

2023 SNAPSHOT:

DIABETES IN AUSTRALIA

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Preamble

What is diabetes?

Diabetes is a metabolic condition characterised by high blood glucose levels which may arise from either the body's ability to produce insulin or its ability to respond to insulin.

Type 1 diabetes is an autoimmune condition in which the immune system is activated to destroy the cells in the pancreas which produce insulin. We do not know what causes this autoimmune reaction. Type 1 diabetes is not linked to modifiable lifestyle factors. There is no cure and it cannot be prevented.

Type 2 diabetes is a condition in which the body becomes resistant to the normal effects of insulin and gradually loses the capacity to produce enough insulin in the pancreas. The condition has strong genetic and family-related (non-modifiable) risk factors and is also often associated with modifiable

lifestyle risk factors. We do not know the exact genetic causes of type 2 diabetes. People may be able to significantly slow or even halt the progression of the condition through changes to diet and increasing the amount of physical activity they do. Evidence shows that around half of all people with recently diagnosed type 2 diabetes can achieve remission through intensive dietary changes and weight loss.

Gestational diabetes mellitus (sometimes referred to as GDM) is a form of diabetes that occurs during pregnancy. Most women will no longer have diabetes after the baby is born. However, some women will continue to have high blood glucose levels after delivery. It is diagnosed when higher than normal blood glucose levels first appear during pregnancy.

About Diabetes Australia

Diabetes Australia is dedicated to reducing the incidence and impact of diabetes on people, health systems and society. Diabetes Australia works with people living with, or at risk of, diabetes, their families and carers, health professionals, researchers, funders, other diabetes organisations and the community to positively change people's lives.

Diabetes Australia acknowledges the Traditional Owners of the lands on which we live and work. We recognise their connection to land, waters and culture. We pay the utmost respect to them, their cultures and to their Elders past and present. We recognise that Australia is made up of hundreds of different Aboriginal and Torres Strait Islander peoples, each with their own culture, language and belief systems. Their relationship with country remains of utmost importance as it is the foundation for culture, family and kinships, song lines and languages.

The state of diabetes in Australia

The diabetes epidemic is one of the largest and most complex health challenges Australia has ever faced. There are now approximately 1.5 million Australians (about 5.6% of the population) living with all types of diagnosed diabetes and registered with the National Diabetes Services Scheme (NDSS). According to the latest reported statistics (as at 30 September 2023) of people with diabetes registered with the NDSS, this includes¹:

- Type 1 diabetes: 135,423 (9.4%)
- Type 2 diabetes: 1,256,493 (86.7%)
- Gestational diabetes: 44,577 (3.1%)
- Other diabetes: 11,622 (0.8%)

Over the last 12 months 113,907 people with diabetes were newly registered with the NDSS – equivalent to 312 new people registered every day.

The rates presented above are likely to underestimate the number of Australians living with diabetes due to a range of factors. Registration with the NDSS is voluntary for eligible individuals and so does not capture all people with diagnosed diabetes, and it is understood Indigenous Australians are under-represented on the NDSS.

Furthermore, in addition to those diagnosed with diabetes and registered with the NDSS, there are also an estimated 500,000 Australians living with silent, undiagnosed type 2 diabetes². The total number of people with diabetes in Australia could therefore be up to 2 million (or 7.5% of the total population).

The data presented above does not account for Australians who are living with 'pre-diabetes' or are considered to be 'at risk' of developing diabetes in the near future. It is estimated that 1 in 6 adult Australians over the age of 25, or approximately 2 million people, are living with pre-

diabetes or are at high risk of developing type 2 diabetes³. This means that there could be up to 4 million Australians, or around 15% of the population, either living with, or at risk of developing, diabetes.

There is a clear upward trend in the prevalence (number of people living with the condition) of diabetes in Australia today, further highlighted in a recent study that showed that the prevalence of type 2 diabetes has tripled in Australia between 1990 and 2019⁴.

The number of Australians living with, or at risk of developing, diabetes is significant and requires urgent action to address the significant impact on people's lives and the Australian health system.

Diabetes-related complications represent the most costly and debilitating aspect of the diabetes epidemic. Diabetes is a leading cause of limb amputation, dementia, stroke, mental and emotional health challenges, heart and kidney disease, preventable blindness and severe COVID-19.

