MICIS
Maine Independent Clinical Information Service
Balanced Data About Medications

GOAL: To improve clinical outcomes by delivering up-to-date, evidence-based prescribing information, using data and guidelines developed by non-commercial sources

FUNDING: MICIS mandated by Maine Legislature, funded by fees collected from pharmaceutical companies as a cost of doing business in the state.

Legislature's Primary Goal

To assist providers in aligning their prescribing patterns with the best scientific evidence

- Improve health care quality and outcomes;
- Decreasing complications;
- Reducing costs

Academic detailing has no commerical bias toward any given drug or approach to care.

The goal is better outcomes.

Just a spoonful of medicine helps the sugar go down:

IMPROVING THE MANAGEMENT OF TYPE 2 DIABETES

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Weight Management, Diet and Exercise

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Working with Patients..

- Structured program
  - Reduce overall caloric intake
  - Reduce the calories from fat and saturated fat
- Structured exercise program
  - Combined aerobic-resistance programs most effective

Lifestyle modification, diet change, and increased exercise can:

- Improve glycemic control
- Slow progression from pre-diabetes to diabetes
- Offer multiple other health benefits

Prevention or Delay of Diabetes

- Lifestyle interventions can delay the development of diabetes significantly

Finnish Diabetes Prevention Study

- Lifestyle modification reduced the incidence of diabetes by 58%

Diabetes Prevention Program (DPP)

- Lifestyle modification group had a lower rate of diabetes development than the metformin group.

Medication Trials in Pre-diabetes

- STOP-NIDDM
  - Treatment with acarbose reduced the development of diabetes by 25% (gastrointestinal symptoms)
- DREAM
  - Treatment with rosiglitazone reduced the development of diabetes by 62% (cardiovascular toxicity)

Treatment to Prevent Development of Diabetes

Treatment	Reduction in diabetes (compared to placebo)	Notes
Lifestyle modification •Weight loss •Decreased saturated fat •Exercise	58%	Results over 3-4 years; at 3-year follow-up reduction was 43%
Metformin 850 mg b.i.d.	31%	Cost-effectiveness of treatment unclear
Acarbose 100 mg t.i.d.	25%	GI side effects limit acceptability to patients
Rosiglitazone 8 mg q.i.d.	62%	Cardiac toxicity/CHF limits use

Bottom Line

Intensive lifestyle modification, including weight loss (5% or more), reduced saturated fat intake, and increased exercise (30 minutes 5 times weekly) can reduce the incidence of diabetes in pre-diabetic patients by over 50%. Oral medication can also reduce the incidence of diabetes, but the benefits must be weighed carefully against side effects and costs.

Optimizing the Use of Insulin

- Patients in the UKPDS trial failed oral therapy at a rate of 5-10% per year.
- 50% required the addition of a second drug after three years
- 75% needed multiple therapies by nine years
- Only 37% of patients with diabetes reach a goal of A1c < 7%

Barriers to Insulin Therapy Patient-based:

- Fear of injections
- Associated discomfort
- Low perceived efficacy
- Belief that adding insulin therapy is a sign of treatment and lifestyle failure

Barriers to Insulin Therapy Physician-based:

- Hypoglycemia
- Lack of time to adequately instruct patients
- Sense of failure
- Belief that insulin should only be started when "absolutely essential"

