-0.3g</td>
<td>0.3-1.5g</td>
<td>More than 1.5g</td>
</tr>
<tr>
<td>Sodium</td>
<td>0-0.1g</td>
<td>0.1-0.6g</td>
<td>More than 0.6g</td>
</tr>
</tbody>
</table>
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Other diet and lifestyle considerations

What to drink
Drink adequate amounts of fluid so that you stay hydrated.

The amount of fluid needed will vary from person to person and depends on level of activity, how much you sweat, your age, gender, and the temperature as well as other factors.

You don’t need to drink excessive amounts, just enough to keep your urine a pale straw colour is adequate.

It is best to limit sugary drinks or adding sugar to your drinks.

Tea and coffee both contribute to fluid but limit caffeine to 300mg a day or consider decaffeinated drinks as caffeine can increase your blood pressure. 300mg is approximately 2-3 coffees depending on strength, or 5-6 teas.

What to drink

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.

Loss of appetite
Occasionally people can lose their appetite in the advanced stages of CKD.

If you notice any nausea, vomiting or taste changes, or have lost weight unintentionally, then you may need some advice from a kidney dietitian.

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

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). If you do not consume alcohol there is no health benefit to starting now.
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Vitamin and mineral supplements

Unless advised otherwise, there are no vitamin and mineral supplements required for CKD. If you choose a plant-based diet, you should get a regular source of vitamin B12, vitamin D, and iodine. If you decide to take a supplement, you should speak to a kidney dietitian to get advice on which supplements are best for someone with a CKD.

Avoid taking a fish oil supplement as these may cause unsafe levels of vitamin A in the body.

If you wish to take any other supplement or a herbal remedy, then it is best to discuss this with your doctor or kidney dietitian to ensure it is safe to take.

Links to other useful resources

- Plant based Eatwell Guide
- BDA Food fact sheet Plant-based diet
- Vegetarian, vegan and plant-based diets
- BMI calculator
- Weight loss tips

References


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

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