Evidence-Based Nutrition Practice Guidelines, Recommendations and Interventions to Control the A-B-C’s of T1 and T2 Diabetes in Adults
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  – Please refer to learning goals and objectives
  – Learners must attend the full activity and complete the evaluation in order to claim continuing education credit/hours

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• **Activity-Type:**
  – Knowledge-based
Learning Objectives

1. Name the 3 primary clinical outcomes (goals) for diabetes MNT and the current target values.

2. Explain the latest nutrition intervention recommendations to normalize A1c in patients with type 1 and type 2 diabetes.

3. Explain the latest nutrition intervention recommendations to normalize blood pressure in patients with type 1 and type 2 diabetes.

4. Explain the latest nutrition intervention recommendations to normalize blood lipids in patients with type 1 and type 2 diabetes.
Main References with Associated Symbols
• Academy of Nutrition and Dietetics (AND) T1/T2 Diabetes Nutrition Practice Guideline (NPG) Update, 2015

• AND Nutrition Guidelines List, Hypertension Guideline Update, Executive Summary, 2015, Evidence Analysis Library

• AND Evidence Analysis Library, Executive Summary, Disorders Lipid Metabolism 2011*


• Standards of Medical Care in Diabetes, 2016* American Diabetes Association

* Date of last update when accessed online on June 12, 2016
• Nutrition Therapy Recommendations for the Management of Adults With Diabetes, Alison B. Evert, et al
  *Diabetes Care*, Nov. 2013* vol. 36 no. 11 3821-3842


• Dietary Guidelines for Americans 2015

• 7th Report of the Joint National Treatment of High Blood Pressure

• AHA Diet and Lifestyle Recommendations
AND NPG Rating System

Each **Recommendation** rated as:
- Strong
- Fair
- Weak
- Consensus
- Insufficient Evidence

Each **Recommendation Statement** is:
- **Conditional** (applies to specific circumstances or sub-population…if - then scenario)
- **Imperative** (applies to target population…required, must, should)
Target Population for AND Diabetes NPG

Adults with type 1 and type 2 diabetes:

• Adult (19 to 44 yrs)
• Middle Age (45 to 64 yrs)
• Aged (65 to 79 yrs)
• Male and female
# Effectiveness of Diabetes MNT

<table>
<thead>
<tr>
<th>INDICATOR</th>
<th>EXPECTED OUTCOME</th>
<th>WHEN TO EVALUATE</th>
</tr>
</thead>
<tbody>
<tr>
<td>BG Control</td>
<td></td>
<td>6 weeks to 3 months</td>
</tr>
<tr>
<td>A1c</td>
<td>0.25 – 2.9%</td>
<td></td>
</tr>
<tr>
<td>Plasma FG</td>
<td>50 - 100 mg</td>
<td></td>
</tr>
<tr>
<td>Lipids</td>
<td>6 wks; if goals not met, intensify MNT, check in 6 weeks</td>
<td></td>
</tr>
<tr>
<td>Total Chol</td>
<td>24 - 32 mg (10 - 13%)</td>
<td></td>
</tr>
<tr>
<td>LDL-C</td>
<td>15 - 25 mg (12 - 16%)</td>
<td></td>
</tr>
<tr>
<td>TG</td>
<td>15 - 17 mg (8%)</td>
<td></td>
</tr>
<tr>
<td>HDL-C</td>
<td>No exercise: 3 mg (7%)</td>
<td>But with exercise: no</td>
</tr>
<tr>
<td>BP</td>
<td>5 mm in systolic</td>
<td>2 mm in diastolic</td>
</tr>
</tbody>
</table>
Evidence-Based Interventions to Improve BG, Lipids, BP and Reduce Cardio-Metabolic Risk (CMR) in Adult Patients with Type 1 and Type 2 Diabetes are Summarized in:

A. D.I.A.B.E.T.E.S.
M.E.A.L. P.L.A.N.
A = Avoid sugar-sweetened beverages (BG, CMR, Wt)

- Consume <10% of kcal/day from added sugars
D = Divide daily calories into $\geq 3$ moderate meals or $\geq 4$ smaller meals (BG)
Design individualized meal plan with foods to meet recommended dietary allowance/dietary reference intake for all micronutrients (CMR)

- No clear evidence of benefit from supplementation in without deficiencies
• Supplementation of following to improve BG control **NOT** clearly demonstrated:
  o Chromium
  o Cinnamon
  o Herbs
  o Vitamin D
Increase plant stanols and sterols to 1.6 – 3 g/day (Lipids)

- Added to many common OTC foods such as margarines, yogurt, cereals, orange juice, etc.

