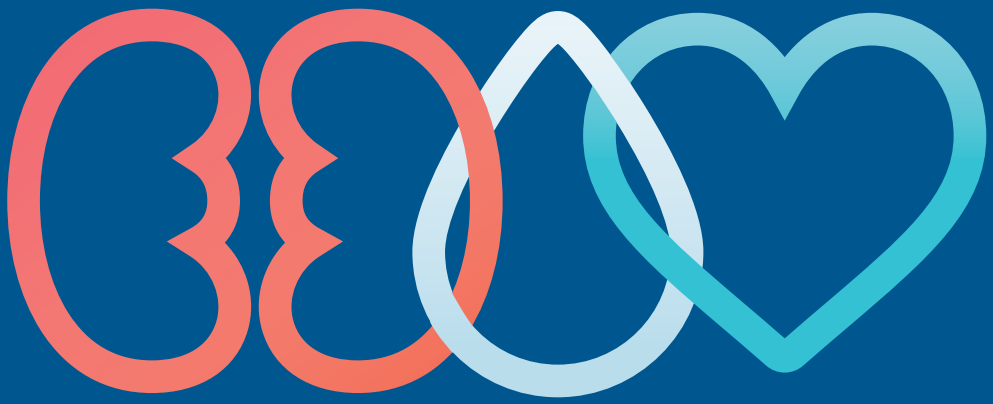
Kidney Health Australia

EVIDENCE REPORT SUMMARY 2021



MAKE THE LINK

Kidneys, Diabetes & Heart

kidney.org.au

Kidney Health® Australia

KEY MESSAGES

CKD rarely occurs in isolation and frequently occurs alongside **diabetes** and **cardiovascular disease.**

29%

of Australian adults are affected by **one or more** of CKD, Diabetes and CVD.

The most **disadvantaged Australians** experience a disproportionate burden of CKD, diabetes and cardiovascular disease and a **higher rate** of comorbidity of these conditions.

Over **one-third** of **Aboriginal and Torres Strait Islander peoples** have one or more of CKD, diabetes or cardiovascular disease. These conditions occur at a **younger** age and progress **faster** than in non-indigenous individuals.

1 in 3

hospitalisations involve diabetes, cardiovascular disease and/or CKD (including dialysis).

Psychosocial factors – **depression, quality of life, cognitive impairment** – have complex and multidirectional associations with CKD, diabetes and cardiovascular disease.

Depression is highly prevalent in persons with CKD, diabetes and cardiovascular disease.

WHAT THIS EVIDENCE REVIEW ADDS TO THE EXISTING LITERATURE IS:

- A central summary of the current key statistics and information regarding CKD, diabetes and Cardiovascular disease in Australia.
- A detailed discussion of how comorbid CKD, diabetes, and cardiovascular disease interact and influence each other.
- A more holistic view of the health burden associated with comorbid CKD, diabetes, and cardiovascular disease in Australia.
- Details on the current evidence concerning the impact of CKD, diabetes, cardiovascular disease and their comorbidity on mental health (Chapter 5). Given the increasing health burden related to dementia in Australia [67], the implications of comorbid CKD, diabetes and cardiovascular disease for cognitive aging are of critical importance.

To access the full evidence report visit **kidney.org.au**

Chronic kidney disease, diabetes and cardiovascular disease together affect **29% of Australian adults** and frequently occur together.

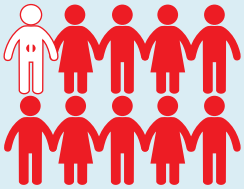
Based on most recent estimates [1, 2]:

10%

of the Australian adult population is affected by CKD.

2.4 million

Australian adults estimated to be affected by CKD (2018), an estimated **50% were over 65 years** and **30% over 75 years**.



< 1 in 10 Australians with CKD are aware of their condition.

5.7%

Prevalence of self-reported **diabetes** (2017-18), true prevalence is **likely higher**.

5.6%

Prevalence of self-reported **heart, stroke** and **vascular disease** among Australian adults (2017-18), with another **13%** self-reporting a diagnosis of **hypertension**.

