

# Nutrition Therapy Recommendations for People with Diabetes

**National Diabetes Education Program  
Quarterly Webinar Series**  
Thursday, March 20, 2014  
2-3 PM ET



A program of the National Institutes of Health and the Centers for Disease Control and Prevention





# Webinar Logistics

- All lines are muted
- Two ways to ask questions during Q&A period:
  1. Type your question into the question section and we will read your question aloud.
  2. Click the “raise hand” icon and we will call your name and unmute your line allowing you to ask your question.



**National Diabetes Education Program**

A program of the National Institutes of Health and the Centers for Disease Control and Prevention

# Presenters

**Marion J. Franz, MS, RDN, CDE**

Nutrition and Health Consultant with Nutrition Concepts by Franz, Inc.

**Joanne Gallivan, MS, RD**

Director, National Diabetes Education Program  
National Institutes of Health

# Nutrition Therapy Recommendations for People with Diabetes

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# Webinar Goals

- Review highlights of the American Diabetes Association (ADA) 2013 Nutrition Therapy Recommendations
- Provide evidence for the effectiveness of diabetes nutrition therapy
- Review the role of weight loss interventions in adults with type 2 diabetes
- Summarize ADA 2013 nutrient recommendations
- “Take Home” message



## **Polling Question: Which is an accurate statement for weight loss (WL) in adults with or at risk of T2DM?**

1. WL improves glucose throughout the progression of T2DM.
2. WL is most effective in prediabetes or early after diagnosis.
3. Low carbohydrate diets are preferred for weight loss.
4. Low fat diets are essential for weight loss.



## **Polling Question: Which is the most accurate statement regarding carbohydrate (CHO) intake for persons with diabetes?**

1. Fiber intake improves glycemic control.
2. High GI foods are absorbed into the blood stream rapidly.
3. Total kcal more important than total CHO for glucose control.
4. Adding protein to CHO snack slows absorption of CHO.



# Is Diabetes Nutrition Therapy Effective?

- Prediabetes outcomes
  - Nutrition therapy along with physical activity ↓ risk of type 2 diabetes by 58%; maintained up to 14 yrs
- Diabetes outcomes
  - Nutrition therapy provided by RDs: ave. ↓ in A1C 1% to 2% (ranging from 0.5 to 2.9%) depending on type, duration, and level of control of db
  - LDL-C ↓ by 15-25 mg/dl or by 7-22%
  - SBP and DBP ↓ on average by ~5 mmHg
  - Outcomes known by 6 weeks to 3 months

Knowler et al. *Lancet* 2009;374:1677; Evert AB, et al. *Diabetes Care* 2013;36:3821; Acad Nutr Diet. EAL.[www.andevidencelibrary.com](http://www.andevidencelibrary.com), Pastors, Franz. *ADA Guide to Nutrition Therapy for Diabetes*. 2012;1-18, Appel et al. *JAMA* 2004;289:2083.



## Type 2 Diabetes and Nutrition Therapy: Examples

- Findings from RCTs, observational studies, systematic and Cochrane reviews demonstrate effectiveness of nutrition therapy; examples:
  - UKPDS (United Kingdom Prospective Diabetes Study): Newly diagnosed; A1C 9%; 3 mo, A1C ↓ 2%
  - Early ACTID (Early Activity in Diabetes): Newly diagnosed; A1C 6.7%; 6 mo maintained to 12 mo, A1C ↓ 0.4% ( $P < 0.001$ ), even with use of fewer diabetes drugs
  - LOADD Study (Lifestyle Over and Above Drugs in Diabetes): Ave duration of db: ~9 yrs; hyperglycemic despite optimized drug therapy; A1C ↓ 0.5% vs control ( $P = 0.007$ ); comparable to adding new drug; cost-effective
- Due to progressive nature of T2DM over time pharmacotherapy is needed but nutrition therapy continues to be essential



## Type 1 Diabetes and Nutrition Therapy: Examples

- FIIT (Flexible Intensive Insulin Therapy) Using Insulin-to CHO Ratios
  - Dose Adjusted for Normal Eating (DAFNE): A1C ↓ 1% with no increase in severe hypoglycemia and quality of life improved; 44-mo follow-up: continued improvement in A1C and quality of life
  - Training programs in Germany (3-yr) and Australia (1-yr): improvements in A1C without increasing risk of hypoglycemia
- For individuals on MDI or insulin pumps, insulin doses adjusted based on planned carbohydrate intake
- For individuals using fixed daily insulin doses, CHO intake should be consistent (time and amount)



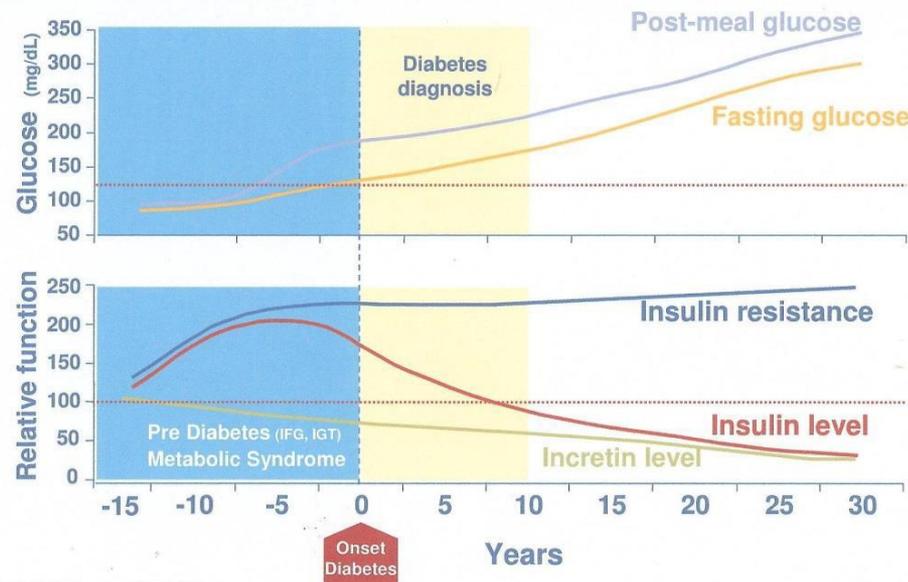
## What Nutrition Therapy Interventions Are Effective?

