

# Diabetic Kidney Disease

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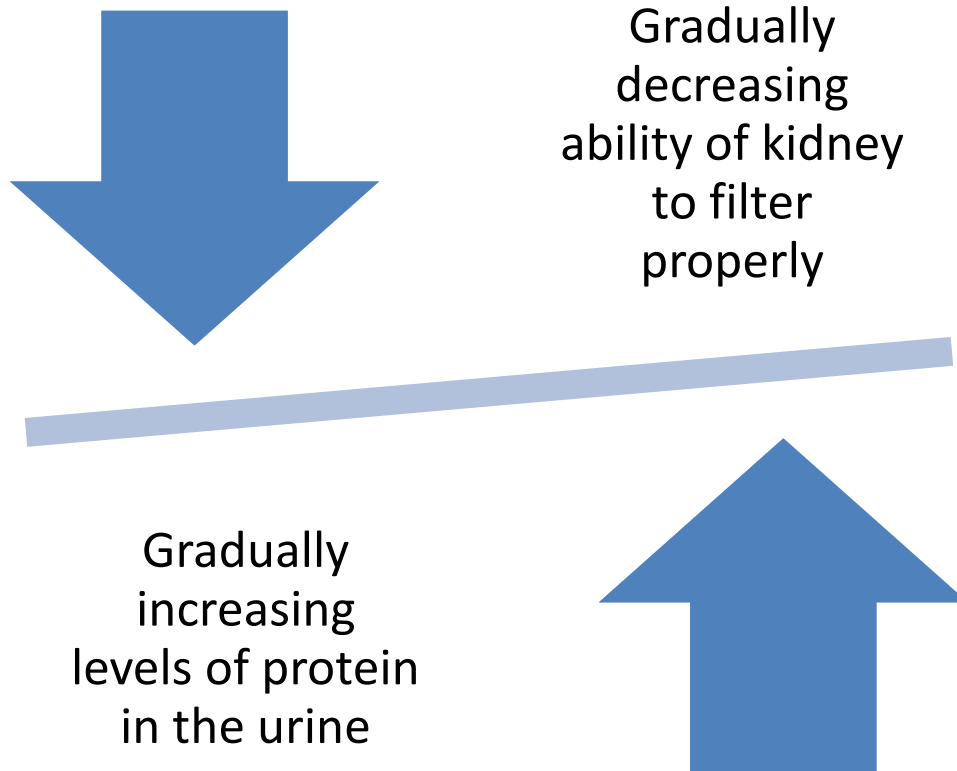
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# Diabetic Nephropathy (Kidney Disease)

- Almost 1 in 5 people with diabetes will need treatment in their life time for nephropathy



# Diabetic Kidney Disease- what is it ?



# Symptoms of Kidney Disease

- No symptoms at the early stages – but can be picked up in your annual urine screening
- Symptoms of later disease ( these may also be signs of other conditions so speak to GP if you have any of these regularly):
  - Swollen ankles, feet and hands
  - Blood in urine
  - Nausea/feeling sick
  - Being short of breath



# How do you screen for diabetic kidney disease ?



- Urine test
- Person should be:
  - free from acute illness ( this can increase amount of protein temporarily)
  - Test to be taken when person has stable blood glucose control (acute hyperglycaemia can increase the amount of protein temporarily)
- Sample can be taken at ANYTIME !!
- Urine may be dipped as well as sent off to the lab for testing – this can help us distinguish between types of kidney disease

# If I get a test which says I have albuminuria, does that mean I definitely have diabetic kidney disease ?

- Further samples should be requested and this may be requested as an early morning sample if protein is present ( usually 1-3 months after the first)
- High levels of variation in protein levels in urine
- Usually a diagnosis is only made after 2 out of 3 tests are positive



# Poll

- How many people get at least an annual urine test to check kidney function ? Tell us about your experience with this

