



Diabetes and Weight Management: Tools to Affect Patient Outcomes



Today's discussion

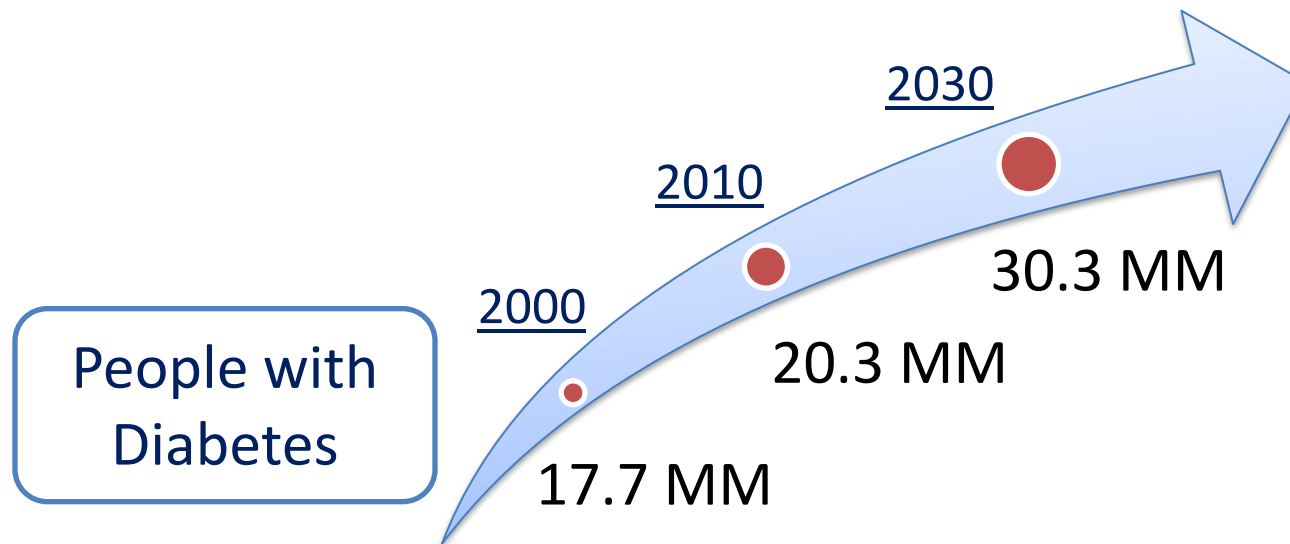
- Review the problem of diabetes and the importance of lifestyle intervention
- Identify current research supporting the use of meal replacements as a tool for weight loss
- Understand the role of diabetes specific meal replacements and introduce Glucerna[®] Hunger Smart[™]



The incidence of diabetes is growing and will continue at an increasing rate

In the United States:

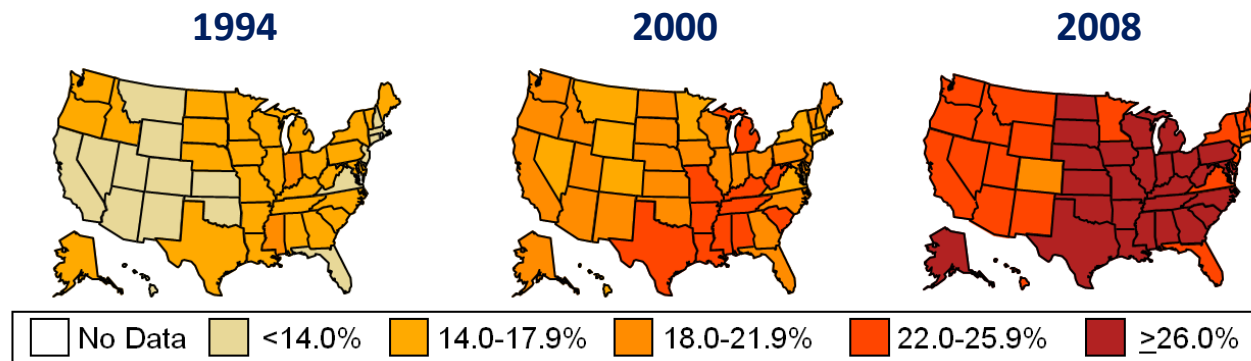
- Every 24 hours, over 5,200 Adults are diagnosed with Diabetes
- 1 in 4 Adults have Pre-diabetes
- Diabetes will grow by over 50% over next 20 years