- A variety of nutrition therapy interventions, such as reduced energy/fat intake, carbohydrate counting, simplified meal plans, healthy food choices, individualized meal planning strategies, insulin-to-carbohydrate ratios, physical activity, and behavioral strategies
  - Type 2 db: reduced energy intake
  - Type 1 db: matching insulin to CHO intake
- A number of initial individual or group sessions and follow-up encounters were implemented

# Type 2 Diabetes: A Progressive Disease

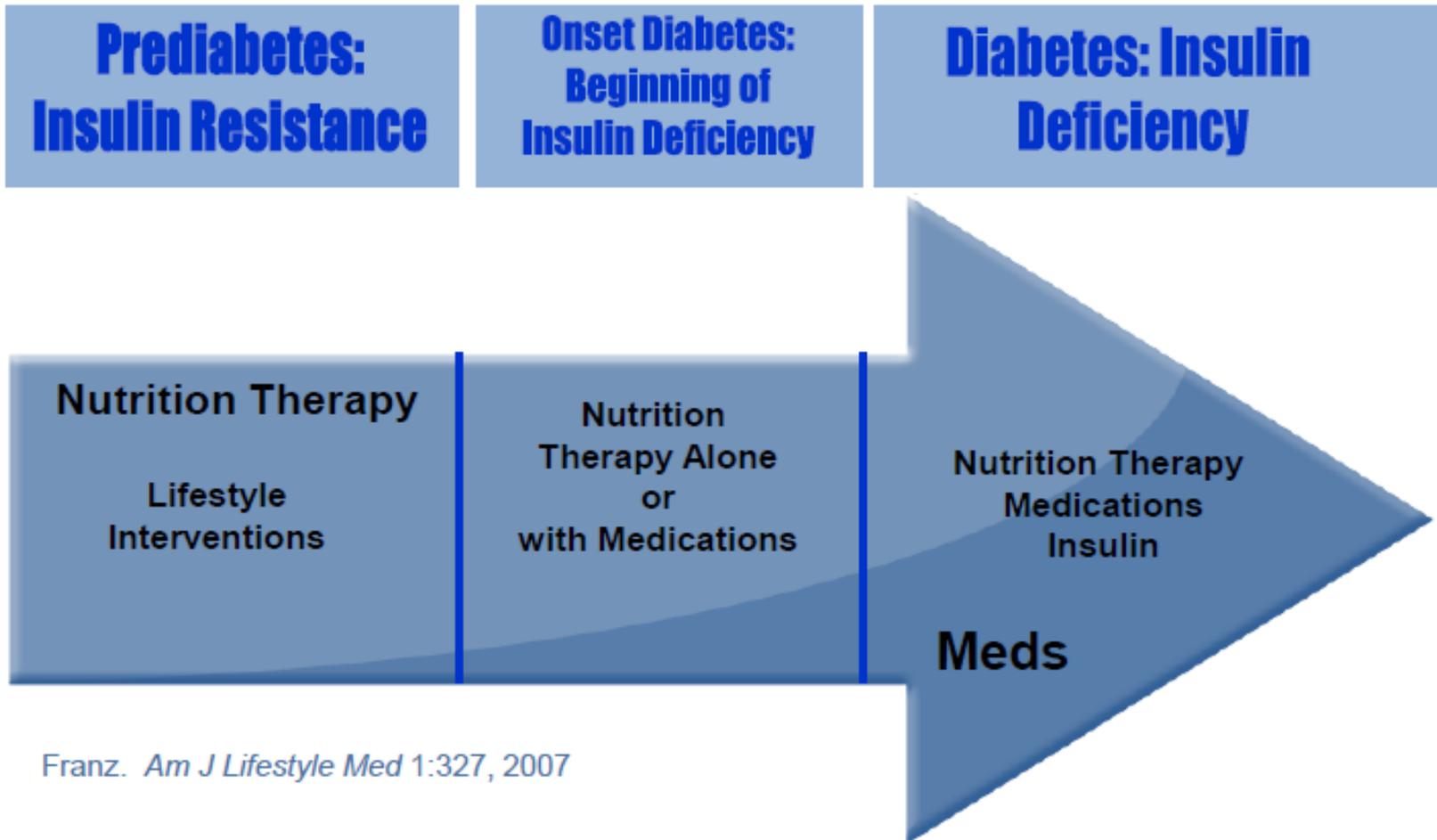
BG remains normal until insulin deficiency

## Natural History of Type 2 Diabetes





# Type 2 Diabetes: A Progressive Disease





# The Dilemma of Weight Loss in Diabetes

- “Diet” doesn’t fail—the beta cells of the pancreas fail
- Insulin resistance
  - Modest amounts of weight loss (and physical activity) can prevent or delay type 2 diabetes
  - Weight loss may improve risk factors
- Insulin deficiency
  - Focus is on nutrition strategies for normalization of blood glucose levels, lipids and blood pressure
  - Results on glucose will be known by 6 weeks to 3 months

