Helping People Make Healthy Lifestyle Changes – from Evidence to Practice

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Start your DIET NOW!
Webinar Goals

• Detail clinical impact of weight loss/maintenance to prevent/delay progression of prediabetes, type 2 diabetes (T2D) with recent evidence.

• Identify factors for successful weight loss and maintenance.
Polling Question:

Which of the following is NOT considered a weight control goal?

a. Maintain a healthy weight
b. Lose excess body weight
c. Maintain a weight considered underweight
d. No weight gain from present weight within the category of overweight or obese
e. Prevent weight regain after losing weight
Categories of Weight Control Goals

• Weight loss
• Prevent weight regain post weight loss
• Maintain a healthy weight
• Prevent further weight gain, slow trajectory
Obesity Trends 1999 through 2014

Figure 5. Trends in obesity prevalence among adults aged 20 and over (age-adjusted) and youth aged 2–19 years: United States, 1999–2000 through 2013–2014

Prevalence of Self-Reported Obesity Among U.S. Adults by State and Territory, BRFSS, 2014

Prevalence estimates reflect BRFSS methodological changes started in 2011. These estimates should not be compared to prevalence estimates before 2011.

*Sample size <50 or the relative standard error (dividing the standard error by the prevalence) ≥ 30%.

http://www.cdc.gov/obesity/data/prevalence-maps.html
Diabetes Facts and Stats

- **Diabetes (US):**
  - 12 – 14% of US adults (higher prevalence AA, HA, Asian)$^1$
  - 29 mil$^2$ (9%) (21 mil dx)
    - ~95% T2
    - ~85% T2 overweight

- **Diabetes (global):** ~415 mil, ½ not dx$^3$

- **Prediabetes (US):**
  - 38% adults$^1$
  - 86 mil$^2$, majority overweight
    - 83% over 65 yrs$^1$
    - Only 11% aware$^4$ (↑ from 8%$^5$)

- **Predictions of diabetes:**
  - 40% of population, 2 out of 5 to develop in lifetime$^6$
  - Global: ~642 mil by 2040$^3$

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Natural History: Weight Gain, Loss, Regain

Diabetes Prevention Program (DPP): Trial Basics¹

- DPP initiated: 1998, stopped 2001
- RCT, multi-site in U.S.
  - ~3000 subjects
- 3 arms: metformin with standard care, placebo/standard care, Intensive Lifestyle Intervention (ILI)
- Weight loss: 5 – 7% from initial
- Exercise: 150 min; 30 min, 5x/week
- DPP Outcomes Study (DPPOS) extension, ongoing
  - Does further reduction in diabetes development reduce complications?

## DPP/DPPOS Results to Date – Reduction of Incidence of T2D in High Risk Population

<table>
<thead>
<tr>
<th></th>
<th>ILI*</th>
<th>Metformin/Standard Care*</th>
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</thead>
<tbody>
<tr>
<td>DPP</td>
<td>58%</td>
<td>31%</td>
</tr>
<tr>
<td>DPPOS at 10 yrs</td>
<td>34%</td>
<td>18%</td>
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<tr>
<td>DPPOS at 15 yrs</td>
<td>27%</td>
<td>17%</td>
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</tbody>
</table>

*Compared to placebo/standard care. All DPP participants offered lifestyle intervention post DPP, leading to reduction in differences over time.³

DPP Lifestyle Changes: Weight Loss or Physical Activity?

DPP Findings:
• Weight loss = dominant predictor of reduced T2D incidence and return to normoglycemia\(^1\)
  – For each kg weight loss = 16% reduction in risk for T2D\(^2\)
  – Subjects who lost > 5 – 7% reduced T2D risk > 90%\(^2\)
• Physical activity helps sustains weight loss – plays “supporting role”

DPPOS – 15 yr F/U¹

• Conclusions¹:
  – Can prevent/delay T2D with ILI or metformin over long term
  – Regardless of DPP treatment type, participants without T2D at 15 years had 28% lower occurrence of microvascular disease
  – Minimal incidence of CVD (HA, stroke) (young, healthy population)
  – Metformin: DPPOS largest, longest trial using drug, safe and well-tolerated; small increase in B-12 deficiency

• Summary: Weight loss key factor in preventing progression of prediabetes to T2D and in restoring normoglycemia to some.²

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Look AHEAD Trial

• Study details:
  – Long term (start ~2000), multicenter, RCT, study extended to 2014 (ended early 10/19/12)\textsuperscript{1,2}
  – \textgt5,137 (55-76 yrs), overweight or obese individuals\textsuperscript{2}
  – T2D diabetes for 6.8 \pm 6.5 yrs (range 3 mos – 13 yrs)\textsuperscript{3}
  – Median follow up 9.6 yrs\textsuperscript{4}

• Primary Outcome:
  – Will intentional weight loss reduce the incidence of fatal and nonfatal cardiovascular and cerebrovascular events?