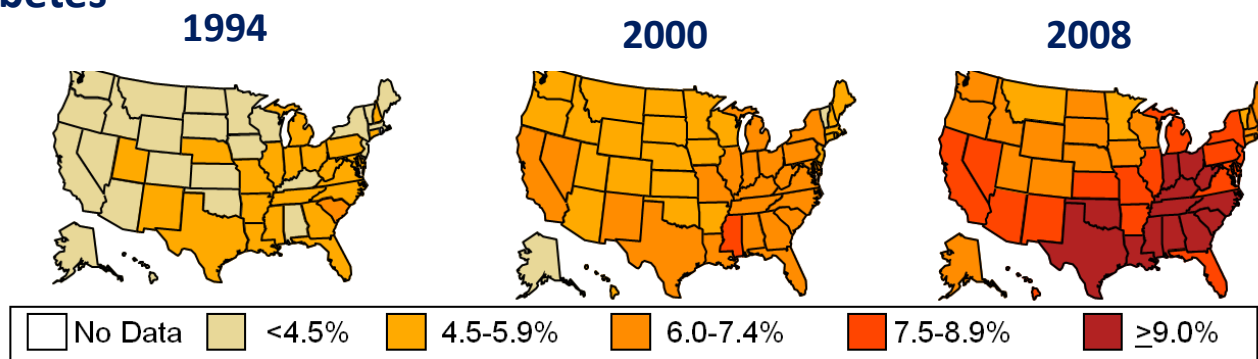


Obesity is a driving force of the increasing prevalence of diabetes

Obesity (BMI ≥ 30 kg/m²)



Diabetes





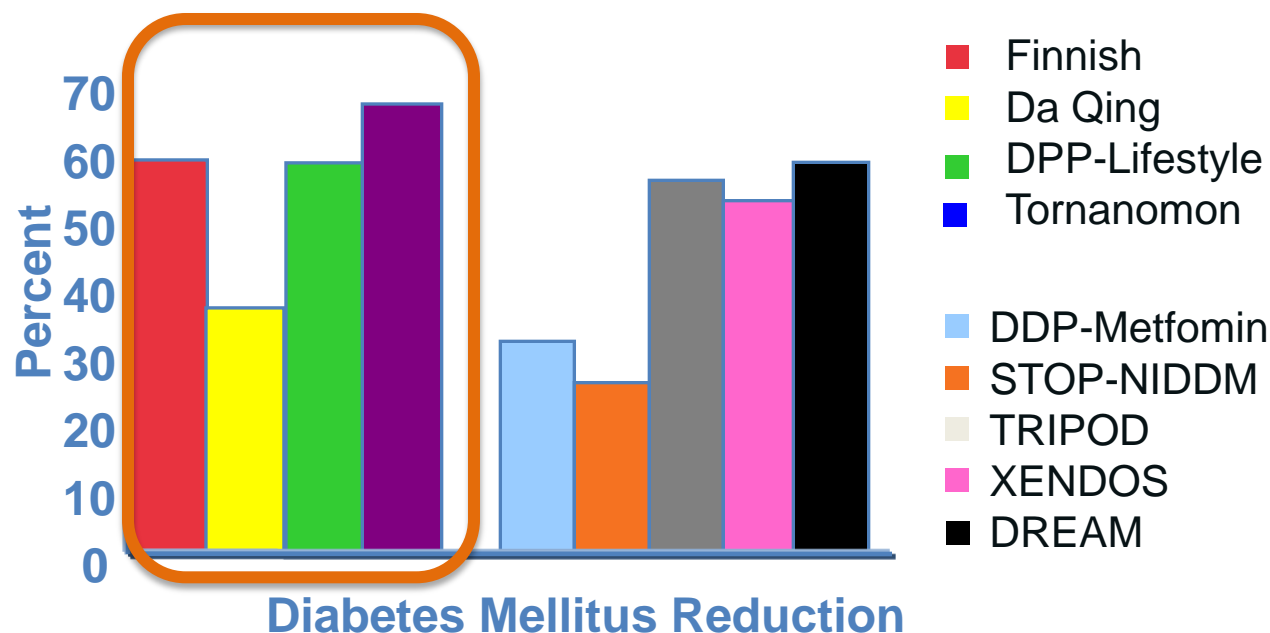
Benefits of Weight Reduction

- Moderate weight loss (5 – 10% of body weight) is associated with:
 - Reduced insulin resistance
 - Improved glycemic control
 - Reduced HbA1C
 - Reduced CVD risk factors
 - Delay in the onset of type 2 diabetes