Diabetes is the leading cause of preventable blindness in working-age adults globally, as well as significantly increasing the risk of some cancers, coronary artery disease and myocardial infarctions. Almost 50% of people living with diabetes experience a mental health challenge each year and one-third of Australians living with type 2 diabetes report some form of

cardiovascular disease. Almost 4000 people living with diabetes will develop dementia annually.

Diabetes leads to more than 19,000 deaths per annum and is associated with approximately 11% of all deaths. The number of diabetes-related deaths almost doubled from 2000 to 2020⁵.

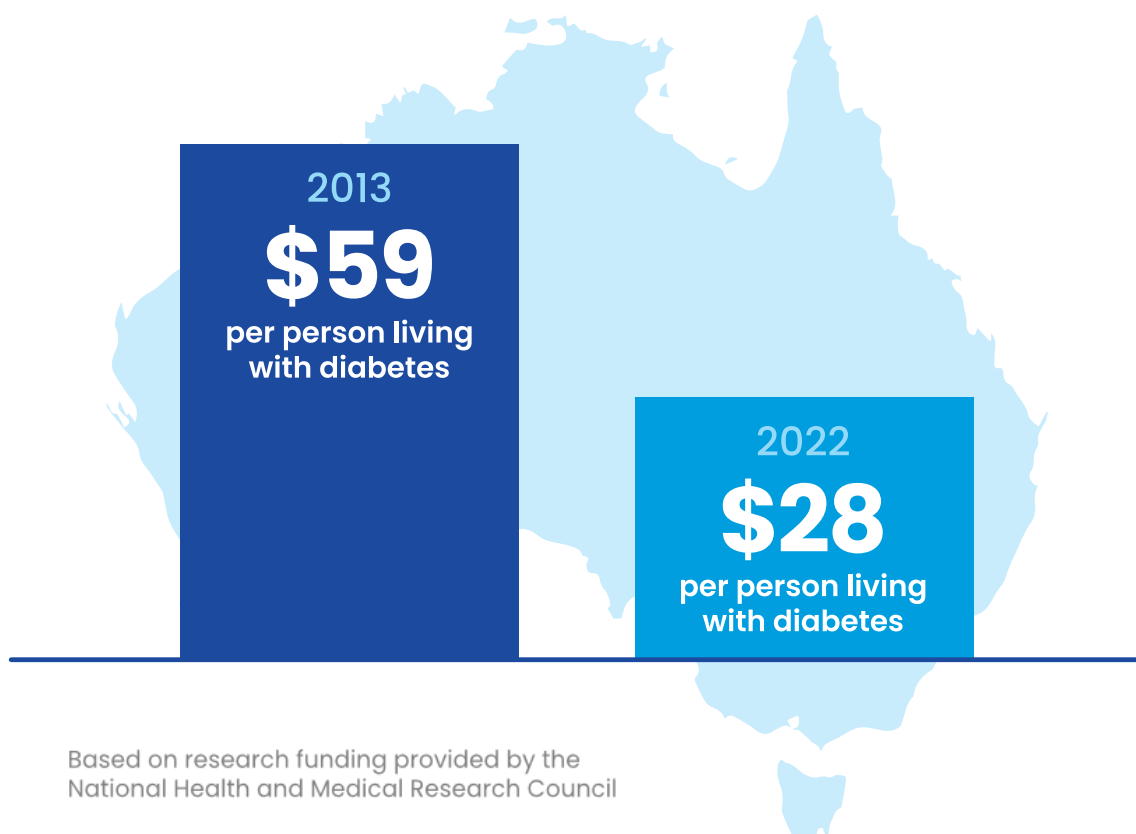
While the number of people living with diabetes has increased over the past decade, there has been a sharp decline in funding for diabetes research over the same period.

Investment in vital diabetes research is critical to better understanding the condition and current trends, and appropriately responding to the worsening epidemic.

In acknowledging the significant impact of diabetes in Australia, the Australian Government has developed the Australian National Diabetes Strategy 2021-2030 (the 'Strategy') with a vision to "strengthen, integrate and coordinate all sectors to improve health outcomes and reduce the social and economic impact of diabetes in Australia".

