#CHAIR2014

7TH ANNUAL

CHAIR SUMMIT

neuroscience CME

Master Class for Neuroscience Professional Development

September 11 – 13, 2014 | Westin Tampa Harbour Island

Sponsored by

CME Outfitters

#CHAIR2014

Obesity: Starting the Conversation with Patients and Family

Douglas M. Ziedonis, MD, MPH
University of Massachusetts Medical School and UMass Memorial Health Care
Worcester, MA

Douglas Ziedonis, MD, MPH

Disclosures

No financial arrangement or affiliation with pharmaceutical or device commercial interests

- ***Research/Grants:*** National Institutes of Health; SAMHSA; Veterans Affairs; Massachusetts Department of Mental Health; Foundation for Mental Health Excellence; Physicians Foundation
- ***Advisory Board:*** RiverMend Health/RCA Holdings LLC; Skyland Trail
- ***Board of Directors:*** National Network Depression Centers; UMass Memorial Behavioral Health Services; Community Health Link; Marlborough Hospital; Massachusetts Hospital Association

#CHAIR2014

Learning Objective 1

Implement counseling or address weight management strategies for overweight or obese patients

#CHAIR2014

Learning Objective 2

Apply the most up-to-date treatment guidelines, safety and efficacy data, and evidence-based criteria for currently available and emerging therapies for the management of overweight and obese patients, which include diet and lifestyle modifications, pharmacotherapies, and surgery

UMASS Department Of Psychiatry
UMass Medical School /
UMass Memorial Healthcare

Psychiatry from the ♥ of Massachusetts

Brudnick Neuropsychiatric Research Institute bnri

CMHSR
A DMH Center of Excellence

UMASS www.umassmed.edu/psychiatry

VA NEW ENGLAND HEALTHCARE SYSTEM

CANDI
Child and Adolescent NeuroDevelopment Initiative

ATTOC

Why the High Rates of Obesity? Changes in Diet, Physical Activity, Culture, and Business Greed

- Change in foods
  - → More highly-palatable, energy-dense, processed foods high in fat, salt and sugar
- Change in lifestyle
  - → Less physical activity with more cars, sedentary work, TVs, and computers
- Culture changes:
  - → Eating away from home, fast food, vending machines, junk food, sodas, decline in culinary literacy, etc.
- Marketing & an Addictive Society:
  - → Power of marketing, media, business well-intentioned but also vulnerable to greed
    - → *When Society Becomes an Addict* (1988), Anne Wilson Schaef

Schaef AW. *When Society Becomes an Addict.* San Francisco, CA. Harper. 1988.

How Much of Overeating is Driven by Specific Foods?

- What specific substance?
- Food and macronutrients
  - → High sugar, fat, and/or salt
- Additives?
  - → Similar to tobacco industry rationale?
- Junk food/processed food
  - → Unique combinations of saturated fats, sugar, salt, additives, and calories

MSG is in Doritos
Is it MSG Addiction or Other Additives?

- MSG addiction
  - → Monosodium glutamate
- Other Additives?
  - → 31 “flavoring” additives
  - → Guanylates
    - → E 627, E628, E 629
    - → genetically modified microorganisms
  - → http://www.dyediet.com
- Tobacco additives
  - → Harmon / MAOI

Managing Overweight and Obese Adults in Clinical Practice

- Risk assessment
- Weight loss benefits
- Diets for weight loss
- Comprehensive lifestyle intervention approach
  - → Consider FDA approved medications
- Bariatric surgery

JAMA. September 3, 2014, Vol 312, No. 9 Website: http://jama.jamanetwork.com/issue.aspx

Developing the Capacity for Mindful Practice with Patients, Families and Ourselves

- Being present
- Attentiveness
- Situational awareness
- Mindful communication
- Team work
- Self-awareness and monitoring

Mindful Communication

- Bring intention, attention, and reflection:
- Kramer's 4 steps: (Insight Dialogue)
  - → 1. Pause
  - → 2. Be open to what is there – not imagined
  - → 3. Listen deeply
  - → 4. Speak truth – without intention to harm

Kramer G. *Insight Dialogue: The Interpersonal Path to Freedom*. Boston MA. Shambhala Publications. 2007

Engage the Family, Help the Patient

- Assessment about family and support network - who eat with, status, etc.
- Engage them in the process – send information, call them, offer help
- Discuss stimulus control strategies
- Aid family to reach a compromise
  - → Discussion, not debate
  - → Conversation, not conflict

Krasner M, et al. Mindful Communication: Bringing Intention, Attention, and Reflection to Clinical Practice. New York. http://www.physiciansfoundation.org/uploads/default/NYACP_Mindful_Communication_Curriculum.pdf 2010.

