Managing Chronic Kidney Disease in Primary Care

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National Education Manager

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Consensus Statement?

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- Four pilot projects run over two years supported by the MOH

Innovative approaches using;

- Electronic screening and referral for CKD

- Nurse-led clinics in primary care focusing on intensive management of CKD

Why is CKD so important?

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- Rising incidence and prevalence of end stage kidney disease (ESKD)
- Need to improve identification and management of CKD in primary care
- Need for effective national screening of at –risk patient groups
- Need for broad implementation of patient-centred strategies
- Cost of ESKD

KD is a major public health problem

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1 in 10 New Zealanders adults has CKD

Less than 10% of people with CKD are aware they have the condition

You can lose up to 90% of your kidney function before experiencing any symptoms

Major independent risk factor for cardiovascular disease

Common, harmful & treatable

Australian Health
Chronic Kidney Disease (CKD) Management in General Practice, 2nd edition. Kidney Health Australia: Melb

robable number in NZ with CKD

dapted from various sources)

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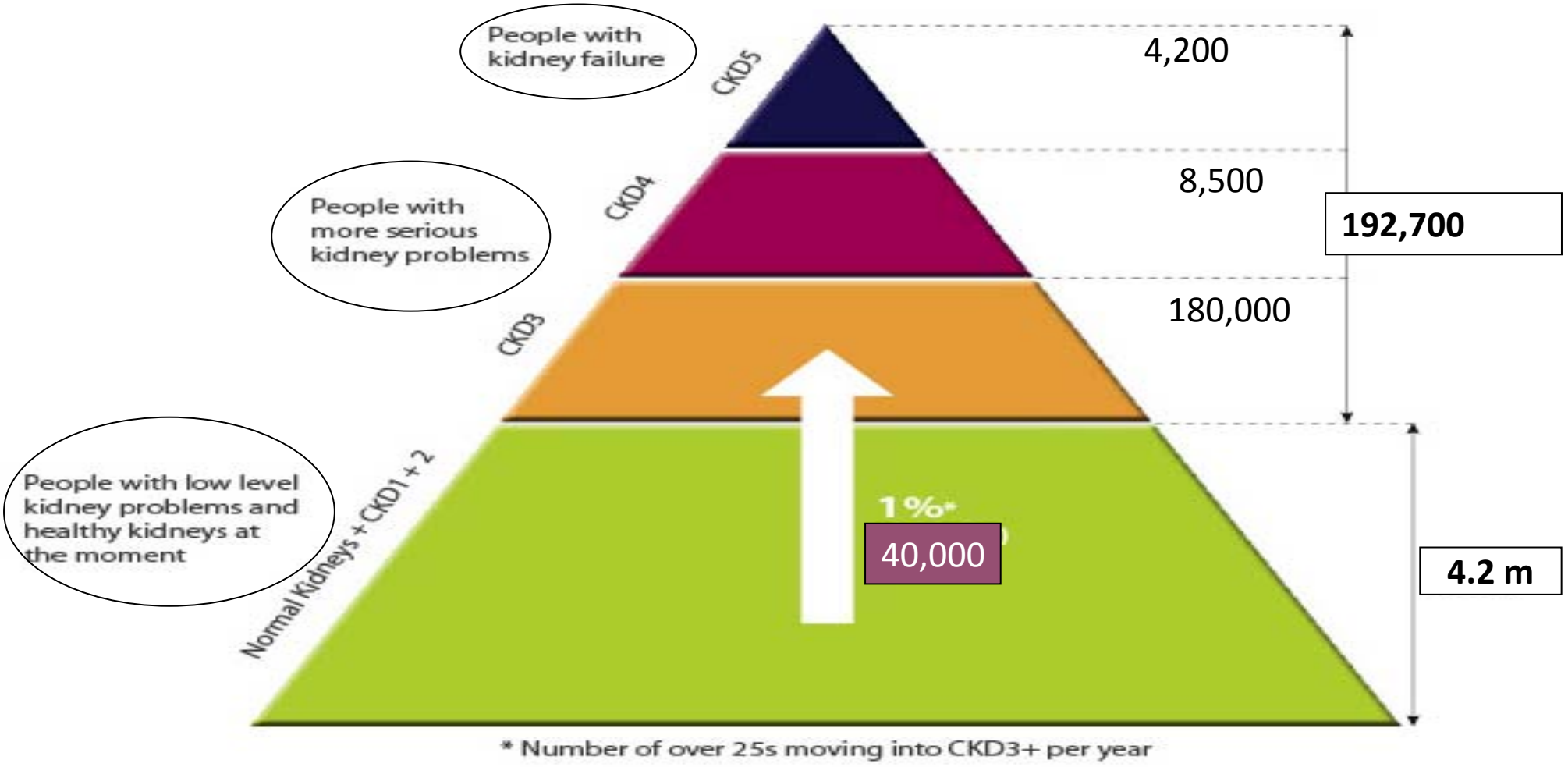

