

# Glucose Management Indicator (GMI): Average Blood Sugar from CGM used to estimate an A1c

- The A1c is an average blood sugar test for the last 6-12 weeks. The lower it is, the lower the risk of diabetes complications
- A1c goals are different for different people, but less than 7.0% is the goal for most people, which is equal to an average glucose on CGM of about 155 mg/dL
- The A1c does not mean the same thing in everyone- so someone with an average blood sugar on Continuous Glucose Monitoring (CGM) of 155 could have a measured A1c of 5.8%, 7.0%, or 8.2%!
- **CGM gives the actual average blood sugar and is a more accurate measure of blood sugar control and risk of complications for the individual than is the measured A1c. A GMI is an A1c from CGM.**
- To easily convert average blood sugar to a GMI: an A1C 7.0%  $\approx$  155 mg/dL average on CGM: on-line calculator: [www.jaeb.org/gmi/](http://www.jaeb.org/gmi/)
  - Each A1C 1/2 percentage point  $\approx$  20 mg/dL
  - Each A1C of 0.1%  $\approx$  4 mg/dL

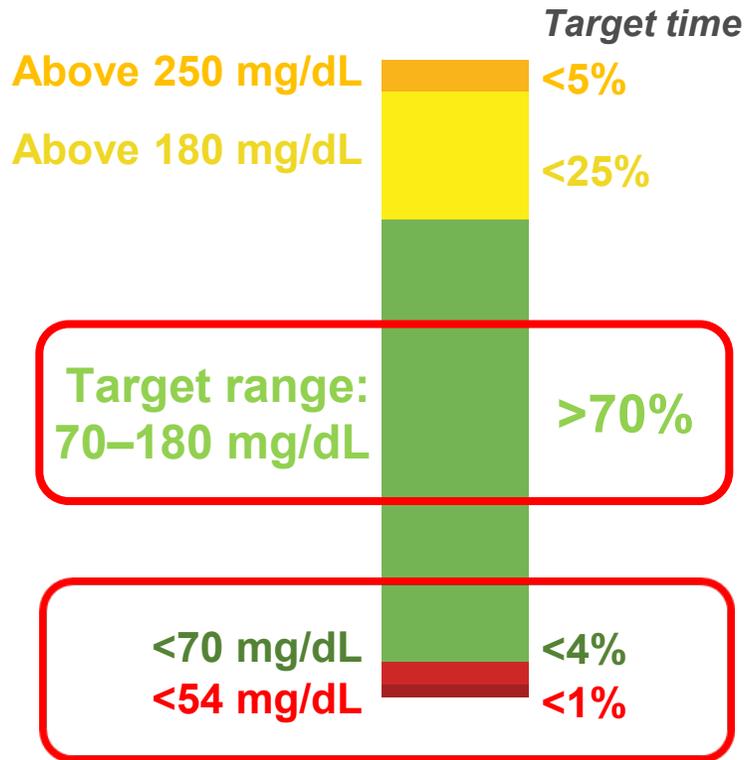
**CGM = continuous glucose monitor**

<b>GMI, the A1c estimated from the CGM</b>	<b>CGM average blood sugar</b>
<b>6.0%</b>	<b>115</b>
<b>6.5%</b>	<b>135</b>
<b>7.0%</b>	<b>155</b>
<b>7.5%</b>	<b>175</b>
<b>8.0%</b>	<b>195</b>

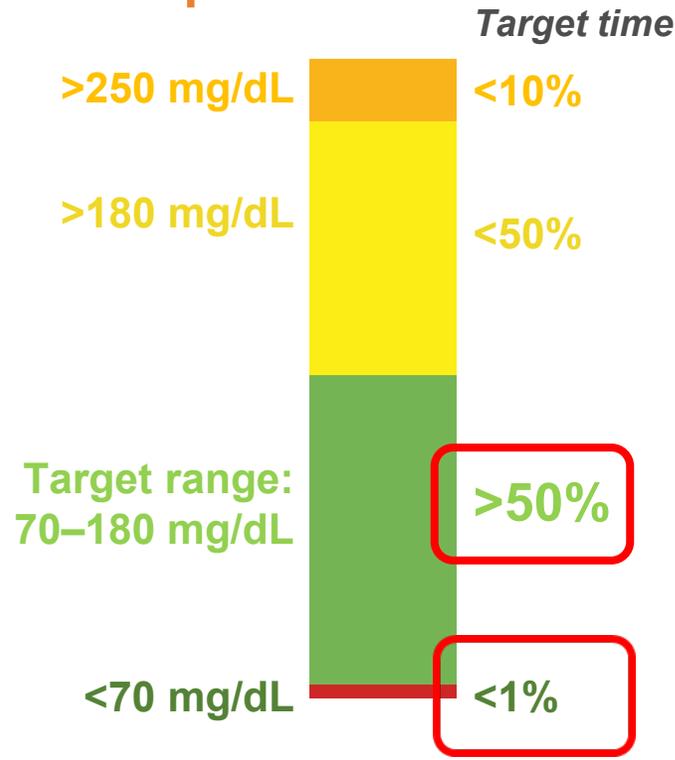
# Recommended CGM Time In Range (TIR) Targets