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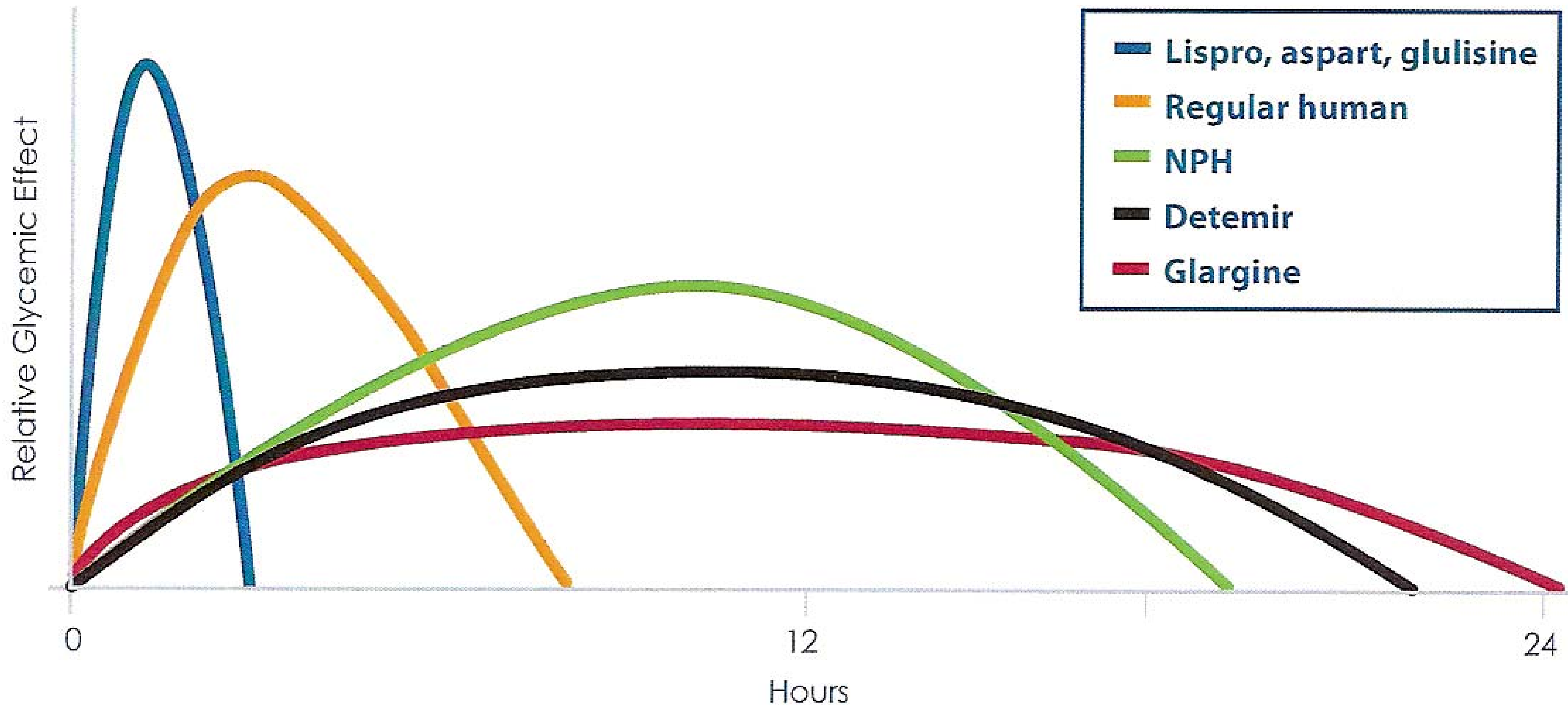
Figure 8. Comparison of Human Insulin Preparations and Insulin Analogs. Reproduced with permission from McMahon and Dluhy, *NEJM*, 2007.[63]



Used with permission, McMahon GT, Dluhy RG. Intention to treat - initiating insulin and the 4-T study. *NEJM* 2007;357(17):1759-61.[15]

Type 2 diabetes

No benefit of rapid acting insulin over regular insulin in managing A1c or in reducing hypoglycemic episodes.

When should insulin therapy be initiated?

Diabetic patient has:

- A1c > 8.0% on maximal dose oral hypoglycemic monotherapy
- A1c > 8.0% on two oral hypoglycemic agents

Figure 9. ADA consensus algorithm for initiating and intensifying insulin (p.36)

