Obesity Management in Diabetes Care &
Education: Explore Our Current and Future
Armamentarium

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Disclosure to Participants
Notice of Requirements For Successful Completion
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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Objectives
At the end of the presentation, attendees will be able to
• describe the rationale for weight management as a pathway to diabetes prevention and diabetes management;
• translate Guideline recommendations and new technologies into actionable steps for diabetes educators regarding
  – Lifestyle intervention
  – Lifestyle intervention and pharmacotherapy
  – Lifestyle intervention and bariatric surgery; and
• discuss the diabetes educator’s role currently and in the future.

Rationale
Why should you engage in weight management as a pathway to better diabetes management?

Weight Management - Why Not
We know the rules of diabetes management. It’s easier for us!
1200 meds for glycemia, cardiovascular risk factors, detailed algorithms, standards of care and trained workforce.
Patients are non-compliant. Patients don’t follow my weight loss instructions.
They just gain it back. If patients succeed with losing weight, they almost always regain.

Weight Management - Why
One approach treats the root cause!
One treatment can improve glycemia, cv risk factors, symptoms and functioning, quality of life and cost of care. Plus, weight loss is powerful medicine!
Hey! No name-calling. We need to give patients tools to aid adherence, since adherence predicts success.
The metabolic and physiologic challenges of weight reduction are well understood. Fore-warned is fore-armed.
The DPP experience: Impact of weight loss on the risk of diabetes

Rationale

The bottom line: Good weight management is good diabetes management.

The importance of aggressive pursuit of normoglycemia: Impact of reaching normal glucose regulation during DPP-OS

Moderate Weight Loss in persons with Type 2 Diabetes - the evidence from Look AHEAD

Improvements in...
- measures of glycemic control: reduction in diabetes medications
- systolic and diastolic blood pressure, hypertension, HDL cholesterol: reduction in lipid lowering and blood pressure lowering medications
- hepatic steatosis measured by MRI
- mobility
- apnoea-hypopnoea index
- symptoms of urinary stress incontinence
- measures of sexual function
- quality of life measures (IWQOL)
- hospitalization and medication cost savings

All may be downloaded free of charge.
Major Message from 2013 AHA/ACC/TOS Guidelines

- It is imperative that PCPs engage in weight management as a pathway to better health for their patients.
- Screen with BMI at every visit. But BMI is only a screening tool.
- Waist circumference is a risk factor. Use the conventional cutpoints >35 inches for women and > 40 inches for men to identify patients that are at high risk.
- Who needs to lose weight? For Europeans, BMI >30 kg/m$^2$ or BMI >25 kg/m$^2$ with a risk factor, like elevated waist circumference. Lower BMI criteria for Asians.


How much weight loss do we need to achieve to improve health?

“…the curious power of modest weight loss …”

David Allison, PhD
Design, Analysis, and Interpretation of Randomized Clinical Trials in Obesity
Dec 4-5, 2006
Newark, New Jersey

Major Message from 2013 AHA/ACC/TOS Guidelines

For Asians:
- Overweight BMI >23 kg/m$^2$
- Obese BMI >25 kg/m$^2$

Waist circumference 31.5 cm for women and 35 cm for men


(www.idi.org.au/obesity_report.htm)

Second Major Message from 2013 Obesity Guidelines

- You do not need to get all your patients to an ideal weight. Modest weight loss has major health benefits.


Progressive weight loss has dose-dependent and tissue-dependent biologic effects

Adjusted LS mean (95% CI). Stable weight defined as ±2% of baseline weight,*p<0.0001 for graded association by weight loss. CI, confidence interval; FPG, fasting plasma glucose; HbA1c, glycosylated haemoglobin; LS, least squares.

Impact of weight loss on glycemic measures (Look AHEAD 1-year data)

Initial weight loss predicts ultimate success

Weight Loss Impact on CVD Risk Markers

Look AHEAD 1-year data

Third Major Message from 2013 Obesity Guidelines

• There is no magic diet for weight loss. Choose the diet composition based on the patient’s health status and personal preference.