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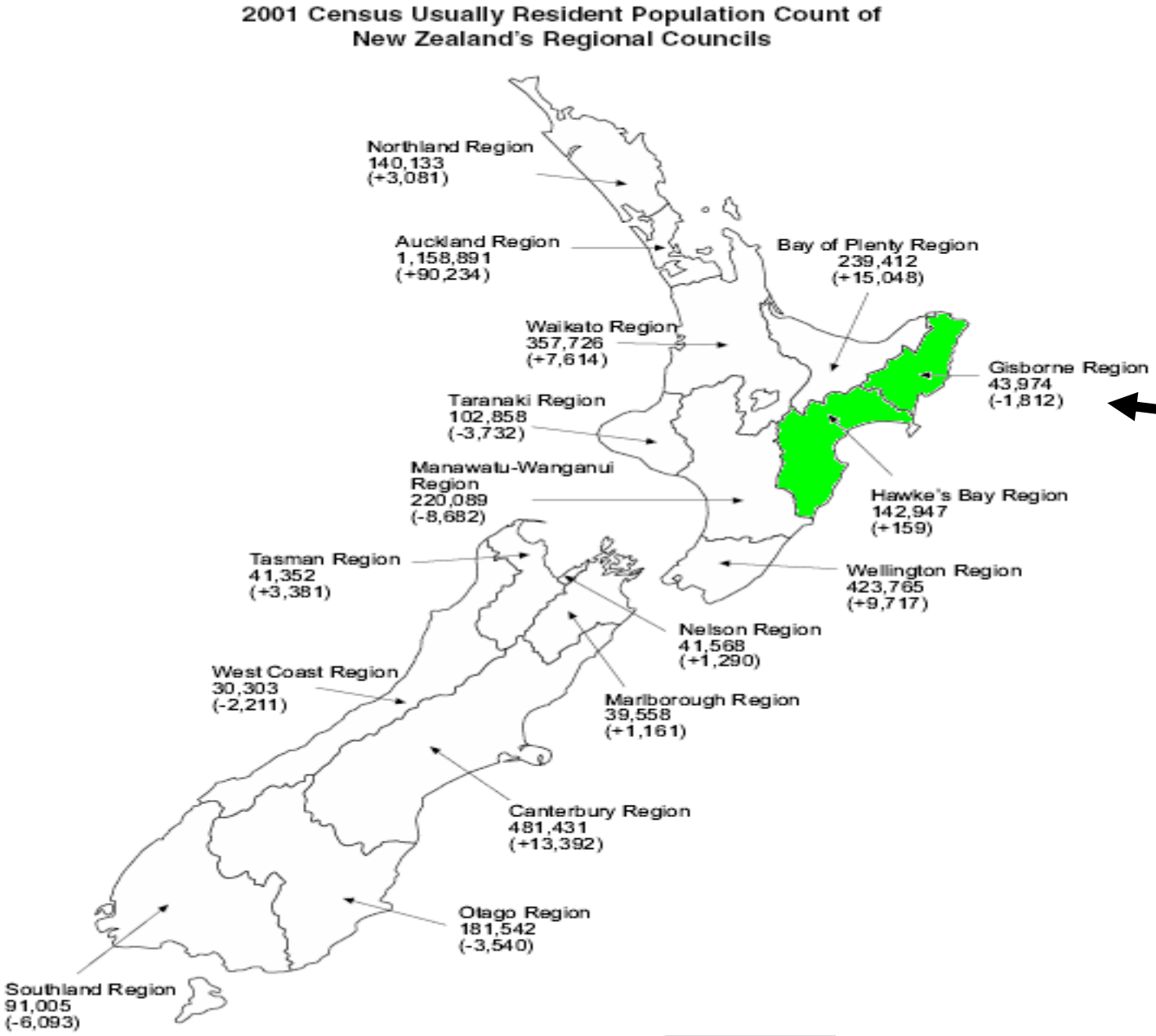

Equals number with important kidney disease In NZ

So what is CKD?

