

# How Much Do Diabetes Drugs Cost?

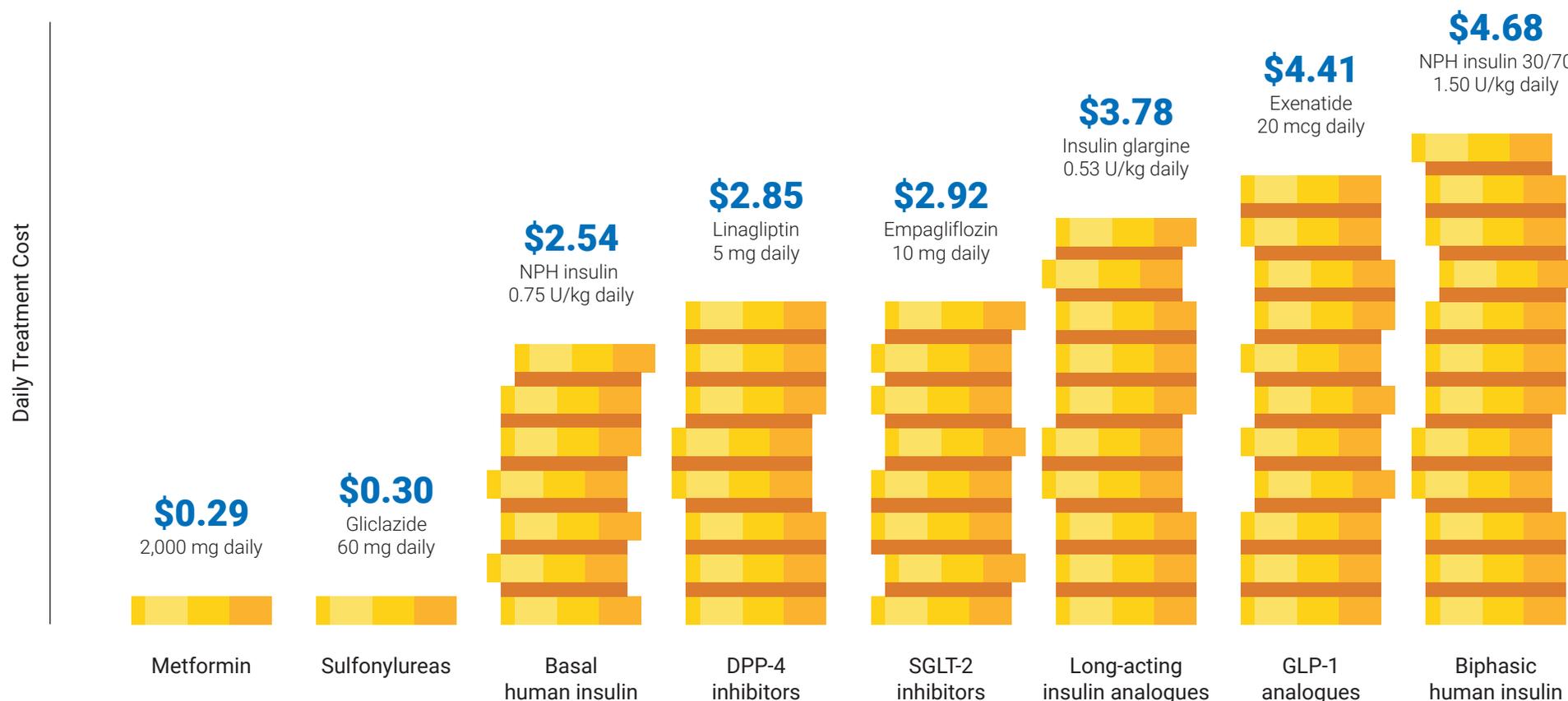
[cadth.ca/newdrugsT2DM](http://cadth.ca/newdrugsT2DM)



For each drug, a 10% markup and \$8.83 pharmacy fee per 90-day supply was applied. It was assumed that patients used the average defined daily dose from the World Health Organization for each treatment.



Total daily costs for insulins are based on assumed body weight of 87 kg (derived from randomized controlled trials included in the systematic review).