(a) Yes

(b) No

# What are we looking for with the urine test ?

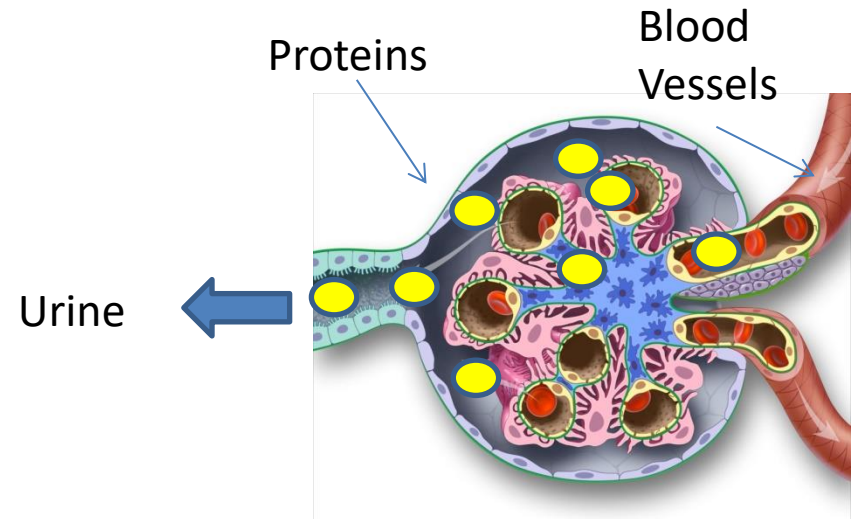


- Urine Albumin: Creatinine ratio – this is a marker of how much protein is leaking into your urine
- eGFR – estimated glomerular filtration rate is another marker of how well your kidneys are filtering

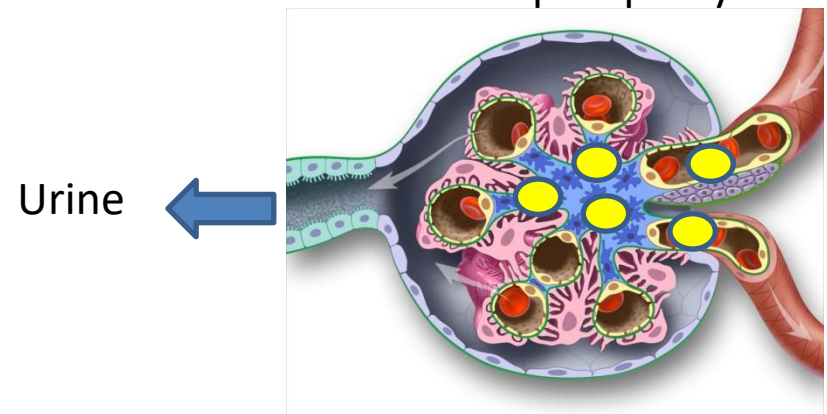


# What is the main causes of albuminuria (protein in the urine) in diabetic nephropathy ?

- ‘High sugars’ – can do damage to the small blood vessels (microvasculature) and filters
- High blood pressure – can damage the filters
- This can cause protein to ‘leak out’ in the urine rather than being re-absorbed



Diabetic Nephropathy



Healthy Kidney

# What are Risk Factors For Developing Diabetic Kidney Disease ?

| Things you might Control | Things you are unable to control                            |
|--------------------------|---|
| Blood Glucose            | Diabetes Duration   |
| Blood Pressure           | Genetic factors   |
| Cholesterol levels       | Other diabetes complications<br>e.g. cardiovascular disease |
| Smoking                  |   |
| Weight                   |   |

# Poll

What do you most associate with good kidney health ? Tell us your experiences of trying to achieve good kidney health

(a) Blood pressure

(b) Blood glucose control

(c) Lipids

(d) Lifestyle e.g. smoking, weight, diet etc.