Wellness Screening for Being Obese or Overweight

- Observation:
  - → Where is weight distributed?
- Calculate body mass index (BMI)
  - → Divide weight (in kilograms) by the square of height (in meters) - expressed in kg/m2
  - → Obesity defined as 30 kg/m2; overweight 25 kg/m2
- Abdominal girth
- What puts weight on for you?
  - → Could you substitute or change that habit?
- Current BMI and food plan/goals
  - → Weight and weight loss history and things tried

Weight and Lifestyle Inventory: Obesity Severity Assessment (Part I)

- Eating habits
  - → Patterns & diet recall (24/7)
  - → Probe for pleasure / soothing aspects of food
  - → Probe for trigger foods and behaviors
  - → Risky situations (set and setting)
- Physical activity / Exercise
- Living circumstances
  - → Who do you live / eat with?
  - → Does your eating / weight effect your relationships?
  - → Who cooks? How often eat out?
  - → Do you cook? What do you cook?
  - → Who shops for the food?
- Self-perception and psychological factors
  - → Often easier to focus on weight and avoid deeper issue
  - → Do they feel addicted to food? OA participation in past?

Weight and Lifestyle Inventory: Obesity Severity Assessment (Part II)

- Caffeine, alcohol, tobacco, other addictions
- Mental health issues
  - → Specific eating disorders
  - → PTSD / trauma
  - → Psychotropic medications
- Use Food Addiction Survey – Yale, OA, other
- Medical history
  - → Medical lab tests and medications
- Is being overweight effecting personal goals?
  - → What are weight / food plan goals?
  - → What willing to commit to doing?

Food Addiction: Denial, Minimization, and Rationalization

- Cravings – obsessions – preoccupation
  - → What foods cause weight gain?
- Compulsions
  - → Rapid binge / purge
  - → Inconspicuous eating
  - → Secret eating
  - → Rapid eating
- Fear of loss of control
- Altered body image
- Chronic, progressive, and ultimately fatal
  - → Lethargy, irritability, and depression
  - → Loss of interest in family, friends, pursuits
  - → Food is main source of security - isolation

Assessing Motivation to Change

- Assess motivational level at the moment:
  - → Lower: Pre-contemplation / Contemplation
  - → Higher: Preparation, action, and maintenance
- Informal:
  - → Importance, readiness, and confidence rulers
    - → DARN-C
  - → Decisional balance (pros / cons)
  - → Time-line for change (quit date)
- Formal instruments:
  - → SOCRATES & URICA

DARN-C = Desire, Ability, Reason, Need, and Commitment; SOCRATES = Stages of Change Readiness and Treatment Eagerness Scale; URICA = University of Rhode Island Change Assessment

Prochaska JO, et al. *Am Psychol*. 1992;47(9):1102-1114. PMID: 1329589.

Engage in Treatment Plan: Shared Decision Making

- Add Obesity/Overweight (or wellness)
  - → Consider motivational level
- Educational materials / visual aide
  - → Resources
  - → Health and other consequences
- Psychosocial treatment
  - → What can you integrate?
- Medication treatment
- Community resources

