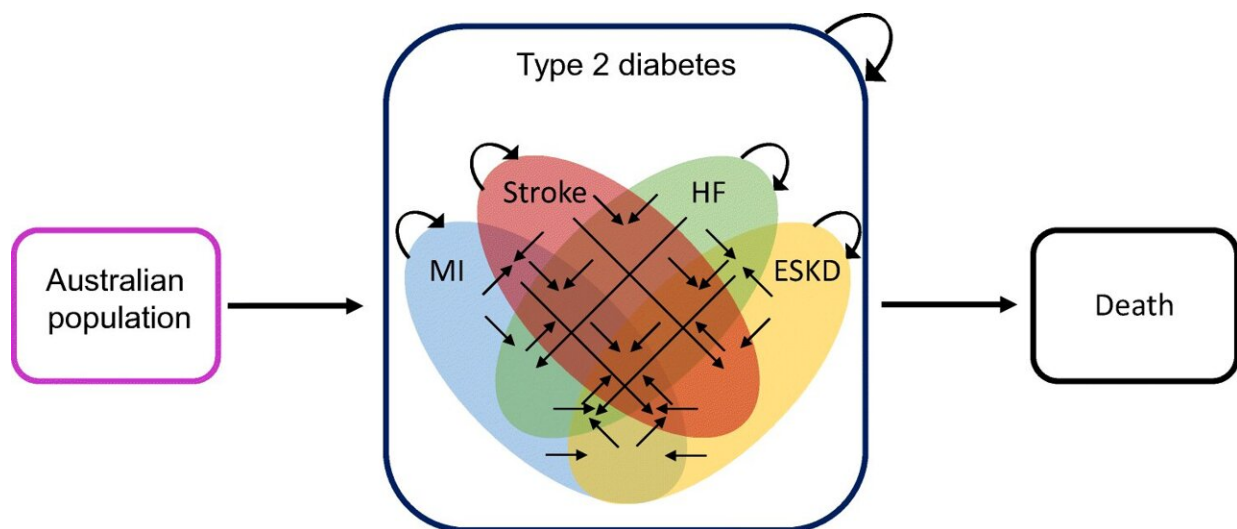


Type 2 diabetes drug cost-effective for cardiovascular and kidney benefits, finds Australian study

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Schematic of the model. The model begins on 1 January 2020 with the entire population with type 2 diabetes in Australia. Each cycle (1 year), people with type 2 diabetes are at risk for MI, stroke, HF, ESKD and death, with the number experiencing each event in the cycle tracked. If an individual experiences an event they have not had before, they then transition to the relevant health state (straight black arrows). If an individual does not experience an event, or experiences only the event of the type they have previously had, they remain in the same health state for the next cycle (circular arrows). There are 17 possible health states, represented as either absence of all of MI, stroke, HF and ESKD (i.e. people with type 2 diabetes not contained within the Venn diagram), any combination of these four outcomes (the 15 spaces within the Venn diagram), or death. Additionally, at each cycle, a population with incident type 2 diabetes is added, who enter the model in their respective health states. Credit: *Diabetologia*

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Medication that helps reduce a person's risk of developing cardiovascular and kidney disease is a cost-effective option to treat Australia's entire population of people with type 2 diabetes, a new study has found.

The study, a collaboration between Monash University and the Baker Heart and Diabetes Institute, analyzed the cardiovascular and kidney health benefits of sodium-glucose co-transporter 2 inhibitors (SGLT2is)—taking into account the [economic costs](#) for government.

The medication is well known for lowering blood glucose levels in people with type 2 [diabetes](#).

But lead researcher Jedidiah Morton, from the Center for Medicine Use and Safety at the Monash Institute of Pharmaceutical Sciences, said this is the first study he is aware of that has explored whether SGLT2is are cost-effective treatments when considering only their cardiovascular and kidney benefits.

"People living with type 2 diabetes are at high risk of heart attacks, stroke, [heart failure](#) and end-stage kidney disease, but some medicines that target these critical health conditions are not currently subsidized for everyone at risk," Morton said.

"Pharmaceutical Benefit Scheme criteria restrict subsidized use of SGLT2is to people who have 'uncontrolled' glucose, potentially limiting access to people who could benefit," he said.

The Monash and Baker Institute study, published in the European

journal *Diabetologia*, found that SGLT2is are a cost-effective option to treat all people living with type 2 diabetes, regardless of whether or not they have challenges managing their [blood glucose levels](#).

Clinical guidelines recognizing the benefits of SGLT2i in terms of preventing [cardiovascular disease](#) and kidney disease were updated in 2019.

In light of the study's results around the medication's cost-effectiveness, the Pharmaceutical Benefits Scheme could potentially review and consider prescribing criteria for SGLT2is, said Associate Professor Zanfina Ademi, a senior author on the study.

"However, the government will also need to balance the cost and benefits of treatments relating to different health problems when making resource allocation decisions at the population level," she said.

According to Diabetes Australia, almost 1.9 million people are currently living with diabetes including an estimated 500,000 people with silent, undiagnosed type 2 diabetes.

Diabetes Australia Group CEO Justine Cain said the findings could be good news for people living with type 2 diabetes.

"Kidney and [heart disease](#) are two of the most common diabetes-related complications with around 380,000 Australians living with [kidney disease](#) and/or cardiovascular disease as well as diabetes," Cain said.

"So it's important that more Australians can access medicines like these to help them live well and reduce the impact of diabetes-related complications on our health system."

Head of Diabetes and Population Health at the Baker Institute, Professor

Dianna Magliano, said, "With the increase in the number of people with diabetes and/or with a longer duration of diabetes we may see a higher incidence of diabetes-specific complications such as kidney failure and cardiovascular disease.

"We therefore need to look at ways to address rising healthcare costs and to improve quality of life for people with type 2 diabetes."

More information: Jedidiah I. Morton et al, Projecting the incidence and costs of major cardiovascular and kidney complications of type 2 diabetes with widespread SGLT2i and GLP-1 RA use: a cost-effectiveness analysis, *Diabetologia* (2022). [DOI: 10.1007/s00125-022-05832-0](https://doi.org/10.1007/s00125-022-05832-0)

Provided by Monash University

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