## An improvement in TIR of 5% means something!

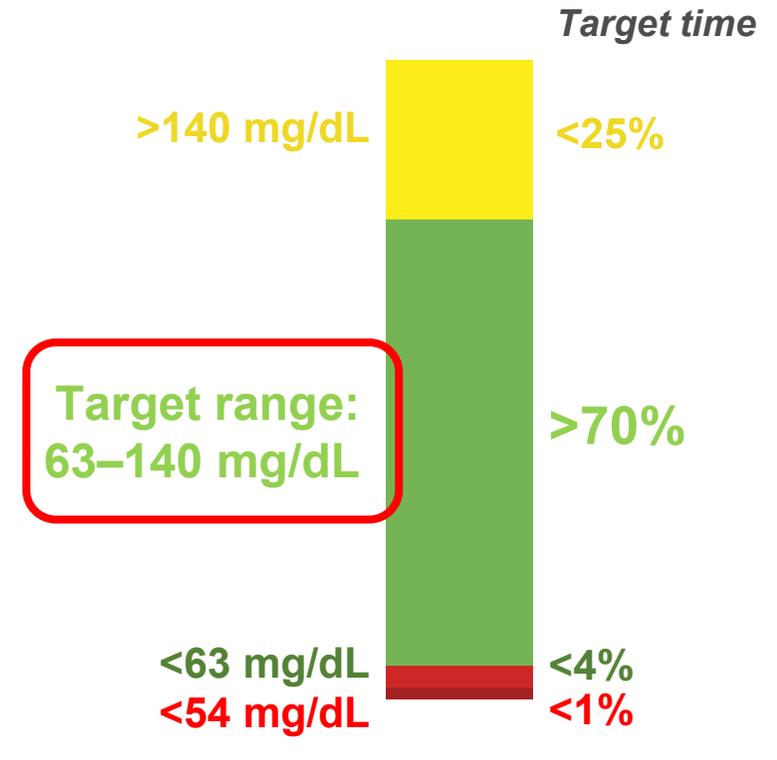
Most people with Type 1 or Type 2



Older/high-risk with Type 1 or Type 2 – Emphasize fewer lows



Pregnancy goals for Type 1: tighter target range



1% of the day is ~15 minutes  
4% of the day is an hour

# How to Improve Your Time in Range

- A lower average blood sugar will reduce your risk for developing diabetes complications tomorrow and help you feel better today! Try to make small changes and gradual improvements
- **High blood sugars after meals are usually the primary reason that time in range is not where you want it to be**
- **Ways to lower post meal blood sugar levels:**
  - Try to eat less carbohydrate overall
  - Avoid liquid sugars like regular soda and fruit juice- they really spike the blood sugar
  - Be sure to give insulin before eating, not after, and consider switching to a faster meal insulin like Fiasp or Lyumjev, or inhaled insulin Afrezza
    - Its even better to give your insulin 15-20 minutes before eating if safe to do and you have control over the timing of the meal. Don't do this when eating out or at a friend's house
  - Eat your carb's like rice, bread, or potatoes at the end of the meal, eat meat-fish and veggies first
    - This slows the digestion of the carbs and leads to lower blood sugar after meals
  - Look for patterns, try to reduce 'spike foods': if a food really spikes the blood sugar, try to eat less of it, eat it less often, or increase the amount of insulin you take for that food
  - Take a 20-30 minute walk after a meal- it slows the digestion

# Other ways to Improve Your Time in Range: Manage Low blood Sugars

- **Always have rapid sugar available to treat a low, especially when driving!**
- **If your CGM predicts you are going to get a low, treat with some quick carbs before you get low**
- **Never ignore a low blood sugar alert-** a low blood sugar reaction can't wait!
  - Its usually easier to treat a low early before it is severe, you may not need as much carbohydrate and won't feel as bad afterwards
- **To treat a low, you want something that will increase your blood sugar quickly but not overshoot**
  - Quick things: 4-6 ounces of fruit juice or sweet soda, 3-4 glucose tablets, sugar candies like Life Savers, Skittles, or Starburst candies
    - Slow things that usually take too long and often overshoot: cookies, ice cream, donuts, chocolate candy, bread
- **Remember this rule:** 15-20 grams, 15-20 minutes. Give 15-20 grams of rapid sugar, then give it a chance to work. If after 15-20 minutes you are still low, repeat the treatment
  - Don't eat until you feel better, because you will probably over treat the low and then go high afterwards
  - Your CGM is likely to be 5-10 minutes behind what the blood sugar is doing, so don't keep eating until the CGM says you are OK, you will likely overdo it. Check a fingerstick if you want to be sure your sugar is coming up