

## Diabetes UK and Kidney Research UK joint statement

### Diabetes remains the single most common cause of kidney failure in the UK.

Almost four in five people with diabetes will develop some stage of kidney disease during their lifetime <sup>[1]</sup>. It's an urgent crisis.

We don't yet know why some people with diabetes are at a higher risk of kidney disease than others. Kidney disease spotted later can result in poorer health outcomes, with people dying unnecessarily.

### The impact is debilitating and life-changing.

Lives are lost because of kidney disease. It accounts for 21 percent of deaths in Type 1 diabetes, and 11 percent of deaths in Type 2 diabetes <sup>[2]</sup>.

It has a huge impact on quality of life. Diabetes is the single most common cause of end-stage kidney disease in the UK <sup>[3]</sup>. For new patients needing dialysis or a transplant, 27.5% of cases are a result of diabetic kidney disease <sup>[3]</sup>. Right now, people in this position are faced with the options of dialysis or transplant (known as renal replacement therapies).

The numbers are rising. More people with diabetes are developing kidney disease. Right now, there are 22,600 people in the UK who have diabetes and need dialysis or a kidney transplant <sup>[4]</sup>. At least 9,900 people have end-stage kidney failure because of damage directly caused by their diabetes <sup>[3]</sup>.

### This needs to change.

We need to find ways to reduce the risk of kidney disease in people with diabetes, and slow its progression. We need to help people with diabetes and healthcare professionals to spot the signs of kidney disease early, and reduce the risk.

We need more effective treatments that can prevent or slow the progression of this devastating condition.

### We're working together to make a difference.

As two leading medical research charities, Kidney Research UK and Diabetes UK are uniquely placed to make a difference in this space. Together, we can protect people with diabetes from kidney disease and help those with the condition to live longer, healthier lives.

Together, Diabetes UK and Kidney Research UK are keen to fund research into the relationship between kidney disease and diabetes, and the development of new treatments. We are open to co-funding research projects in these areas, and would encourage researchers to notify both charities in advance of applying for grant funding.

Both charities have also established Clinical Studies Groups: groups of people living with diabetes or kidney disease, scientists and healthcare professionals working together to identify the most important areas of research moving forward. These Clinical Studies Groups are now collaborating, to ensure that expertise across diabetes and kidney disease are put to the best use, in order to identify research priorities and improve the lives of people with these conditions.

#### References for statement:

1. National Diabetes Audit Report 2A 2015-16: Mortality and Complications
2. Morrish NJ, Wang SL, Stevens LK et al (2001). Mortality and causes of death in the WHO multinational study of vascular disease in diabetes. *Diabetologia* 44, suppl 2; s14–s21
3. Gilg J, Methven S, Casula A, Castledine C. UK Renal Registry 19<sup>th</sup> Annual Report: Chapter 1. UK RRT Adult Incidence in 2015: National and Centre-specific Analyses. *Nephron* 2017;137(Suppl 1): 11-44 . Available at <https://www.renalreg.org/publications-reports/>
4. NHS Digital National Diabetes Audit Report 2A 2017: Complications and Mortality applied to Quality Outcomes Framework diabetes prevalence for the UK

#### Footnotes:

Diabetic kidney disease remains the single most common cause of new cases of renal failure in the UK, accounting for 27.5% of all patients starting renal replacement therapy in 2015 (1).

Diabetic kidney disease was the cause of renal failure in 13.6% of all patients on renal replacement therapy in the UK in 2006, rising to 16.7% of prevalent patients by 2015. A greater proportion of people whose kidney disease is caused by diabetes are on haemodialysis, compared to transplantation, than people whose kidney disease is caused by other diseases (2).

Almost 10% of patients with diabetes who started renal replacement therapy in the UK in 2015 were referred late (1). Their progressive kidney damage certainly could have been anticipated, if not even prevented. Nearly all patients with diabetes are known to their GP and often to other hospital services (3). Late presentation is associated with poorer outcomes, greater costs of care, and lower chances of home dialysis and of kidney transplantation (4).

Particularly amongst younger patients, survival after starting renal replacement therapy is considerably poorer amongst people whose kidney disease is caused by diabetes than amongst those with other causes of kidney failure (5).

In an analysis of survival in which co-morbidities were identified by interrogating the Hospital Episode Statistics database, English patients with diabetes aged less than 55 years at start of renal replacement had a 3.31-fold greater chance of death than similar patients without diabetes (6).

In a large prospective study of Finnish people with type 1 diabetes, the risk of mortality was strongly associated with the presence of markers of chronic kidney disease: while those with normal urine albumin excretion were no more likely to die than people in the general population, the standardised mortality rate was 2.8 in those with 'microalbuminuria', 9.2 in those with 'macroalbuminuria' and 18.3 in those with end-stage kidney failure (7).

In a Scottish study, in which data on type 1 vs type 2 diabetes were available, the median survival amongst type 1 diabetic patients starting renal replacement therapy was only 3.84 years, and 2.16 years amongst those with type 2 diabetes (8).

In a large study from the USA, nearly all of the excess mortality amongst people with type 2 diabetes was amongst the subgroup with evidence of kidney disease. After allowing for other factors, those with no evidence of kidney disease were only 4.1% more likely to die over the next 10 years; those with increased urine albumin excretion were 17.8% more likely, those with reduced GFR 23.9% more likely, and those with both albuminuria and reduced GFR 47% more likely (9).

Amongst patients with chronic kidney disease, those with diabetes have significantly poorer health-related quality of life than those without diabetes (10, 11).

In a Norwegian study of dialysis patients, health-related quality of life was significantly poorer amongst patients with diabetes than in those without diabetes or than in diabetic patients not on dialysis. Poor scores on the mental aspects of the health-related quality of life questionnaire were an independent predictor of higher mortality amongst diabetic patients on dialysis (12).

### References for footnotes:

1. Gilg J, Methven S, Casula A, Castledine C. UK Renal Registry 19<sup>th</sup> Annual Report: Chapter 1. UK RRT Adult Incidence in 2015: National and Centre-specific Analyses. *Nephron* 2017;137(Suppl 1): 11-44 . Available at <https://www.renalreg.org/publications-reports/>
2. MacNeill SJ, Ford D. UK Renal Registry 19<sup>th</sup> Annual Report: Chapter 2 UK Renal Replacement Therapy Prevalence in 2015: National and Centre-specific Analyses. *Nephron* 2017;137 Suppl 1:45-72. Available at <https://www.renalreg.org/publications-reports/>.
3. Blunt I, Bardsley M, Strippoli GF. Pre-dialysis hospital use and late referrals in incident dialysis patients in England: a retrospective cohort study. *Nephrol Dial Transplant*. 2015;30(1):124-9.
4. Smart NA, Dieberg G, Ladhani M, Titus T. Early referral to specialist nephrology services for preventing the progression to end-stage kidney disease. *Cochrane Database Syst Rev*. 2014(6):CD007333.
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6. Fotheringham J, Jacques RM, Fogarty D, Tomson CR, El Nahas M, Campbell MJ. Variation in centre-specific survival in patients starting renal replacement therapy in England is explained by enhanced comorbidity information from hospitalization data. *Nephrol Dial Transplant*. 2014;29(2):422-30.
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