Look AHEAD Trial – Groups Defined

• Intensive Lifestyle Intervention (ILI):¹,²
  – > 7% weight loss at one year
  – >175 minutes physical activity/week
  – Calorie goal: 1200-1800 cals/day, ≤ 30% of cals as fat
  – Support: significant, especially early

• Diabetes Support and Education (DSE)/(control)

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Look AHEAD: Changes in Weight\textsuperscript{1,2}

Mean weight loss from baseline 8.6% ILI, 0.7% control\textsuperscript{1,2}

Look AHEAD – Positive Results, Despite Headlines$^{1,2,3}$

- Mean weight loss from baseline 6% ILI, 3.5% control$^1$
- A1c lowering ILI group 0.2%$^1$
- Primary outcome: Failed to reduce CVD events in ILI vs. control
- Other health benefits:
  - Reduced sleep apnea, depression, urinary incontinence and improved quality of life (QOL$^3$)
- Subjects with early disease = most health benefits
  - Shortest duration
  - Not on insulin
  - Good baseline glycemic control

Look AHEAD – Positive Results, Despite Headlines$^1,^2$

- Financial analysis$^2$:  
  - ILI produced mean relative per-person 10-year healthcare cost savings of $5,280; not evident in people with history of CVD  
  - Average annual savings ~$600/participant  
  - ILI used fewer medications (7%), had fewer hospitalizations (11%)

- Look AHEAD continues as observational trial

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Weight Loss Matters Most – When?

But Healthy Eating is continuously important and can always assist glucose, BP, lipid control!
POUNDLS LOST Study

- NIH - 2 year weight loss trial, 800+ subjects, 2 sites
- Overweight adults, BMI: 25 - 40
- 4 diets, varying % calories:
  - Carbohydrates - Low 35% to high of 65%

POUNDS LOST Study

Results:

• No one nutrient composition fared better than another (subjects modified towards diet goal, but didn’t reach diet’s goal)

• Weight loss:
  • 6 months: similar weight loss - 7% (6 kg/13 lbs)
  • 12 months: regained similar amounts of weight
  • 2 years weight loss remained similar: 4 kg/9 lbs
  • Subjects attending two thirds of sessions lost: 9 kg/20 lbs

• Clinical improvements:
  • Reduced cardiovascular disease and T2D risk factors including lower LDL-cholesterol, BG and serum insulin levels; and slightly lower BP

Dietary Approaches Associated with Weight Loss by Expert Panel

Among 15, range of options:* 
- Higher protein (25%), fat (30%), carbohydrate (45%) 
- Lacto-ovo-vegetarian-style 
- Low-fat (10% to 25% of total calories from fat) vegan-style 
- Low-carbohydrate (initially <20 g/day carbohydrate) 
- Mediterranean-style diet with prescribed energy restriction 
- Provision of high-glycemic load or low-glycemic load meals

*If reduction in dietary energy intake is achieved.

Average American adult gains 1 to 2 pounds per year.\(^1\) If a person at the end of 2, 5 or 10 years (eg DPPOS, Look AHEAD) is at a lower body weight than they were at when they began their weight loss efforts, have they avoided gaining those 1 to 2 pounds per year and the health consequences? Gained potential health benefits?

From: Martin, C: WMDPG Symposium, April 2013

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Polling Question:

What do numerous clinical trials demonstrate about the common pattern of weight loss and regain?

a. People lose weight slowly initially and after one month steadily lose weight for six months.
b. People hit a weight loss plateau about every six weeks even with vigilant adherence.
c. People lose maximal weight by about six months to one year, then slow weight regain is common.
d. People lose weight most quickly by about six months and then they continue to lose weight but at a slower pace.
Factors for Successful Weight Loss and Control
National Weight Control Registry (NWCR) - 10 years

- Initiated 1993, Wing and Hill
- Goal: Identify successful weight loss maintainers and describe their strategies
- Criteria: > 30lbs maintained > 1 yr; now > 10,000
- 10 year study: enrolled 1993 – 2000
- Total: 2886 completed > 2 of 10 annual follow up surveys

NWCR - 10 years
Predictors of Success

- Magnitude of initial weight loss and duration
- Increased physical activity
- Low calorie and low fat intake
- High restraint and low disinhibition around food
- Self-weighing > several times/week

"Continued adherence to each behavior can improve long term outcomes."

Weight Loss: Successful Strategies

• Ready, willing and able?¹,²
• Focus, don’t overwhelm¹,²
• Choose behaviors most ready to change¹,²
• Reduce total fat to < 30% fat (don’t focus on counting carbohydrate)²,³
• Use of meal replacements/structure³
• Include physical activity²-⁵
• Continuous tracking essential for accountability
• Early success (weight loss) predicts later success (frequent contact early)⁵,⁶

Weight Maintenance: Successful Strategies

• Physiologic realities\textsuperscript{1}
  – Lower calorie needs to maintain lower weight: 300 – 400/day
• Food/Calories:
  – Low calorie, low fat intake\textsuperscript{2,3,4}, eat breakfast\textsuperscript{2,5}
  – Simplify eating plan, minimize choices\textsuperscript{3}
• Physical Activity\textsuperscript{4}:
  – Regular significant physical activity (60-90 min/day)\textsuperscript{2,4}
  – Minimize sedentary behavior (e.g. TV watching)\textsuperscript{5}
• Continuous tracking essential for accountability
• Maintain continuous support
• Relapse prevention plan
• Regular self weigh-ins\textsuperscript{4,5}

\textsuperscript{1}Rosenbaum M: Weight Management DPG Symposium, 2013.
\textsuperscript{2}Fletcher, On the Cutting Edge, Diabetes Care and Education. 2008;29(4).
Polling Question:

Which of the following is NOT a weight control principle or strategy to share with your clients?

a. Physical activity, particularly aerobic activity, plays an important role to achieve weight loss.

b. Keeping lost weight off is often more difficult than taking pounds off.

c. It’s common for people to need fewer calories after they have lost weight than they needed to maintain that same weight prior to gaining weight.

d. Physical activity is even more important to keep lost pounds off than it is for weight loss.
Online Discussion

What are a couple of successful strategies you’ve used in your clinical practice to assist people with their weight control efforts, either weight loss or long term control?