Staging the patient - the first step in the AACE Advanced Framework – determines treatment approach

Adherence - Not Diet - Predicts Success

Comparison of Four Popular Diets
• Patients who need to lose weight should receive a comprehensive program (diet, physical activity, and behavior modification) of 6 months or longer
• The gold standard is on-site, high-intensity (≥ 14 sessions in 6 months) comprehensive intervention delivered in group or individual sessions by a trained interventionist and persisting for ≥ 1 year
• Other approaches (ie, Web-based, telephonic) may be used when patients cannot access the gold standard, although the amount of weight loss on average may be less (evidence grade B, moderate)


Progress in Lifestyle Intervention:
mean weight loss in first year

1970-1990:
- Self-Monitoring
- Stimulus Control
- Reinforcement/Shaping
- Goal Setting
- Behavioral Contracting
- Meal Planning
- Modification of physical activity
- Problem Solving
- Social Support

1990-2010:
- Long term contact (1Y)
- Maintenance approaches
- Relapse prevention
- Booster treatment
- Tool Box approaches

2010–
- Medication adjuncts
- LCD incorporation
- eHealth approaches (?)
- mHealth approaches (?)
- Social networks (?)

Why Patients Struggle:
Biologic Adaptations to Weight Loss

[Graph showing changes in weight from baseline to week 62 with a loss of 30-lb and a gain of 11-lb]

What do the Guidelines say about patients who struggle? When do we add meds? When do we add devices and surgery?

Prescribing Medications with an Indication for Chronic Weight Management...from the ENDO Guidelines

• Follow the label – use as indicated
• Assess efficacy and safely monthly for the first 3 months
• Stop at 3 months if patients aren’t responding. Try something else.
• Use long-term to promote weight loss maintenance.
• Do not exceed recommended doses.
• Do not use sympathomimetic drugs with patients with cardiovascular disease or uncontrolled hypertension.

Medications Approved for Chronic Weight Management

<table>
<thead>
<tr>
<th>Agent Defined</th>
<th>Action</th>
<th>Approval</th>
<th>Scheduled Drug</th>
</tr>
</thead>
<tbody>
<tr>
<td>Orlistat</td>
<td>Peripheral pancreatic lipase inhibitor - blocks ingested fat absorption</td>
<td>Approved 1997</td>
<td>Yes</td>
</tr>
<tr>
<td>Lorcaserin</td>
<td>5-HT2C serotonin agonist - little affinity for other serotonergic receptors</td>
<td>Approved 2012</td>
<td>Yes</td>
</tr>
<tr>
<td>Phentermine/topiramate ER</td>
<td>Sympathomimetic - Anticonvulsant (GABA receptor modulator, carbonic anhydrase inhibitor, glutamate antagonist)</td>
<td>Approved 2012</td>
<td>Yes</td>
</tr>
<tr>
<td>Naltrexone SR/bupropion SR</td>
<td>Opioid RA - Dopamine/noradrenaline reuptake inhibitor</td>
<td>Approved 2014</td>
<td>No</td>
</tr>
<tr>
<td>Liraglutide 3.0 mg</td>
<td>GLP-1 RA</td>
<td>Approved 2014</td>
<td>No</td>
</tr>
</tbody>
</table>

Note: Phentermine approved for short term use

ACC/AHA/TOS Obesity Guidelines: Recommendation 5 Grade A (Strong)

- Advise your patients with a BMI ≥35 kg/m² and a co-morbidity or ≥40 kg/m² that bariatric surgery may be an appropriate option to improve health and offer referral to an experienced bariatric surgeon for consultation and evaluation.

Drugs that Cause Weight Gain and Alternative Approaches for Overweight and Obese Patients...from the ENDO Guidelines

Weight Effects of Common Medications

<table>
<thead>
<tr>
<th>Weight Loss</th>
<th>Alternatives (Weight Reducing in Parentheses)</th>
</tr>
</thead>
<tbody>
<tr>
<td>+</td>
<td>Metformin, acarbose, miglitol, sitagliptin, exenatide, liraglutide, SGLT-2 inhibitors</td>
</tr>
<tr>
<td>+++</td>
<td>Bupropion, nefazodone, fluoxetine (short term, sertraline, &lt; 1 year)</td>
</tr>
<tr>
<td>++++</td>
<td>Progestational steroids, Barrier methods, intrauterine devices</td>
</tr>
</tbody>
</table>

Common Bariatric Surgery Procedures

SOS and All Cause Mortality
The Longitudinal Assessment of Bariatric Surgery (LABS) Study

