There are some links below to recipes which are mostly plant-based. Some will result in adult portion sizes so please be mindful of this.

Vegetable risotto: <u>www.kidneycareuk.org/news-and-</u> <u>campaigns/news/new-kidney-friendly-cookbook</u> (page 27)

Rice and bean burrito with side salad (would need smaller portion for young child): <u>www.kidneycareuk.org/about-kidney-health/living-kidney-disease/kidney-kitchen/recipes/rice-and-bean-burrito-side-salad</u>

Red lentil Bolognese: <u>www.kidneycareuk.org/about-kidney-</u> <u>health/living-kidney-disease/kidney-kitchen/recipes/red-lentil-</u> <u>bolognese</u>

North African One Pot Casserole: <u>www.kidneycareuk.org/about-kidney-health/living-kidney-disease/kidney-kitchen/recipes/north-african-style-one-pot-vegetarian-casserole</u>

The following link contains help with cooking and chopping skills: www.kidneycareuk.org/about-kidney-health/living-kidneydisease/kidney-kitchen/kidney-kitchen-skills



Early Phosphate Intervention for Chronic Kidney Disease Stage 1-3

Information for parents and carers

This guidance is aimed at the parents/carers of children and young people who have early-stage chronic kidney disease (CKD stages 1-3). It contains advice on reducing excess phosphate in their diet. We encourage doing this before blood phosphate levels become high as it can help slow down the progression of CKD. Those with stage 4 or 5 CKD, or with significant difficulties in coping with changes to their diet, should be referred to a Paediatric Renal Dietitian for individualised advice.

What is phosphate?

Phosphate is a natural mineral found in humans, animals and plants. It comes from the food we eat and is needed to form bones and teeth. It is also used in the structure of our body's cells and to provide energy. After we eat, phosphate is released from the food and absorbed into our blood.

Why do I need to lower my child's phosphate intake?

Healthy kidneys control how much phosphate stays in our body. When the kidneys are not working properly the amount of phosphate can build up and cause problems. Your child may not feel unwell or know that this is happening. However, over time the excess phosphate may be causing problems in their bones or heart as well as in the kidneys themselves. If your child does have symptoms, they may feel itchy, their eyes may be red or their bones and/or joints may feel sore.

Reducing the amount of phosphate your child eats, even in the early stages of CKD, can slow down the progression of disease and delay the need for dialysis and transplantation.

To help control your child's phosphate intake they may need to eat slightly less of some foods or change the type of food they eat. There are different types of phosphate: those found naturally in foods that are rich in protein (for example: meat, dairy foods and pulses) and those that are added to foods (processed meats, cakes or biscuits). Our bodies absorb the added phosphates very easily compared to the phosphate that naturally occurs in foods. They also absorb more phosphate from animal-based protein sources compared to plant-based sources.

How can I reduce my child's phosphate intake?

There are many ways that you can reduce the amount of phosphate that your child eats:

 Try to cook from scratch where possible. This is key as it helps to reduce added phosphate compared to having processed foods or ready-made meals The British Dietetic Association have published a food fact sheet on vegetarian, vegan and plant-based diets where you will find more information on the nutrients that need particular attention to avoid deficiencies:

www.bda.uk.com/resource/vegetarian-vegan-plant-based-diet.html

Tips and suggestions for getting started with introducing plant-based options:

- Start small aim for one plant-based meal a week at first
- Swap half of the mince in your spaghetti bolognese for red lentils
- Add butterbeans to casseroles and reduce the quantity of meat you include
- Try a vegetable, potato or chickpea curry instead of a meatbased one
- Increase the frequency of plant-based foods your child may already like, such as baked potatoes, hummus, vegetable soup or nut butters
- Try homemade granola bars for breakfast
- Add a chopped banana, a handful of berries or some seeds to porridge or cereal

Offer fresh vegetable sticks or fruit as a snack instead of processed options such as crisps. They may enjoy sliced apple with peanut butter.

Plant-based diet

There is not a widely accepted definition of what it means to eat a plant-based diet. It is mostly based on plants but animal meat and/or products are eaten occasionally. Foods such as grains, nuts, legumes*, seeds, fruit and vegetables are common.

*Legumes are foods such as lentils, chickpeas, beans and peas.

Plant-based diets also usually contain very few processed foods. Cooking from scratch using unprocessed (or minimally processed) ingredients is important. For example, a processed vegan bacon substitute wouldn't be encouraged as part of a plant-based diet. However, aiming to include a wide variety of different colours of vegetables and types of grain would be.