Many key actions to support Australia's response to the diabetes epidemic are outlined in the Strategy, which has the support of both sides of politics and the Australian and State and Territory Governments. However, despite the bipartisan commitment to implementation many of the key recommendations remain unfulfilled.

The ongoing Parliamentary Inquiry into Diabetes is an opportunity to act decisively to reduce the impact of the diabetes epidemic, save lives and safeguard the sustainability of Australia's health system.



IMPACT OF DIABETES IN AUSTRALIA



1,448,115 people in **Australia** live with diabetes, that's **5.6%** of the population.

Impact on people



135,423

with type 1
diabetes



1,256,493

with type 2
diabetes



44,577

with gestational
diabetes



960,383

with diabetes
aged 60+

Impact on health



5,163

amputations
per annum



110,057

are living with
diabetes-related
vision loss



955,756

are living with
diabetes and
heart disease



275,142

are living with
diabetes and
kidney disease

Impact on hospitals



727,085

will experience
a mental health
challenge per
annum



504,956

living with silent,
undiagnosed
type 2 diabetes



1.3M

hospitalisations
attributed to
diabetes
per annum



\$17.6B

cost of
diabetes in
Australia
per annum

A snapshot of the crisis and growing challenge of the diabetes epidemic

The diabetes epidemic in Australia is worsening over time and this is having a significant impact on people, the health system, and the economy.

Increasing rates of diabetes

As noted, the number of people living with diabetes continues to increase with more than 113,000 people newly registered with the NDSS over the last 12 months⁶.

Since 2000 the number of Australians living with diabetes has increased by approximately 220%.

And from 2013 to 2023, the total number of people known to be living with any type of diabetes in Australia rose by 32% (from approximately 1.1 million to 1.5 million people).

Recent projections show that type 1 and type 2 diabetes prevalence are growing at 4.3% and 2.9% annually⁷. Concerningly, overall, the number of people living with diabetes in Australia is projected to reach 3.6 million by 2050⁸ – 2.5 times the current prevalence of diabetes in Australia. These numbers could be much higher when those living with silent, undiagnosed type 2 diabetes and those considered at high-risk are accounted for.

The increase in prevalence is expected to rise significantly in the coming years and this trend is likely to last for many years.

Given the increasing prevalence of diabetes in Australia, and the complexity of managing the condition itself and the challenging complications and comorbidities that can arise, the impact of diabetes in Australia is already highly pronounced.

Diabetes impact can be seen in terms of its effect on people, the health system, and the economy.

Increasing impact on people

Living with diabetes

Diabetes is a serious chronic condition, affecting people of all ages, backgrounds and cultures. It requires daily self-care, and can have a significant impact on quality of life and well-being. Diabetes is often described as a 24/7, 365 day a year condition.

Diabetes-related stigma is widespread with around 80 per cent of people living with the condition reporting being blamed or shamed⁹. More than two-thirds of people living with type 1 diabetes say people make false assumptions about what they can do because of their diabetes, while more than 50 percent of people with type 2 diabetes say

people assume they are overweight¹⁰. Additionally, living with overweight and obesity is associated with significant stigma.

A recent Diabetes Australia national community consultation found 21% of people living with diabetes identified stigma and discrimination as one of the biggest challenges associated with living with the condition¹¹. The major sources of stigma for people living with diabetes were identified as the broader community (74%), the media (51%) and health professionals (36%).

The impact of diabetes-related complications

Diabetes can affect all systems in the body and is one of the leading causes of stroke, preventable blindness and preventable amputations¹². It can lead to dementia and other cognitive impairments¹³ and has recently been linked to increased rates of some cancers.¹⁴

In addition, almost 50% of people living with diabetes experience a mental health challenge every year.¹⁵ People who are diagnosed with diabetes are at increased risk of depression, with depressive disorders one of the leading reasons for mental health admission in Australians with diabetes.

Concerning trend in younger onset type 2 diabetes

An increasing number of younger people (aged <39) are developing type 2 diabetes.

Over the past 10 years, the number of people living with type 2 diabetes in this age group has increased by 37% from 30,775 people in 2012¹⁶ to 42,131 people in 2022¹⁷.

The impact of earlier onset type 2 diabetes is profound and significant and the risks of complications appear to be more severe. While more research is needed to understand the risks fully, it is possible that when people are diagnosed with type 2 diabetes while they are young and still growing that this could result in complications that are more serious. Compounding this biological mechanism, the younger people are when they develop type 2 diabetes the longer they live with the condition and their risk of developing diabetes-related complications increases over time.