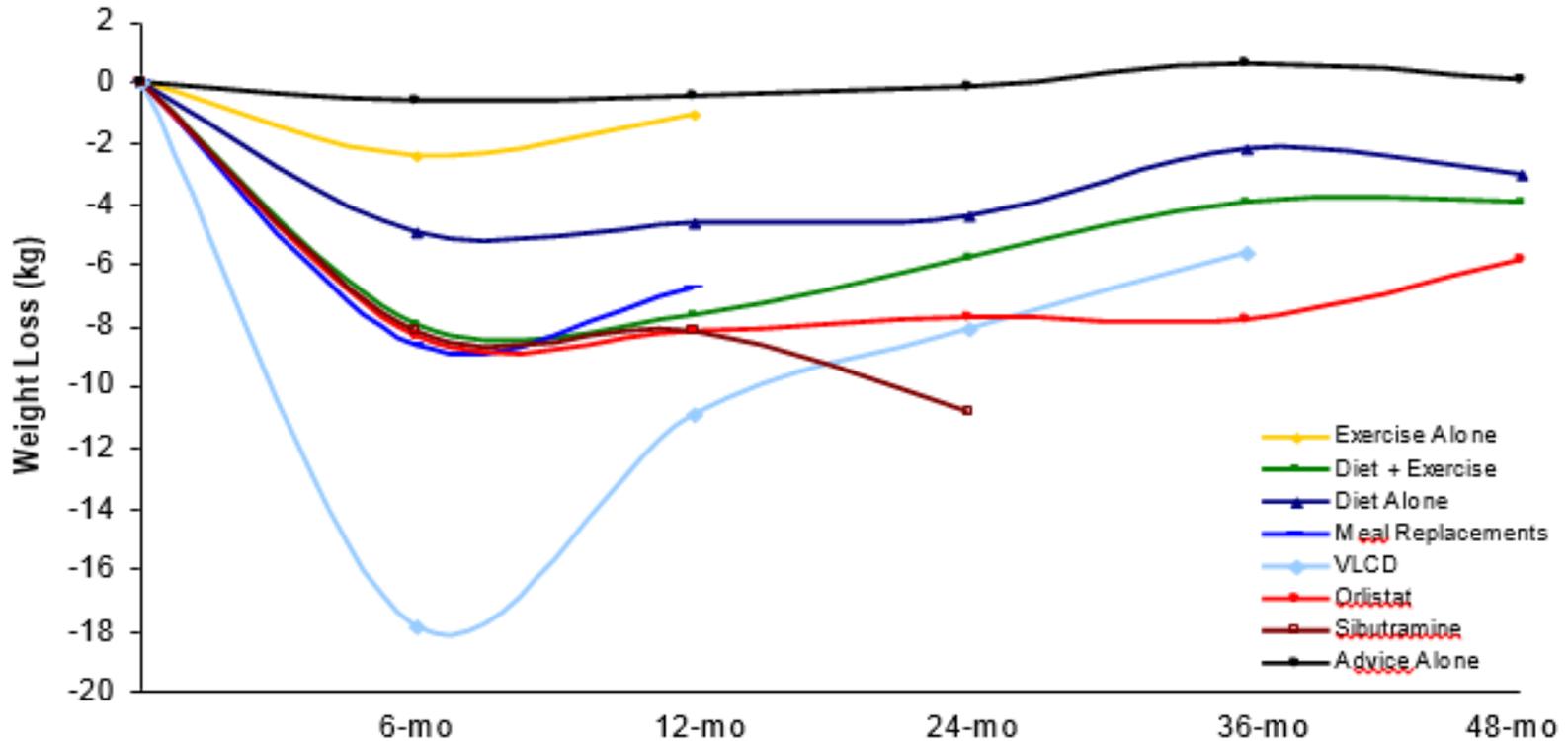


## What is Known About Weight Management?

- At ~6 months individuals can lose 5% to 10% of their starting weight
- Regardless of the intervention, plateaus and regain of weight loss are expected; compensatory mechanisms protect against weight loss
- If treatment is discontinued, weight gain occurs
- With support, modest weight loss can be maintained

# Average Weight Loss Per Subject Completing a Minimum 1-Yr Intervention

80 studies; 26,455 subjects; 18,199 completers (69%)





# Why Is Weight Loss Difficult?

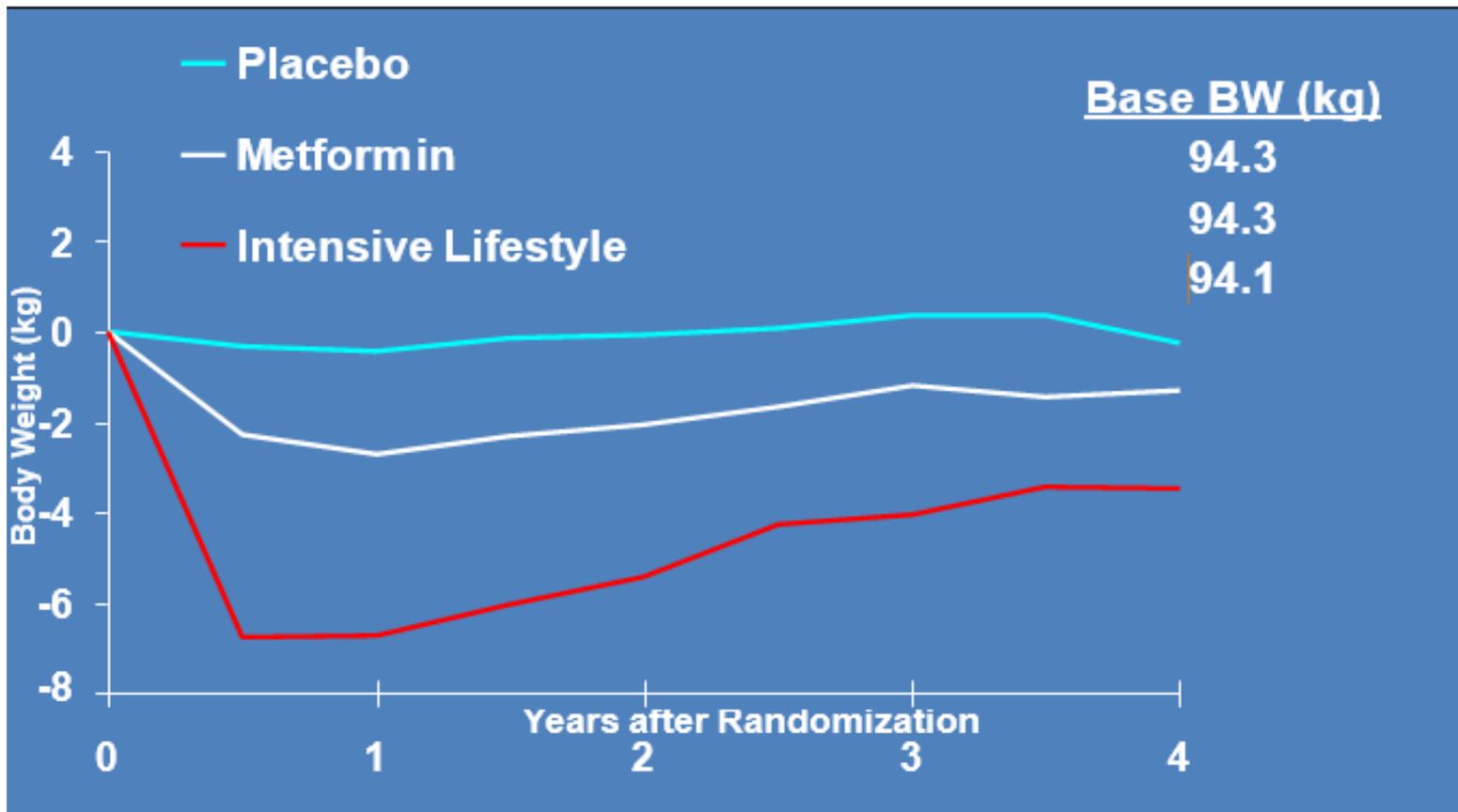
- Genetics - ~50% of variance genetics and 50% environment
- Weight tightly regulated by neural, hormonal, and metabolic factors
  - Hormonal adaptations (↓ leptin, peptide YY, cholecystikinin, insulin, and ↑ ghrelin, gastric inhibitory polypeptide, pancreatic polypeptide) that encourage weight gain after diet-induced weight loss remain 1-yr after initial weight reduction
  - Weight loss results in adaptive thermogenesis (↓ resting metabolic rate) up to 1-yr



# What Are the Benefits From Modest Weight Loss (~5% of Initial Weight)?

- Prevention or delay of type 2 diabetes
- Decreases in systolic and diastolic blood pressure in dose-dependent fashion
- Decreases in circulating inflammatory markers (C-reactive protein and cytokines)
- Potential improvement in triglyceride levels, total and LDL cholesterol

