



# District Endocrine

## Type 2 Diabetes

- This is an amazing time in history of management of diabetes. There are many new (oral) medications and technology to make this easier and get better outcomes.
- What do NORMAL sugars look like? 70-150
- Diabetes is an inherently progressive disease, so EARLY AGGRESSIVE interventions buy us more health and time in the future.
  - It's important that we are also just as aggressive with blood pressure, cholesterol and bone health because **these are all interrelated**
- This is about making systematic long term changes and aiming to hit your targets 80% of the time
  - Because of the advent of paleo, ketogenic and gluten free diets, there are a lot of food & cooking resources available and **LIFESTYLE IS THE CORNERSTONE OF YOUR SUCCESS.**
- This is NOT about eliminating anything from your life, just shifting perspective and adjusting your approaches.
- Fundamental principles of glucose control
  - **Always bring your meter to every doctor's appointment**
  - Avoid "naked" carbs; always pair with fat, fiber or protein to avoid spikes.
  - Reducing your baseline body weight by 5-10% will dramatically improve your insulin sensitivity -- **some people can resolve their diabetes!**
  - Moderate exercise can improve your insulin sensitivity for days. Use your Fitbit! Every time you choose the stairs, the bicycle or the gym this is money in your pocket.
    - Moderate = walk/jog 1 mile in 12-15 minutes, or equivalent
- Here are my favorite products that help me handle my glucose control - check Target, Costco, Walmart and Amazon for best prices
  - Apps: Figwee or MyFitnessPal for calories, portions and carbs
  - Bread: Nature's Own Life Wheat + Protein or Wheat + Fiber
  - Cereal: The Cereal School; steel cut oatmeal
  - Frozen pizza: Quest, RealGood
  - Polaner or Welch's Fruit spreads without added sugar
  - Sweeteners: agave syrup, stevia or Swerve (erythritol)



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- Nuts and nut butters (without added sugars)
- Pure Protein bars & One protein bars
- Premier Protein shakes
- Alternative pastas that are high in fiber: Shirataki “miracle” noodles, Weight Watchers Skinny Pasta made of konjac, or others made of banza, edamame and adzuki; lots of different flavors and textures, so find your favorite.
- Dannon Light & Fit Greek yogurt or Sigge’s Skyr yogurt
- Gabriella’s Kitchen Skinny Pasta/Frozen meals; RealGood enchiladas
- [soft] cheeses, lean meats, fatty fish
- Strawberries, blueberries, raspberries, blackberries
- Bob’s Red Mill low carb baking mix
- **How to RESCUE a sugar < 70**
  - Glucose tablets are available over the counter and a bottle of 50 tablets costs about \$7.
  - Eat 16g glucose, **wait 15 minutes** and recheck sugar
    - 4 glucose tablets OR,
    - 6 oz apple or orange juice OR,
    - 4-5 packets of sugar in water
  - If sugar is still < 100, repeat step 1 until sugar > 100
  - Once sugar > 100, eat a small mixed snack (protein, fat, carb) to maintain your glucose in the normal range.
  - **Avoid overtreatment** -- we don’t want to have a glucose of 300 afterward, because chasing high blood sugar is a losing game.
  - Think about what caused your low: did you miss a meal? Exercise? Miscalculate how much insulin you needed? We need to find and correct the cause.
  - **NOTE:** chocolate is not a good rescue source of glucose because it has a lot of fat in it. You won’t get a quick improvement.
- How do I adjust my insulin?
  - Basal (Lantus, glargine, Levemir, detemir, Tujeo, degludec, Tresiba, etc.)
    - For you, a fasting AM sugar of \_\_\_\_\_ is PERFECTION
    - Choose **2 days of the week that are not next to one another**, i.e., Monday & Thursday