CKD, diabetes & CVD

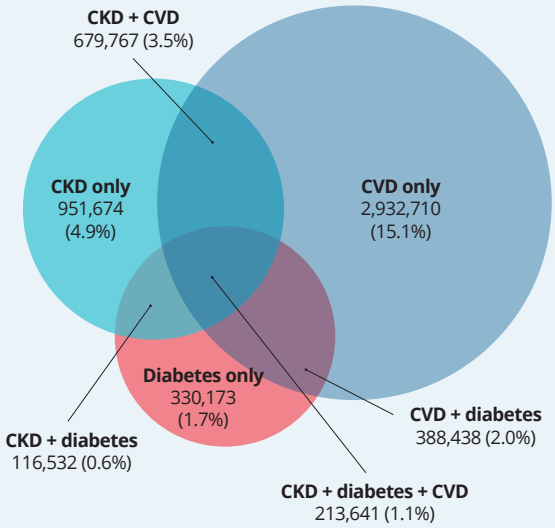
The prevalence of all three conditions **increases steadily** with increasing age.

CKD, diabetes and cardiovascular disease are inextricably linked, with **interrelated biological pathways** and **shared risk factors**.

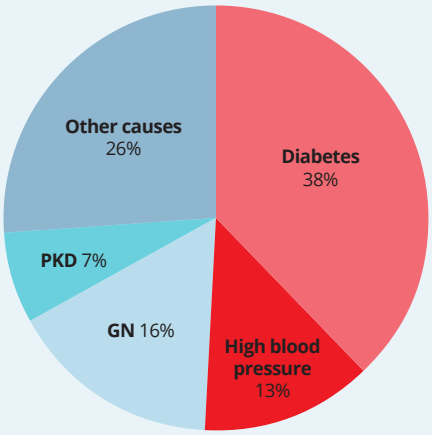
Physical inactivity | Poor nutrition | Overweight & obesity | High blood pressure | Smoking | Harmful use of alcohol | High blood cholesterol | Insulin resistance

5.6 million

Australians have at least 1 of these three conditions



Rates of kidney failure due to diabetes have been **increasing** by **2.2%** per year



Diabetes and hypertension cause over **half of all kidney failure** cases in Australia

THE BURDEN OF COMORBID DISEASE IS **UNEQUALLY DISTRIBUTED** ACROSS THE AUSTRALIAN POPULATION

CKD, diabetes and cardiovascular disease are most prevalent among the **most disadvantaged Australians.**

Australian adults in the **lowest socioeconomic** group are more than **twice as likely** to have 2 or more comorbid diagnoses of CKD, diabetes or cardiovascular disease compared to adults in the highest socioeconomic group [1].

Rates of death in association with CKD, diabetes and/or cardiovascular disease **increase** with greater **geographical remoteness** and greater **socio-economic disadvantage.**

People living in **outer regiona**l and **remote areas** were **twice as likely** to have all three of CKD, diabetes and cardiovascular disease compared to people living in major cities [1].

ABORIGINAL AND TORRES STRAIT ISLANDER PEOPLES EXPERIENCE A **HIGHER BURDEN** OF **COMORBID CKD, DIABETES** AND **CARDIOVASCULAR DISEASE.**

Over **one-third** of Aboriginal and Torres Strait Islander peoples have **one or more** of CKD, diabetes or cardiovascular disease.

- Appear at a younger age
- Progress faster
- Co-occur more frequently
- Are associated with more complications

6% of all Aboriginal and Torres Strait Islander deaths listed **all three conditions** on the death certificate, compared to less than 2% of non-Indigenous deaths.

SOCIAL DETERMINANTS OF HEALTH AND PATHWAYS TO CKD, DIABETES AND CARDIOVASCULAR DISEASE IN ABORIGINAL AND TORRES STRAIT ISLANDER PEOPLES.

INTERGENERATIONAL TRAUMA

ENVIRONMENTAL FACTORS

SOCIAL MARGINALISATION & RACISM

Social determinants

- Adverse Interuterine environment
- Economic disadvantage
- Lower educational attainment
- Poor nutrition
- Overcrowded housing
- Environmental stressors/lack of personal security
- Exposure to stressful life events
- Lack of control/agency
- Limited access to primary health care
- Marginalisation

High rates of psychological distress and depression

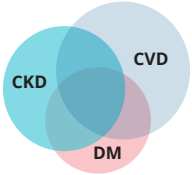
High rates of lifestyle related risk factors