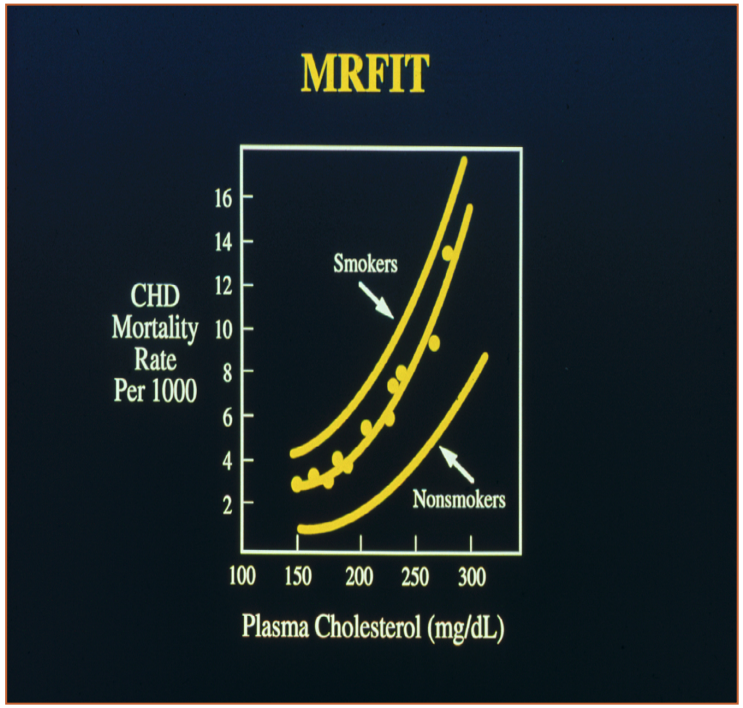
3 Primary Patient Goals

- Increase physical activity / exercise
  - → Increase time / steps each week
  - → Achieve 150 min/week of moderate intensity exercise
  - → Maintain this level of physical activity throughout the Diabetes Prevention Program (DPP)
- Decrease weight
  - → Lose 1 to 2 pounds per week
  - → 7% loss of body weight at 6 months
- Decrease fat or calories
  - → Harris-Benedict equation minus 100 calories
  - → Mobile apps help (myfitnesspal)

MET = Motivational Interviewing and Personalized Feedback: What Matters with Overeating?

What matters for addressing increased BMI?

- Personalized feedback
  - → Comparing to norms: BMI chart
  - → Personal medical history
  - → Blood tests
  - → Quit smoking
  - → Range of benefits – health, role-model, relationships, wellness, etc.



MRFIT = Multiple Risk Factor Intervention Trial

Stamler J, et al. *JAMA.* 1986 Nov 28;256(20):2823-2828. PMID: 3773199.

Motivation Based Psychosocial Treatments for Obesity

- Lower motivated
  - → MET / Brief personalized feedback
  - → Learning about healthy living / education
  - → OA / FAA
  - → Exercise
- Higher motivated
  - → Diabetes Prevention Program (DPP)
  - → CBT / Relapse prevention
  - → Mindfulness based stress education
  - → Healthy eating / Physical activity

Evidence-Based Treatment for Weight Loss

- Lifestyle intervention that includes nutrition counseling, physical activity counseling and behavioral modification
  - → Stimulus control, self-monitoring, problem solving, relapse prevention, stress management, goal setting, CBT
- Meal replacements – shakes, bars are recommended when portion control is difficult
- Evidence-based protocols (examples are in Diabetes Prevention Program and Look Ahead studies – free materials available on web): https://www.lookaheadtrial.org/public/dspMaterials.cfm

Diabetes Prevention Program (DPP)

- DPP lifestyle intervention
  - → 16 core curriculum sessions in 6 months
  - → http://www.bsc.gwu.edu/dpp/index.htmlvdoc
- Nutrition, exercise, and behavioral modification
  - → Self monitoring, stimulus control, problem solving, stress management, relapse prevention, goal setting
- Flexible dietary modification – not prescribed
  - → Tailor to diet goals (decrease fat / calories)
  - → Adapt to cultural differences
- Self-monitoring of weight, fat and/or calorie Intake, and physical activity
- Tool box / resources – pedometers, books

Physical Activity Exercise

- Moderate exercise yields big benefits
  - → 30 minutes a day
- Add simple strengthening exercises
  - → 2-3 times/week and benefits are even greater
- Health benefits
  - → Lower blood pressure
  - → Improve cholesterol - reduce triglyceride levels
  - → Prevent or manage type 2 diabetes
  - → Manage weight
  - → Maintain mental well being - reduce stress, improve mood, reduce anxiety, and improve sleep
  - → Increase energy and stamina: A lack of energy often results from inactivity, not age.