# Change in Body Weight and Prevention/Delay of Type 2 Diabetes

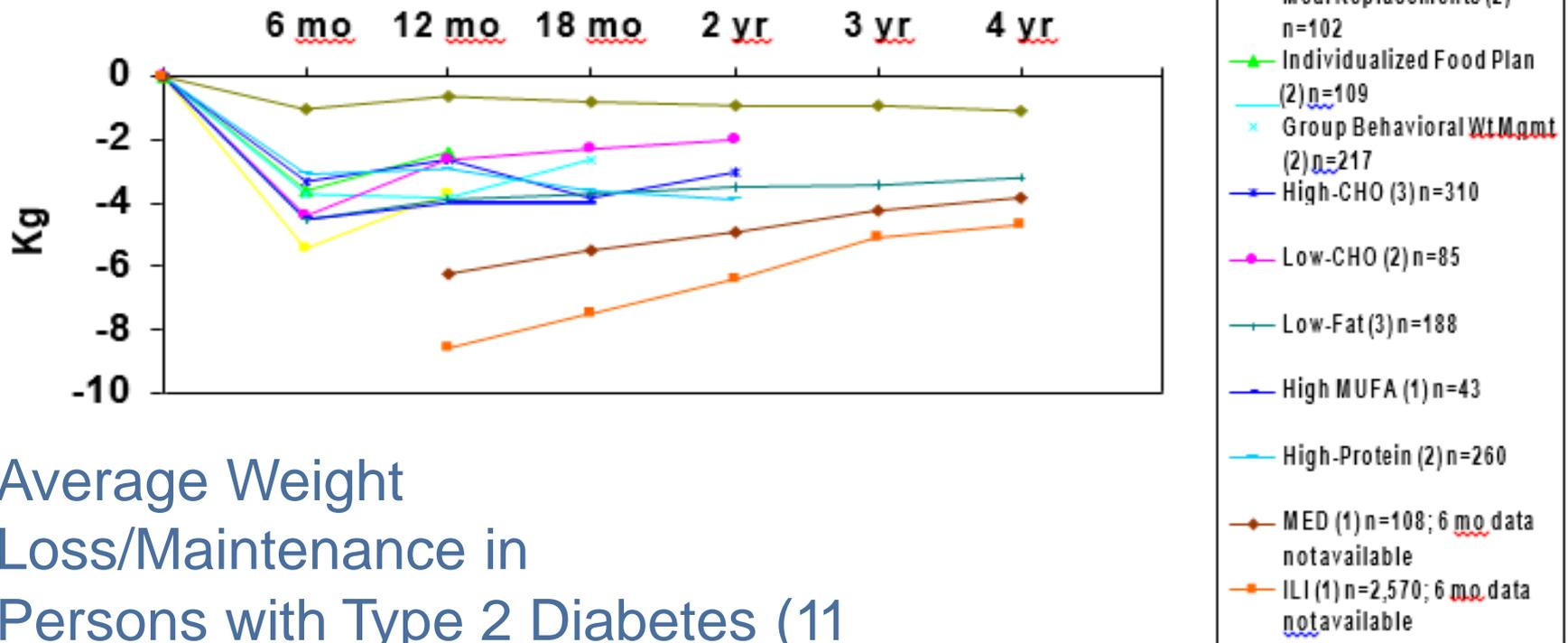




## Weight Loss Intervention Studies in Type 2 Db

- Systematic Review: 1-yr study duration; 70% completion rate; 2000 to 2013
- 11 studies (5 >1-yr): 8 compared weight loss interventions (WLI) and 3 compared WLI to usual care or control (19 WLI groups)
- Weight, A1C, lipid, and BP effectiveness
- Weight losses 1.9-8.4 kg at 1-yr
  - 17 interventions -1.9 to 4.8 kg
  - Mediterranean-style -6.2 kg; ILI -8.4 kg
  - Low carbohydrate -1.9 kg

# Weight Change Outcomes





## Systematic Review cont.

- 8 WLI improved A1C at 1-yr
  - Meal replacements, behavioral at 12 mo but not at 18 mo; high CHO, high protein, low-fat, MED, ILI
- – 3 with PA: MED ↓ 1.2%; ILI ↓ 0.6%; low-fat ↓ 0.6%
- 11 WLI reported NS changes in A1C at 1-yr
  - Individualized food plan; soy-meal replacement; high-MUFA; high-CHO; low-fat; high-protein
- Majority NS changes in lipids (10 ↑ HDL)
- 7 WLI improved BP; 7 NS changes in BP



## Systematic Review cont.

- 5 studies compared macronutrients (all reported similar weight changes)
  - High MUFA vs high CHO (-4.0 vs -3.8 kg)
  - Low CHO vs low fat (2) (-3.1 vs -3.1 kg; -1.9 vs -3.9 kg)
  - High protein vs high CHO (2) (-3.2 vs 2.4 kg; 2.2 vs 2.2 kg)
- 8 WLI reported NS changes in A1C from baseline at 1-yr; 2 (1 high-protein, 1 high-CHO) reported improvement (-0.2%)



## Why doesn't weight loss always lead to improved glycemia?

- Usual weight loss therapies do not lead to adequate weight loss

OR

- Persons are primarily insulin deficient—need medications to be combined with nutrition therapy

OR

- Energy restriction leads to improved glycemia, not weight loss per se



# Carbohydrate

- There is no ideal percentage of calories from carbohydrate, protein, and fat for all persons with diabetes; all 3 require insulin for metabolism
- Total energy intake is more important than the source of the energy
- Monitoring carbohydrate intake, whether by carbohydrate counting or experience-based estimation, remains a key strategy in achieving glycemic control