- Can also purchased in OTC capsules
Improve portion control (BG, Wt)
After a 2 year loan to United States, Michelangelo's David being returned to Italy
Look at what excess calories and no exercise has done to David!
A = Assess need for weight loss for overweight and obese PWDs (Wt, BG)

• In overwt and obese pts with T2 DM, modest wt loss (= sustained loss of 5% of initial wt):
  - Improves glycemic control
  - Reduces need for anti-glycemic medications
• Sustained wt loss of 7% is optimal

• Wt loss can be attained with lifestyle programs to achieve:
  
  – Energy deficit of 500 – 750 kcal/day
  
  – Limit of 1200-1500 total kcal/day for women
  
  – Limit of 1500-1800 kcal/day for men
A = Acknowledge results of studies on sustained weight loss ≥1 year

Studies show that sustained weight loss interventions lasting ≥ 1 year had inconsistent effects on A1C, even though modest weight loss shown to improve insulin resistance in overweight and obese insulin-resistant persons.

Strong, Conditional
Why? Two Reasons*

1. Calorie deficit results in BG improvement almost immediately and before weight loss occurs, resulting in improved A1c….but, calorie deficit eliminated in wt maintenance

- Seen in bariatric surgery: BG improves quickly before weight loss occurs
  - Improvement may result from nutrients diverted away from GI tract and incompletely digested nutrients to ileum

*The Dilemma of Weight Loss in Diabetes, Franz Marion J. MS, RD, LD, CDE, Diabetes Spectrum July ‘07 vol. 20 no. 3 133-136
2. In *early* stages of T2, **insulin resistance** *predominant* metabolic error, **not** insulin deficiency

- Calorie deficit  BG almost immediately in resistant phase
- When T2 progresses from insulin resistance TO **insulin deficiency**, BG benefits of calorie deficit and weight loss
- Treatment focus in **insulin deficiency** stage of T2:
  - Prevent weight gain
  - Combine meds (also insulin) with MNT
  - Seek BG control over weight control
Assure calorie intake is reduced if PWD is overweight or obese (BG, Lipids, Wt, CMR)

THE BOTTOM LINE:
Eating less calories and getting regular physical activity improves BG control independent of body weight and weight loss.
Arrange meal plan/eating pattern that fits PWD’s personal preferences, lifestyle, goals, etc. (BG, Wt)

Appreciate that there is:

- No “one-size-fits-all” eating pattern
• Many acceptable eating patterns exist...example:
  - Mediterranean-style
    - MUFA-rich eating pattern can improve BG, CVD risk
    - Can be recommended as effective alternative to *lower fat, higher-carb plan*
Another example:

- Dietary Guidelines for Americans, 2015
Base macronutrient distribution on individualized assessment of current eating patterns, preferences, and metabolic goals (BG)

- There is no optimal mix of macronutrients or ideal % of calories as CHO, protein and fat for optimal BG control
B = Boost total fiber

B = Boost **viscous soluble** fiber to 7 - 13 g/day (BG, Lipids, Wt)
### Viscous Soluble Dietary Fiber in Foods