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- A general term for chronic disorders that affect kidney structure and function
- A gradual decline of kidney function
- Classification system 2002 - Kidney Disease Outcomes Quality Initiative (KDOQI)
- Classified CKD into five stages based on the measurement of kidney function using eGFR

CKD in NZ

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- Long term, permanent reduction in kidney function
- In a small minority CKD worsens, kidneys no longer able to sustain life, this is called end stage kidney disease (ESKD)
- Each year 1000 people diagnosed with ESKD – about half of these will start dialysis treatment
- Life expectancy on dialysis is reduced.

mpact of kidney disease in NZ

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In 2000 there were;

1336 people on some form of dialysis

1014 people with a functioning kidney transplant

In 2013 there were;

- 2584 people on some form of dialysis
- 1572 people with a functioning kidney transplant

An increase of 84% in 12 years!

dney Disease in New Zealand

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- There were 4,156 (936 pmp) on some form of renal replacement therapy in New Zealand at the end of 2013
- 546 new patients commenced dialysis in 2013
- The median age group was 55-64.
- 6oo people on the kidney transplant waiting list
- 139 transplants in 2014

The Goal and the Challenge

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- To reduce morbidity and mortality and to delay progression towards End Stage Kidney Disease (ESKD)

- The challenge is to identify and manage those patients with, or at high risk of progressive CKD

he challenges

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The implementation of decision –support tools is variable

Detection and management of CKD is a complex process

Working with patients to make significant lifestyle changes is time consuming

High risk patients need greater focus

Kidney Disease is Sexy

unctions of the kidneys

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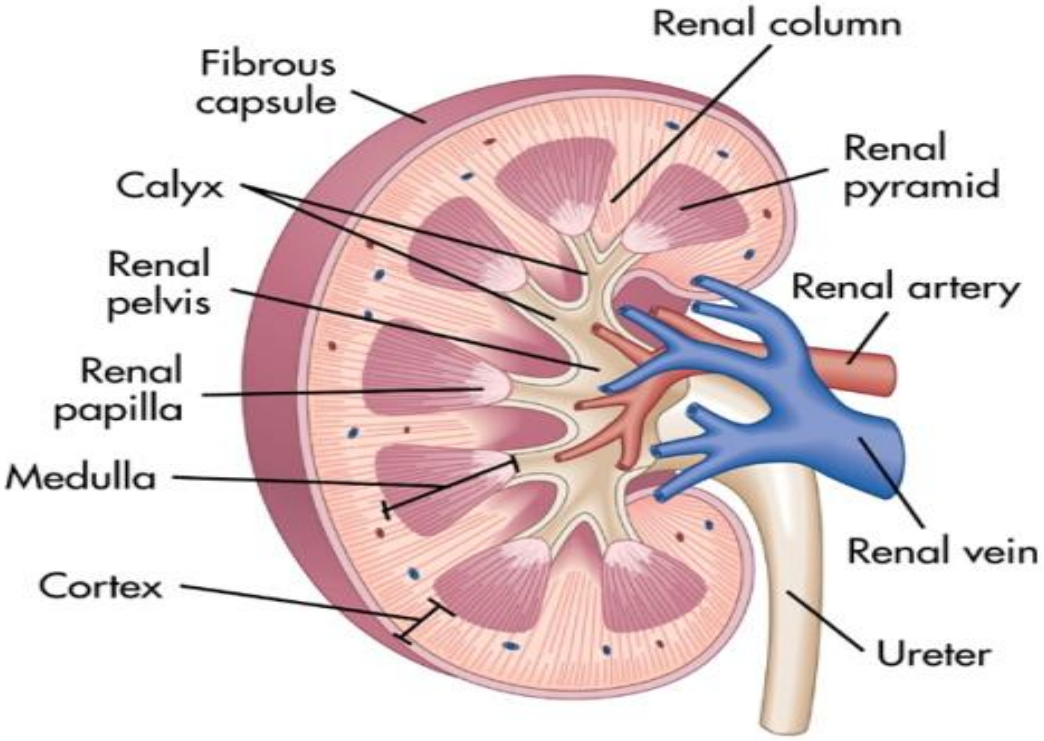
- Elimination of metabolic wastes
- Electrolyte, acid/base and fluid balance
- Blood pressure regulation
- Regulation of RBC production
- Regulation of bone metabolism (vitamin D and calcium)



From Thibodeau GA, Patton KT: *Anatomy and physiology*, ed 4, St. Louis, 1999, Mosby.