<table>
<thead>
<tr>
<th>Procedure</th>
<th>Number</th>
<th>Age (mean) ± SD</th>
<th>BMI (median)</th>
<th>Death in 30 days (%)</th>
<th>DVT (%)</th>
<th>Failed to be discharged in 30 days (%)</th>
<th>Composite endpoint* in 30 days (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lap Band</td>
<td>1198</td>
<td>46 ± 12.5</td>
<td>46.9 ± 10.7</td>
<td>0</td>
<td>0.3</td>
<td>0.4</td>
<td>1.2</td>
</tr>
<tr>
<td>Lap Roux-en-Y</td>
<td>2975</td>
<td>43.6 ± 11</td>
<td>50.9</td>
<td>0.2</td>
<td>0.4</td>
<td>0.9</td>
<td>4.8</td>
</tr>
<tr>
<td>Open Roux-en-Y</td>
<td>437</td>
<td>45.9 ± 10.7</td>
<td>45.9</td>
<td>2.1</td>
<td>1.1</td>
<td>1.9</td>
<td>7.8</td>
</tr>
</tbody>
</table>

*Composite endpoint: death, DVT or venous thromboembolism, intervention or failure to be discharged within 30 days


4776 patients in 10 United States Centers 2005-2007

Two Balloon Devices Approved in 2015

- **ReShape™ Integrated Dual Balloon System**
  - 11.27% TBWL at 12 months (n=1683)
  - Balloons are deflated at removal in 6 months
  - BMI of 30-40 kg/m²

- **ORBERA™ Intragastric Balloon System**
  - 10.2% TBWL at 6 months
  - Maximum use of 6 months before removal
  - BMI of 30-40 kg/m²

AspireAssist – Stomach Draining Device

- 16 week weight loss 12.4 kg
- Removes ~30% of food from stomach before calories are absorbed, causing weight loss
- Thin tube connects inside of stomach directly to a discreet Skin-Port on outside of abdomen. Valve on port valve controls flow of stomach contents
- Aspiration process is performed ~20 minutes after entire meal is consumed and takes 5 to 10 minutes to complete, 3x/da
- Requires oral processing of food.

http://aspirebariatrics.com/

Vagal Blocking Therapy

- Pacemaker-like device designed to block the vagus nerve to affect the perception of hunger and fullness.
- Satiation by delaying food processing and gastric emptying.


Role of the Diabetes Educator

Two spheres of knowledge are needed

- Intensive medical efforts at weight loss
- Chronic weight management over the life course

Factors associated with weight loss success
1-year data from Look AHEAD. Intensive lifestyle intervention participants

![Graph showing factors associated with weight loss success.]

Weight Counseling 101
Windows of opportunity for implementing behaviors to create negative energy balance:
YOU ARE AN EXPERT ON HOW TO ACHIEVE WEIGHT LOSS SUCCESS.

- Face-to-face counseling
- More contact time
- More structure in the diet – meal replacements
- Liquid diets – low calorie (>800 kcal/d) or very-low-calorie diets (<800 kcal/d)
- Alternate day fasting
- Group support
- Campaigns
- Medications
- Devices
- Referral for Surgery

How do we intensify lifestyle intervention?

- Face-to-face counseling
- More contact time
- More structure in the diet – meal replacements
- Liquid diets – low calorie (>800 kcal/d) or very-low-calorie diets (<800 kcal/d)
- Alternate day fasting
- Group support
- Campaigns
- Medications
- Devices
- Referral for Surgery

We need to be more open to these, sooner in our patients’ struggles.

Factors associated with weight loss success
1-year data from Look AHEAD. Intensive lifestyle intervention participants

![Graph showing factors associated with weight loss success.]

Weight Counseling 201
Long term monitoring, anticipating regain:
YOU ARE READY TO SUPPORT THE PATIENT OVER THE LONG TERM.

Process predictors of long-term weight loss
Data from the National Weight Control Registry

Weight Counseling 301

Beware of weight gain pitfalls.

YOU KNOW THE PREDICTORS OF WEIGHT GAIN THAT CAN OCCUR ACROSS THE LIFESPAN.

What causes weight gain?
Genetically susceptible individual exposed to environmental influence - Usual suspects
• Too much fattening food
• Not enough exercise

Some new ideas
(1) Insufficient sleep,
(2) Smoking cessation
(3) Medications that can cause weight gain (e.g., atypical antipsychotics)
(4) Stress
(5) Depression
(6) Pregnancy
(7) Menopause


What we talked about
• Why you need to do it.
• What you need to do.
• How to do it.

Thank you!