UPDATED TREATMENT STRATEGIES IN THE MANAGEMENT OF OBESITY

Holly Wyatt, M.D.
Associate Professor of Medicine
Medical Director
Anschutz Health and Wellness Center
University of Colorado Anschutz Medical Campus
www.facebook.com/DrHollyWyatt
@dhrollywyatt

HOLLY WYATT, M.D.
DISCLOSURES

- Board Member/Advisory Panel: Eisai; Retrofit, Atkins, Vivus
- Consultant: Takeda
- Research Support: American Beverage Association; GI Dynamics; Novo Nordisk, DuPont, National Cattleman's Beef Association; Gelesis
- Stock/Shareholder: Active Planet LLC, Shakabuku LLC
- Speaker’s Bureau: CME Insite, Global Directions in Medicine, Vindico, IMNE, Inc. - CME events only
- Royalty- Up to Date
- Patent- Energy Gap
- Book- I am the co-author of a weight loss book, State of Slim, published by Rodale
- Honorarium- American Diabetes Association, The Obesity Society
GAME PLAN

• Where are we TODAY in treating Obesity?
• What is NEXT?
• How do we significantly move the field in the years ahead?

OLD PARADIGM
OF PATIENT ASSESSMENT & PLAN

• A 52 yr old male with hypertension, dyslipidemia, GERD, arthritis of knees, and depressed mood. He is taking losartan/HCTZ, atorvastatin, omeprazole, and meloxicam. On examination, he is overweight with weight of 210 lbs and height of 68 inches. BP is 138/88.
• Labs show TC of 220 mg/dl, TG 150 mg/dl, HDLc 36, LDLc 130 mg/dl, new fasting glucose 128 mg/dl and HbA1c of 6.0%
• Recommendation is to start metformin (with some minimal counseling for diabetes and to lose weight)
NEW PARADIGM
OF PATIENT ASSESSMENT & PLAN

- A 52 yr old male with obesity (BMI = 32 kg/m²) complicated by hypertension, dyslipidemia, GERD, arthritis of knees, and depressed mood. He is taking losartan/HCTZ, atorvastatin, omeprazole, and meloxicam. On examination, he is overweight with weight of 210 lbs and height of 68 inches. BP is 138/88.
- Labs show TC of 220 mg/dl, TG 150 mg/dl, HDLc 36, LDLc 130 mg/dl, and new fasting glucose 128 mg/dl and HbA1c of 6.0%
- Recommendation is to begin aggressive weight management program

MANAGING WEIGHT IS THE KEY TO TREATING CHRONIC DISEASES

WT Garvey, 2011. NAFLD, nonalcoholic fatty liver disease; PCOS, polycystic ovary syndrome
THE MEDICAL MANAGEMENT OF OBESITY
WHAT WOULD YOU RECOMMEND?

1. Prescribe a Structured Calorie Reduced Diet- if so What Kind?
2. Increase his Activity- if so How much?
3. Prescribe a Structured Diet, Increase his Activity and throw in some Behavioral Modification?
4. Add a Weight Loss medication?
5. Add a Weight Loss medical device?
6. Change his DM medications, and/or add a blood pressure medication?
7. Recommend Bariatric Surgery?
8. Do Nothing Right Now - his numbers are pretty good, advise him not to gain weight?
9. Let your resident or fellow decide?
10. Refer to a specialist- Weight management is not my thing!

WHAT ROLE DO YOU PLAY?

Don’t Ask: Don’t Tell
Identify & give advice to lose weight if the patient brings it up
Assess & Refer
Assess, Counsel & Treat
Specialist
Don’t Ask: Don’t Tell
ADVANCES IN THE FIELD

- CMS reimburses PCPs for “intensive behavioral therapy for obesity”
- AMA Now Recognizes Obesity as a Disease - June, 2013
- Four new medications on market approved by the FDA - 2012 and 2014
- Multiple New Guidelines promote weight management as a path to disease management
- Endoscopic Bariatric Therapies are approved by the FDA in 2015 and 2016.