What happens to the kidneys in CKD?

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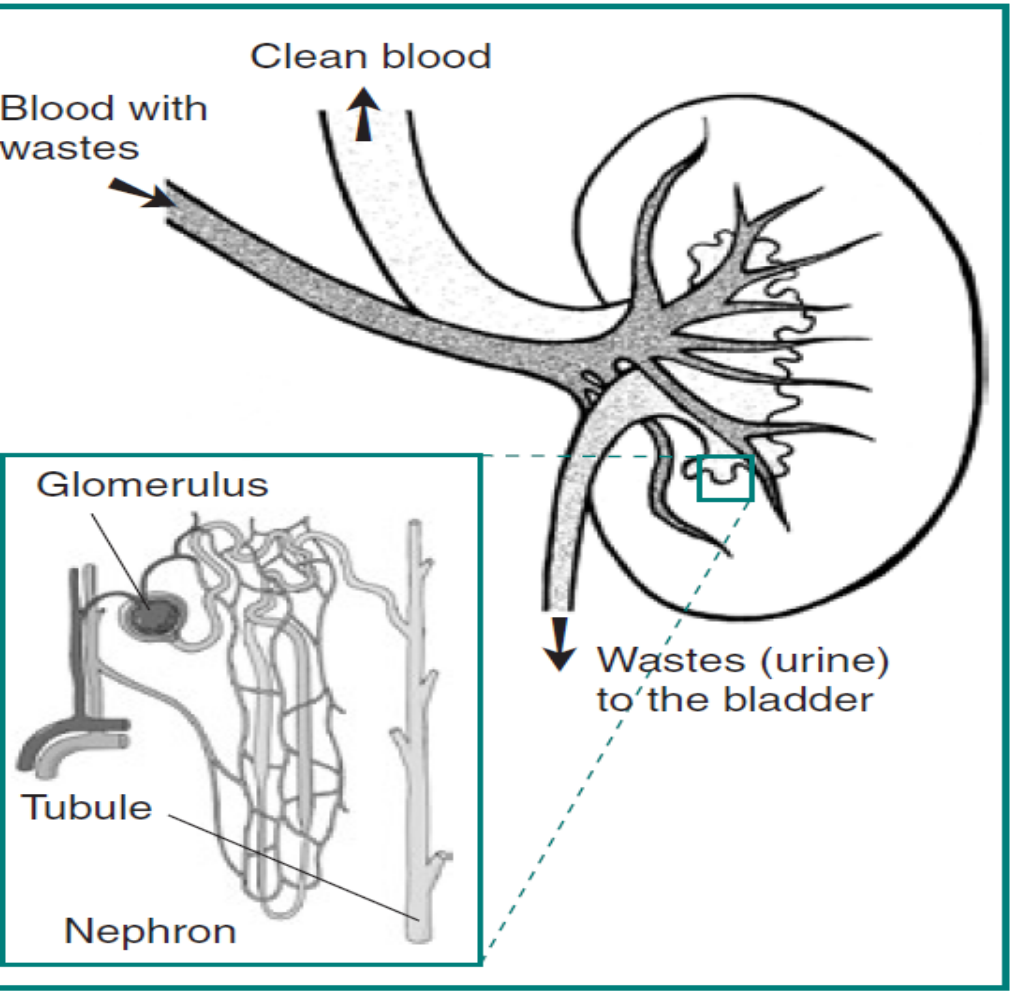

Most kidney diseases slowly damage the nephrons which causes them to lose their filtering capacity. This leads to a loss of kidney function.