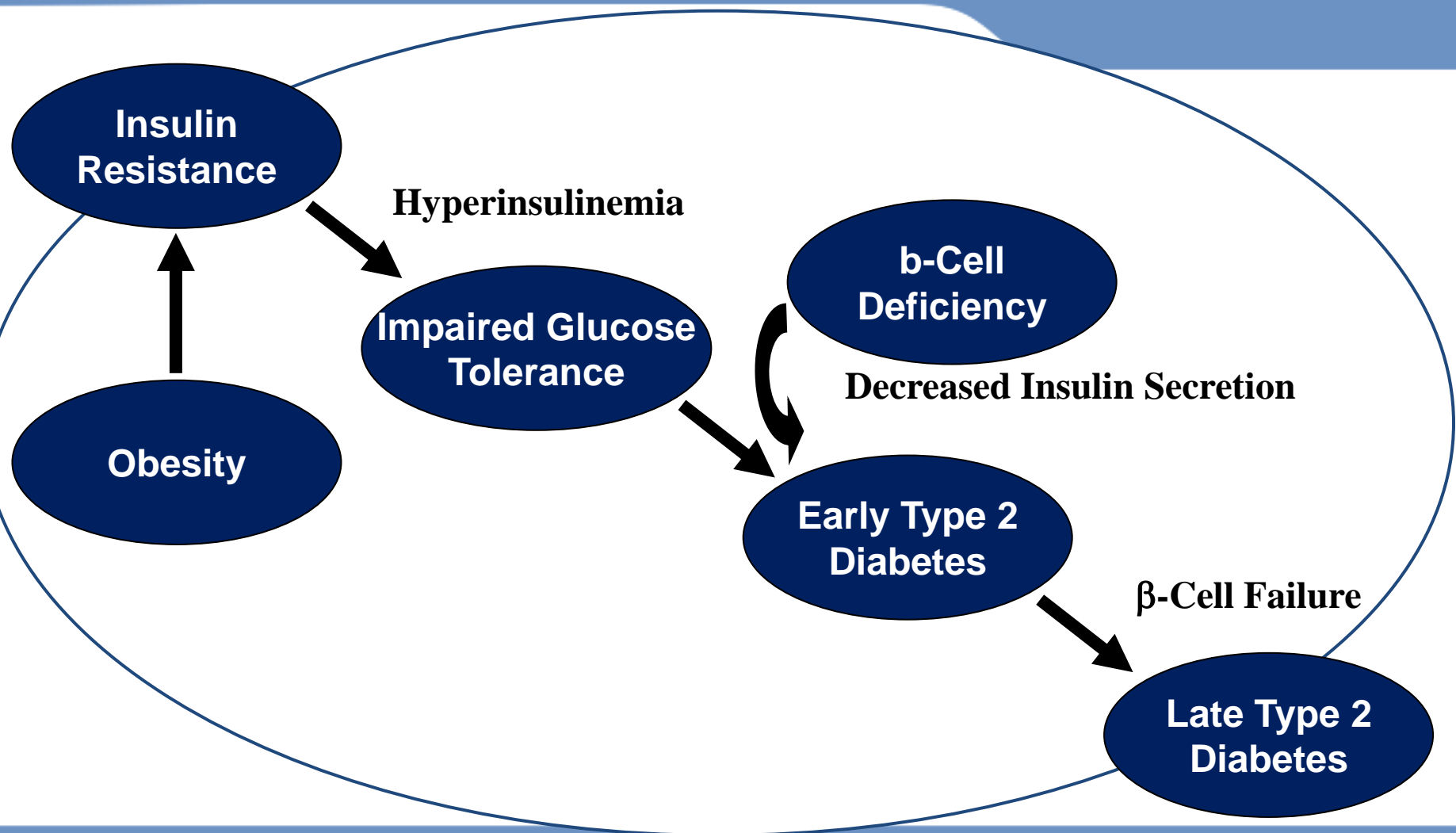
Lifestyle intervention including modest weight loss can delay the onset of diabetes



DPP=Diabetes Prevention Study. STOP-NIDDM=Study TO Prevent Non-Insulin-Dependent Diabetes Mellitus. TRIPOD=Troglitazone in the Prevention of Diabetes. XENDOS=XEnical in the Prevention of Diabetes in Obese Subjects. DREAMS=Diabetes Reduction Assessment with Ramipril and Rosiglitazone Medication



Obesity can lead to the development and progression of type 2 diabetes





Tailored lifestyle intervention is critical for long-term success

- Structured, integrated, and intensive lifestyle programs focus on:
 - Modest weight loss goal (5-10%)
 - Regular physical activity
 - Diabetes education
 - Counseling / behavior change
 - Frequent participant contact
 - Individualized calorie controlled eating plan
 - Food records
 - Meal Replacements as a tool