REPUTABLE SOURCES OF TREATMENT RECOMMENDATIONS FOR ADULT OBESITY

- AHA/ACC/TOS (Obesity 2)\(^1\): focus on lifestyle intervention with guidance on referral for surgery
- AACE\(^2,3,4,5\): framework for diagnosis and algorithm based on assessment of disease severity
- ASBP\(^5\): comprehensive and holistic approach
- Endocrine Society\(^6\): detailed description of pharmacological intervention
- Society of Behavioral Medicine\(^7\): provides specific recommendations for using 5A’s in practice

---

Etiology of Obesity TODAY

Energy intake

• Portion size
• High energy density
• High glycemic index
• Soft drinks/junk food in schools
• Added sugar
• Easy food access
• Low cost
• Variety
• Convenience
• Great taste
• Ads/marketing

Energy expenditure

• Sedentary workplaces
• Sedentary schools
• Activity "unfriendly" community design
• Automobiles
• Drive-through conveniences
• Elevators/escalators
• Remote controls
• Sedentary entertainment
• Labor saving devices
• Television/computer

OBESITY

PICK YOUR FAVORITE REASON WHY

• Genetics & epigenetics
• Biology
• Environment
• Society
• Personal responsibility
• Weight gaining medications

• Health care
• Economics
• Ecology
• Diet
• Physical inactivity
• Social networks
• Stress and emotion
• Microbiota
### REGULATION OF FOOD INTAKE

#### Brain

**Stimulate**
- NPY
- Orexin-A
- AGRP
- galanin

**Inhibit**
- α-MSH
- CRH/UCN
- NE
- GLP-1

#### Central Signals

- Glucose
- CCK, GLP-1, Apo-A-IV
- Vagal afferents
- Insulin
- Ghrelin
- Leptin
- Cortisol

#### Peripheral signals

- Peripheral organs
- Gastrointestinal tract
- Adipose tissue
- Adrenal glands

#### Peripheral organs

- Food Intake

#### External factors

- Emotions
- Food characteristics
- Lifestyle behaviors
- Environmental cues

#### Peripheral organs

- Food Intake

---

Berthoud HR. *Curr Opin Neurobiology* 2011;21:888-896
EVEN OUR FRIENDS MAKE US OBESE

Evaluation of interconnected social network of 12,067 people assessed as part of The Framingham Heart Study.
Ego = a person whose behavior is being analyzed
Alter = a person connected to the ego who may influence the behavior of the ego


ASK THE AUDIENCE? IS THERE A SILVER BULLET?
CURRENT APPROACH TO OBESITY TREATMENT

<table>
<thead>
<tr>
<th>TREATMENT OPTIONS</th>
<th>Current Patient Risk LOW</th>
<th>Patient Risk HIGH</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>BMI Range</strong></td>
<td>25-26.9</td>
<td>27-29.9</td>
</tr>
<tr>
<td><strong>Diet, Exercise and Behavioral Therapy</strong></td>
<td>+</td>
<td>+</td>
</tr>
<tr>
<td><strong>Pharmacotherapy</strong></td>
<td>↓</td>
<td>with a comorbidity</td>
</tr>
<tr>
<td><strong>Surgery</strong></td>
<td></td>
<td>+</td>
</tr>
</tbody>
</table>

Wyatt HR. JCEM 2013.

HOW DO WE APPROACH OBESITY TREATMENT?

- Acute Weight Loss
  - Strategy

- Chronic Weight Loss
  - Strategy

- Weight Loss
  - Strategy 1
  - Strategy 2

- 4-6 months
- Years/Forever?
RULE OUT SPECIFIC MEDICAL CAUSES FOR OBESITY

Secondary Causes of Obesity

- Hypothyroidism: wt gain modest, can impede weight loss efforts.
- Cushing’s Syndrome (1/1,000,000) → screen only if hx/PE findings suggestive.
- Congenital: Prader Willi, Down’s
- Hypothalamic disorders: trauma, tumor, surgery