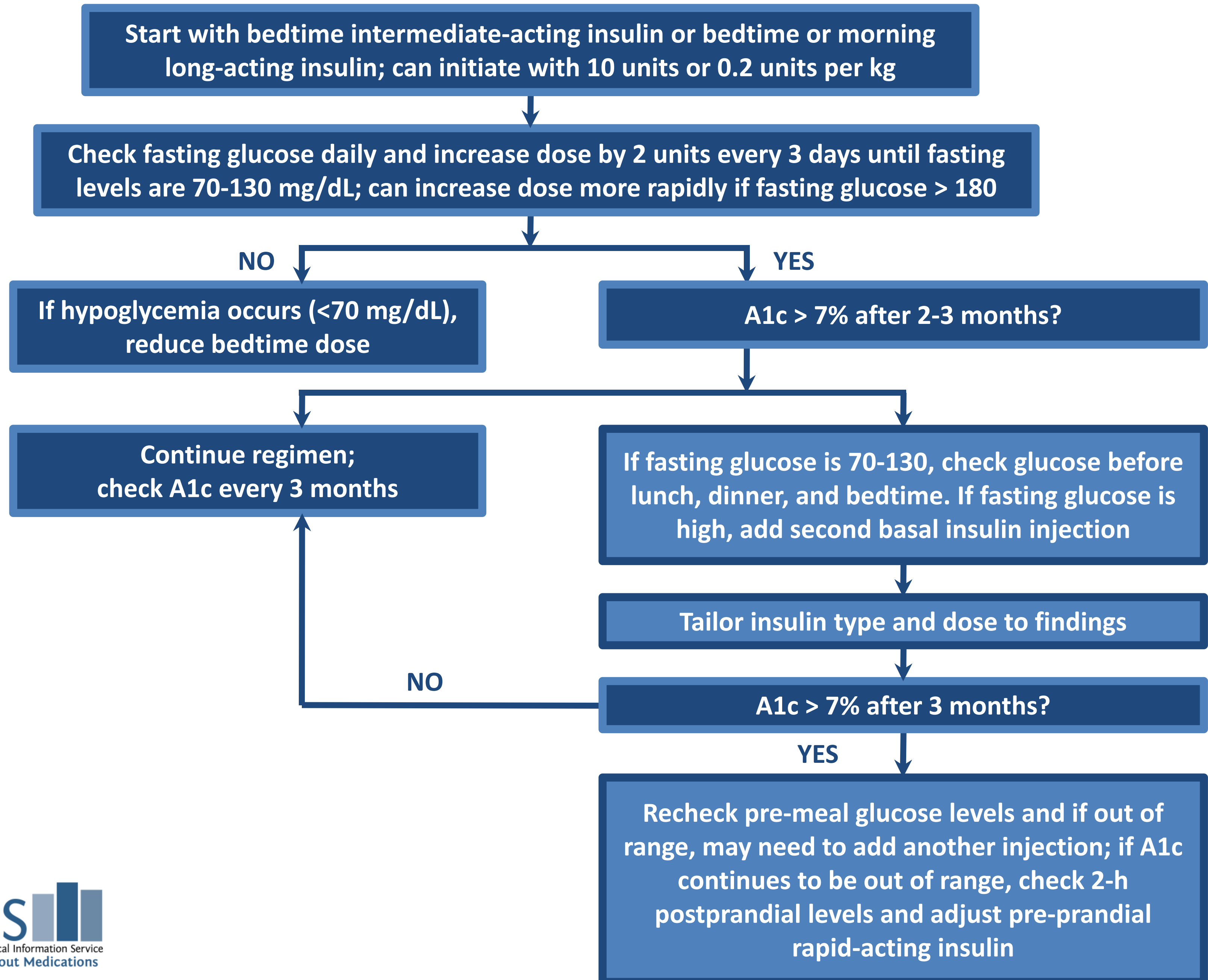


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Table 7. Insulin initiation or titration (p.37)

- Start with 10 units per day of bedtime basal insulin.
- Adjust insulin every week. To adjust, calculate the mean self-monitored fasting blood glucose (FBG) values from the previous 2 days.

Mean FBG	Increase insulin by
100-120 mg/dL	2 units
120-140 mg/dL	4 units
140-180 mg/dL	6 units
≥ 180 mg/dL	8 units

Questions?

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For more information:

www.mainemed.com

Other links:

www.rxfacts.org

www.cochrane.org

www.ohsu.edu/ohsuedu/research/policycenter/DERP/index.cfm

www.sccp.sc.edu/centers/scorxe (South Carolina Academic Detailing Program)

www.med.uvm.edu/ahec (Vermont Academic Detailing Program)

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