The three top causes of kidney failure in New Zealand are:

- Diabetes (49% of new cases)
- Nephritis or inflammation of the kidney (22%)
- Hypertensive vascular disease (9%)

isk factors for kidney disease

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- Diabetes
- Hypertension
- Established cardiovascular disease
- Family history of kidney failure
- Obesity (BMI >30kg/m^2)
- Smoker
- Maori, Pacific or South Asian origin
- History of acute kidney injury

1 in 3 New Zealand adults at increased ri of CKD due t these risk factors

RACGP Guidelines for preventive activities in general pract
Chronic Kidney Disease (CKD) Management in General Practice, 3rd edition. Kidney Health Australia: Me

Detection in Primary Care

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- CKD usually identified following tests arranged by primary care clinicians
- Average rate of loss of GFR with age is 1ml/min/year
- Patients with progressive CKD may lose kidney function at much faster rates, often as high as 10 – 20 ml/min/year

efining CKD

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Glomerular Filtration Rate (GFR) < 60 mL/min/1.73m^2 for ≥3 months with or without evidence of kidney damage.

OR

Evidence of kidney damage (with or without decreased GFR) for ≥3 months:

- albuminuria
- haematuria after exclusion of urological causes
- pathological abnormalities
- anatomical abnormalities.

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What is GFR?

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GFR = Glomerular Filtration Rate

- **is accepted as the best measure of kidney function**
- **can be estimated from serum creatinine using prediction equations**
- there is no direct way of measuring
- may fall substantially before serum creatinine is outside the normal range

eGFR	Indicates…
>90 mL/min/1.73m^2	**Normal GFR** in healthy adults *(declines with age)*
60-90 mL/min/1.73m^2	should not be considered abnormal unless there is evidence of kidney damage.
Consistently **<60 mL/min/1.73m^2**	indicates CKD

aging CKD

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Combine eGFR stage, albuminuria stage and underlying diagnosis to specify CKD stage
(e.g. stage 3b CKD with microalbuminuria secondary to diabetic kidney disease)

		Albuminuria Stage		
GFR Stage	GFR (mL/min/1.73m²)	**Normal (urine ACR mg/mmol) Male: < 2.5 Female: < 3.5**	**Microalbuminuria (urine ACR mg/mmol) Male: 2.5-25 Female: 3.5-35**	**Macroalbuminuria (urine ACR mg/mmol) Male: > 25 Female: > 35**
1	**≥90**	*Not CKD unless haematuria, structural or pathological abnormalities present*		
2	**60-89**			
3a	**45-59**			
3b	**30-44**			
4	**15-29**			
5	**<15 or on dialysis**			

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Determining Renal Risk

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Kidney Health Check

Blood Test	Urine Test	BP Check
eGFR *calculated from serum creatinine*	**Albumin / Creatinine Ratio (ACR)** *check for albuminuria*	**Blood pressure** *maintain consistently below BP goal*

CKD screening should be undertaken as a part of every chronic disease & cardiovascular risk assessment

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creening for CKD

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ications for assessment*	Recommended assessments	Frequency
betes	Urine ACR, eGFR, blood pressure If urine ACR positive repeat twice over 3 months (preferably first morning void) If eGFR < 60mL/min/1.73m^2 repeat within 7 days	Every 1-2 years[†]
pertension		
ablished cardiovascular disease[**]		
nily history of kidney failure		
esity (BMI ≥30 kg/m^2)		
oker		
ori, Pacific or South Asian origin aged ≥ 30 rs[‡]		
tory of acute kidney injury	See recommendations in booklet	

lst being aged 60 years of age or over is considered to be a risk factor for CKD, in the absence of other risk factors it is not necessary to routinely assess these individuals for k se.

tablished cardiovascular disease is defined as a previous diagnosis of coronary heart disease, cerebrovascular disease or peripheral vascular disease.

nually for individuals with diabetes or hypertension.

er to booklet for more details regarding recommendations for testing in Maori, Pacific and South Asian peoples.