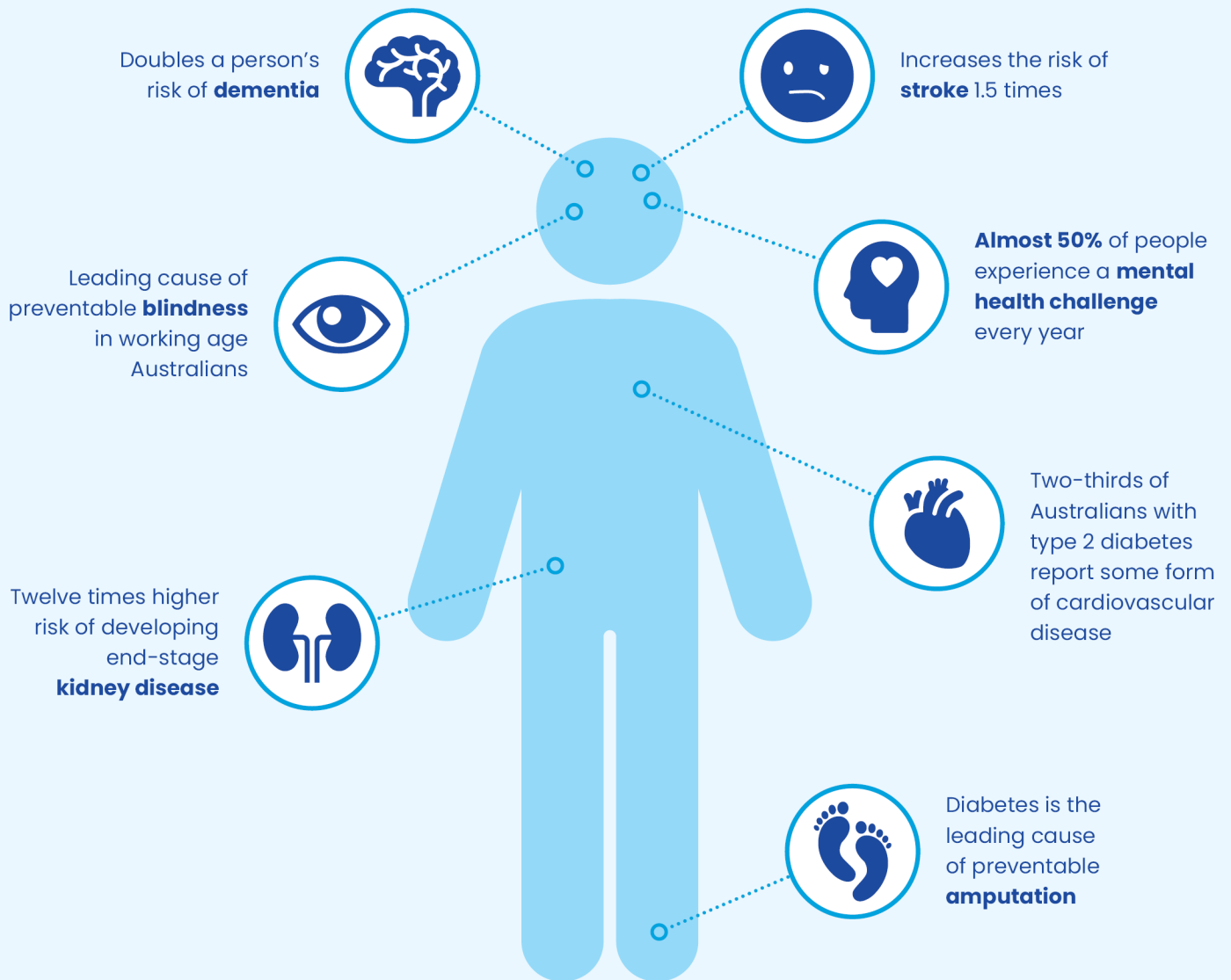
Challenges accessing care

Access to care is critical to supporting people to live long and live well with diabetes, however access is currently a profound and pressing concern for people living with the condition.

