Diabetes Education- Back to the Basics

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Background

- Diabetes isn't going away and is increasing
- Despite new medications, technology, and procedures, the treatment of diabetes is not successful for far too many
- Medication management and treatments for complications are only part of the treatment, but that is primarily what is reimbursed.

Current Problems

- How do we get people to change their lifestyle to improve their health?
- How do we get people to pay us to help people change their lifestyle and improve their health?
- In light of above, how do we make every second count that we spend with our patients and clients?

Reasons Diabetes Ecucators can make a difference

- Even slight hyperglycemia is a poison- medicines alone do not correct it to normal
- DM2 is many diseases in one that can lead to similar outcomes. Education is needed to address all facets of the problem
- Diabetes medications require precise timing and adherence beyond most other meds, and are often used improperly

Reasons Diabetes Educators can make a difference

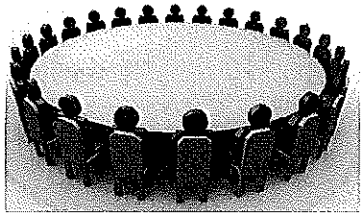
- Studies show people improve with some education but revert back if it isn't continued. Still, a long-term decrease in complication rates can be maintained.
- Almost every study has shown a favorable cost-benefit ratio for whatever aspect of education was studied.
- Treatment is difficult and requires coaching for success.

Reasons Diabetes Edcuator can make a difference

- Treatment is complex, and requires it to be distilled for a typical person to understand.
- There can be decades of somatic damage to try to overcome- takes more than meds.
- We are now diagnosing people earlier in the course of their diabetes when prevention of complications can make all the difference

Reasons Diabetes Educators can make a difference

- Diabetes educators can be instrumental in preventing diabetes if given the chance.
- Diabetes educators need to toot their own horn about this work because they are not aligned well in the overall health care system.



What we know to be true about diabetes

- If you have a foundation in the basics, practice daily, and are motivated to improve, you do well.
- Any person with any kind of diabetes can be successful at controlling diabetes

So what do we need to teach?

Concept #1

TEACH HOW TO UNDERSTAND DIABETES

- It is a disease where the body can't make enough insulin.
- The system is broken and CANNOT be fixed

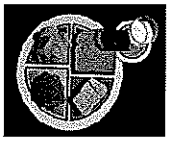
Concept #1 continued

- There are 2 treatments and you need to do both of them at the same time- increase the insulin in your body and decrease the need for insulin in your body.
- Use analogies for those who can't understand science well
- Just get agreement on what needs to be done if they can't think about it at all.
- Teach caretakers if they are willing

Concept #2

TEACH WHAT IT MEANS TO EAT HEALTHY!!

What is Healthy Nutrition



Healthy Nutrition

- It isn't about counting anything
- Whole Grains PLUS fiber PLUS protein PLUS healthy fats AT THE SAME TIME every time you eat.
- Need to slow digestion because insulin works slower in diabetes
- Meals, not snacks (a snack is not a little meal)
- Routine- same time each day
- Same plan on "weekends"

Concept #3

- ***Never miss a dose of medicine- all food must be preceded by insulin.***

Not many things in life require 100% for success, but this does

Consequences of late/missed injections, boluses, oral meds, and general poor care

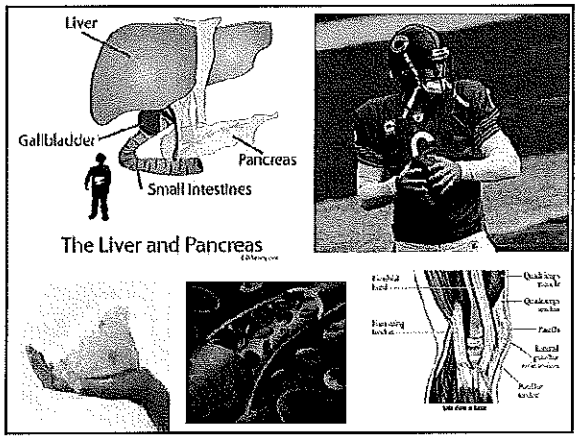
- Blood glucose goes WAY UP quickly
- Blood glucose comes down SLOWLY
- Blood glucose ends up getting pinned at higher numbers
- A1c gets pinned at higher numbers