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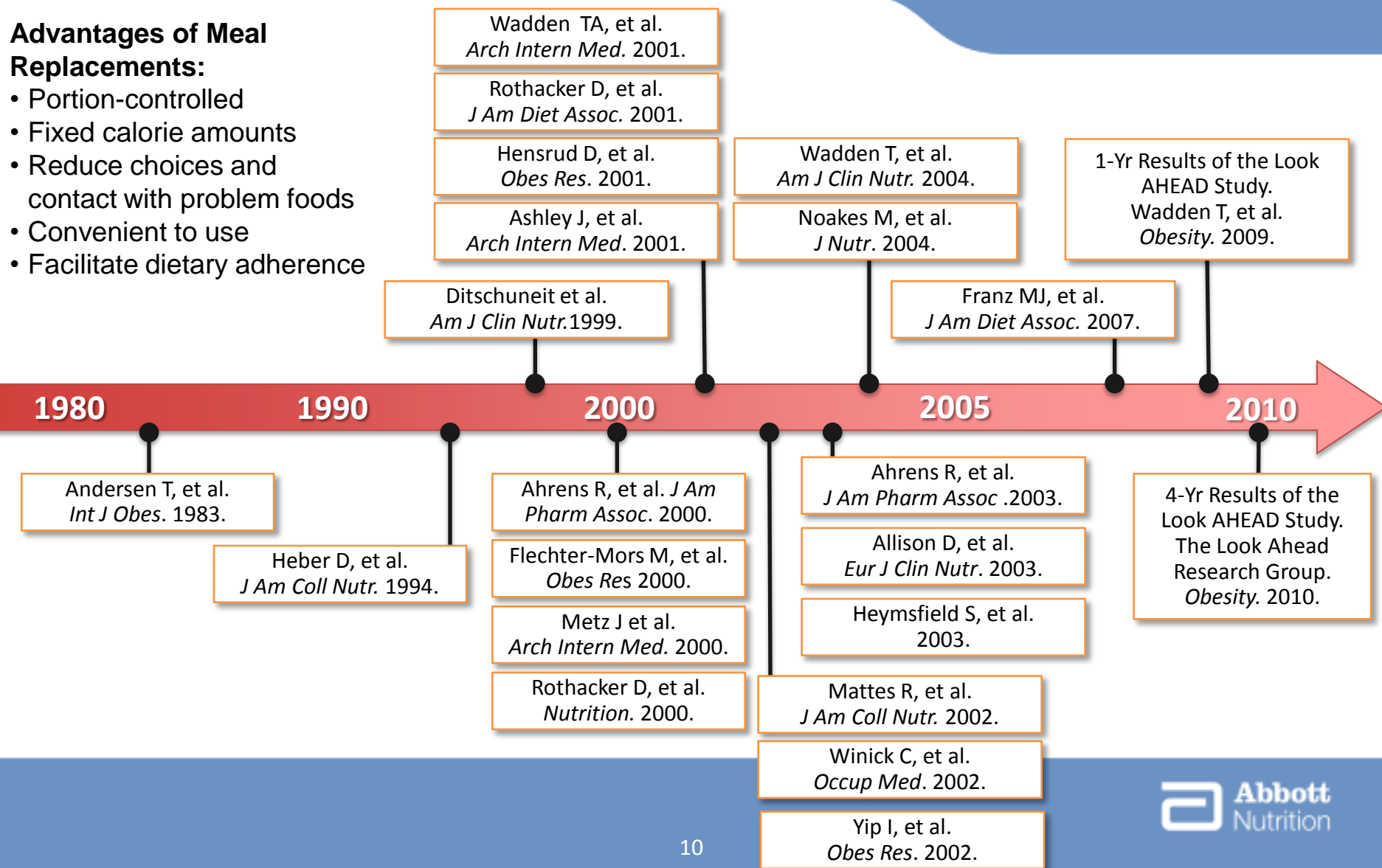
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Meal Replacements have substantial clinical support as effective tools to help in weight loss

Advantages of Meal Replacements:

- Portion-controlled
- Fixed calorie amounts
- Reduce choices and contact with problem foods
- Convenient to use
- Facilitate dietary adherence





ADA: EAL Evidence Summary

How effective (in terms of client adherence and weight loss/maintenance) are meal replacements (liquid meals, meal bars, frozen prepackaged meals)?

- 8 randomized controlled trials
 - 5 RCT report \geq wt loss in subjects using diets with 1 to 2 liquid MR
 - 1 RCT report \geq wt loss in subjects using diets with 3 or more MR
 - 2 RCT report \geq wt loss in subjects using non liquid MR (cereal, pre-packaged entrees)
- 3 CT report successful wt loss using MR in interventions
- 1 meta-analysis of 6 RCT show ~ 3 kg $>$ wt loss comparing MR diets to \downarrow calorie diets



American Dietetic Association (ADA) Evidence Analysis Library (EAL) on Meal Replacements

“Substituting one or two daily meals or snacks with meal replacements is a successful weight loss and weight maintenance strategy”

- For people who have difficulty with self selection and/or portion control
- Part of the diet component of a comprehensive weight management program

Rating: strong, Grade I



Look AHEAD Trial (Action for Health in Diabetes)

Objective

- Assess the effectiveness of weight loss in reducing cardiovascular disease events in type 2 diabetes.

Methods

- 5,145 men and women with type 2 diabetes who were 45 – 74 years of age and had a BMI $\geq 25\text{kg/m}^2$
- Randomly assigned to **Intensive Lifestyle Intervention (ILI)** or a control condition, **Diabetes Support and Education (DSE)**

ILI Group included:

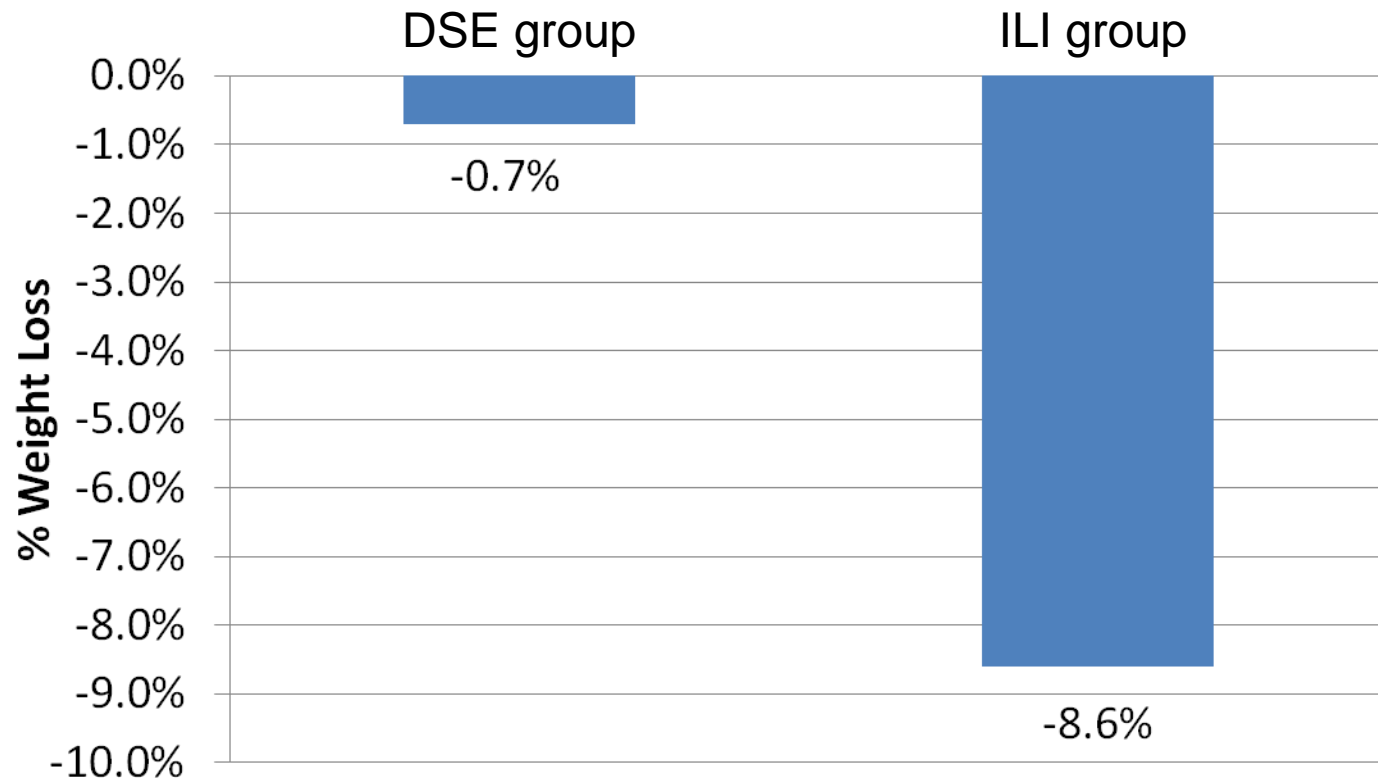
- Weight loss goal of 10% (study goal = 7%)
- Physical activity goal of 175 minutes per wk
- Ongoing group and individual sessions
- Portion-controlled diet **including liquid meal replacements**

DSE Group included:

- Invited to three group sessions each yr
- Information on behavioral strategies presented but not implemented in sessions
- Information focused on diet, physical activity, or social support



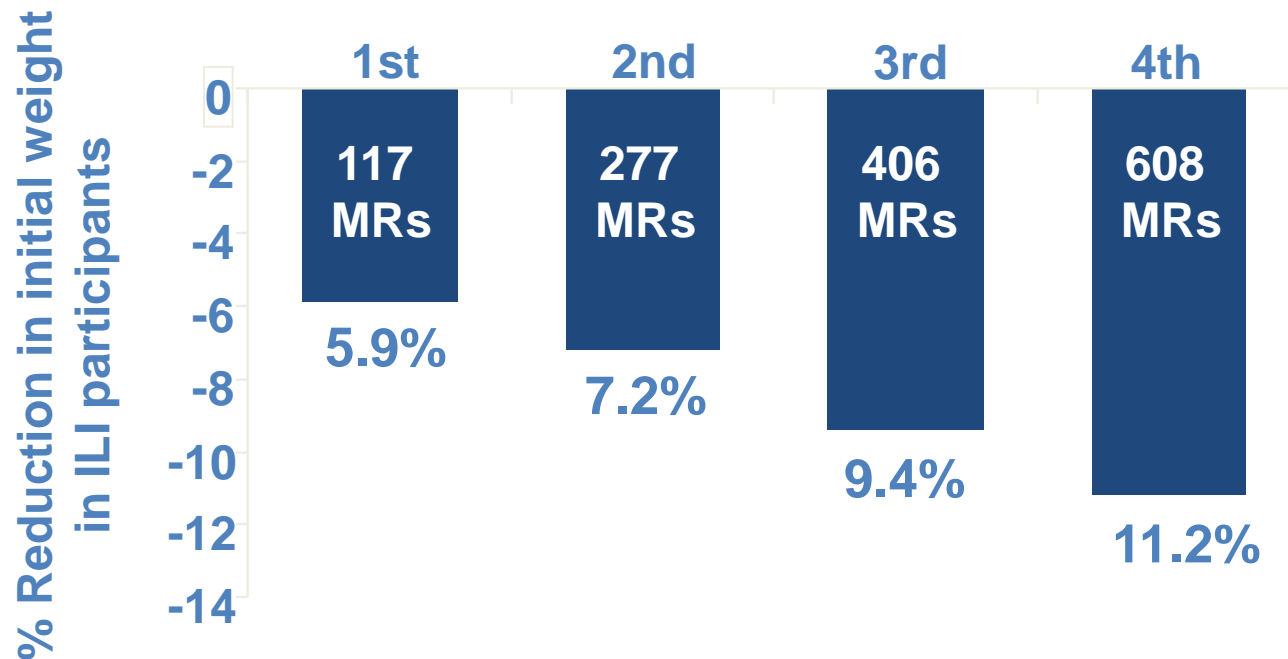
Year 1 results showed significantly more weight loss with Intensive Lifestyle Intervention (ILI)