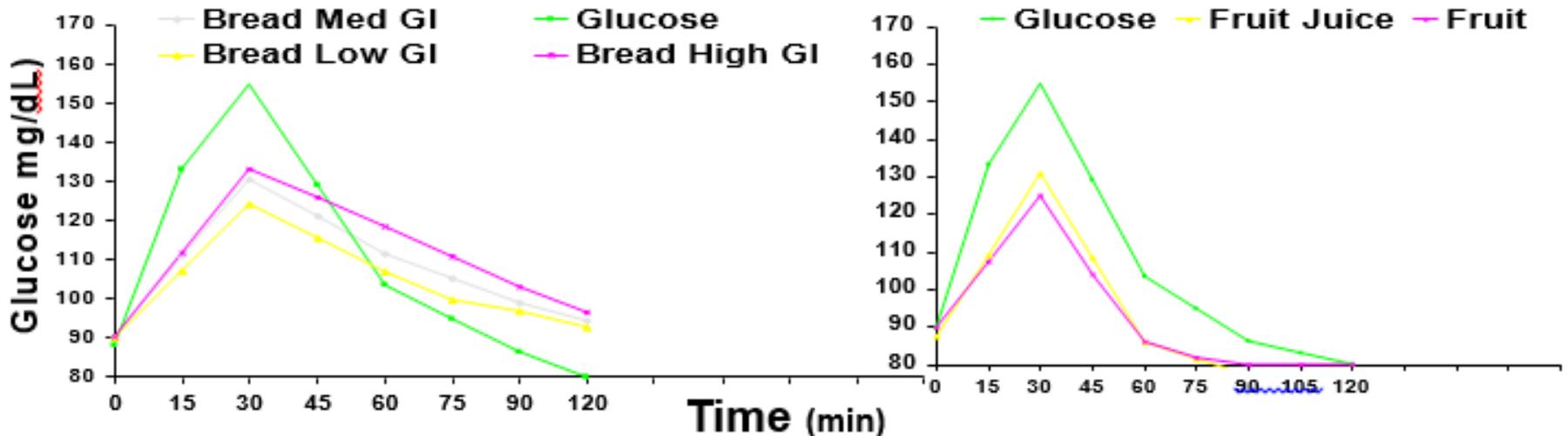
# Carbohydrate Intake

- Most individuals with diabetes do not eat a low- or high-CHO diet, but rather a moderate intake of CHO
  - CHO: ~45% of total kcal
  - Protein: ~16-18%
  - Fat: ~35-40%
- For the majority of individuals with diabetes it appears difficult to eat a high CHO diet
  - In the UKPDS, despite education to eat 50% to 55% of kcal from CHO, average intake was 43%



# Glycemic Index: The GI Does Not Measure How Rapidly BG Increases!

The GI is the relative area under the postprandial glucose curve (AUC) comparing 50 g of digestible carbohydrate from a test food to 50 g of glucose



“No statistical difference in the glucose response curve from different foods...Low GI foods do not produce a slower rise in BG nor do they produce an extended, sustained glucose response.”



## GI Summary

- Two 1-year RCT of low GI diets reported to differences in A1C
  - Canadian Trial of Carbohydrates in Diabetes: compared high-GI/low GI; low-CHO/high MUFA; no significant in A1C, lipids or body weight
  - Low GI vs. ADA diet: similar reductions in A1C at 6 and 12 mo
- ADA Macronutrient Systematic Review
  - In general, there is little difference in glycemic control and CVD risk factors between low GI and high GI or other diets; slight improvement in glycemia from lower GI diets confounded by higher fiber intake



## Carbohydrate: What's Important?

- Although all CHOs can be eaten, for good health, CHOs from vegetables, fruits, whole grain, legumes, and dairy products take priority over CHO foods that contain added fat, sugars, or sodium
- Limit or avoid intake of sugar sweetened beverages (from any caloric sweetener including high fructose corn syrup and sucrose) to reduce risk of weight gain and worsening of CVD risk
- Macronutrient proportions should be individualized and adjusted to meet metabolic goals and individual preferences of the person with diabetes



# Protein

- In persons with type 2 diabetes, ingested protein does not increase plasma glucose levels but does increase insulin response
  - Protein should not be used to treat hypoglycemia or to prevent hypoglycemia
- In persons with normal renal function, usual protein intake (15-20%) does not need to be changed
- In persons with DKD (either micro- or macroalbuminuria), reducing protein is not recommended as this does not alter the course of the GFR decline



## Protein Summary

- Protein does not need to be added to snacks or meals
  - Does not slow or change carbohydrate meal or snack glucose response
- Protein is not helpful in the prevention or treatment of hypoglycemia
- For persons with DKD (micro- or macroalbuminuria) reducing protein below usual intake is not recommended because it does not alter glycemic, CVD, or the course of GFR decline



## Fats and Diabetes

- In animal and observational studies, higher intakes of total dietary fat, regardless of the fat type, produce greater insulin resistance
- In clinical trials saturated and *trans* fats shown to cause insulin resistance, whereas mono- and polyunsaturated and omega-3 fatty acids do not have an adverse effect
- Evidence inconclusive for ideal amount of total fat; fat quality more important than quantity



ouheranta, 2000;



di, 2000; Denl



0; Jejoy, 2002; m





# Individualization Is Essential

- Individuals with diabetes eat foods, not single nutrients
- *Healthy eating or healthy eating patterns* emphasizing a variety of nutrient-dense foods in appropriate portion sizes continues to be the first goal of diabetes nutrition therapy
- Must address individual nutrition needs based on personal and cultural preferences and the individual's willingness and ability to make behavior changes

# What's the best nutrition therapy intervention for diabetes?



## In an “Ideal” World

- People with type 2 diabetes:
  - Lose 5% to 10% of baseline weight
  - Eat a nutrient dense eating pattern in appropriate portion sizes
  - Participate in 150 min/wk of regular physical activity
- People with type 1 diabetes:
  - Count carbohydrates
  - Adjust insulin based on insulin-to-CHO ratios
  - Use correction factors



## In the “Real” World

- Facilitate behavior changes that individuals are willing and able to make based on proven lifestyle interventions
- A variety of nutrition therapy interventions and eating patterns can be implemented
- But lifestyle interventions for diabetes are effective!

# Diabetes and Nutrition Resources

**Joanne Gallivan, MS, RD**

Director, National Diabetes Education Program

National Institute of Diabetes and Digestive and Kidney Diseases

National Institutes of Health



# NDEP Resources

## Diabetes HealthSense

Resources for living well

[HealthSense Home](#) [Make a Plan](#) [Articles](#) [Submit a Resource](#) [About HealthSense](#)

Diabetes HealthSense  [Go](#)

**Diabetes HealthSense** provides easy access to resources to help you live well and meet your goals—whether you have diabetes or are at risk for the disease.

*Live well. Eat healthy. Be active. It's not easy, but it's worth it.*

**Diabetes Travel Tips**



Diabetes doesn't keep David from traveling. But he makes sure he plans ahead when he takes a trip. Learn about some of David's tips for traveling with diabetes.

Watch more videos from NDEP [↗](#)

### Selected Resources

Need help getting started, or feeling overwhelmed? Take a look at some of the resources below to help you get on the right track.

#### Help Me

Select one:

- [Eat healthy](#)
- [Be active](#)
- [Manage my weight](#)
- [Cope with stress and emotions](#)
- [Set goals](#)
- [Stop smoking](#)
- [Prevent diabetes-related health problems](#)
- [Check my blood glucose](#)
- [Take my medicine](#)

#### I Am A

#### Age

#### Type of Resource

#### Language



## Diabetes HealthSense

Resources for living well

- [HealthSense Home](#)
- [Make a Plan](#)
- [Articles](#)
- [Submit a Resource](#)
- [About HealthSense](#)

### Help Me

#### I Am A

Select one:

- Person with diabetes
- Person with prediabetes
- Person at risk for diabetes
- Family member, friend, or caregiver
- Health care professional
- Teacher or school health professional +
- Community health worker
- Community organization

#### Age

#### Type of Resource

#### Language

Diabetes HealthSense

Search HealthSense by title or keyword  [Go](#)