Mayo Clinic. Exercise: 7 benefits of regular physical activity. Mayo Clinic Website http://www.mayoclinic.org/healthy-living/fitness/in-depth/exercise/art-20048389. 2014

Common Barriers for Physical Activity

- No time
- Family obligations
- Not motivated
- Weather
- “Hate exercise”
- No money/resources
- No support

Adjunctive Treatments for Eating Pathologies

- CBT for binge eating disorder[1]
- IPT for binge eating disorder
- Mindfulness based eating intervention[2]
  - → Paying attention on purpose, in the present moment, and non-judgmentally
- These are effective at managing overeating, emotional and binge eating, but do not have evidence for significant weight loss and therefore should not be done in absence of behavioral weight loss if weight loss is a treatment goal

1. Fairburn, CG, et al. *Am J Psychiatry*. 2009;166(3):311-319. PMID: 19074978.
2. Kristeller, JL, et al. *Eat Disord.* 2011;19(1):49-61. PMID: 21181579.

Encourage Them to Make Connections – Get Support

- Encourage support
  - → Community resources
  - → Health coaching / peers
  - → Consider costs and way of connecting
- Consider in-person, internet, social media
- Discuss range of choices:
  - → Weight Watchers (similar types)
  - → 12 Step Programs (OA, FAA, FA, GSA)
- Give practical information /handouts
  - → Specific suggestions help
- Internet app / website options
  - → monitoring, support, and information

Weight Management Digital Tools

- Mobile Apps – Simple health and nutrition logging
  - → MyFitnessPal, LoseIt
  - → Most useful – short term assessment tool to increase food + calorie awareness
- Online web communities for motivated
  - → Spark People, A Kind Life
- Commercial services online
  - → Weight Watchers, Nutrisystem, Jenny Craig, Optifast
- Meal tools - recipes, blogs, restaurant finders
  - → MyNewRoots, OhSheGlows, Pinterest
- Wearables – Fitbit
- Work best as an adjunct to in-person / remote support

Physical Activity Resources

- National Center on Health, Physical Activity, and Disability (NCHPAD)
  - → 14-Week Program to a Healthier You!
  - → www.ncpad.org/14weeks
  - → For those with chronic health conditions & restrictions
  - → Access to 14-week expert coaches
  - → Fitness videos: http://www.ncpad.org/videos/
- Exercise is Medicine
  - → http://exerciseismedicine.org/index.htm
  - → Resources for provider and patients
- American Heart Association
  - → www.startwalkingnow.org

Health Coaching
Weight Watchers

- Cost: about $39/mos with some discounts, insurance help
- On-line options
  - → www.weightwatchers.com
  - → Apps, tools (pedometer, etc)
- Find the right group for you—local options in hospitals, work setting, community programs
- Track / Measure food intake
  - → PointsPlus Weight Loss System (proprietary)
- Coaching
  - → What do you use food for? What are your triggers?
  - → Stress management
  - → What else can you do?
- Other choices: Jenny Craig; Nutrisystem, etc.

Compulsive Eating / Food Addiction 12-Step Programs

- Overeaters Anonymous (OA)
- Food Addicts Anonymous (FAA)
- Food Addicts in Recovery Anonymous (FA)
- GreySheeters Anonymous (GSA)

Watch out for strong opinions about any method being the “correct and only one” versus tolerance for others & respect for individual differences

12-Step Facilitation

- Chronic disease model
- Label self as “addict” or “compulsive eater”
- Abstinence model
  - → Different definitions of abstinence
  - → Abstinence (bottom lines) and life goals (top lines - WA)
- Expectation to work the 12-Steps
- Fellowship group and higher power are key
- Encourage use of 12-Step social network
  - → Sponsor and home group
  - → Different types of meetings (newcomer, speaker, closed / open, discussion, step, etc) share experience, strength and hope
  - → Face to Face / On-line / Phone Meetings
- Help coach them to “work their Program”

Is the Patient Working their 12-Step Program?

- Working the steps
- Sponsor, mentor, or guide
- Group support and involvement
- Self-evaluation
- Spiritual Activity – Connection to Higher Power (prayer, meditation, ..)
- Daily reading or reflections
- Health care (recreation, exercise, diet, tobacco)
- Celebrate successes
- Being of service to others

Detoxification: Specific Food Specific?