# How do I reduce my risk of developing diabetic kidney disease?



- Keep blood glucose within target range
- Keep blood pressure within target range
- If you are a smoker – seek stop smoking services
- Stay active and eat healthily
- Ensure you attend your diabetes reviews and that you bring your urine sample when asked for

# Poll

There is poor uptake nationally on getting screening done for kidney function ? Why do you think this is, tell us your experiences

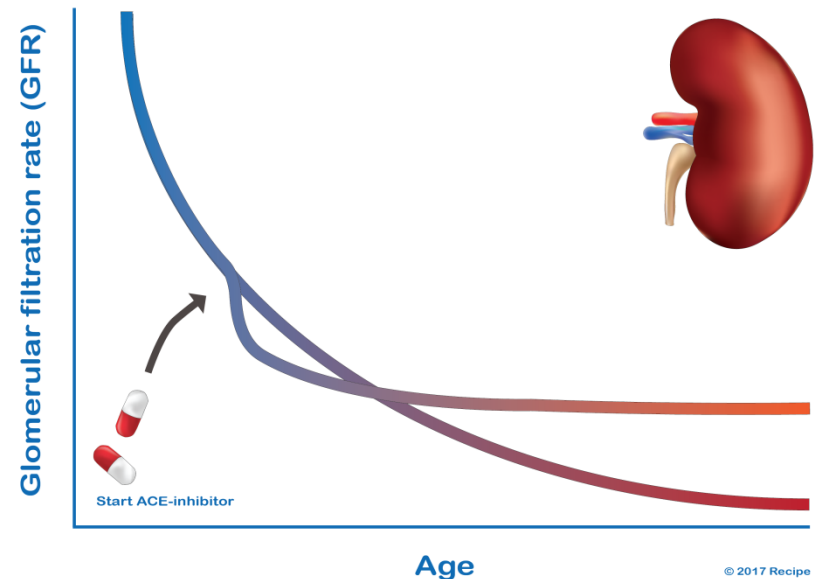
(a) People don't like doing urine tests

(b) People forget to bring a sample in to appointment

(c) People think it has to be done early in the morning and this is a barrier

# How do we manage diabetic kidney disease together ?

- We may discuss keeping blood glucose within target range
- We may discuss starting an ACE inhibitor or ARB and controlling blood pressure with other medications
- We may discuss making changes to diet e.g. reducing salt and protein intake
- We may discuss using an SGLT2 (type 1 or type 2)
- We may discuss using a GLP-1 (type 2 only)



# Poll

Starting an ACE inhibitor e.g. ramipril, enalapril, lisinopril has independent protective benefits to the kidneys above and beyond just blood pressure control :

- (a) True
- (b) False

# Poll

What is a common side effects of ACE inhibitors  
e.g. Ramipril, Lisinopril, Enalapril?

(a) Dry eyes

(b) Cough

(c) Leg cramps

(d) Oedema



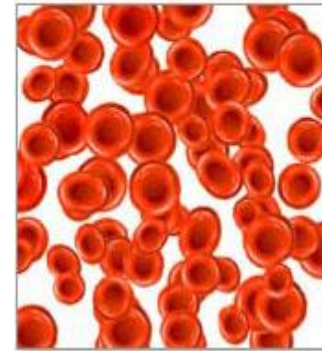
# Poll

- What can a common problem be with taking ARB or ACE inhibitors in renal impairment?
  - (a) low potassium
  - (b) high potassium
  - (c) Low calcium
  - (d) High calcium

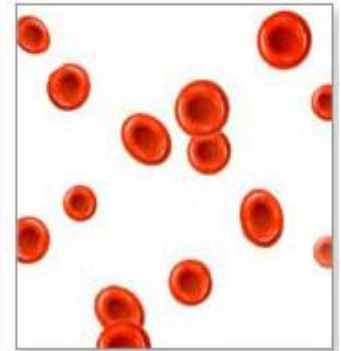
# If you have more progressed kidney disease we may also check:

1. For anaemia – one of the stimulating factors for making red blood cells is made in the kidney
2. For bone chemistry- vitamin D which helps the body absorb calcium to make bone is activated in the kidney
3. If you need a referral to the specialist nephrologist

Normal amount of red blood cells



Anemic amount of red blood cells



# Resources

- National Kidney Federation



- Kidney Care UK



# Any other questions?