A recent Diabetes Australia national consultation survey revealed that only 56% of Australians living with diabetes are satisfied with the healthcare services and support available to them. Furthermore, people cite getting an appointment with their GP and other healthcare professionals, and access to medicines and technology amongst the biggest difficulties when it comes to managing diabetes¹⁸.

People living in rural and remote Australia, as well as some metropolitan areas, report difficulties in accessing services such as credentialled diabetes educators, nutrition support, podiatry and tertiary specialists.¹⁹

DIABETES IMPACTS EVERY PART OF THE BODY



Pregnancy – Twice as likely to require **caesarean birth** (women living with type 1 and type 2 diabetes)



Children born to mothers with type 2 diabetes and gestational diabetes are at higher risk of developing type 2 diabetes

Challenges accessing diabetes-related technology and medicines

While some Australians living with diabetes enjoy good to very good access to diabetes technology, products and medicines, there are significant gaps in access to certain products or among certain cohorts of people that mean many Australians are missing out on essential technology or medicines.

One example of potentially innovative technology that can provide real-time feedback on glucose levels to help people living with diabetes understand and manage their condition is Continuous Glucose Monitoring (CGM). While financial support for people living with type 1 diabetes to access CGM has been implemented by the Australian Government, that support has not yet been extended to people living with other types of diabetes.

An emerging area of concern is the increasing frequency of shortages of diabetes-related medicines and products.

In the past 18 months people living with diabetes have been impacted by shortages of a number of medicines. In some cases, there are no comparable products available in Australia. Shortages of diabetes medicines and products interrupt diabetes self-management and add to the mental health challenges associated with living with diabetes.

Increasing impact on vulnerable groups

Aboriginal and Torres Strait Islander peoples

Diabetes disproportionately affects Aboriginal and Torres Strait Islander communities in Australia.

Based on self-reported health survey data, 7.9% of all Aboriginal and Torres Strait Islander people are estimated to be living with diabetes²⁰. Overall, Aboriginal and Torres Strait Islander people are three times more likely to develop diabetes than non-indigenous Australians²¹.

In central Australia's remote areas, a study found that 40% of Aboriginal adults had been diagnosed with diabetes²², marking the highest recorded diabetes prevalence documented globally.

Furthermore, the same study showed that overall rates of diabetes amongst adult Aboriginal populations in the Northern Territory are increasing, from 14% in 2012 to 17% in 2019²³.

Aboriginal and Torres Strait Islander communities also face the world's highest rates of youth-onset type 2 diabetes. The prevalence of diabetes in Aboriginal and Torres Strait Islander young people aged 15-24 years has doubled over the past five years²⁴. Rates of gestational diabetes mellitus (GDM) are also high in remote Aboriginal populations and continue to rise. Among Aboriginal women, the prevalence of GDM increased from 3.4% in 1987 to 13% in 2016²⁵. Pre-existing and gestational diabetes increase the risk of medical complications and cardiometabolic disease in mother and child, and increases the child's risk of early obesity and type 2 diabetes, continuing an alarming intergenerational trend²⁶
²⁷.

The risk of diabetes-associated hospitalisation and of developing life-threatening complications is also much higher amongst Aboriginal and Torres Strait Islander people compared to non-Indigenous Australians. The rate of preventable

hospitalisations for complications associated with type 2 diabetes is 5.2 times higher in Aboriginal and Torres Strait Islander people compared to other Australians²⁸. Diabetes-associated death rates are estimated to be 4.4 times higher among Aboriginal and Torres Strait Islander people compared to other Australians²⁹. Furthermore, diabetes has emerged as the leading cause of death among Aboriginal and Torres Strait Islander women nationally and across the entire Aboriginal demographic in the Northern Territory³⁰.

Culturally and linguistically diverse communities

Australians from some culturally and linguistically diverse backgrounds are at a higher risk of developing type 2 diabetes compared to people born in Australia, and the risk is notably higher for people originating from the Pacific Islands (14% - 17% prevalence), Middle East (8% - 14% prevalence), South Asia (8% - 11% prevalence) and Africa (9% prevalence)³¹. People from these communities are also at higher risk of hospitalisation for certain diabetes-related complications when compared to Australian-born people, such as lower limb amputations³².