When taking steps to reduce the quantity of meat or poultry that your child is eating, we would really encourage swapping a portion of meat for a plant-based alternative, such as lentils, rather than a vegetarian option such as cheese.

Introducing more plant-based options in to your child's diet is likely to benefit their kidney health. Swapping to a completely plantbased diet may mean a huge change from what your child is currently eating and therefore may not be an appropriate choice. It is important to have a balance between positive dietary changes and maintaining freedom for children and young people to go out with friends, have sleepovers or eat in restaurants of their choice, for example. If you do intend to move towards a fully plant-based diet then please ask your GP or Consultant to refer your child to a Paediatric Dietitian. This is important to ensure that your child's diet remains nutritionally adequate, particularly for calcium, iron and vitamin B12.

- 2. Looking out for added phosphate in the ingredients list of packaged food
- 3. Limit the portion size of protein-rich foods if excessive
- 4. Swap some animal-based protein sources for plant-based alternatives
- 5. Avoid an excessive intake of dairy foods
- 6. Limit the number of cakes, biscuits and chocolate you offer.

It is important to continue to have some phosphate in your child's diet so you should never try to avoid all these foods all the time. It is about making small changes that you and your child can continue with. For example, if your child has a ham sandwich, could they swap it for a leftover roast chicken sandwich? If you have a cake after dinner every day, could you have one every other day initially?

Phosphate additives are commonly found in processed foods such as sausages, burgers, chicken nuggets, and cold meats (ham/chicken slices). They are used to increase shelf life, enhance flavour or to make baked foods rise. Heavily processed cheese products are also likely to contain phosphate additives. Use fresh or less processed options such as mince, chicken thighs/breasts or less processed cheeses such as cheddar, mozzarella or cottage cheese.

In the UK, food companies do not need to include added phosphate on food labels. It makes it very difficult to know whether they are present. Therefore, it is best to cook from scratch where you can and offer unprocessed snacks such as a piece of fruit. Some companies do include added phosphate on their labels though so it is important to know what to look for. Please check the ingredients list for any words that contain "*phos*" such as *phos*phoric acid or sodium *phos*phate. Try to reduce your child's intake of these foods. Cola based drinks contain large amounts of phosphoric acid and should be avoided.

By reducing phosphate, you may also be reducing your child's protein and calcium intake and these are both important for your child's health. The following table shows the suggested dietary intake (SDI) of calcium for children and young people with CKD (Pediatric Renal Nutrition Taskforce, 2020):

| Age | Calcium SDI |
|-------------|-------------|
| 1-3 years | 450-700mg |
| 4-10 years | 700-1000mg |
| 11-17 years | 900-1300mg |

The British Dietetic Association has a useful 'calcium food fact sheet' where you can find details of the calcium content of various foods. Please use this to estimate whether your child is meeting the calcium SDI for their age (as detailed above rather than the requirements shown on the food fact sheet itself as they are for the general population).

www.bda.uk.com/resourceDetail/printPdf/?resource=calcium

If your child is having more calcium in their diet than the SDI then there may be scope to reduce their intake which can help decrease the phosphate in their diet too. For example, if your child has a particularly large intake of dairy products then reducing their intake of cows' milk and heavily processed cheese will help reduce their phosphate intake. Skimmed, semi-skimmed, and whole cows' milk all contain similar amounts of calcium and phosphate. Plant-based milk substitutes may be fortified with calcium phosphate and therefore may not be lower in phosphate than cows' milk. Please ask for a referral to see a Dietitian if you feel your child is having an excessive intake of calcium-rich foods.

To make sure your child has enough protein in their diet you should continue to offer two portions of protein-rich foods per day (for example, meat **or** poultry **or** fish **or** pulses **or** tofu **or** egg).

Is there anything else I can do?

Are you already cooking from scratch using unprocessed ingredients where possible? A further positive step you could take would be introducing more plant-based meals in to your child's diet and reducing their meat intake.

Plant-based diets have been linked with slower progression of kidney disease. A plant-based diet might be very different to what your child is currently eating. However, please do not worry as it is not necessary to change over every single meal and snack.

It is important to understand the difference between vegetarian, vegan and plant-based diets. These are explained a little below.

Vegetarian diet

A person who follows a vegetarian diet does not eat meat, poultry or fish. They do, however, eat animal products such as eggs, yogurt, milk and cheese. If someone does eat fish then they consume a pescetarian diet.

Vegan diet

A vegan diet excludes all animal products, often for ethical reasons. Those who eat a vegan diet may also avoid non-food products that impact on animals. An example would be avoiding leather shoes.