Additionally, the participants who used more meal replacements had greater weight loss

Quartile of meal replacements (MR)





4 year follow-up: ILI group have sustained better outcomes than DSE group

Over four years, the Intensive Lifestyle Intervention group sustained greater improvements in multiple areas

Patient Outcomes	ILI Group	DSE Group
Weight Loss	-6.15%	-0.88%
Treadmill Fitness	+12.74%	+1.96%
HbA1C Levels	-0.36%	-0.09%
Systolic Blood Pressure	-5.33 mm Hg	-2.97 mm Hg
Diastolic Blood Pressure	-2.92 mm Hg	-2.48 mm Hg
HDL Cholesterol	+3.67 mg/dL	+1.97 mg/dL

Success Factors: Ongoing intensive contact (group & individual), physical activity, & **use of meal replacements**



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Diabetes-specific products demonstrate positive effects on glycemic outcomes

Based on a system review of 23 studies (N=784 patients) of oral supplements (16 studies) and tube feeding (7 studies) , with the majority comparing diabetes specific with standard formulas:

Variable	Decrease from baseline (compared to standard formulas)
PPG ^a	18.5 mg/dL (1.03 mmol/L)
Peak glucose	28.5 mg/dL (1.59 mmol/L)
AUC ^b glucose	31%–45%

ADA 2011: *“it is clear postprandial hyperglycemia, like pre-prandial hyperglycemia, contributes to elevated A1C levels...”*

^aPPG = Postprandial glucose. ^bAUC = Area under the curve.

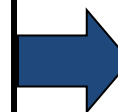
Elia M, et al. *Diabetes Care*. 2005;28:2267–2279.

DIABETES CARE, 2011;34:S11



Diabetes specific products : Formulated to help manage glycemic response

Source	Rationale	
<i>Fibersol</i>	Slowly-digested carbohydrate with indigestible materials as a fiber source	Slow-release carbohydrate system
<i>FOS</i>	Fermentable fiber, a prebiotic	Well-tolerated
<i>Glycerine</i>	Fully-digested; well-tolerated; low-glycemic index	Supports GI health Low glycemic index



**Specialized
Nutrition
to
Help
Manage
Glycemic
Response**

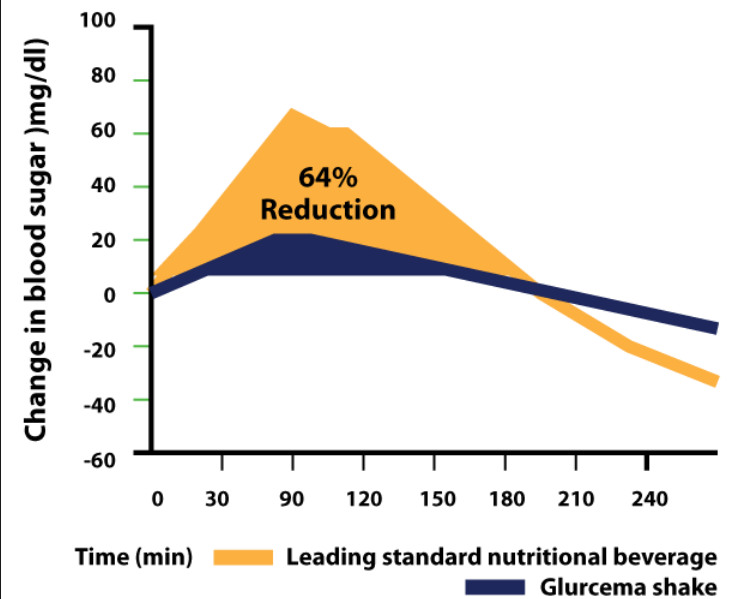


Glucerna® products are specially formulated for the unique nutritional needs of people with diabetes