Other vulnerable groups

Concerning trends are also being observed in relation to other vulnerable groups:

- People living in rural and remote areas of Australia are 1.3 times as likely to be living with diabetes compared to people residing in major cities. People living with diabetes in remote and very remote Australia are 2.6 times more likely to be hospitalised due to diabetes complications than those in major cities, and mortality rates are 2.2 times as high³³.
- Around 1 million (over 65%) of people that live with diagnosed diabetes are aged over 60. People aged 60 and over are at a higher risk of hospitalisation for diabetes-related complications, such as stroke, myocardial infarction and heart failure³⁴. The number of comorbid conditions and

potential cognitive decline that some older people live with, may also increase the challenges in living with diabetes and preventing serious complications.

Increasing impact on the health system

As diabetes is a complex and challenging condition, there is a considerable burden on the health system.

In addition, when people who are at risk (of type 2 diabetes or GDM) or are living with any type of diabetes do not receive sufficient education and empowerment to self-manage their condition and do not receive sufficient primary care, they can end up experiencing serious and potentially life-threatening complications.

In 2022, it was estimated that over 1.3 million hospitalisations were attributed to diabetes (accounting for 10% of total hospitalisations in Australia), which included 19,000 emergency department presentations³⁵.

Australia has the second highest rate of diabetes-related amputations in the developed world. Across geographic regions, rates vary more than 10-fold, and are particularly high in rural and remote settings, and among Aboriginal and Torres Strait Island people.³⁶

Increasing cost of diabetes

Diabetes has a massive financial impact on Australia.

Diabetes Australia's most recent modelling places the annual cost at \$17.6 billion per annum.³⁷

A 2014 Deloitte Access Economics Report found diabetes costs Australia around \$5.63 billion per annum in lost productivity.³⁸

According to the Australian Institute of Health and Welfare (AIHW), diabetes costs the health system around \$3.14 billion per annum including:

- \$827 million via the Pharmaceutical Benefits Scheme (PBS)
- \$374 million for public hospital outpatient care
- \$758 million for public hospital admitted patients
- \$290 million for GP services.³⁹

The costs of treating diabetes increase as people age with more than 70% of total disease expenditure for people living with type 2 diabetes attributed to people aged 60 and over⁴⁰. With Australia's ageing population, these costs will increase significantly in the coming decades.



Responding to the growing challenges of the diabetes epidemic

The impact of the diabetes epidemic can be felt by every Australian either directly, as a person living with diabetes or caring for someone living with diabetes, or indirectly via its considerable impact on our health system and our economy. Meeting the challenges associated with the growing numbers of people living with diabetes will require resolve, commitment and innovation. It also demands dedicated investment. However, with smart policy and smart spending, we can reduce the impact of diabetes on Australians and reduce the long-term impact on the health system. Some key areas to drive change are discussed below.

Diabetes research at the forefront of the response

Diabetes research has led to a better understanding of the condition and the development of new technologies and new medicines that have transformed the lives of people living with all types of diabetes.

Research has been central to enhancing the delivery of care and informing the health system response to the impact of diabetes in Australia.

But there are significant gaps in the understanding of the true prevalence and burden of living with diabetes and subsequent complications.

To change the trajectory of the diabetes epidemic, research must be at the forefront of our response. However, diabetes research is at a critical juncture in Australia.

National Health and Medical Research Council (NHMRC) funding for diabetes-related research has fallen by around 35% from \$70.3 million in 2015 to \$42.3 million in 2022.

This must change. More research funding is needed to improve the lives of people living with or at risk of diabetes and help drive the response to the diabetes epidemic.

In particular, research is urgently needed to build the health sector's knowledge and understanding of diabetes, enhance our capacity to prevent or delay it, and discover ways to better treat and care for people living with diabetes.

There is currently a limited understanding of why some people develop diabetes and some do not. We know that there are several risk factors (with obesity playing a major role in type 2 diabetes); however, not all people who are obese develop type 2 diabetes, which indicates there is a genetic predisposition at play. Additional research would allow prevention strategies to be more targeted and effective.

There is also a need to better understand the stigma associated with diabetes. The impacts of stigma are far-reaching and better knowledge on how stigma impacts health-seeking behaviours,

outcomes, and how this can be addressed is important.

Remission for type 2 diabetes is also an area requiring further research, including scaled implementation of remission programs to enable anyone who wants to attempt type 2 diabetes remission to do so.

