



Potassium Matters:

Why managing high potassium levels is so important – a leaflet for people with kidney disease







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Potassium Matters



Foreword

by Joanna Pulman, Kidney Dietitian, Dorset County Hospital NHS Foundation Trust

As a kidney dietitian, I have many years of experience helping people living with conditions such as chronic kidney disease and have supported them with managing their potassium levels.

A common guestion I get asked by patients is how they can effectively manage potassium in their diet and do so without having to sacrifice the foods and flavours that they love. Eating well for your kidneys and reducing your dietary potassium intake should not feel restrictive. It's important to know that avoiding certain foods is not always necessary. You can still enjoy delicious meals by making small changes to recipes and learning the appropriate quantities and preparation techniques for high potassium foods.

That is why I am so pleased to have been involved in the development of this leaflet. I hope it helps people living with hyperkalaemia or high potassium manage their potassium levels and ensure they stay within a healthy limit. Not only does it contain really valuable information on what potassium is and its role in the body, but the recipes included, I hope, will be of a great help to those struggling with managing potassium in their diets. The recipes are quick and easy to make while still being nutritious and packed with flavour. From stir-fried chicken to crème brûlée (my personal favourite!), we hope that this is a welcome addition to your kitchen.

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What is potassium?

Potassium is an essential nutrient found in many foods. Healthy kidneys maintain normal potassium levels in the body because they remove excess amounts through urine. When in a normal range, potassium helps your nerves, cells and muscles, including your heart, to work in the right way.¹

Chronic kidney disease is a long-term condition where your kidneys don't work as well as they should. Because of this you may be at a higher risk of developing high potassium levels, known as hyperkalaemia.

Monitoring potassium

Because having too much or too little potassium in the blood can be dangerous, your potassium levels will be monitored regularly through blood tests. Defining hyperkalaemia is not easy as values vary from person to person and day to day; the standard normal range of potassium levels in your blood is typically considered to be 3.5–5.5 mmol/L.² Hypokalaemia (low levels of potassium in the blood) occurs when blood potassium drops below the normal range, while hyperkalaemia happens when blood levels go above the normal range of 5.5 mmol/L.² People who are having regular dialysis treatment will usually be advised to keep their levels below 6.0 mmol/L.²

Potassium levels below 3.5 mmol/L are classified as hypokalaemia The normal range of serum potassium is between 3.5-5.5 mmol/L (up to 6.0 mmol/L for people who have dialysis) Potassium levels above 5.5 mmol/L (or 6.0 mmol/L for people who have dialysis) are classified as hyperkalaemia

What is hyperkalaemia?

Hyperkalaemia is a medical condition that means you have too much potassium in your blood. If you have been told you have high potassium levels, you may be advised to limit potassium in your diet to help manage the amount of potassium in your blood.

Hyperkalaemia may be mild, moderate, or severe:³



Why does hyperkalaemia matter?

The way the body responds to hyperkalaemia is unpredictable. Many people have few, if any symptoms, and if symptoms do appear, they are usually mild (some muscle weakness, numbness, tingling, nausea, or other unusual feelings).⁴ However, it can cause muscle weakness, paralysis, heart arrhythmias (a condition characterised by abnormal heart rhythm which may result in either too fast or slow heartbeat) and sadly, if not managed properly, is associated with increased risk of death.²

What causes hyperkalaemia?

Hyperkalaemia is common in people with advanced chronic kidney disease because their kidneys don't work as well as they should.³ This means that the kidneys are not able to remove enough potassium from the body.³

Some of the causes of hyperkalaemia are:

- Medicines that affect kidney function: It is common for people living with chronic kidney disease to have cardiovascular disease too. Several medicines taken for heart disease and blood pressure can prevent the kidneys from removing enough potassium, causing potassium levels to rise.²⁵
- Other medical conditions:

- Some of the medications used in heart failure can cause high levels of potassium in the blood.²

- Low levels of bicarbonate in the blood can cause high levels of potassium in the blood.²
- Diabetes: Having frequent high blood sugar can cause high levels of potassium in the blood.²

- Constipation can also cause potassium levels to rise as some potassium is removed from the body in stools.²

• A diet high in potassium: Too much potassium-rich food can cause hyperkalaemia, especially in people with advanced kidney disease.^{2,3} Processed foods can be high in potassium due to the use of additives such as potassium chloride, which is used to replace salt. They are also often lower in fibre which important for overall health.⁶

It's important to talk to your doctor about how best to manage your individual potassium levels.

Managing potassium levels

There are preventative steps and lifestyle changes that can help to manage high potassium levels and keep them within normal ranges.

An important part of managing high potassium levels in the long-term is managing the amount of potassium in your diet, particularly by avoiding processed foods which are high in potassium and preparing fresh food as much as possible. Before making any changes to your diet, you should discuss this with your doctor or kidney dietitian.³



Potassium in food

This leaflet includes recipes that may help you when making food choices, and provides some guidance to help with choosing ingredients when preparing your meals. The following tables give some examples of both foods that are higher in potassium, as well as foods that have lower amounts of potassium. All can be included in a healthy and balanced diet.

