

## CHRONIC KIDNEY DISEASE: A PROBLEM FOR US ALL



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**Chronic Kidney Disease (CKD) is on the increase across the western population and is recognised as a global public health problem (1). A systematic literature review published in 2012 by McCullough et al (2) concluded that impaired kidney function with an eGFR of 30 to 59mL/min/1.73m<sup>2</sup> is as common as diabetes in the general population. In December 2012, there were 54,824 patients receiving renal replacement therapy (dialysis, transplantation) in the UK, which was an increase of 3.7% from the previous year (3).**

So what does chronic kidney disease mean? Chronic generally means a condition that won't improve. Many people who have CKD will never end up on dialysis and they have a higher risk of dying of cardiovascular disease than pro-

people with CKD (6).

It is now more than likely that dietitians working in the community are coming across patients with CKD in clinics. Unless eGFR is <25mL/min or <30mL/min for diabetics, they are unlikely to have regular contact with the renal multidisciplinary team. It is, therefore, important that non-renal dietitians know how best to manage this in order to try and prevent accelerated deterioration in renal function.

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gressing on to dialysis (4). Other chronic health conditions, such as diabetes mellitus and hypertension, are known risk factors in the development of CKD. Therefore, good management of these conditions will slow down progressive renal function loss and the cardiovascular complications (5). Cardiovascular disease is the leading cause of death in

### DIABETES

Diabetic renal disease continues to be the most common cause of renal failure in the UK (3). Diabetic patients with end stage renal disease are less likely to receive a kidney transplant and also have higher mortality on dialysis (7). There is much focus now on structured education programmes and more regular review to allow people to engage in self-management and this has been linked to

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an improvement in outcomes (8). Self-management is now being encouraged for patients on renal replacement therapy, so if they can master this in early CKD with diabetes management, then it will help.

#### HYPERTENSION

There is a significant evidence base to support the view that salt intake is the major cause of increased blood pressure (9). The average salt intake in the western world is 9.0-12.0g per day. This had been reducing, however, with the increased consumption of processed foods, but is now on an upward trend (9). NICE recommends that we should be aiming to reduce salt intake to 6.0g per day by 2015 and 3.0g by 2025 (10). For CKD, studies suggest that there would be a 25 percent improvement in renal and cardiovascular end points for individuals with CKD if salt intake were reduced to 3.0-5.0g per day (5). Pressure is starting to be put on manufacturers of processed meals to reduce salt intake, but this is going to take time. It is therefore important that all patients referred to dietetic clinics (regardless of reason) receive advice on reducing salt intake where appropriate.

#### LIPID MANAGEMENT

Fat modification, like salt, is important for the entire population; however, it is still unclear which fat confers the most benefit. Although most evidence would suggest that swapping saturated fat for unsaturated alternatives has a positive impact on serum cholesterol (11). Fat modification should be considered in the early stages of CKD; however, it is likely that a statin may be commenced following a large international multicentre trial (SHARP) (12) which showed that statins are key agents for lipid management in patients with advanced CKD.

#### POTASSIUM

Move away from the bananas! Often a dietary potassium restriction is not required until eGFR has reached <30. In the early stage of CKD (2/3a), if a patient is found to have a raised potassium level (>5.0), it would be of benefit to repeat in order to determine if it is a one off. There are many non-dietary related causes of hyperkalemia which are useful to explore and investigate, such as constipation, blood transfusion, uncontrolled diabetes, sepsis, acidosis and medications (potassium sparing diuretics and ACEIs ARBs) (13). It may be that, in some cases, potassium restriction is

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*... in the early stages of kidney disease, weight loss (particularly for those with high BMI) is likely to have benefits for other chronic conditions such as diabetes, hypertension and cardiovascular health.*

required early on if a patient is unable to change medications or if they have a history of heart failure and diabetes as they would, therefore, be at a higher risk of hyperkalemia (14). Restricting potassium at an early stage may have a significant impact on quality of life so it's important that this is discussed with the wider multidisciplinary team.

#### PHOSPHATE

Serum phosphate tends to rise when eGFR decreases to 20 to 30mls/min (15). However, there is strong evidence to suggest that phosphate restriction may be beneficial well before this point and that adverse impact of rising phosphate levels, such as development of CKD-mineral bone disease, are already happening at this time (16). If you are unsure about the need to restrict phosphate, it would be advisable to contact your local renal unit

and discuss with a specialist renal dietitian who will be able to advise.

#### OBESITY

There is an interesting paradox in CKD, particularly with dialysis, as obesity is protective for survival. The reason for this is not entirely clear and needs further investigation (17). However, in the early stages of kidney disease, weight loss (particularly for those with high BMI) is likely to have benefits for other chronic conditions such as diabetes, hypertension and cardiovascular health.

This is a brief overview of some of the considerations when seeing patients with CKD. If you need advice about dietary management of a patient with CKD, contact your local renal unit and ask to speak to one of the specialist renal dietitians. Or contact the Renal Nutrition Group of the BDA through the BDA website.

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**Questions relating to:** *Chronic kidney disease: a problem for us all*

Type your answers below and then **print for your records** or print and complete answers by hand.

**Q.1** Explain why CKD is recognised as a global public health problem.

A

**Q.2** Name at least two chronic health conditions that are known risk factors in the development of CKD.

A

**Q.3** What is the focus for management of diabetic renal disease?

A

**Q.4** What role does salt intake play?

A

**Q.5** How can fat modification help in the early stages of the disease?

A

**Q.6** When is the restriction of potassium required and what effect can it have?

A

**Q.7** Why is phosphate restriction beneficial to patients with CKD?

A

**Q.8** Describe the benefits of weight loss for individuals with a high BMI and in the early stages of kidney disease.

A

Please type additional notes here . . .