OPTIMIZE CURRENT REGIMENS—MEDICATIONS FOR COEXISTING CONDITIONS MAY PROMOTE WEIGHT GAIN

<table>
<thead>
<tr>
<th>Category</th>
<th>Drugs That Cause Weight Gain</th>
<th>Possible Alternatives</th>
</tr>
</thead>
<tbody>
<tr>
<td>Neuroleptics</td>
<td>Thoridazine, haloperidol, olanzapine, quetiapine, risperidone, clozapine</td>
<td>Ziprasidone, aripiprazole</td>
</tr>
<tr>
<td>Tricyclics (ADs)</td>
<td>Amitriptyline, nortriptyline, imipramine, doxepin</td>
<td>Protriptyline, bupropion, nefazodone</td>
</tr>
<tr>
<td>MAOIs (ADs)</td>
<td>Phenelzine</td>
<td></td>
</tr>
<tr>
<td>SSRIs (ADs)</td>
<td>Paroxetine</td>
<td>Fluoxetine, sertraline</td>
</tr>
<tr>
<td>Other (ADs)</td>
<td>Mirtazapine, duloxetine</td>
<td>Bupropion</td>
</tr>
<tr>
<td>Anticonvulsants</td>
<td>Valproate, carbamazepine, gabapentin, pregabalin, vigabatrin</td>
<td>Topiramate, lamotrigine, zonisamide, felbamate</td>
</tr>
<tr>
<td>Antidiabetic agents</td>
<td>Insulin, sulfonylureas, thiazolidinediones</td>
<td>AGIs, DPP-4’s, SGLT2’s, GLP-1 RAs, metformin</td>
</tr>
<tr>
<td>Antihistamines</td>
<td>Cyproheptadine</td>
<td>Inhalers, decongestants</td>
</tr>
<tr>
<td>β- and α-adrenergic blockers</td>
<td>Propranolol, doxazosin</td>
<td>ACEIs, CCBs</td>
</tr>
<tr>
<td>Steroid hormones</td>
<td>Contraceptives, glucocorticoids, progestational steroids</td>
<td>Barrier methods, NSAIDs</td>
</tr>
</tbody>
</table>

ASSESS WEIGHT AND LIFESTYLE HISTORIES TO IDENTIFY FACTORS CONTRIBUTING TO WEIGHT GAIN AND BARRIERS TO WEIGHT LOSS

Questions to ask

- History of weight gain and loss over time?
- Previous weight loss attempts?
- Dietary habits?
- Physical activity?
- Family history of obesity?
- Other medical conditions or medications that may affect weight?

Answers may guide approach to adjusting weight-loss regimen

- Address/readdress contributing factors and barriers
- Intensify lifestyle/behavioral intervention
- Add adjunct therapies
- Optimize current regimens


ASK THE AUDIENCE: WHAT IS THE BEST DIET FOR WEIGHT LOSS?
It’s Not What You Eat, But How Long You Can Eat It


PRESCRIBE A NUTRITIONAL PLAN TO REDUCE CALORIC INTAKE

Methods to Reduce Caloric Intake

• Limit calories
  - Women: 1200-1500 kcal/d
  - Men: 1500-1800 kcal/d
• Energy deficit (500 or 750 kcal/d)
• Evidence-based diet that restricts certain food types (eg, high carbohydrate, high fat)
• Very low–calorie diet (< 800 kcal/d) ONLY
  - In limited circumstances
  - With medical monitoring and high-intensity lifestyle intervention

Consider Patient Preferences and Health Status

• Preferably refer to a nutrition professional for counseling
• A variety of diets will promote weight loss