It's important to remember that, if you can, you should try to cook from fresh and limit or avoid processed foods (foods that have added fats, salt or sugar or that contain additives or preservatives). The potassium that is used in processed foods is absorbed into the blood stream much more easily and can cause high levels of potassium. Also, the size of the serving that you eat of each ingredient matters, as well as how the meal is prepared. The way that food is cooked or prepared can also determine the potassium content.

If you have any questions or need more information, you should discuss this with your doctor or kidney dietitian.



The following table provides some examples of foods that are lower in potassium.



What changes may be needed?

There are many things that you can do to help manage potassium levels if they are high. Please speak to your doctor and your kidney dietitian to find out which may be right for you. Here are a few examples:

- 1. Aim for a healthy and balanced diet, which includes fruit and vegetables.
- 2. Cook from fresh as much as possible. Potassium is often found in preservatives and additives in convenience or pre-packaged foods which can have a big impact on potassium levels in your blood.
- Avoid salt substitutes, as these are potassium based.⁵
- 4. Enjoy lower potassium options more often with higher potassium options in moderation.
- Limit milk, milky drink and yogurt to around 1/2 pint per day (300ml). This includes milk alternatives.
- 6. Limit crisps, dried fruit and fruit juices as these contain a lot of potassium and have very little health benefit.
- 7. If you have been advised, peeling vegetables and potatoes before boiling them helps to reduce their potassium content. Just remember to discard the cooking water rather than using it to make any gravies, sauces, soups, or stews. You may need to avoid using microwaves, air fryers, pressure cookers or steamers for your vegetables and potatoes unless they have been pre-boiled.
- 8. Speak to your doctor or kidney dietitian if you need help managing your diabetes or constipation, maintaining a healthy gut or if you are considering herbal remedies or taking supplements.

The Main Event

Use the advice in the leaflet above to help with ingredient choices.

For the sweet tooth



Serves 4

Ingredients

225a Chicken fillet (lean pork fillet may be used) 2 medium Carrots (don't pre-boil unless advised by a dietitian) 1 medium Courgette (don't pre-boil unless advised by a dietitian) 1 Small Red pepper (don't pre-boil unless advised by a dietitian) Thai seven spice powder ½ tsp Oil for frying

Analyses per portion	
Energy (kcal)	280
Protein (g)	39
Fat (g)	1 '
Sodium (mmol)	13
Phosphorus (mmol)	(
Potassium (mmol)	24

Stir-fried chicken

Method

- 1. Cut the chicken into thin strips and fry in a small amount of oil using a wok or frying pan.
- 2. Cut the carrot, courgette and pepper into strips and add to the chicken.
- 3. Stir in the Thai seven spice powder.
- 4. Stir fry on a medium heat until the chicken is cooked through.

Serve with... noodles tossed in a little sesame oil if desired.



Crème Brûlée

Analyses per portion

Energy (kcal)
Protein (g)
Fat (g)
Sodium (mmol)
Phosphorus (mmol)
Potassium (mmol)

520

З

43

2

2

3

Serves 2

Ingredients

2 Slices	Tinned pineapple
140ml	Double cream
1	Egg
50g	Caster Sugar
1tsp	Vanilla essence
2	greased ramekins
	(approx. 8-9cm diameter).

Method

- 1. Preheat the oven to 150° (Gas Mark 2).
- 2. Pat the pineapple dry with kitchen paper. Chop coarsely and place in the bottom of each ramekin.
- 3. Heat the cream gently until it bubbles around the edge but do not boil.
- 4. Add half the sugar to the egg in a mixing bowl and whisk until well blended. Gradually whisk in the cream then stir in the vanilla essence or brandy. Pour the mixture over the pineapple to 1cm from the rim.
- 5. Place the ramekins in a shallow roasting container filled with boiling water to a depth of 3cm or 3/4 way up the ramekins. Bake in the oven for 25-30 minutes until the custard is set.
- 6. Remove, cool and chill for a minimum of 1 hour or overnight. Heat the grill to the hottest setting, sprinkle the remaining sugar over the top of the custard. Grill until brown and bubbling, turning the ramekin occasionally to ensure even browning. 7. Chill for 1 hour before serving.



The recipes included within this leaflet were provided by the National Kidney Federation. For more recipes, please explore the National Kidney Federation's recent cookbook, 'Taste': https://www.kidney.org.uk/shop/nkf-cook-book.

This leaflet was developed with the input from the British Dietetic Association's Renal Nutrition Specialist Group. Current guidance for managing potassium through diet is evolving so please visit the Renal Nutrition Group website for the most up to date advice:

> https://www.bda.uk.com/specialist-groups-and-branches/ renal-nutrition-specialist-group.html

Speak with your healthcare professional for more information.

Thanks to the National Kidney Federation, Pumping Marvellous and the Renal NutritionSpecialist Group of the British Dietetic Association for their counsel and contributions to this leaflet.

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