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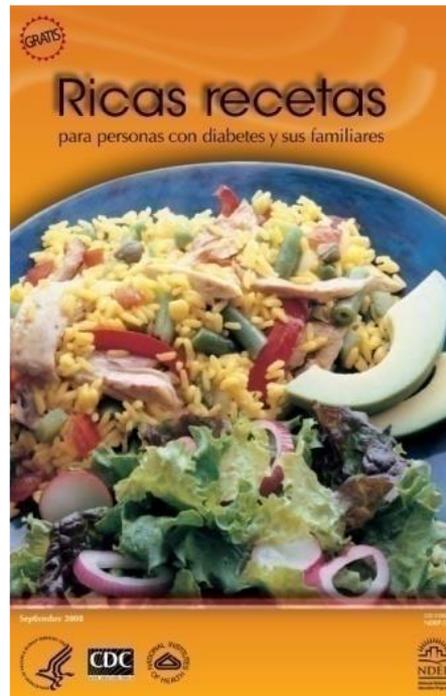
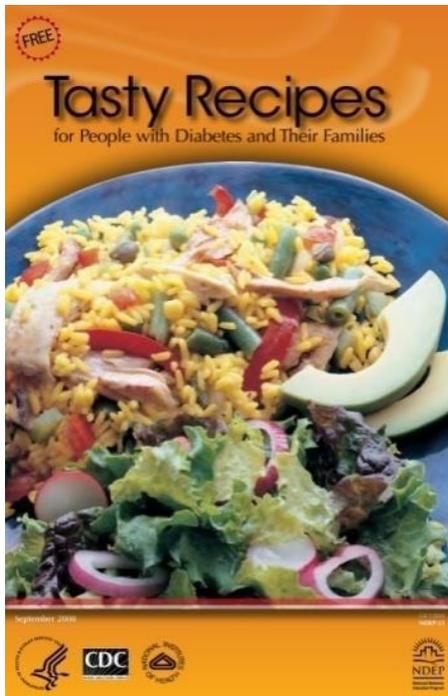
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National Diabetes Education Program

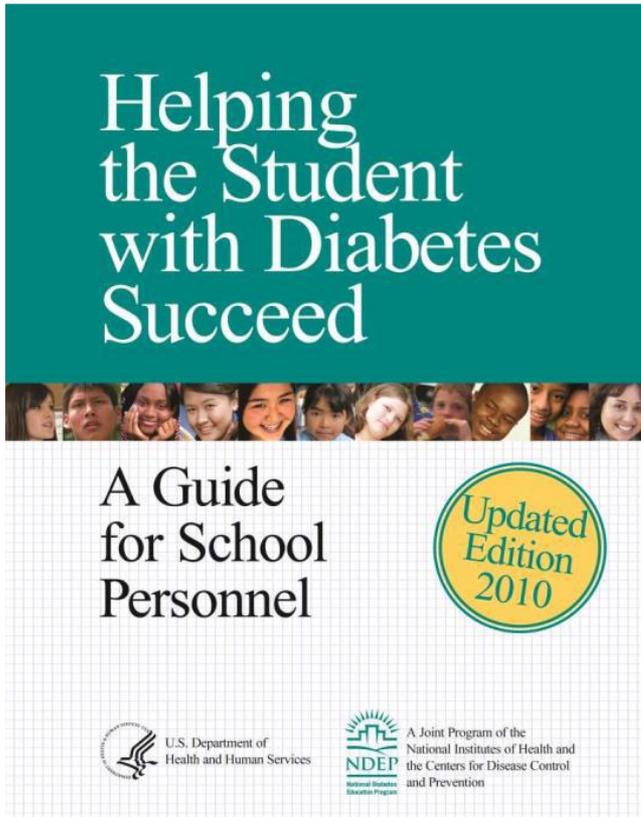
A program of the National Institutes of Health and the Centers for Disease Control and Prevention

# NDEP Resources



Tasty Recipes for People with Diabetes and Their Families For more information, call 1-800-CDC-INFO or visit [www.cdc.gov/info](http://www.cdc.gov/info)

# NDEP Resources for Schools and Youth



**Helping the Student with Diabetes Succeed**

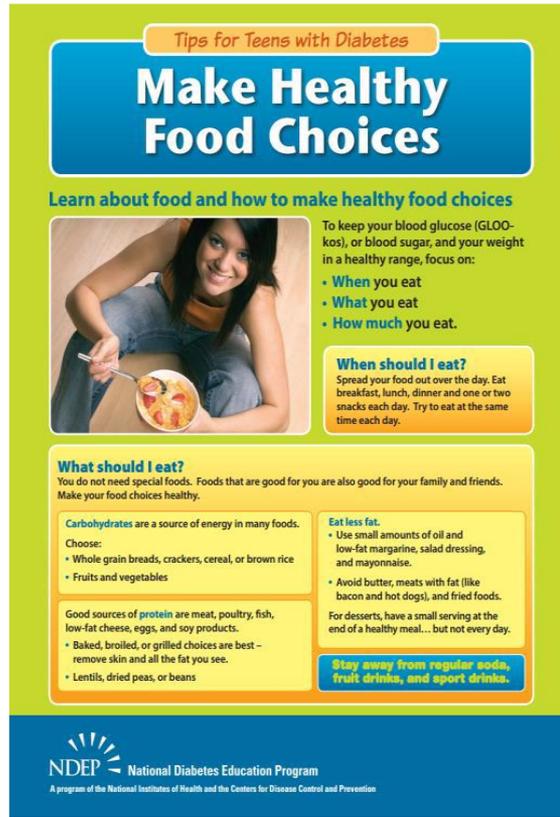
A Guide for School Personnel

Updated Edition 2010

U.S. Department of Health and Human Services

A Joint Program of the National Institutes of Health and the Centers for Disease Control and Prevention

Helping the Student with Diabetes Succeed: A Guide for School Personnel



Tips for Teens with Diabetes

## Make Healthy Food Choices

Learn about food and how to make healthy food choices



To keep your blood glucose (GLOO-kos), or blood sugar, and your weight in a healthy range, focus on:

- When you eat
- What you eat
- How much you eat.

**When should I eat?**  
Spread your food out over the day. Eat breakfast, lunch, dinner and one or two snacks each day. Try to eat at the same time each day.

**What should I eat?**  
You do not need special foods. Foods that are good for you are also good for your family and friends. Make your food choices healthy.

**Carbohydrates** are a source of energy in many foods. Choose:

- Whole grain breads, crackers, cereal, or brown rice
- Fruits and vegetables

Good sources of **protein** are meat, poultry, fish, low-fat cheese, eggs, and soy products.

