

Diabetes Meds on a Budget

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Oral Medications for Diabetes

If your patients are not taking their “medications as directed”, you may want to explore if they can afford it or are experiencing side effects. Many of the patients I have interviewed over the years who are on a tight budget, try to stretch out their medications by cutting dose in half or taking it every other day. Others, just never fill the prescription. In these situations, educators have the opportunity to discuss other medication options and share our suggestions with the prescribing provider. Getting a pharmacist involved in the conversation regarding comparable medications and cost is also a good idea. See our [Med Pocketcards](#) for a complete summary of the available meds for type 2.

Is newer always better? A quote from a recent article in the New York Times on diabetes sums it up nicely, “There are now 12 classes of drugs, many of them expensive, and the question is, are we any better off?” said Dr. Silvio E. Inzucchi, director of the Yale Diabetes Center. “You can control glucose with generics for \$4 a month or some new ones that are \$8 or \$9 per pill. Some medicines are 100 times more expensive, but they’re certainly not 100 times as effective. In fact, they’re probably equal for most people.”

Considering more affordable medications. For patients on a budget, it is important to emphasize that in addition to medications, increasing activity and choosing healthy foods is just as important! In addition, it is sometimes cheaper for a patient to pay cash for their medication than going through their insurance company, especially if the copay is higher than the cost of the medication.

Diabetes Meds that cost \$4.00* - \$30.00 for a month’s supply:

*For the following 3 medications, Walmart offers a \$4 a month prescription plan or a 3 month plan for \$10.

For other pharmacies, pricing is based on dose. Lower doses cost less, higher dose cost more.

Metformin (generic) – This medication lowers A1c 1-2% points. In addition, it can contribute to lower LDL levels and does not cause hypoglycemia. To reduce GI side effects (such as nausea) instruct to take with meals. This is the starting medication for most patients as recommended by the ADA and AACE. See our [Medications Resource Page](#) to review different medication algorithms.

Metformin XR – this long-acting, once-a-day version is cheap, easier to take and causes a lot less stomach upset. I suggest switching many of my patients to XR and they tolerate it a lot better. Main drawback is its large size.

Sulfonylureas – Glyburide, Glucotrol, Glimepiride - these meds lower A1c 1-2% points and cost pennies per pill. Main disadvantage is the associated 5-10lb weight gain and risk of hypoglycemia

Other generic oral diabetes medications: There are other diabetes pills that are available in generic form such as acarbose, rosiglitazone and pioglitazone, but these cost \$100 and more for a month's supply.

All of the newer GLP-1 Agonists, SGLT-2 Inhibitors and DPP-IV Medications cost hundreds of dollars a month if not covered by insurance. Before starting these medications, I encourage patients to first check with their insurance companies to determine out-of-pocket cost.

For a comprehensive review of oral diabetes medications from a quality and cost perspective, take a look [Consumer Report's Best Buy Drugs](#)— it offers a fresh look at diabetes medication from a consumer perspective.

In the case of Jim, we switched him to the Metformin XR and he is tolerating it fine, without any signs of diarrhea. And his blood glucose levels are less than 150 for the first time in a year. But, he is almost out of his Lantus sample pens.

There are 3 main companies that manufacture insulin; Eli Lilly, Sanofi-Aventis and NovoNordisk.

The older insulins are regular and NPH. They are available as Humulin R and N (Eli Lilly) and Novolin R and N (Novo Nordisk). These biosynthetic insulins take longer to start working and the NPH peaks at 4-10 hours.

ReliOn Brand – Walmart sells Novolin insulin Regular, NPH and 70/30 (biphasic insulin) under the ReliOn label at discounted prices (see chart below).

Which insulin should we start? Find out below.

Per vial cost	Walmart	Walgreens	Costco	Insulin – What is the cost?
Regular Insulin	\$25*	\$92	\$99	Insulin has been available since the 1920s and has undergone major production changes since the original beef and pork insulins. Insulins are now created by coaxing e. coli and yeast to make insulin through recombinant DNA technology.
NPH	\$25*	\$92	\$99	
70/30	\$25*	\$92	\$101	
Humalog	\$200	\$220	\$178	See our Insulin PocketCards for a complete listing of the different insulins names and action times.
Novolog	\$197	\$217	\$178	
Apidra	\$180	\$246	\$178	
Levemir	\$300	\$300	\$300	
Lantus	\$226	\$221	\$206	

Newer insulins are referred to as analogues. The amino sequence of these insulins has been slightly rearranged through genetic engineering to make them more rapidly available or take longer to absorb

Which company makes which insulin analogues?·

- Eli Lilly – lispro (Humalog)
- Novo Nordisk – aspart (NovoLog) and detemir (Levemir).
- Sanofi Aventis – glulisine (Apidra) and glargine (Lantus).