e significance of CKD staging ng eGFR

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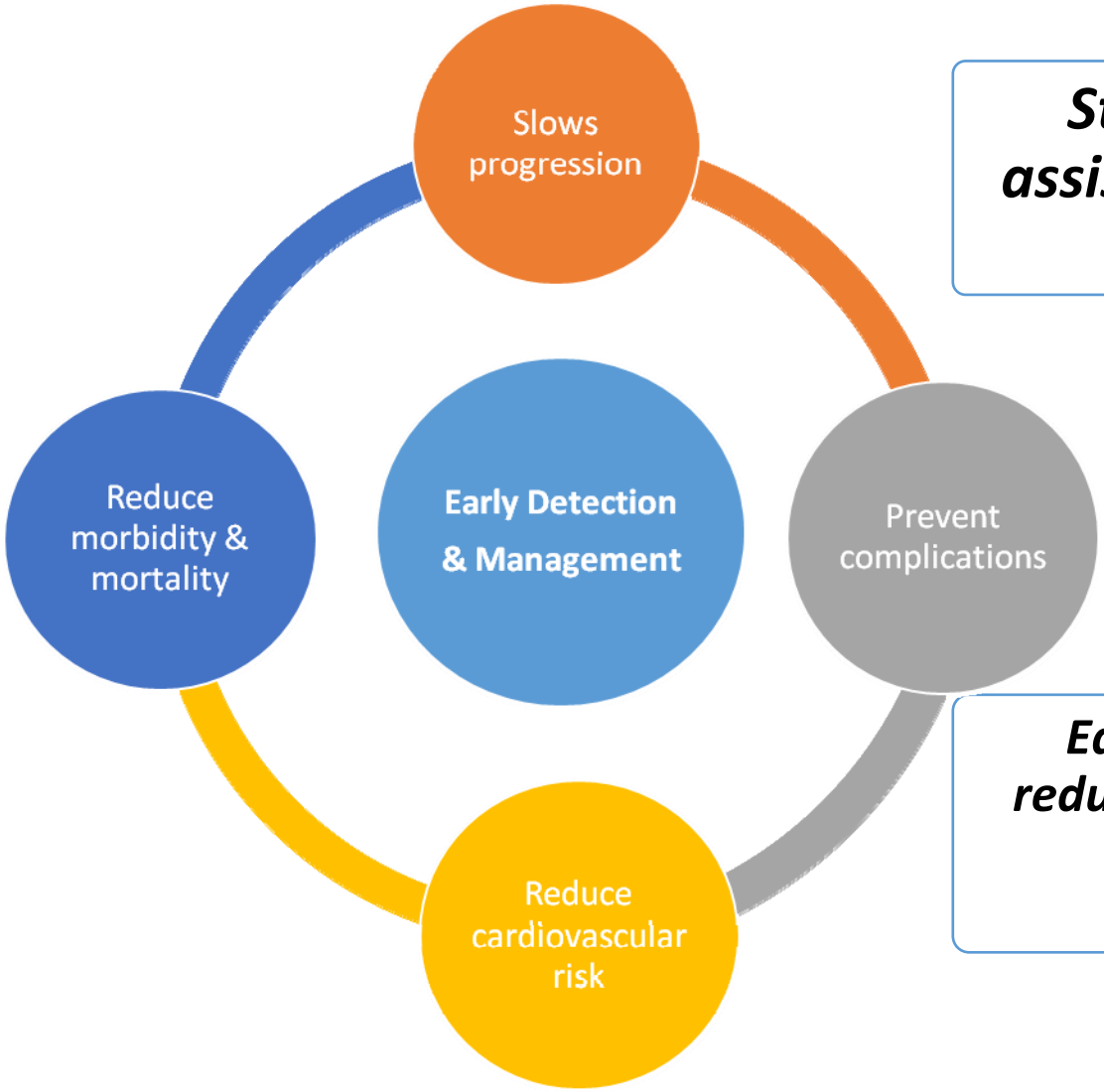

Staging CKD using eGFR will assist with goals of management of CKD

Early detection and treatment may reduce the rate of progression of kidney failure and cardiovascular risk by 20 – 50%

VD risk

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nyone with…

eGFR < 45 mL/min/1.73m^2 or persistent proteinuria

Diabetes and microalbuminuria

Diabetes and age > 60 years

Established cardiovascular disease

Familial hypercholesterolaemia or total cholesterol above 7.5

Severe hypertension

- Systolic 180 mmHg or greater
- Diastolic 110 mmHg or greater

is already at the highest risk of a cardiovascular event *therefore the calculator should not be used*

Goals for best practice in managing CKD

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- Those people with, or at risk of, progressive CKD are identified and effectively managed.
- Cardiovascular risk is reduced
- Effective blood pressure control reduces albuminuria and slows the rate of decline of eGFR in many patients.
- The incidence and prevalence of CVD, progressive CKD and ESKD, and their associated morbidity and mortality rates, fall over time.