Developed with *CarbSteady*™, which includes slowly digestible carbohydrates, clinically shown to minimize blood sugar spikes

Smaller peak blood sugar and lower 4-hour blood sugar response with Glucerna





Glucerna* as a part of a diabetes management plan improves weight and other metabolic parameters

	Look AHEAD ^{1,2}	Sun et al. ³	Abbott Study BJ19 ⁴	Tatti et al. ⁵	Garvey et al. ⁶
Weight loss	x	x	x	x	x
Reduced HbA1C	x	x	x	x	x
Improved lipid profile	x		x	x	x
Improved blood pressure	x	x		x	x

* Key Glucerna products were used as a meal or partial meal replacement as part of lifestyle intervention program.

1. The Look AHEAD Research Group. *Diabetes Care*. 2007;30(6):1374–1383.
Glucerna shakes were one of four products used in the Look AHEAD trial.
2. Wadden TA, et al. *Obesity*. 2009;17:713–722.
3. Sun J, et al. *Asia Pac J Clin Nutr*. 2008;17(3):514–524.
4. Abbott. Study BJ19:2002.
5. Tatti P, et al. *Mediterr J Nutr Metab*. 2010;3:65–69.
6. Garvey TW, et al. *Diabetes*. 2006;55 (suppl 1): A596.



New Glucerna® Hunger Smart™ products are designed as meal replacement options for people with diabetes

An important part of a diabetes weight loss plan



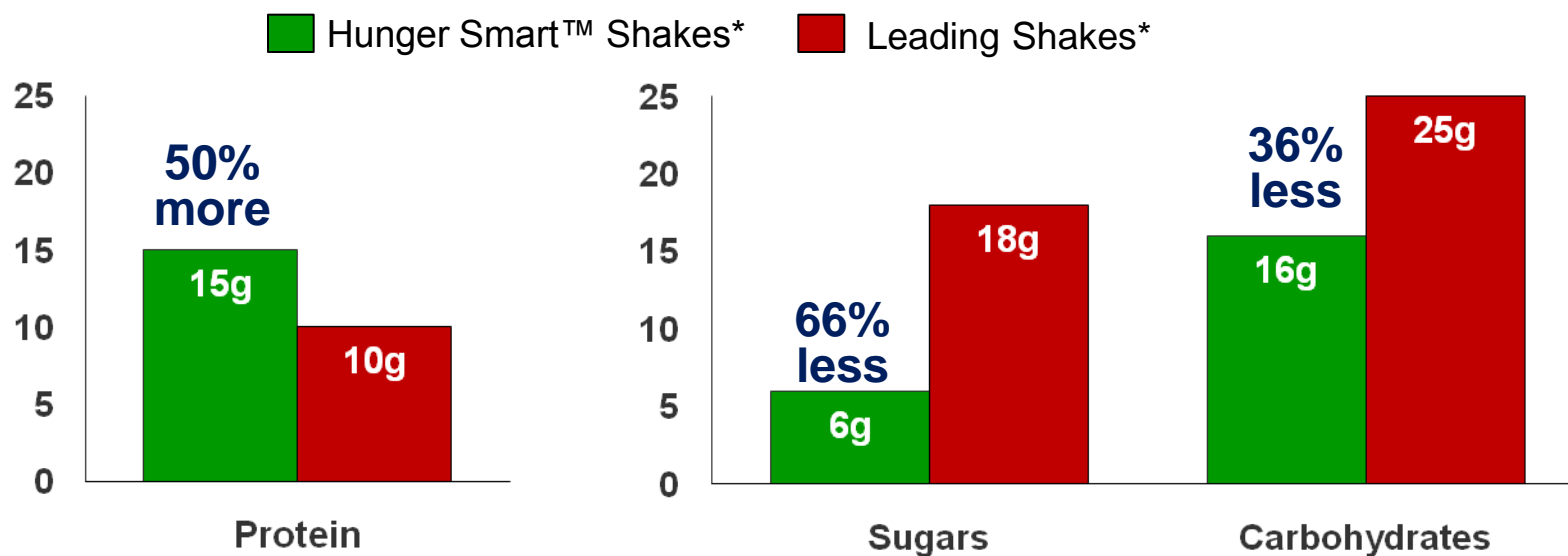
- ✓ 15g of protein to help manage hunger
- ✓ 6g of sugars
- ✓ 1 carb choice
- ✓ Low Glycemic Index
- ✓ CarbSteady to help minimize blood sugar spikes

Glucerna products are to be used under medical supervision as part of a diabetes management plan



Glucerna® Hunger Smart™ products are designed to help manage hunger, while minimizing blood sugar spikes

***Compare to the leading meal replacement shakes
used in weight loss plans***



*Based on Glucerna Hunger Smart™ Rich Chocolate Shake, Slim-Fast® Creamy Chocolate Shake, and Kellogg's™ Special K™ Milk Chocolate Protein Shake as of Nielsen 13 weeks ending 5/28/2011. Slim-Fast® Low Carb Diet Shakes were not included in the analysis. Slim-Fast® and Special K™ are not registered trademarks of Abbott Laboratories.