- Baked, broiled, or grilled choices are best – remove skin and all the fat you see.
- Lentils, dried peas, or beans

**Est less fat:**

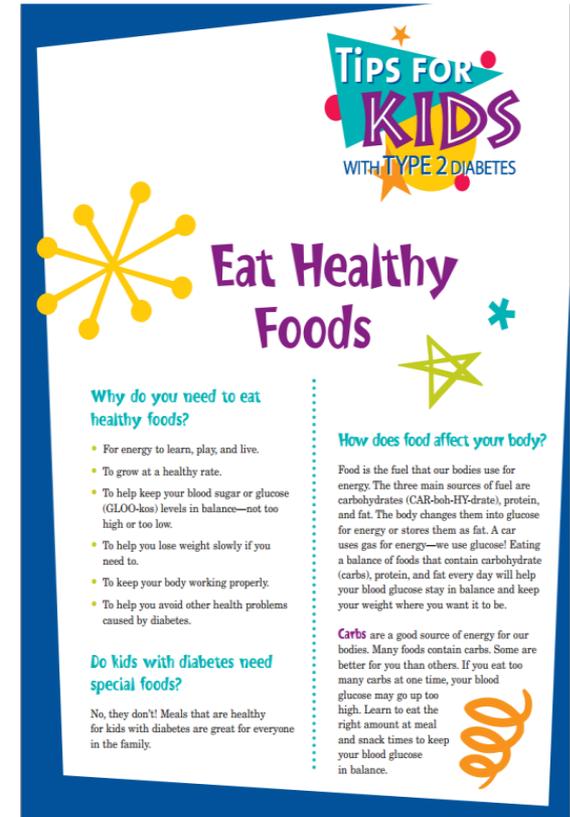
- Use small amounts of oil and low-fat margarine, salad dressing, and mayonnaise.
- Avoid butter, meats with fat (like bacon and hot dogs), and fried foods.

For desserts, have a small serving at the end of a healthy meal... but not every day.

**Stay away from regular soda, fruit drinks, and sport drinks.**

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A program of the National Institutes of Health and the Centers for Disease Control and Prevention

Tips for Teens with Diabetes: Make Healthy Food Choices



TIPS FOR KIDS WITH TYPE 2 DIABETES

## Eat Healthy Foods

**Why do you need to eat healthy foods?**

- For energy to learn, play, and live.
- To grow at a healthy rate.
- To help keep your blood sugar or glucose (GLOO-kos) levels in balance—not too high or too low.
- To help you lose weight slowly if you need to.
- To keep your body working properly.
- To help you avoid other health problems caused by diabetes.

**How does food affect your body?**

Food is the fuel that our bodies use for energy. The three main sources of fuel are carbohydrates (CAR-boh-HY-drate), protein, and fat. The body changes them into glucose for energy or stores them as fat. A car uses gas for energy—we use glucose! Eating a balance of foods that contain carbohydrate (carbs), protein, and fat every day will help your blood glucose stay in balance and keep your weight where you want it to be.

**Carbs** are a good source of energy for our bodies. Many foods contain carbs. Some are better for you than others. If you eat too many carbs at one time, your blood glucose may go up too high. Learn to eat the right amount at meal and snack times to keep your blood glucose in balance.

**Do kids with diabetes need special foods?**

No, they don't! Meals that are healthy for kids with diabetes are great for everyone in the family.

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Tips for Kids: Eat Healthy Foods

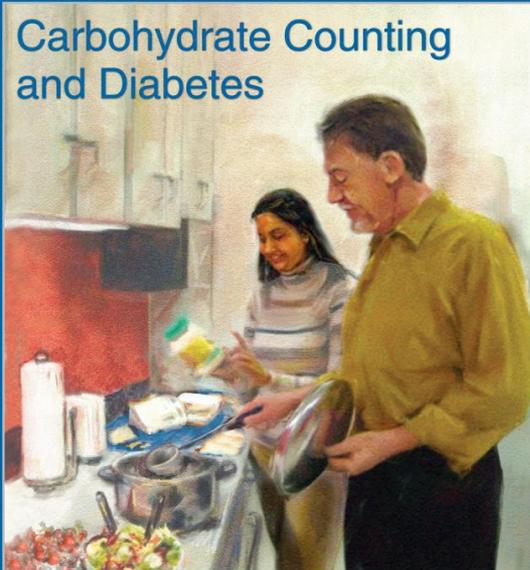


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# National Diabetes Information Clearinghouse (NDIC)

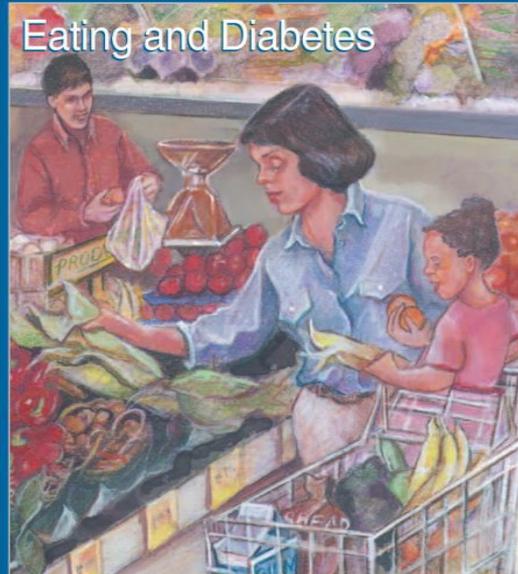
What I need to know about  
Carbohydrate Counting  
and Diabetes



National Institute of  
Diabetes and Digestive  
and Kidney Diseases

National Diabetes Information  
Clearinghouse

What I need to know about  
Eating and Diabetes



U.S. Department of  
Health and Human  
Services

NATIONAL INSTITUTES OF HEALTH

NIDDK NATIONAL INSTITUTE OF  
DIABETES AND DIGESTIVE  
AND KIDNEY DISEASES

National Diabetes Information Clearinghouse

[www.diabetes.niddk.nih.gov](http://www.diabetes.niddk.nih.gov)

# Resources from the National Kidney Disease Education Program

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**Health Communication Programs**

National Diabetes Education Program

National Kidney Disease Education Program

- NKDEP Health Topics A-Z
- Learn About Kidney Disease
- Identify and Manage Patients
- Laboratory Evaluation
- Get Involved
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- Programa Nacional de Educación sobre la Enfermedad de los Riñones

Weight-control Information Network

NIDDK Information Clearinghouses

Bowel Control Awareness Campaign



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## National Kidney Disease Education Program (NKDEP)

Improving the understanding, detection, and management of kidney disease.

**Minorities Are at Higher Risk for Kidney Disease.**

If you are African American, Hispanic, or American Indian, you are more likely to develop kidney disease than if you are white.