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- These are the days of the week where you will adjust your basal insulin doses, according to your fasting sugar.
- If your fasting AM sugar is > \_\_\_ you will ADD \_\_\_ units basal insulin that day
  - Similarly if your fasting AM sugar is < \_\_\_, you will REDUCE insulin dose by \_\_\_\_\_ units.
- Keep doing this on the Mondays and Thursdays until you achieve your goal range.
- Mealtime (Humalog, Novolog, lispro, Apidra, aspart, etc.)
  - For you, the 4 hour post-meal sugar of < 150 is PERFECTION.
  - Because mealtime insulin is so rapid-acting, you can make changes to your dose on consecutive days.
  - If your 4 hour post-meal sugar is > 150 you will ADD another 10-20 percent of the units of insulin. If your 4 hour post-meal sugar is < 70 you should REDUCE the dose by 20 percent of the units.
- **What if I RUN OUT OR LOSE my insulin?**
  - First call your pharmacy to see if you have refills.
  - If you don't have refills, call the office to get one.
  - If you can't reach anyone to refill your insulin, here's what to do:
    - Go to any pharmacy and tell the pharmacist that you are diabetic and you have run out of insulin. Walmart will have the best price (about \$25)
    - Ask them to give you **NPH insulin** and the needles/syringes over the counter. **You DO NOT NEED A PRESCRIPTION IN Many US States.**
    - Give yourself half of long acting insulin units as NPH insulin units every 12 hours – For example, if you take 20 units of long acting insulin such as Lantus, you will take 10 units of NPH in the morning and 10 units in evening.
    - **This will keep you OUT of DKA and the hospital** until you can get a refill of your usual insulin (it's OK if your sugar isn't perfectly controlled, it's just a temporary "band-aid").
- Family planning (women only)
  - About half of all pregnancies in the United States are UNPLANNED.



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- There are significant risks to both mother and baby when an unplanned pregnancy occurs in diabetes, so **it is fundamental for mom's & baby's safety to plan for conception appropriately.**
- If you are NOT ready for pregnancy there are many options for reliable contraception: intrauterine devices, progesterone implants, contraceptive pills/injections, contraceptive rings or permanent sterilization depending on your needs and preferences.
- What can I do to make my life easier/get better control?
  - #1: Always take your medications as prescribed and do not miss doses.
  - #2: Always bring your glucometer or a glucose log to your appointment.
  - #3: use a sensor if it's appropriate
    - **Abbott** makes a continuous sensor called Freestyle Libre which automatically checks your glucose every 60 seconds. The device is worn for 14 days and costs \$35. You read your glucose with the scanning device which is a one time cost of \$75. Medicare and commercial insurance pay for these.
    - **Dexcom and Medtronic** have continuous sensors that integrate with insulin pumps, and they are much more expensive. Unlike the Freestyle Libre, these devices will ALARM if you glucose is changing too fast, or if you are about to have a low. Medicare and commercial insurances will pay for these devices when certain criteria are met.
    - **Eversense** is the newest sensor, which is approved for 90 day wear and is implantable under the skin. It communicates with an adhesive transmitter worn on the body and will vibrate to alarm you of changes in glucose.
- Resources to utilize when you have questions or want to learn more:
  - YMCA Diabetes Prevention Program <https://amaymca.org/programs/health-wellness/diabetes-prevention/>
  - American Diabetes Association [www.diabetes.org](http://www.diabetes.org)
  - Centers for Disease Control <https://www.cdc.gov/diabetes/ndep/index.html>
  - National Institutes of Health <https://www.niddk.nih.gov/health-information/diabetes>
  - Mayo Clinic [www.mayoclinic.org/diseases-conditions](http://www.mayoclinic.org/diseases-conditions)

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## Disclaimer:

This article is not medical advice. It is intended for general informational purposes and is not meant to be a substitute for professional medical advice, diagnosis, or treatment. Always seek the advice of your physician or other qualified health provider with any questions you may have regarding a medical condition. If you think you may have a medical emergency, immediately call your physician or dial 911.