DPP-4 = dipeptidyl peptidase-4; GLP-1 = glucagon-like peptide-1; NPH = neutral protamine Hagedorne; SGLT-2 = sodium-glucose cotransporter-2

## What Is Cost-Effectiveness?

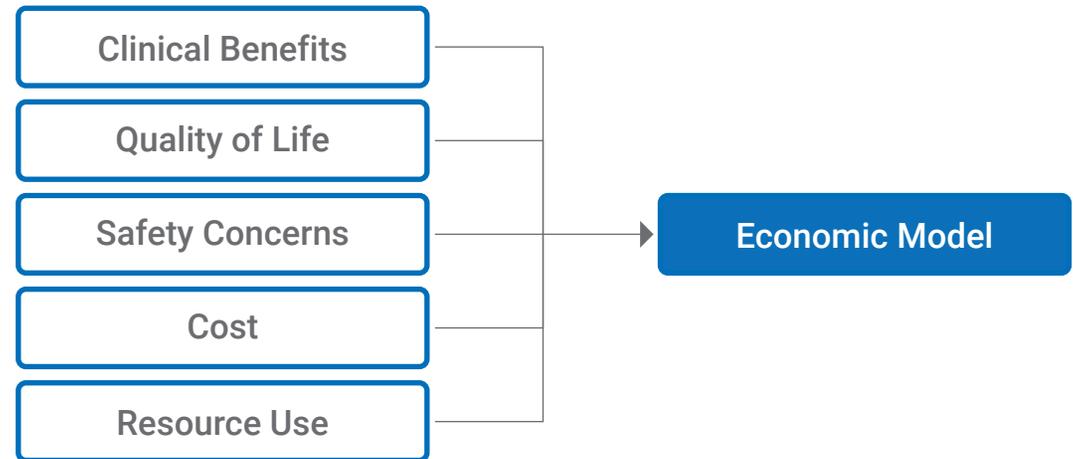
A cost-effectiveness analysis takes into consideration not only the cost of the drug, but also the clinical benefits provided by the drug to patients. It is somewhat like a competition among drugs, with points awarded for good treatment performance and low price, and points deducted for safety concerns or unwanted side effects. The final points are calculated in an economic model, and the drug that “wins” is the one that provides the best value for money.

The least expensive drug isn't necessarily the most cost-effective, because a more expensive drug might have more clinical benefits.

## Which Diabetes Drugs Provide the Best Value for Money?

CADTH wanted to determine which class of diabetes drugs is the best choice for second-line therapy once first-line therapy with metformin is not effective enough. CADTH considered many different scenarios and factors in its analyses and, in all cases, sulfonylureas ranked #1 as the most cost-effective option for second-line therapy. That's because all the drug classes (shown on the other side) were found to work similarly well for treating type 2 diabetes when added to metformin, but sulfonylureas had the advantage of having the lowest cost. Note that sulfonylureas may not be suitable for all patient groups.

There is some new but limited research indicating that sodium-glucose cotransporter (SGLT-2) inhibitors may help protect patients who already have cardiovascular disease, but there's not enough evidence at this point to make a recommendation for the entire drug class. However, CADTH did review an individual drug within this class – empagliflozin (Jardiance) – and found that there's sufficient evidence to recommend it as a second-line therapy for patients with type 2 diabetes and established cardiovascular disease. As more individual drugs are approved in Canada, and more evidence becomes available, CADTH can review them, too, and issue additional recommendations.



## Key Messages

- For adults with type 2 diabetes without established cardiovascular disease, add a sulfonylurea drug to metformin once metformin, diet, and exercise are not enough to control blood glucose levels.
- For adults with type 2 diabetes with established cardiovascular disease, refer to the CADTH Common Drug Review (CDR) recommendations on individual drugs<sup>a</sup> that have been reviewed for this indication.

<sup>a</sup> As of August 2017, the only drug reviewed by CDR for this indication is empagliflozin (Jardiance). The recommendation is to reimburse empagliflozin for patients with type 2 diabetes as a second-line therapy after metformin if these patients have established cardiovascular disease, as defined by the EMPA-REG OUTCOME trial that looks at empagliflozin, cardiovascular outcomes, and mortality in type 2 diabetes.

For more information on the CADTH project, visit [cadth.ca/newdrugsT2DM](http://cadth.ca/newdrugsT2DM).

## ABOUT CADTH

CADTH is an independent, not-for-profit organization responsible for providing Canada's health care decision-makers with objective evidence to help make informed decisions about the optimal use of drugs and medical devices in our health care system.

CADTH receives funding from Canada's federal, provincial, and territorial governments, with the exception of Quebec.

June 2018