Nurse led clinics

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- CKD can be managed as one aspect of the range of long term conditions
- To manage CKD in primary care, practice nurses need to be able to work to their scope of practice
- Good working relationship with secondary care renal services

Recommended management practice

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- Life style modification
- Self management encouraged
- Blood pressure management
- Blood glucose control
- Management of CVD risk
- Intensive management of high risk CKD patients

elf management

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Key self management principles include:

- Engaging the patient in decision making and management of their illness
- Allowing the patient to set appropriate and achievable goals
- Using evidence based, planned care
- Improving patient self management support
(e.g. enlisting other health professionals and supports, and better linkages with community resources such as seniors centres, self help groups, skills and support programs)
- A team approach to managing care

lectronic desktop tool for CKD
nanagement in primary care

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The tool is a clinical pathway, using a best practice approach informed by specialist renal expertise, including:

- Staging of CKD and assessment of rate of change in renal function
- Clinical advice on management of CKD, including blood pressure anaemia, mineral metabolism, nephrotoxic medication adjustment
- Recommended laboratory monitoring and clinical follow-up, generating forms and appointments
- Electronic referral to secondary care where necessary, populated from electronic tool and PMS.

Key Stakeholders

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- PHOs and primary care practices
- Nephrology services
- Diabetes services
- Clinical and community pharmacists
- DHB funding and planning teams
- Professional groups (primary care, nephrology, diabetes)
- Patient organisations
- MOH

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CKD is common, harmful and treatable

Early detection is beneficial

Systematically identify patients at high risk of CKD

Perform a Kidney Health Check (urine ACR, eGFR, blood pressure) on at risk patients

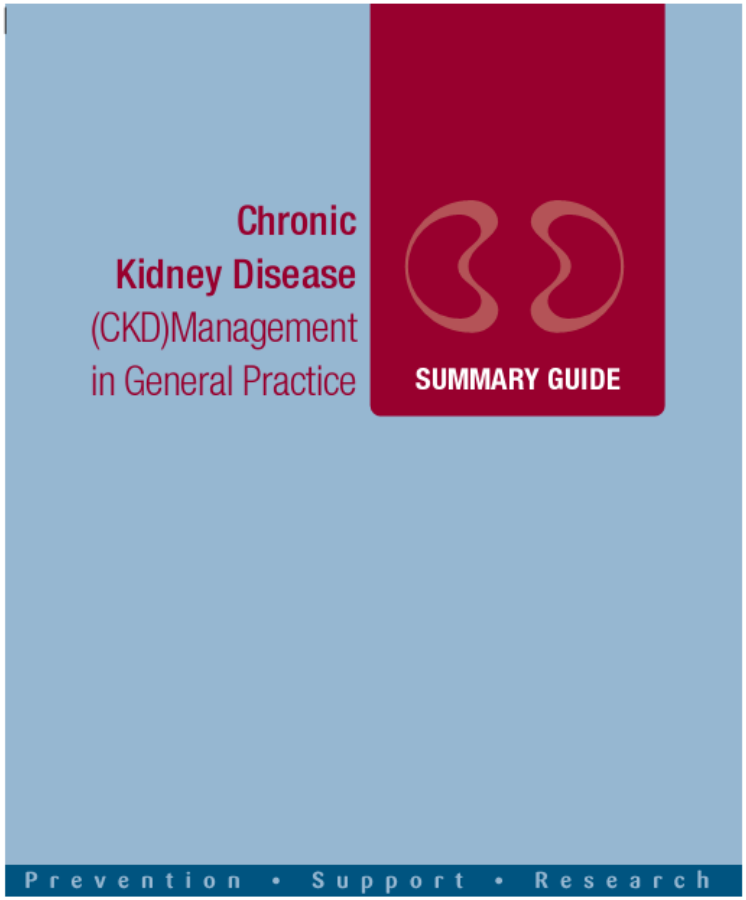
Maintain blood pressure consistently below the relevant threshold

Refer to the CKD staging table and clinical action plans in 'CKD Management in General Practice'

Most CKD patients can be managed in general practice

GPs and practice nurses play a vital role in detecting and managing CKD

Potential to halve the number of patients presenting with kidney failure


Chronic
Kidney Disease
(CKD)Management
in General Practice
SUMMARY GUIDE
Prevention • Support • Research
Kidney Health
NEW ZEALAND
0800 KIDNEY (0800 543 639)
www.kidneys.co.nz

References and acknowledgement

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