<table>
<thead>
<tr>
<th>FOOD SOURCE</th>
<th>VISCOUS SOLUBLE FIBER (G)¹</th>
<th>TOTAL DIETARY FIBER (G)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Fruit (1 medium)</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Apple</td>
<td>1</td>
<td>4</td>
</tr>
<tr>
<td>Banana</td>
<td>1</td>
<td>3</td>
</tr>
<tr>
<td>Blackberries (1/2 c)</td>
<td>1</td>
<td>4</td>
</tr>
<tr>
<td>Nectarine</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>Citrus fruit (orange, grapefruit)</td>
<td>1</td>
<td>2–3</td>
</tr>
<tr>
<td>Peach</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>Pears</td>
<td>2</td>
<td>4</td>
</tr>
<tr>
<td>Plums</td>
<td>1</td>
<td>1.5</td>
</tr>
<tr>
<td>Prunes</td>
<td>1.5</td>
<td>4</td>
</tr>
<tr>
<td>FOOD SOURCE</td>
<td>VISCOUS SOLUBLE FIBER (G)</td>
<td>TOTAL DIETARY FIBER (G)</td>
</tr>
<tr>
<td>-----------------------------</td>
<td>---------------------------</td>
<td>-------------------------</td>
</tr>
<tr>
<td>Seeds</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Psyllium seeds, ground (1 tbsp)</td>
<td>5</td>
<td>6</td>
</tr>
</tbody>
</table>
Ensure that PWDs on insulin-carb ratios subtract 50% of dietary fiber that is ≥5 g on label from Total Carbohydrate when estimating amount of carb to be eaten at meals (BG).

Ensure same is done with sugar alcohol by examining food label.
For PWDs on Insulin-Carb Ratio:

When Dietary Fiber Is $\geq 5$ g on Label, Subtract 50% of Dietary Fiber g From Total Carbohydrate When Estimating Amount of Carb Grams To Be Eaten at Meals

“Net Carb“, “Impact Carb" not defined by FDA. Created by companies to give products more shelf appeal
For PWDs on Insulin-Carb Ratio:
When Sugar Alcohol is $\geq 5$ g on Label, Subtract 50% of Sugar Alcohol Grams from Total Carbohydrate When Estimating Amount of Carb Grams To Be Eaten at Meals
Treat high blood pressure in PWDs:

- For pts with BP $\geq 120/80$, advise on:
  - **Lifestyle interventions** to reduce BP

- For pts with BP $\geq 140/90$, advise on:
  - **Lifestyle interventions** to reduce BP
  - Initiation + timely titration of Rx meds

- Measure BP at every healthcare visit
  - If elevated, confirm on separate day
## BP Goals for PWDs and Rx Meds

<table>
<thead>
<tr>
<th>Goals</th>
<th>Lifestyle Interventions</th>
<th>Rx Meds</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Without co-morbidities:</strong></td>
<td></td>
<td><strong>Multiple-drug therapy (incl. thiazide diuretic) and ACE inhibitor OR angiotensin receptor blocker at max doses generally required to meet BP targets.</strong></td>
</tr>
<tr>
<td>S: $&lt;140$ D: $&lt;90$</td>
<td><strong>See next slides</strong></td>
<td></td>
</tr>
<tr>
<td><strong>With co-morbidities:</strong></td>
<td></td>
<td><strong>If using ACE inhibitors, ARBs or diuretics, then serum creatinine/estimated glomerular filtration rate and serum potassium levels should be monitored.</strong></td>
</tr>
<tr>
<td>S: $&lt;130$ D: $&lt;80$</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
## Lifestyle Interventions to Reduce BP

<table>
<thead>
<tr>
<th>Intervention</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stop smoking</td>
</tr>
<tr>
<td>Limit Alcoholic drinks</td>
</tr>
<tr>
<td>Lose excess body weight</td>
</tr>
<tr>
<td>Engage in regular physical activity</td>
</tr>
<tr>
<td>Adhere to DASH Diet eating plan</td>
</tr>
</tbody>
</table>
• Lose Excess Body Wt
• Engage in Physical Activity
  – Maintain normal wt (BMI 18.5 to 24.9)
  – Lose excess body weight:
    o Wt loss of 10 kg can systolic BP by 5--20
  – Exercise 30 min. per day, most days of week
  – Limit alcohol per day:
    o **Men**: ≤2 drinks (1 drink = 24 oz. beer, 10 oz. wine, 3 oz. whiskey)
    o **Women** and **lighter-weight persons**: ≤1 drink
Lifestyle Interventions

Reduce sodium per day for BP reduction to:

- 1500 – 2000 mg
- <2300 mg
- 1500 – 2400 mg
- ≤2400 mg
  - 1500 mg desirable; associated w/ lower BP
  - If Na level not achieved, by ≤1000 mg
- ≤1500 mg
<table>
<thead>
<tr>
<th>Minerals to Reduce BP</th>
<th>Amount Per Day in Foods</th>
<th>Food High In</th>
<th>Supplement/Day If Not In Foods</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Potassium</strong></td>
<td>2000 mg</td>
<td>Fruits, Vegetables</td>
<td>3700 mg</td>
</tr>
<tr>
<td><strong>Calcium</strong></td>
<td>≥800 mg</td>
<td>Low Fat Dairy</td>
<td>1000 to 1500 mg</td>
</tr>
</tbody>
</table>
| **Magnesium**         | Dietary Reference Intakes (DRI):  
310 - 420 mg for women & men 19 to >70 years old | Whole Grains, Green Leafy Veggies, Black Beans, Brown Rice, Nuts, Seeds, Fortified Foods (Cereals, Yogurts) | Up to 350 mg |
DASH Diet

• Encourages foods high in CA, K, Mg and fiber (or supplement)

• Limits sodium to 1500 - 2400 mg per day

• Limits fats consistent with *Therapeutic Lifestyle Changes* to blood cholesterol (low total fat, low saturated fat)

• Limits sweets
In 2000 calorie DASH diet, aim for these servings daily:

• 7-8 servings of grains daily (3 = whole grains)
• 4 - 5 servings of fruits
• 4 - 5 servings of vegetables
• 2 - 3 servings of low-fat or nonfat dairy
• ≤2 servings of lean meat, fish, or poultry
• **Weekly:** 4 - 5 servings nuts, seeds, legumes
Ensure carbohydrate amount per meal & snack individualized to meet BG target (BG)

- Carb foods, beverages and endogenous insulin = greatest determinant of post-meal BG

- Carb intake from whole grains, veggies, fruits, legumes, dairy products, with emphasis on high fiber and lower in glycemic load to be advised over other sources, esp. those containing sugars
• **Monitoring** carb intake is key strategy to BG control via:
  - Carb counting or
  - Experience-based estimation (BG)
$S = \text{Shrink saturated fat to } <5-6\% \text{ of kcal/day}$

+ replace with MUFA (CMR, Lipids, BG)

• Decreases insulin resistance in pre-diabetes and T2 diabetes pts

$\text{Shrink saturated fat to } <7\% \text{ of kcal/day}$

$\text{Shrink trans fat to } <1\% \text{ of kcal/day}$

$\text{Shrink } \% \text{ of calories from trans fat}$
Shrink saturated fat and trans fat (BG, Lipids, CMR)

Shrink **saturated fat** to <10% of calories

Limit **trans fat**
S = Shrink LDL-C and BP with further interventions (CMR, Lipids, BP)

- Consume **dietary pattern** that emphasizes intake of fruits, veggies, whole grains and:
  - Low fat dairy products
  - Poultry
  - Fish
  - Legumes
  - Non-tropical vegetable oils
  - Nuts

- Limit intake of **added sugar foods** and sugar-sweetened beverages
• Limit **red** meat

• Adapt this pattern to:
  – Calorie requirements
  – Culture
  – Personal food preferences
  – MNT for other dx’s

• Achieve this pattern by following:
  – DASH Diet
  – AHA Diet
  – USDA Food Pattern
# USDA Food Pattern

[http://www.cnpp.usda.gov/sites/default/files/usda_food_patterns/USDAFoodPatternsSummaryTable.pdf](http://www.cnpp.usda.gov/sites/default/files/usda_food_patterns/USDAFoodPatternsSummaryTable.pdf)

