Welcome to the COPE Webinar Series for Health Professionals!

September 16 2015 webinar

Improve Your Practice Through the Application of Current Recommendations in Diabetes and Nutrition

Time: 12 noon – 1 PM EDT
Moderator: Rebecca Shenkman, MPH, RDN, LDN
Director: MacDonald Center for Obesity Prevention & Education

Handouts of the slides are posted at: www.villanova.edu/COPE

Improve Your Practice Through the Application of Current Recommendations in Diabetes and Nutrition

Lynn Parker Klees, MA, RDN, LDN, CDE
Instructor, Department of Nutritional Sciences
The Pennsylvania State University

Objectives: The learner will be able to:
1. Verbalize evidence-based changes in the ADA position statement related to medical nutrition therapy for diabetes.
2. Examine the role of protein and fat in blood glucose management.
3. Apply concepts presented to case studies discussed during webinar.

Credits: This webinar awards 1 contact hour for nurses and 1 CPEU for dietitians.
Suggested CDR learning need code: 5000, 5190; Level 2.

Notice: Villanova University College of Nursing is accredited as a provider of continuing nursing education by the American Nurses Credentialing Center Commission on Accreditation.
Villanova University College of Nursing Continuing Education/COPE is an Accredited Provider with the Commission on Dietetic Registration.

DISCLOSURE

Neither the planners or presenter have any conflicts of interest to disclose.

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No Financial Conflicts of Interest to disclose

Improve Your Practice Through the Application of Current Recommendations in Diabetes and Nutrition

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Objectives for this session:
Participants will be able to:
1. Verbalize evidence-based changes in the ADA position statement related to medical nutrition therapy for diabetes.
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Nutrition Therapy Recommendations for the Management of Adults with Diabetes 2014
• Previous position statement-2008
• Prevention of Type 2, management of complications and GDM not addressed

Diabetes Nutrition Therapy
• Defines Medical Nutrition Therapy as well as nutrition therapy
• Acknowledges that many with diabetes receive nutrition therapy from health professionals other than RD’s.
• Includes evidence of benefits and AND Nutrition Practice Guidelines but acknowledges that “it is important that all members of the health care team be knowledgeable about diabetes nutrition therapy and support its implementation”
• Study of 88,404 patients with diabetes:
  • Only 9.1% had at least 1 nutrition visit within a 9-year period.

Goals of Nutrition Therapy
• Achieve or attain individualized glycemic, blood pressure and lipid goals.
• Achieve and maintain body weight goals
• Delay or prevent complications

Goals of Nutrition Therapy
• General goals:
  • A1C <7%
  • BP <140/80 mmHg
  • LDL cholesterol <100 mg/dL
  • TG <150 mg/dL
  • HDL Males >40 mg/dL
  • HDL females >50 mg/dL

Optimal Mix of Nutrients & Eating Patterns
• No optimal mix identified
• Stress nutrient dense foods
• Limit SSB
• Utilize CHO Counting with flexible insulin patterns
  • Lower A1C seen in studies that focused on adjusting insulin doses to CHO intake and PA
• Utilize consistent CHO with fixed daily doses
• Type 2 with health and literacy concerns:
  • Utilize simple approaches-portion control or healthful food choices
Optimal Mix of Nutrients & Eating Patterns

- Increased focus on eating patterns designed to lower BP and alter lipid profiles.
- Fasting until noon raises risk of post-prandial hyperglycemia and impaired IR.
- Weight loss appears most beneficial early in disease process.
- Studies achieving greatest weight losses/change in A1C include:
  - Mediterranean-style or diet/exercise including meal-replacements
  - Observation shows people with DM eat: ~45% CHO, 36-40% Fat and ~16-18% PRO

Health Literacy

- >90 million identified as “poor literacy”*
- Study of 398 patients with diabetes:
  - >25% struggle with basic number hierarchy-unable to identify what numbers were between 60-120 mg/dL
  - More than 45% could not calculate CHO content of a packaged item even with a calculator.
  - >2/3 had poor ability to estimate portion sizes.


Strategies to utilize even with literate audiences

- 5th grade level
- Pictures
- Color-coding
- Step-by-step instructions with bullet points
- Practice sheets

Modestly effective eating patterns

- Mediterranean-style
- DASH
- Vegan or vegetarian
- Lower-fat- did not consistently improve glycemic control or CVD risk. Benefit more likely when combined with reduced energy and weight loss.
  - Lower-CHO

Weight Loss Strategies consistent with lower BMI

- Weekly self weighing
- Breakfast
- Reduced fast food intake
- Increased PA
- Reduced portion sizes

Phone app useful with diabetes
Carbohydrate

- For most people, do not need to subtract fiber or sugar alcohols from total CHO.
- No range for carbohydrate recommended. Lower limit of CHO removed.

Sucrose

- Research demonstrates that substitution of sucrose for starch up to 35% of calories may not affect glycemia or lipid levels
- However, minimize consumption to avoid displacing nutrient-dense foods.
- Sugar Sweetened beverage consumption associated with increased risk of diabetes in observational studies.

