

Chronic Kidney Disease

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How prevalent is CKD in NZ Adults?



100-150 per GP

52-year-old woman- Joyce

- Keeps fit and well, no long term conditions
- Attends for annual check-up



- Would you include a kidney check?
- What would you check?

Screening for CKD

- WHO

You're more likely to have kidney disease if you:

Have high blood pressure

Have diabetes

Smoke

Have a family history of kidney disease

Are over 50

Are of Māori or Pacific heritage

- HOW OFTEN



- HOW



uACR



Creatinine,
eGFR

Auckland Health Pathways

- **Annually:** HTN, Vascular Disease, Diabetes
- **Biannually:** Family history of kidney disease including polycystic kidney disease
Previous acute kidney injury
Obesity (BMI greater than 30)
Gout or recurrent renal stones
If > 50 years or
If >30 years and Male and Māori, Pacific, or Indo-Asian ethnicity
If > 40 years and Female and Māori, Pacific, or Indo-Asian ethnicity

Prostatic syndrome or urologic disease (including recurrent UTI)

From 2024 KDIGO guidelines

Table 5 | Risk factors for CKD

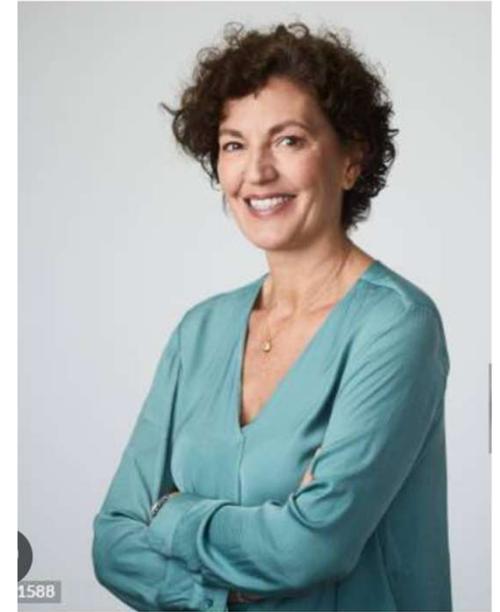
Domains	Example conditions
Common risk factors	Hypertension Diabetes Cardiovascular disease (including heart failure) Prior AKI/AKD
People who live in geographical areas with high prevalence of CKD	Areas with endemic CKDu Areas with the high prevalence of <i>APOL1</i> genetic variants Environmental exposures
Genitourinary disorders	Structural urinary tract disease Recurrent kidney calculi
Multisystem diseases/chronic inflammatory conditions	Systemic lupus erythematosus Vasculitis HIV
Iatrogenic (related to drug treatments and procedures)	Drug-induced nephrotoxicity and radiation nephritis
Family history or known genetic variant associated with CKD	Kidney failure, regardless of identified cause Kidney disease recognized to be associated with genetic abnormality (e.g., PKD, <i>APOL1</i> -mediated kidney disease, and Alport syndrome)
Gestational conditions	Preterm birth Small gestational size Pre-eclampsia/eclampsia
Occupational exposures that promote CKD risk	Cadmium, lead, and mercury exposure Polycyclic hydrocarbons Pesticides

don't forget Lithium



- BP 128/78mmHg
- Creatinine 72 $\mu\text{mol/L}$
- eGFR 94mL/min
- uACR 145 mg/mmol (repeated),
- No diabetes
- Occasional ankle swelling

“What do you do next?”



Take a History

- Uses probably a packet of Voltaren every 3 months for niggly MSK pains
- No herbal remedies
- No family history of Kidney disease
- No arthralgias or vasculitic rashes, no weight loss
- One UTI a couple of years ago
- Never noticed haematuria or frothing urine
- No incontinence or flow issues
- Never had a kidney stone
- Had severe pre-eclampsia in first pregnancy (20 years ago) with delivery at 35 weeks

Examination

- Euvolaemic, normal BMI
- No palpable bladder, kidneys or abdominal masses
- Normal cardiovascular examination

What is the Next Test you should order?

- **MSU**

- **– 60 RBC, 0 WBC, No epis**

- ANA, ds DNA, C3/4 negative
- Hepatitis Screen Negative
- Urinary and Serum electrophoresis negative

Is this Chronic Kidney Disease?

Recheck in 3 months uACR 136

Yes

What Stage of CKD is this?

GFR and ACR categories and risk of adverse outcomes		ACR categories (mg/mmol), description and range		
		<3 Normal to mildly increased	3–30 Moderately increased	>30 Severely increased
		A1	A2	A3
GFR categories (ml/min/1.73 m ²), description and range	>90 Normal and high G1	No CKD in the absence of markers of kidney damage		
	60–89 Mild reduction related to normal range for a young adult G2			
	45–59 Mild–moderate reduction G3a ¹			
	30–44 Moderate–severe reduction G3b			
	15–29 Severe reduction G4			
	<15 Kidney failure G5			

↑
Increasing risk

← Increasing risk →

¹ Consider using eGFR_{cystatinC} for people with CKD G3aA1 (see KDIGO recommendations 1.1.14 and 1.1.15)

Abbreviations: ACR, albumin:creatinine ratio; CKD, chronic kidney disease; GFR, glomerular filtration rate

Adapted with permission from Kidney Disease: Improving Global Outcomes (KDIGO) CKD Work Group (2013) KDIGO 2012 clinical practice guideline for the evaluation and management of chronic kidney disease. *Kidney International* (Suppl. 3): 1–150

What does it mean?

- Proteinuria = **risk marker**,
- Persistent ACR >30 is *never* benign
- ACR >100 = think glomerular disease
- Normal eGFR does not mean normal kidneys

Management Options

- Start ACEi/ARB ?
- →yes
- Start SGLT2 ?,
→look at heat map
- Repeat in 6 months or Refer now?
- →Now

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Case 2

39 year old factory worker who attends his GP practice after an employment medical showed a BP of 165/95mmHg.

He works in an electronic factory. Job largely involves sitting down. No regular exercise, smokes 20/day. Only drinks on weekends.

No past medical history. Father always took BP meds and died of a heart attack in his 60's.



Charlie

Is this one off reading sufficient to diagnose Charlie with HTN?

- No. There should be 2-3 readings that are consistently high. (>140/90mmHg)
- Consider home BP monitor or ABPM if concern about White Coat HTN