NOTE: How much the dose is far less important than simply taking it at the right time

Concept #4

- ***EXERCISE !!!***

- ***Except if you do it wrong, A1c and weight can increase, and there can be unnecessary hypoglycemia.***



Sports: Other actions of insulin we don't talk about much but need to

- Responds to sudden increases in hepatic glucose production
- Stops Glycogenolysis
- Stops Gluconeogenesis
- Stops Glucagon
- Increases the conversion of glucose to fat
- Prevents fat from being changed to ketones
- Improves muscle function

Exercise physiology- Mild

- Much easier to manage than intense .
- Does not promote rapid increase in glucose production and hyperinsulinemia
- Hypoglycemia can occur early and can be dangerous for elderly.
- 15 gm glucose may be needed just prior to exercise, but if hypoglycemia does occur, it may be compensated for by excessive eating

What do we want to happen in sports

- Stop glycogenolysis because we need the liver glycogen to keep blood glucose from going dangerously low at night
- Stop gluconeogenesis because it uses the protein we need to build up muscles
- Provide muscle with all the glucose they need
- Provide muscles with protein to build
- Keep blood glucose in good levels during and after exercise

Exercise physiology- Intense

- Different physiology form mild exercise.
- Promotes extreme glucose production leading to hyperglycemia and hyperinsulinemia during exercise and hypoglycemia later from depletion.
- Late hypoglycemia leads to extremely poor management decisions by patients

Intense Exercise- Mimic Nature

- Maintain relatively high insulin levels during intense exercise
- Maintain high glucose production rate by providing ongoing fuel (glucose) for intense exercise and just what is needed to prevent hypoglycemia for mild exercise
- Do not allow protein stores in muscles to be cannibalized to produce glucose (fuel).

One way to do it

- Provide insulin to stop glycolysis and gluconeogenesis and increase muscle function. In general, do not decrease doses.
- Provide extra protein before starting as a source of gluconeogenesis if there isn't enough insulin to stop it, and to help build muscles.
- Provide 15-30 grams glucose every 30 minutes to provide the glucose the muscles need, balance the blood glucose levels and prevent hypoglycemia after exercise.
- Check bgs to understand the process better

Concept #5

- ***TEACH HOW TO USE BLOOD GLUCOSE CHECKS TO LEARN HOW TO TREAT YOURSELF- NOT JUST TO MEASURE***

What happens when you don't pay attention to your readings?

What to do with blood glucose

- Measure before and postprandial (2 hours after you start eating) to check on eating habits
- Measure when you have a question to answer, particularly questions that require you to write them down and look a week or to later.
- Measure for safety (bedtime, school lunchtime, before an activity you can't be low for, before an activity where your access to glucose is limited)

But only measure if you plan on doing something with the result that matters

Concept #5 restated

- ***If the results are not in the target range, do things differently.***

Don't accept that people make a conclusion about what works from 5 years ago or even 2 weeks ago and stick with it forever despite all evidence to the contrary.

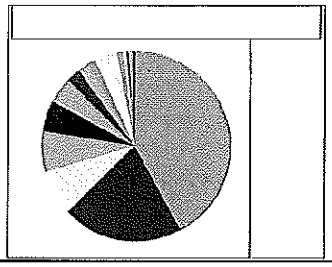
Concept #6

DON'T SMOKE !!!!

- **At any level of blood glucose, the risk for long term complications will be much higher if you smoke**
- **Need to be very aggressive about this.**

Concept #7

TEACH ABOUT PRIORITIES- Always do what matters the most



Parting Remarks

- **Everyone in this room has so much to offer- toot your horn and celebrate what you do!**
- **Keep it as simple as possible and focus on what really matters**
- **Be involved in the larger system of health care delivery and insurance**