“Free” Fructose

- Defined as that naturally occurring in foods.
- Not detrimental unless intake exceeds ~12% of total caloric intake
- 60 grams/2000 calorie plan
  - Apple=10 grams
  - 1 cup grapes=12 grams
  - Agave nectar=60 kcals/TBSP 55-90% fructose

Protein

- Evidence inconclusive to recommend ideal protein intake
- Reducing protein below usual intake is no longer recommended for those with DM and diabetic kidney disease (A)
- Appears to increase insulin response in type 2 diabetes without increasing plasma glucose concentrations
- CHO sources high in protein should not be used to treat or prevent hypoglycemia (B)

Total Fat

- Type of fat more important than quantity
- MUFA rich eating pattern may be beneficial
- 5% energy replacement of SFA with MUFA; improved insulin responsiveness in type 2 diabetes and insulin-resistance.
- Same guidelines for omega-3 as for general public

Antioxidant supplementation

- Routine supplementation is not advised (A)
- Insufficient evidence for use of micronutrients, herbs/supplements (C)
- Evidence does NOT support n-3 supplements for prevention or treatment of CVD events (A)
Priority on coordinating food with medications

1. Insulin secretagogues:
   Do not skip meals
   Consistent CHO

2. Biguanides (metformin):
   Gradually titrate medication to avoid GI side effects
   Take with food or 15 mins after meal

3. Alpha-glucosidase inhibitors (acarbose, miglitol):
   Gradually titrate
   Take at start of meal
   If hypoglycemia occurs, glucose tabs will prevent the digestion of polysaccharides

4. Incretin mimetics (GLP-1-exenatide)
   Gradually titrate
   Injection of daily or twice daily should be pre-meal
   Once-weekly GLP-1 can be taken at any time of day

5. Type 1 DM and Type 2 w/Insulin
   Match insulin to CHO

Role of Fasting vs Post-Prandial BG

- In 2003, Monnier et al. reported:
  - HbA1c scale (<7.3 %) PPG contributed roughly 70 % of excess glycemia.
  - HbA1c levels of 10.2 %, FPG levels accounted for roughly 70 % of hyperglycemia
  - Progressive nature of T2D - gradual decline of b-cell function with increasing dysglycaemia.

Weight Loss in the first 2 months of an intensive lifestyle intervention could predict long-term weight loss*

Update on Prevention of CVD in Adults with Type 2 DM*

- Reiterates nutrition guidelines presented in this talk.
- Provides detailed information on studies to date related to diabetes and CVD.
- Recommended reading.

Protein Co-Ingestion with CHO*

- 60 males with type 2 diabetes
- 58/60 responded with >10% increased insulin secretion and lowered glycemic excursion

* Authors suggest effective dietary strategy

*Fox, C et al. Circulation. 2015;132:000-000. DOI: 10.1161/CIR.000000000000230

*Protein Co-Ingestion Overall, Improves Postprandial Insulin Secretion in Type 1 Diabetes Patients.
Food Order Has a Significant Impact on Postprandial Glucose and Insulin Levels

Macronutrient order mattered in small pilot study.
Effect seen at all points through 2 hours.

Teaching Tips
• Consider suggesting eating protein and veggies first if individual struggles with high 2-hour post meal numbers.
• Notice whether protein intake is evenly divided over the course of the day.

Dietary Fat & Insulin Requirements

Significant individual differences, however one method:
For each 100 calories of fat added to meal, add 1 unit of insulin using square wave.

-100 calories: over 3 hours
-200 calories: over 4 hours
-300 calories: over 5 hours
->300 over 8 hours

Teaching Tips
• For “cheesy, gooey, high fat, fried foods” take 1 or 2 units additional in extended bolus.
• Some individuals are more “fat sensitive” and will have higher blood glucose readings when eating a higher fat diet.
• Best time to bolus-20 mins prior to meal
  • Greater fluctuation with postprandial dosing
  • Fewer nocturnal hypos with preprandial dosing
  • Exceptions

Teaching Tips
Missed insulin dosing common and raises A1C
• Most common strategy is to use more basal insulin with greater chance for higher postprandial readings and higher chance of hypoglycemia.
• Clear distribution of responsibility
• Downloading of data to analyze increases focus
• Discuss situations where doses are typically missed

Case Studies
Case Study #1

- JM is a 31 year old female with DM 1. Duration 10 years.
- BMI: 23
- No signs/symptoms of complications.
- Normal BP, Lipids.
- Exercises regularly in the evening after dinner.
- See blood glucose record on the next page.

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<th>Post-BKFT</th>
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*Note: 196 was after having an overnight low blood glucose level and treating prior to falling back asleep

- What questions would you need to ask prior to making suggestions?
- What topics would you want to discuss with your patient?

Case Study #2

- RS is a 53 year old male. Family history of DM 2 and CVD. Newly diagnosed with pre-diabetes.
- Salesman with large territory. Eats out frequently. Has tried to lose weight unsuccessfully over the last 20 years.
- Doesn't currently exercise.
- States he is open to try anything that will help him lose weight and keep from getting diabetes.
- The physician has started RS on an ACE inhibitor for BP and a statin for lipid management.

<table>
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<td>BMI</td>
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<td>BP</td>
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<td>T. Chol.</td>
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<td>LDL</td>
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<td>HDL</td>
<td>31 mg/dL</td>
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<td>TG</td>
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- What would you do with this patient?
- What dietary therapy might be the best option for this patient? How would you decide?

THANK YOU

Questions?

Contact Information:
Lynn Parker Klees, MA, RDN, LDN, CDE
lgp2@psu.edu
Evaluations and CE Certificates

- Everyone who has completed the webinar will be emailed a link to the evaluation.
- The email will be sent to the email address that you used to register for the webinar.
- Please complete the evaluation soon after you receive the email. The evaluation does expire after 3 weeks. Once expired, you cannot obtain a certificate.
- Once the evaluation is completed, the CE certificate will be emailed separately within 2 business days.

COPE's October Professional Webinar

David Genova, BS
District Wellness Coordinator
Pottstown School District

Creating a Culture of School Wellness

Date: Thursday, October 15 2015
Time: 12:00PM - 1:00PM EDT
CE Credit: 1.0 contact hour, 1.0 CPEU

Questions and Answers!

Moderator: Rebecca Shenkman, MPH, RDN, LDN
Email: cope@villanova.edu
Web site: www.villanova.edu/COPE

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