High rates of infectious diseases

Untreated risk factors

Biomedical risk factors

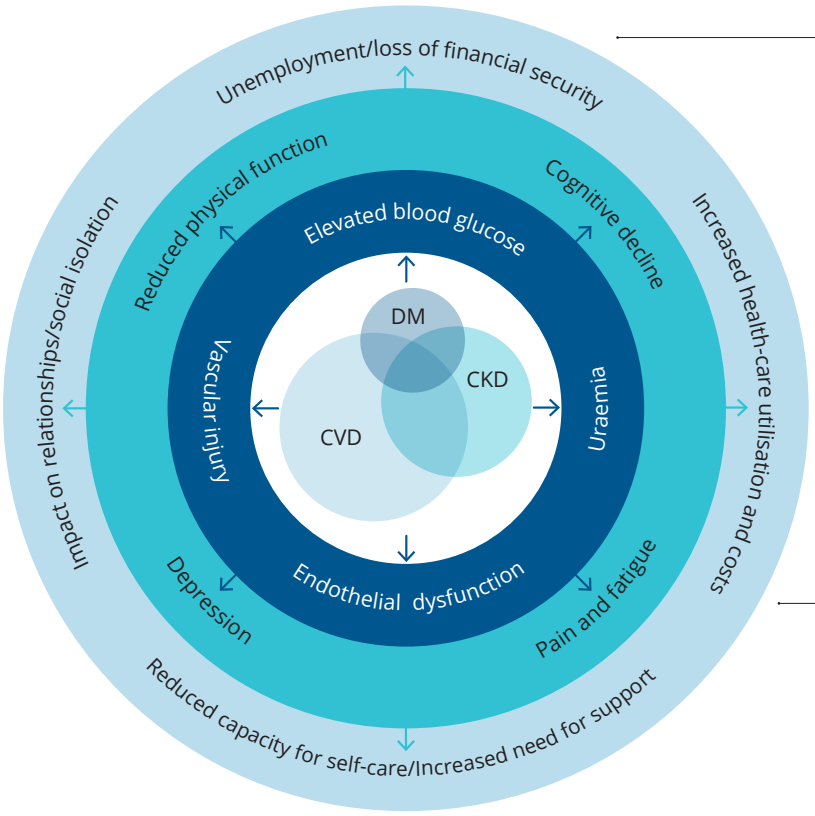
- Obesity
- High blood pressure
- Impaired fasting glucose/insulin resistance
- Inflammatory responses
- Vascular injury
- Endothelial dysfunction



- **DEMENTIA**
- **CANCER**
- **INFECTION**

DEATH

THE RIPPLE EFFECT: MULTIMORBIDITY HAS IMPORTANT IMPLICATIONS FOR HEALTHY BRAIN AGING



CKD, diabetes and cardiovascular disease each have a **strong association** with presence of **cognitive impairment** [54].

A **faster rate of kidney function decline** is associated with global cognitive decline and incident dementia [55-58].

Prevention and management strategies need to prioritise long-term cognitive outcomes of Australians with CKD, diabetes and/or cardiovascular disease.

Relationship between chronic kidney disease (CKD), diabetes, cardiovascular disease (CVD) and mental health, and knock-on effects on social functioning, financial security, care dependency and hospitalisations.

COMORBID CKD **INCREASES THE COSTS** ASSOCIATED WITH DIABETES AND CARDIOVASCULAR DISEASE.

The presence of comorbid CKD in diabetes and cardiovascular disease increases costs to the health system through:

Increased **rates** of hospitalisation

Increased **length** of hospitalisation

Increased rates of **adverse events and complications**, and increased risk of onset of kidney failure requiring kidney replacement therapy (KRT).

Increased **complexity** of medical management

The presence of Stage 3-5 CKD (excluding dialysis and transplant recipients) **increased** direct per person **health care costs** in people with diabetes by **57%** on average, compared to the cost of diabetes alone [47].

The **annual cost** to provide dialysis and transplantation to the 25,652 patients receiving KRT **exceeds $1 billion** [45, 48].