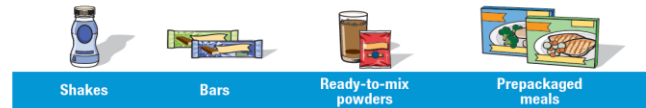
The below patient education tool is available at: www.dce.org/publications/education-handouts

Nutrition to help manage your diabetes and weight



What is a meal replacement?

Meal replacements are foods that you can eat or drink as an alternative to or as part of your normal meals. They are a quick and easy way to get the nutrition you would get from a complete meal. Here are some examples:



Why should I use a meal replacement?

Meal replacements are calorie and portion controlled. This helps you know how much food you put in your body. They take the guesswork out of meal planning for you, and they're easy to grab when you're on the go. You get vitamins, minerals, and other nutrients you need. People with diabetes should look for meal replacements that are specially made to help manage blood sugar.

Can meal replacements help me manage my weight?

Meal replacements can be a great addition to a well-balanced diet. They may help you reach and maintain your weight loss goals.

"Use of meal replacements once or twice daily to replace a usual meal can result in significant weight loss," according to the American Diabetes Association.¹

Can meal replacements help me manage my diabetes, too?

The *right* meal replacement can help you manage your weight, control your blood sugar, and provide proper nutrition...all in one serving. Read nutrition labels. Meal replacements for people with diabetes should:

- have "good" carbohydrates that break down slowly to help keep your blood sugar steady
- have less than 350 calories
- be rich in protein

How should I use meal replacements?

Meal replacements may be used in place of 1 or 2 meals, or instead of a high-fat, high-sugar snack when trying to manage weight. But they shouldn't be used as your only nutrition source throughout the day. They can be used with other foods such as fruits, vegetables, whole-grain crackers, nuts, fat-free milk, and light yogurt.

How should I use meal replacements? (continued)

Sample meal plan

Here's an example of a nutritious meal plan that includes meal replacements (approximately 1,500 calories):

Breakfast

Shake
1/2 cup blueberries



Snack #1

1 small apple
1 Tbsp peanut butter



Lunch

Roasted chicken sandwich:
2 oz chicken breast, roasted
2 slices whole-grain bread
1 Tbsp mustard
Small side salad:
1/2 cup iceberg lettuce,
1/2 cup cucumber,
1/2 cup carrots,
2 Tbsp fat-free salad dressing



Snack #2

1/4 cup almonds
6 oz light yogurt



Dinner

Salmon over rice:
2 oz salmon fillet, grilled
2/3 cup long-grain brown rice, cooked
1/2 cup steamed broccoli
1 1/4 cup whole strawberries



Snack #3

Bar



Use meal replacements:

- **Instead of skipping breakfast.** Studies show that eating breakfast can help you manage weight, control hunger, and steady blood sugar levels. So, grab a shake or bar on your way out the door
- **With lunch or dinner.** For example, you might have a bar or shake plus an apple for lunch
- **Rather than snacking from the vending machine.** Carry a shake or bar to eat when you get hungry between meals

Weight loss tips



1. Don't skip meals
2. Use a small plate to help limit your portions
3. Replace 1–2 meals each day with calorie- and portion-controlled meal replacements
4. Track what you eat in a journal or by using a smartphone application
5. Slowly add 30 minutes of moderate exercise (like walking) into each day's activities*
6. Set reasonable weight loss goals (for example, 1–2 lb per week)

Remember that everyone's needs are different. Talk to your registered dietitian or other healthcare provider to learn the best way to make diabetes-appropriate meal replacements part of your diet.

Meal replacements should be used as part of a diabetes management plan that includes good nutrition and physical activity.
*Check with your doctor before starting an exercise program.

Reference: 1. American Diabetes Association. Nutrition Principles and Recommendations in Diabetes. Available at: http://care.diabetesjournals.org/content/62/7/suppl_1/s36.full. Accessed January 20, 2011.

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Developed in collaboration with:
Diabetes Care and Education
American Diabetes Association
Abbott Nutrition, makers of Glucerna®

Abbott
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Summary

- Modest weight loss is associated with clinical improvements for diabetes and pre-diabetes
- Utilization of meal planning tools, such as meal replacements, can help assist with weight loss
- Diabetes specific meal replacement have been clinically demonstrated to manage glucose levels and support weight loss
- New Glucerna® Hunger Smart™ was designed as a meal replacement option for people with diabetes to be used as part of a weight loss plan



Thank You!
Questions?



Win a registration to FNCE 2012

- Name, RD#, Practice setting
- Case study
 - How you are using Glucerna to support weight management or
 - Future changes that you will make to incorporate Glucerna as a tool for weight management
- Email to Linda Flanagan Vahl:
LFLANAG@eatright.org