U.S. NEWS & WORLD REPORT BEST WEIGHT-LOSS DIETS: PATIENTS HAVE MANY OPTIONS

<table>
<thead>
<tr>
<th>Diet</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Weight Watchers</td>
<td>Point system based on food characteristics encourages healthy choices; group support available</td>
</tr>
<tr>
<td>HMR Diet</td>
<td>Meal replacements, fruits, vegetables; quick start and transition phases; lifestyle training; weekly coaching; home or clinic</td>
</tr>
<tr>
<td>Biggest Loser Diet</td>
<td>Books providing guidance on calorie restriction and exercise</td>
</tr>
<tr>
<td>Jenny Craig</td>
<td>Personalized prepackaged meal/exercise plan with support*</td>
</tr>
<tr>
<td>Raw Food Diet</td>
<td>75% to 80% of daily foods are plant based and not heated above 115°F; substantial preparation time</td>
</tr>
<tr>
<td>Volumetrics</td>
<td>Focus on low-density, high-volume foods</td>
</tr>
<tr>
<td>Atkins</td>
<td>Low carb; frozen food line is available</td>
</tr>
<tr>
<td>Flexitarian Diet</td>
<td>Mostly vegetarian; outlined 5-week meal plan</td>
</tr>
<tr>
<td>Slim-Fast</td>
<td>Meal replacement program</td>
</tr>
<tr>
<td>Vegan Diet</td>
<td>Excludes all animal products</td>
</tr>
</tbody>
</table>

* HMR, Health Management Resources.


ASK THE AUDIENCE: HOW MUCH EXERCISE DO YOU NEED TO DO? WHAT DO YOU RECOMMEND?
PRESCRIBE INCREASED PHYSICAL ACTIVITY

**Prescription**

- Include frequency, intensity, time spent, type, enjoyment level, and default and back-up plans.
- ≥ 150 min/week moderate or ≥ 75 min/week vigorous aerobic activity.
- Resistance training to preserve lean mass.
- > 200-300 min/week moderate or > 150 min/week vigorous aerobic activity for more robust weight loss and to prevent weight regain.
- Accounting records—e.g., written or electric activity logs, pedometer/accelerometer logs, metrics (miles, laps, reps).


PRESCRIBE A PROGRAM THAT OFFERS BEHAVIORAL INTERVENTION

**Ideal Initiation**

- High contact frequency.
- ≥ 14 group or individual sessions in 6 months.
- On-site, high-intensity program with behavioral strategies.

**Alternatives**

- Telephone or electronic counseling (with personalized feedback).
- Commercial programs with evidence of safety and efficacy.

**Maintenance**

- Continued contact (≥ 1 x/month).

COMMERCIAL PROGRAMS: 3 MOST POPULAR WITH AN EVIDENCE BASE TO EVALUATE

- **Weight Watchers** – Low cost (as little as $12 per week); two diet options, expanded from classic points program; can choose between web-based and group setting; lay counseling
- **Nutrisystem** – Provides food and telephone counseling, ~$280 - $370 per month, shelf-stable dry or frozen foods with supplemental fruits and vegetables
- **Jenny Craig** – Provides food and in-person or telephone counseling, ~$500-$650 per month, shelf-stable dry or frozen foods with supplemental fruits and vegetables

CONSIDER COMMERCIAL PROGRAMS THAT HAVE FEATURES CONSISTENT WITH RECOMMENDATIONS¹⁻³

- Self-monitoring—weight and diaries
- Portion control—meal replacements
- Regular, moderate physical activity
- Social support—individual and group sessions
- Incremental steps to behavior change
- Option for long-term participation or weight maintenance support
- Examples: Weight Watchers, Jenny Craig, TOPS, NutriSystem, YMCA Diabetes Prevention Program

ADDITIONAL RESOURCES AND TOOLS TO FACILITATE SELF-MONITORING AND PLANNING

- Pedometers and sports watches\(^1\)
- Personal-activity monitors (eg, BodyMedia FIT, DirectLife, Fitbit One, Fitbit Zip, ActiGraph, Jawbone Up, Basis B1)\(^2\)
- Phone applications (eg, Calorie King,\(^3\) GoMeals,\(^3\) Fitter Fitness Calculator,\(^3\) SparkPeople,\(^3\) Strava Cycling,\(^3\) South Beach Diet,\(^3\) Charity Miles,\(^4\) LiveStrong,\(^5\) MyFitnessPal\(^6\))