All of these insulins are available in pens and vials and offer premixed formulations that include long acting and rapid acting insulins (basal/bolus or biphasic insulin therapy)

Insulin Therapy for Type 2 – Is newer always better?

29 million have type 2 diabetes and approximately one third of these patients will require insulin therapy. This means a lot of people are on insulin therapy and even more will be starting as the epidemic marches on.

Steps for starting insulin –

For patients with A1c above target on oral medications, the addition of basal or long acting insulin is a usual next step.

When the basal insulin dose exceeds more than 0.25 units of insulin per kg and blood glucose levels are still above target, the addition of bolus insulin is the usual next steps.

For our patients like Jim who have no insurance or a big copay, what is the most effective strategy to get glucose to goal in a cost effective manner?

Insulin cost comparison – Making it affordable

For patients like Jim, it is a good idea to have a general notion of the cost of insulin in your local pharmacies. Based on a survey of 3 local pharmacies in my Northern California community, here are the insulin costs per vial. Your regional insulin costs will be different, with exception of Walmart ReliOn insulin* The ReliOn cost is the same throughout the country.

Insulin starting steps: Given these pricing disparities, please consider [reading this article published in Diabetes Care, 2009](#) – that describes the effective use of NPH and Reg to manage Type 2 diabetes. The authors research shows that for type 2s, NPH and Regular insulins are as effective as the newer analogues in getting glucose to goal. The main drawbacks are well known; the peak of NPH slightly increases risk of hypoglycemia and patients will get better post prandial glucose control by taking regular insulin 30 minutes before meal (vs at meals with the analogs).

Start NPH – For Jim, starting NPH insulin at bedtime seems reasonable. The usual starting dose for most basal insulins is 10units daily ([see ADA Guidelines](#)) with gradual 2 to 3 unit increases until morning blood glucose levels are below 130 mg/dl. Since NPH has a peak of 4-10 hours, make sure to teach about signs of hypoglycemia and treatment.

When to add Regular – Once Jim's dose on NPH is greater than 0.25 units per kg and the post meal blood sugars are above target, it's time to consider adding morning NPH and/or premeal regular insulin.

50/50 Rule: This is based on the 50/50 insulin dosing rule. Take the patients weight in kgs x 0.5 to calculate total daily insulin needs. 50% is from basal NPH (0.25 units per kg) the other 50% from bolus regular (0.25 units per kg divided into 2 to 3 meals). See our [Medications Resource Page](#) to learn more about insulin dosing and calculations.

Adding bolus – According to [ADA Guidelines](#), a common starting dose is 3-4 units of regular at meals where the postmeal blood glucose is above target. Patients need to be reminded that they need to eat food containing carbohydrates after injecting bolus insulin to prevent hypoglycemia. The advantage of taking NPH and Regular together, is that they can be mixed in the same syringe for one injection.

70/30 insulin – Another strategy is to start the patient on a premixed 70/30 insulin, which combines 70% basal and 30% bolus in one vial. This is a very economical strategy, since the patient only has to purchase one vial that contains both basal and bolus insulin. This is my preferred insulin for patients reluctant to take more than 1 injection a day and their blood glucose levels are above target. There is nothing like a little regular bolus insulin to lower blood glucose in the company of background basal to keep things in control between meals

Conclusion – Given the increasing prevalence of type 2 diabetes and the economics of our health care system, it is reasonable to consider the cost of therapy, especially if it achieves comparable results. For individuals on a limited budget, we need to provide cost effective options to help them reach their glucose targets and have the best quality of life possible.

If you want to learn more about diabetes management, goals, medications and more – please see our [Medication Resource Page](#) at www.diabetesed.net

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Conflict of interest statement. We have no conflict of interest to disclose. Please see our complete statement on this page.