More research promoting innovation, and the development and investigation of new medications and technologies is also needed. This research needs to be relevant in the Australian context (ideally conducted in Australia, with Australian patients), noting the challenges of vulnerable and priority populations (such as pregnant women, children, people with mental health conditions, the elderly, and CALD communities).

Further, these studies need to be conducted in such a way that the results can be readily translated into practice and reimbursement for patients expedited in the Australian Health Technology Assessment (HTA) system.

A focus on prevention

Preventing type 2 diabetes from developing is the most cost-effective approach to tackling the diabetes epidemic and is the only way to ensure that no one has to live at risk of developing serious, life-threatening complications. However, there is currently no systematic approach to prevention in Australia and most of the initiatives target the stages of diabetes that are further along the continuum. Reasons for this include funding silos across the federal and state systems; limited awareness of the potential seriousness of the condition from the public perspective and even among some healthcare professionals; and the stigma associated with the condition.

In order to prevent type 2 diabetes developing in people with pre-diabetes, one of the primary interventions is lifestyle modifications aimed at losing weight. However, research has found that competing priorities, limited time available for

consultations, and a lack of expertise in nutrition made it difficult to discuss diets and weight loss strategies at GP appointments. Multiple guidelines recognise that individualised care with a GP as the lead coordinator, supported by a multidisciplinary team (typically including diabetes education and nutritional support/education), is needed. However, studies have found that only as few as one in five people with type 2 diabetes or pre-diabetes have received a referral to a dietitian/nutritionist from their GP.

Currently in Australia, people with pre-diabetes are only eligible for reimbursed care plans (which include five visits to allied health professionals) if they have another chronic health condition. This means that people with cardiovascular disease and pre-diabetes qualify for these plans but people with pre-diabetes alone do not. This is a missed opportunity for prevention.

It is also important to ensure that prevention programs are presented in a culturally appropriate way for Aboriginal and Torres Strait Islander people and the CALD community. Tailored approaches are also needed to meet the needs of younger people developing type 2 diabetes.

For initiatives and programs aimed at reducing the impact of diabetes on Aboriginal and Torres Strait Islander peoples to be successful, they must be led by Aboriginal and Torres Strait Islander peoples. Such leadership ensures that initiatives are culturally appropriate, and tailored to the specific needs of the communities they are designed to support.

By increasing funding for the prevention of type 2 diabetes, we can reduce the health impact of the condition and its complications.

Improved access to care supported by a stronger workforce

Strengthening the diabetes health workforce through comprehensive training and upskilling, recruitment and retention programs, and increased remuneration is a key component in effectively managing the diabetes epidemic.

Part of the solution also includes funding and support for person-centred multi-disciplinary diabetes care teams through increased visits to Credentialed Diabetes Educators (CDEs) and other allied health professionals, as well as educating GPs on referring patients to a diabetes care team to create a clear referral pathway.

Australia also has a shortage of CDEs, relative to the number of people with diabetes now, and the increased numbers that are expected in the future.

Further to this, the existing skilled CDE workforce is currently under-utilised, with the core Medicare Benefits Schedule (MBS) item number covering only a 20-minute appointment with a CDE. This is not long enough to deliver the blend of care and education fundamental to effective CDE care. If a person can be helped to develop the skills to self-manage their diabetes, they will be able to reduce their risk of diabetes-related complications and by avoiding these complications, reduce the number of primary care visits and hospital admissions.



Closing

The diabetes epidemic is one of the largest and most complex health challenges Australia has ever faced. There are now approximately 1.5 million Australians (about 5.6% of the population) living with all types of diagnosed diabetes and registered with the NDSS.

In the years ahead, we will see a growing number of people developing diabetes, as well as increases in the impact of diabetes-related complications and the costs associated with supporting people with diabetes.

Now is the time to act decisively to reduce the impact of the diabetes epidemic, save lives and safeguard the sustainability of Australia's health system.

In order to change the trajectory and create a future where diabetes can do no harm, diabetes research must be at the forefront of our response to the diabetes epidemic. We must act to intervene early through a systematic approach to preventing type 2 diabetes. And we must ensure people living with diabetes are connected to the right care and have access to the technology and medicines they need to live long and live well.

**DIABETES
RESEARCH
CHANGES
LIVES.**



Endnotes

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