Figure 1. Factors that predict weight loss in the Look AHEAD study\(^36\) and \(^40\)Effect of physical activity (A), behavior sessions (B), meal replacements (C) on weight loss. (D) Weight loss at years 4 and 8 after beginning the study is shown relative to percentage... Bray, et al. lancet, 2016, vol 387, 1947-1956.
FDA-APPROVED DEVICES ON THE MARKET DESIGNED TO TREAT OBESITY

• Gastric Bands - bands are placed around the top portion of the stomach leaving only a small portion available for food. 2007

• Electrical Stimulation Systems - electrical stimulator is placed in the abdomen to block nerve activity between the brain and stomach. 2015

• Gastric Balloon Systems - inflatable balloons are placed in the stomach to take up space. 2015

• Gastric Emptying Systems - a tube is inserted between the stomach and outside of abdomen to drain food after eating. 2016

http://www.fda.gov/MedicalDevices/ProductsandMedicalProcedures/ObesityDevices/ucm350134.htm
ELECTRICAL STIMULATION SYSTEM

GASTRIC BALLOON SYSTEMS
GASTRIC EMPTYING SYSTEM

BARIATRIC SURGICAL PROCEDURES

WHAT CAN YOU DO?

Do not start with your “hardest” patient.

YOU CAN MAKE A DIFFERENCE—DISCUSS WEIGHT MANAGEMENT WITH YOUR PATIENTS

If patients hear from a physician or other healthcare professional that they are overweight, they are

In this study...

- 45.2% of individuals with BMI ≥ 25 had been told they were overweight
- 66.4% of individuals with BMI ≥ 30 had been told they were overweight

≈ 6 × more likely to perceive themselves as overweight
≈ 2.5 × more likely to attempt weight loss

BECOMING COMFORTABLE TREATING OBESITY

- Obesity treatment for most doctors is out of their “Comfort Zone”
- Takes some effort to change your practice patterns
- Have a strategy for patients with an elevated BMI- just like you have a strategy for patients with elevated blood pressure
- Start small and build- become proactive!

HOW DO WE MOVE THE NEEDLE IN 2017?

[Diagram showing a cycle between "The Same Old Thinking" and "The Same Old Results"]
STRATEGY 1 - SET THE BAR HIGHER

A GREATER RATE OF WEIGHT LOSS DOES NOT YIELD A BETTER RESULT AT THE END OF 1 YEAR

INITIAL WEIGHT LOSS PREDICTS ULTIMATE SUCCESS

ILI participants who lost ≥10% at year 1 (N=887)

ILI participants who lost 5.0%–9.9% at year 1 (N=702)

ILI participants who lost <5.0% at year 1 (N=729)


STRATEGY 2- BEGIN WITH THE END IN MIND
STRATEGY 3-START WITH THE WHY? (NOT THE WHAT)
We know WHAT to Do. But we still do not do it

How do we get there?

Motivation
Your kids WILL exercise

Very Demotivational.com
STRATEGY 4- UTILIZE THE POWER OF THE MIND- BUILD YOUR MENTAL MUSCLE

• If I see it--- I will believe it
• If I believe it--- I will see it
TRANSFORMATIVE WEIGHT LOSS

• The process of creating and aligning a new reduced body weight, a positive and emotionally resilient mindset and your bigger purpose/spirit with a new lifestyle and way of being.

• Links the WHAT and the WHY
• WE have to provide the HOW – the Bridge
• If your WHAT is not related to your WHY you will stop doing it

TRANSFORMATION- MAKE IT BIGGER THAN WEIGHT LOSS
SUMMARY

- Obesity and overweight impact 66% of your patients
- Obesity is associated with increased morbidity and mortality
- **We need to take an active role in treating obesity**
- Remember- one size does not fit all
- **Comprehensive lifestyle therapy is the cornerstone for the management of overweight and obesity**
  - Behavioral intervention
  - Reduced calorie intake
  - Increased physical activity
- Medications and surgery should be considered in some patients
- Several medical devices have recently been FDA approved and provide additional strategies in the management of obese patients.