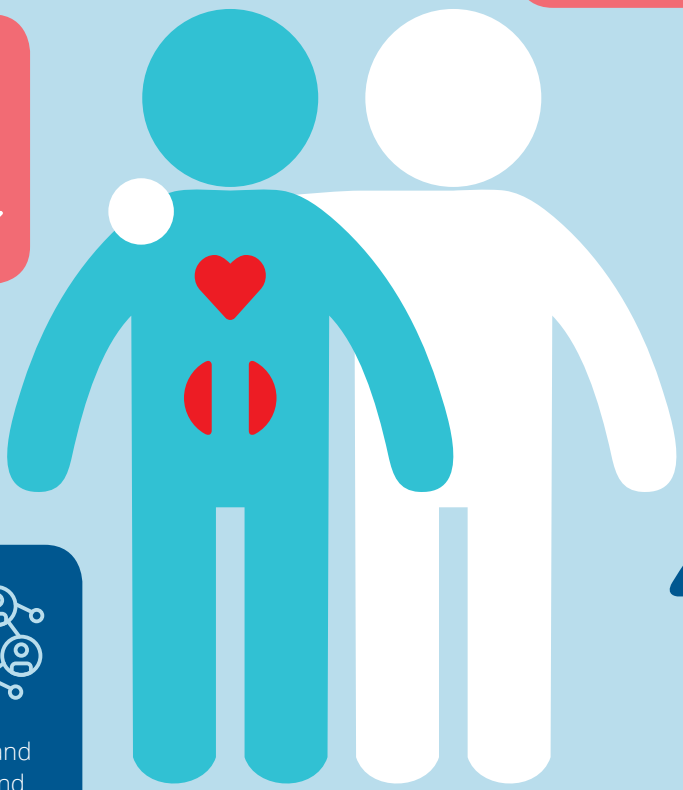
THE ONSET OF COMORBID CKD IS ASSOCIATED WITH **SIGNIFICANTLY WORSE** PROGNOSIS AND **QUALITY OF LIFE**

Patient-centred treatment approaches are needed that consider both physical and mental health

Individuals with comorbid CKD, diabetes and/or cardiovascular disease experience **greater disease severity, significantly worse quality of life**, and **poorer prognosis** than individuals with any one condition in isolation.

The presence of any one of CKD, diabetes or cardiovascular disease **increases** the likelihood of having **depression** and is associated with **reduced quality of life**.

The onset of CKD causes **worsening** of depressive symptoms and further **reductions** in quality of life.



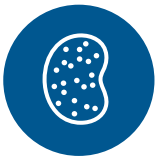
Caring for someone with kidney failure has a **major impact on relationships** and disrupts roles within the **family** [41].

It is critical that health systems consider the **inter-relationships** between CKD, diabetes and cardiovascular disease and respond with integrated **prevention strategies, clinical care pathways and broader support systems.**

The **impact** of an individual's disease on **family and friends**, feeling unwell, low mood, insufficient home care and other life stressors are other key factors that increase the likelihood of **low self-reported quality of life** in CKD [28].

CKD exacerbates the **psychosocial burden** of diabetes and cardiovascular disease while compounding the **physical symptom burden** [26, 27].

A **LONG-TERM**, **COORDINATED** APPROACH TO THE PREVENTION OF CKD, DIABETES AND CARDIOVASCULAR DISEASE IS NEEDED.



Reduce the risk

Reducing the prevalence of risk factors for the onset of kidney damage, insulin resistance, hypertension, atherosclerosis and dyslipidaemia.

Improving access

Improving access to primary health care and preventive therapies for Aboriginal and Torres Strait Islander peoples and Australians who are socioeconomically disadvantaged or reside in remote areas.

Early detection

Early detection of CKD, diabetes and cardiovascular disease through targeted population screening.

Careful management

Careful management of disease from its earliest stages to prevent complications and adverse events, including access to new therapies.

Support

Provision of adequate psychosocial support to enable people to manage their own disease as effectively as possible, to prevent adverse mental health outcomes, and to support healthy cognitive aging.

About Kidney Health Australia

Kidney Health Australia has a clear purpose. We want to achieve good kidney health for all Australians. As the peak body for kidney health in Australia, we bring together the many voices within the kidney community, advocating on their behalf for health initiatives that will improve their quality of life. We strive to create a healthier community through increased awareness and detection of kidney disease and connect kidney patients to resources and services to help them manage their condition and improve their quality of life. For over 50 years, we have worked with the clinical and research community to support treatment and research improvements and innovations to foster a future without kidney disease.

Acknowledgments

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