[Read More](#)



**Featured Topics**

**Learn About Kidney Disease**



Keeping Your Kidneys Healthy  
Testing for Kidney Disease  
Diet and Lifestyle Changes  
Medicines and Kidney Disease  
Treatment for Kidney Failure

**Identify & Manage Patients**



Managing CKD in Primary Care  
Promoting Patient Self Management  
CKD and Nutrition  
Training for CDEs, RDs, and PharmDs

**Laboratory Evaluation**



Calculators for Estimating GFR  
Glomerular Filtration Rate  
Urine Albumin  
CKD and Drug Dosing  
Update on Cystatin C



## Make the Kidney Connection

### Food Tips and Healthy Eating Ideas



Diabetes and high blood pressure are the two leading causes of kidney disease. Other risk factors include heart disease and a family history of kidney failure. Eating healthy is one way to maintain good health. Small changes to your diet can help you manage your diabetes and high blood pressure and possibly protect your kidneys.

The National Kidney Disease Education Program (NKDEP) and National Diabetes Education Program (NDEP), both of the National Institutes of Health, have a few tips to get you on your way to healthier eating!

**Tips on How to Eat Less**

1. Make sure you eat breakfast every day.
2. Share a single dessert.
3. When eating out, have a big vegetable salad, then split an entrée with a friend or have the other half wrapped to go.
4. Drink a glass of water or 10 minutes before your meal to take the edge off your hunger.
5. Listen to music while you eat instead of watching TV (people tend to eat more while watching TV).
6. Eat slowly. It takes 20 minutes for your stomach to send a signal to your brain that you're full.
7. Teaspoons, salad forks, or child-size utensils may help you take smaller bites and eat less.
8. Make less food look like more by serving your meal on a salad or breakfast plate.
9. Make a list before you go to the store. Don't grocery shop on an empty stomach.
10. Try not to snack while cooking or cleaning the kitchen.

Continued on the next page.



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# Resources from the Weight-control Information Network (WIN)

## Just Enough for You

About Food Portions



**TAKE CHARGE OF YOUR HEALTH**  
A GUIDE FOR TEENAGERS

Logos for the Department of Health and Human Services, NIH National Institute of Diabetes and Digestive and Kidney Diseases, and WIN Weight-control Information Network.

## Charge Up! Healthy Meals and Snacks for TEENS

Take Charge of Your Health



### Eat healthy to look and feel better!

- Eating healthy foods will ...
- ❖ Help keep your weight in check.
  - ❖ Keep you awake and focused in school.
  - ❖ Help you do your best at sports.

### Take it easy on pizza, sweets, and sodas!

- They have lots of sugar, salt, and fat.
- ❖ Limit cakes, cookies, and other foods made with shortening, butter, and margarine.
  - ❖ Choose water or fat-free or low-fat milk instead of sugary soda or juice drinks.
  - ❖ Eat more foods like bananas, beans, and yogurt for potassium to help build strong bones.

### Snack smart on these!

- Fresh apples, berries, or grapes
- A handful of walnuts or almonds
- A small bag of mini-carrots
- Low-fat or fat-free yogurt
- String cheese
- Peanut butter on whole-wheat crackers

### Give your body the right fuel!

- ❖ Make half of your plate fruits and vegetables.
- ❖ Power up with lean meats, chicken, seafood, eggs, beans, nuts, tofu, and other protein-rich foods.
- ❖ Build strong bones with fat-free or low-fat milk products for calcium and vitamin D.
- ❖ Choose whole grains, like whole-wheat bread, brown rice, and oatmeal, for half of your grain servings.



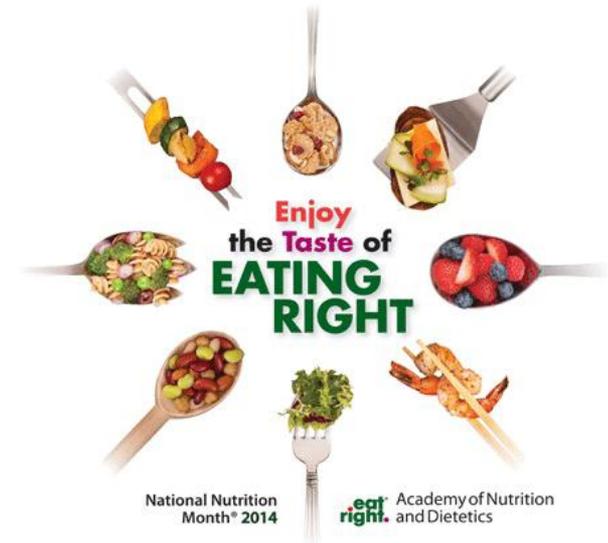


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# Partnership with the Academy of Nutrition and Dietetics (AND)

- NDEP celebrates March as National Nutrition Month
- AND's DCE practice group co-brands and distributes NDEP patient education materials
- **Coming Soon:** Diabetes and Kidney Disease webinar featuring Dr. Andrew Narva, Director of NKDEP on May 20, 2014 at 1PM ET



[www.eatright.org](http://www.eatright.org)



# Webinar Slides and Evaluation

- Webinar Series Webpage
  - [www.ndep.nih.gov/resources/webinars](http://www.ndep.nih.gov/resources/webinars)
- Presentation Slides
- Webinar Evaluation
- Certificate of Completion for Webinar Attendees
  - [ndep@hagersharp.com](mailto:ndep@hagersharp.com)

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Health Care Professionals | **National Diabetes Education Program Webinar Series**

Practice Transformation ▶ The National Diabetes Education Program Webinar Series explores the latest advances and challenges in diabetes prevention and management. Webinars are designed to support the efforts of NDEP partners and other professionals who are working to improve diabetes treatment and outcomes, promote early diagnosis, and prevent or delay the onset of type 2 diabetes. Webinar participants can interact with presenters through a moderated question and answer session and learn about related educational tools and campaigns offered by NDEP.

Promoting Medication Adherence ▶

GAME PLAN for Preventing Type 2 Diabetes ▶ You can also view additional webinars from the CDC-NDEP.

NDEP Webinars

Guiding Principles ▶

School Guide ▶

Team Care ▶



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Health Information Center

- Phone: 1-800-800-8747
- TTY: 1-866-569-1162
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- Hours: 8:30 a.m. to 5 p.m. eastern time, M-F

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**Addressing the Unique Needs of Older Adults with Diabetes**

This webinar was held in May 2013 and featured Linda Haas, Ph.D., R.N., C.D.E., Diabetes Consultant; Janet Miller, M.P.A., Centers for Medicare and Medicaid Services; and Joanne Gallivan, Director of the NDEP at the NIH.

**Are We Ready to Meet Today's Challenges with Diabetes Education: Plight or Promise?**

This webinar was held in May 2016 and featured Linda Simerino, PhD, RN, CDE; Maggie Powers, PhD, RD, CDE; and Joan Bardsley, MBA, RN, CDE, FAADE.

**Diabetes and Cardiovascular Disease Webinar Presentation**

This webinar addresses the relationship between diabetes and cardiovascular disease presented with research findings and their implications. Resources are provided to help participants promote diabetes and heart health messages.



**National Diabetes Education Program**

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# Questions and Answers



# Thank you!



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