## Daily Amount of Food From Each Group

<table>
<thead>
<tr>
<th>Calorie Level¹</th>
<th>1,000</th>
<th>1,200</th>
<th>1,400</th>
<th>1,600</th>
<th>1,800</th>
<th>2,000</th>
<th>2,200</th>
<th>2,400</th>
<th>2,600</th>
<th>2,800</th>
<th>3,000</th>
<th>3,200</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fruits²</td>
<td>1 cup</td>
<td>1 cup</td>
<td>1½ cups</td>
<td>1½ cups</td>
<td>2 cups</td>
<td>2 cups</td>
<td>2 cups</td>
<td>2 cups</td>
<td>2½ cups</td>
<td>2½ cups</td>
<td>2½ cups</td>
<td>2½ cups</td>
</tr>
<tr>
<td>Vegetables³</td>
<td>1 cup</td>
<td>1½ cups</td>
<td>1½ cups</td>
<td>2 cups</td>
<td>2½ cups</td>
<td>2½ cups</td>
<td>3 cups</td>
<td>3½ cups</td>
<td>3½ cups</td>
<td>4 cups</td>
<td>4 cups</td>
<td>4 cups</td>
</tr>
<tr>
<td>Grains⁴</td>
<td>3 oz-eq</td>
<td>4 oz-eq</td>
<td>5 oz-eq</td>
<td>5 oz-eq</td>
<td>6 oz-eq</td>
<td>7 oz-eq</td>
<td>8 oz-eq</td>
<td>9 oz-eq</td>
<td>10 oz-eq</td>
<td>10 oz-eq</td>
<td>10 oz-eq</td>
<td>10 oz-eq</td>
</tr>
<tr>
<td>Protein Foods⁵</td>
<td>2 oz-eq</td>
<td>3 oz-eq</td>
<td>4 oz-eq</td>
<td>5 oz-eq</td>
<td>5 oz-eq</td>
<td>5½ oz-eq</td>
<td>6 oz-eq</td>
<td>6½ oz-eq</td>
<td>7 oz-eq</td>
<td>7 oz-eq</td>
<td>7 oz-eq</td>
<td>7 oz-eq</td>
</tr>
<tr>
<td>Dairy⁶</td>
<td>2 cups</td>
<td>2½ cups</td>
<td>2½ cups</td>
<td>3 cups</td>
<td>3 cups</td>
<td>3 cups</td>
<td>3 cups</td>
<td>3 cups</td>
<td>3 cups</td>
<td>3 cups</td>
<td>3 cups</td>
<td>3 cups</td>
</tr>
<tr>
<td>Oils⁷</td>
<td>15 g</td>
<td>17 g</td>
<td>17 g</td>
<td>22 g</td>
<td>24 g</td>
<td>27 g</td>
<td>29 g</td>
<td>31 g</td>
<td>34 g</td>
<td>36 g</td>
<td>44 g</td>
<td>51 g</td>
</tr>
<tr>
<td>Limit on calories from SoFAS⁸</td>
<td>137</td>
<td>121</td>
<td>121</td>
<td>121</td>
<td>161</td>
<td>258</td>
<td>266</td>
<td>330</td>
<td>362</td>
<td>395</td>
<td>459</td>
<td>596</td>
</tr>
</tbody>
</table>
**S = Substitute** low-glycemic load foods for higher-glycemic load foods (BG)

**S = Shrink** high sucrose foods to avoid displacing nutrient-rich foods (BG, Wt)
M = Make alcohol intake moderate (BP, BG, Wt)

- ≤1 drink/day for women
- ≤2 for men

Alcohol consumption may place PWD at increased risk for delayed hypoglycemia, especially if taking insulin or insulin secretagogues
M = Make at least half of all grains whole grains (BP, BG, Lipids, Wt, CMR)
E = Ensure intake of antioxidant-rich fruits, nuts, veggies, whole grains (not supplements) (CMR, BG)

Oxidation reactions:

Leads to → free radicals

→ Oxidative stress (esp. CV system)

→ Cell damage

→ Pre-mature aging
High BG leads to:

- Glucose toxicity
- Glucose oxidation
- Free radicals
- Cell damage
- Beta cell destruction
Dietary antioxidants that inhibit oxidation:

- Vitamin A, C, E
- Beta carotene
- Lycopene
- Lutein
- Polyphenols
- CoQ10
- Selenium
- Flavonoids
- Flavones
- Flavonols
- Green tea
- Proanthocyanidins
**E** = **Ensure** you are **not** recommending high doses of supplemental anti-oxidant vitamins **E, C, ß-carotene** for CVD prevention and treatment

- **Per research:**
  - **High** doses (above Recommended Dietary Allowance) do **not** provide CV benefit
  - May cause **harm** (incl. more cell damage)
  - May even **shorten life span**
• Per research:
  – Supplemental vitamin C, E, β-carotene & selenium should not be taken with simvastatin-niacin drug combination
  – Combination may lower HDL\textsubscript{2}-C, a beneficial subfraction of HDL-C
E = Encourage intake of foods that contain:

- Plant omega 3 fats (ALA or alpha-linolenic acid)
- Marine omega 3 fats (EPA, DHA)

Also:

- Encourage intake of n3 fish, 2 - 3x/week (Lipids, CMR)
E = Evaluate carefully the mixed recommendations on omega 3 supplementation (CMR):

• Evidence does not support EPA - DHA refined oil supplements (ROSs) for PWDs for prevention or treatment of CVD

• But: ROSs shown to be equally effective as fish at ↑ tissue levels of EPA - DHA
But: per ADA, eating foods rich in long-chain omega-3 fats recommended to prevent or treat CVD (CMR):

- Fatty fish (EPA - DHA)
- Nuts
- Seeds (ALA)

Evidence does not support a beneficial role for omega-3 dietary supplements
<table>
<thead>
<tr>
<th>Patients without documented CHD</th>
<th>Eat variety of (preferably fatty) fish at least twice a week. Include oils and foods rich in alpha-linolenic acid (flaxseed, canola and soybean oils; flaxseed and walnuts).</th>
</tr>
</thead>
<tbody>
<tr>
<td>Patients with documented CHD</td>
<td>Consume about 1 g of EPA + DHA/day, preferably from fatty fish. EPA + DHA in capsule form could be considered in consultation with the physician.</td>
</tr>
<tr>
<td>Patients who need to triglycerides</td>
<td>2 - 4 g of EPA + DHA/day provided as capsules under physician’s care.</td>
</tr>
</tbody>
</table>
A = Assure consistent **timing** and even spacing of meals and carbohydrate intake (**BG**)
A = Assure priority given to coordinating food with dose and type of anti-diabetes medicine (BG)
• If on insulin secretagogues:
  - Eat **moderate amounts of carb** at meals and snacks
• T1/T2 PWDs on **mealtime insulin**:
  - Assure priority given to coordinating **food** with dose and type of **anti-diabetes medicine**

• On **fixed** daily insulin doses:
  - Assure meal plan emphasizes relatively **fixed**:
    - Meal and snack **times** and
    - **Carb** intake
Learn that fructose consumed as “free fructose” (naturally occurring in foods such as fruit) (BG):

- May result in better glycemic control compared with isocaloric intake of:
  - Sucrose
  - Starch

- Fructose not likely to have detrimental effects on triglycerides as long as intake not excessive (>12% energy)
P = Provide lean **protein** for health, 15 - 19% of kcal, or **0.8 g/kg** body weight/day without renal co-morbidities (BG, Wt)

- **T2 DM:** this amount has **NO** significant effect on BG

- **T1 DM:** effect on BG is less clear

- **Protein** does **NOT** significantly slow absorption of carb food
• Adding **protein** to carbohydrate food treatment for hypoglycemia NOT shown to treat or prevent hypoglycemia.

• Evidence **inconclusive** to recommend ideal amount of **protein** to optimize BG or improve ≥1 CVD risk measures.
L = Lower total fat to 20 - 35% of calories (CMR, Wt)

L = Let fat quality be more important than quantity; replace SFA w/ MUFA, PUFA (CMR, BG, Lipids)

L = Let total fat amount be individualized for PWDs; evidence inconclusive for ideal amount of
A = Allow PWDs to consume non-nutritive sweeteners as can decrease calorie and carbohydrate intake when substituted for caloric sweeteners (BG, Wt, CMR)
Nibble on nuts, 5 oz./week, especially walnuts, pecans, almonds, pistachios; best to isocalorically incorporate daily consumption for wt control (Lipids, CMR)
N = Notify non-insulin PWDs that it is not required to subtract dietary fiber or sugar alcohols from Total Carbohydrate on label when carb counting at meals & snacks (BG)

Sugar alcohols (2 calories/g):
- Sorbitol
- Xylitol
- Mannitol
- Isomalt
- Maltitol, Lactitol
- Hydrogenated starch hydrolysates
You expect me to remember all this stuff?
I’ve learned that I must learn the newest methods, processes and technologies, so that both I, and my patients, land on our feet the first time and every time!
BOTTOM LINE:
LIFESTYLE AFFECTS DIABETES!

“Our health always seems much more valuable after we lose it.”

~Author Unknown
I’m sleepy after all that info!
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