- Stop/restrict a specific food type or specific trigger food? Or just less food?
- Impact of caffeine, alcohol, or tobacco
  - → Should these be restricted or eliminated?
- Should medications or food be used for food detox?
  - → What withdrawal symptoms are expected?
    - → Washout phase temporary?
  - → Example “Raw for 30 Days”
    - → Vegetables?

Expected Weight Loss with Currently Approved and Investigational Drugs

Agent	Drug	Placebo	Net Weight Loss
Orlistat*	7.3 kg	3.5 kg	3.0 kg
Lorcaserin*	8.2 kg	3.4 kg	4.8 kg
Topiramate/phentermine*	14.7 kg	2.5 kg	12.2 kg
Bupropion/naltrexone	8.2 kg	1.9 kg	6.2 kg
Pramlintide/metreleptin	12.7 kg	No placebo	12.7 kg (vs. no PBO)
Tesofensine	11.2 kg	2.0 kg	9.2 kg
Liraglutide	7.2 kg	2.8 kg	4.4 kg
Bupropion/zonisamide	7.2 kg	2.9 kg	4.3 kg
Phentermine	6.8 kg	2.8 kg	4.0 kg
Topiramate	4.5 kg	1.7 kg	2.8 kg
Velneperit	7.1 kg	4.3 kg	2.8 kg
Cetilistat	4.3 kg	2.8 kg	1.5 kg

* Approved by FDA as adjuncts to a reduced calorie diet and increased physical activity

Powell AG, et al. *Clin Pharmacol Ther.* 2011;90(1):40-51. PMID: 21654742.

Pharmacotherapy For Weight Loss

- Fenfluramine/ phentermine withdrawn 1997
  - → Valvular heart disease
- Sibutramine withdrawn 2010
- Orlistat on market now
- Two “newer” medications FDA approved in 2012

Orlistat

- Binds gastrointestinal lipases, decreasing fat absorption by 1/3
- One year study subjects lost 9% of body weight, with control subjects losing 5.8%
- Side effects common: flatulence, steatorrhea
- Available over-the-counter in 2007

PI for orlistat. Drugs@FDA Website.http://www.accessdata.fda.gov/drugsatfda_docs/label/2013/020766s033lbl.pdf. 1999

Recent Weight Loss Medications

- FDA-approved “adjuncts to a reduced calorie diet and increased physical activity”
- Studied only with associated lifestyle intervention– no “med only” control
- Lorcaserin: 4.5-5.8% BW loss at 1 year
  - → Approved by FDA June 27, 2012
- Phentermine/topiramate: 7.8-10.9%
  - → Approved by FDA July 17, 2012
- Both drugs associated with improvement in cardiometabolic parameters including BP, HDL, A1C

PI for lorcaserin tablets. Drugs@FDA Website. http://www.accessdata.fda.gov/drugsatfda_docs/label/2012/022529lbl.pdf. 2012.

PI for phentermine hydrochloride; topiramate extended release capsules. Drugs@FDA http://www.accessdata.fda.gov/drugsatfda_docs/label/2013/022580s004lbl.pdf. 2012

Lorcaserin HCL

- Selective 5-HT 2C receptor agonist
- Individuals eat less and feel full after eating smaller amounts of food
- Safety and efficacy evaluation
  - → Three randomized, placebo-controlled trials
  - → About 8,000 obese and overweight patients, with and without type 2 diabetes
  - → Treated for 52 to 104 weeks
  - → Outcome after up to one year: associated with 3-3.7% average weight loss.

Thomsen W, et al. *J Pharmacol Exp Ther*. 2008;325(2):577-587. PMID: 18252809.
O'Neil PM, et al. *Obesity*. 2012;20(7):1426-1436. PMID: 22421927.
Smith SR, et al. *N Engl J Med*. 2010;363(3):245-256. PMID: 20647200.

Lorcaserin HCL

- Adults, obese (BMI > 30) or overweight (BMI > 27) and at least one weight-related condition (hypertension, type 2 diabetes, dyslipidemia, etc)
  - → Approved dose: 10 mg twice a day
- Side effects:
  - → Attention and memory problems, hypoglycemia
  - → In non-diabetic patients: headache, dizziness, fatigue, nausea, dry mouth, and constipation;
  - → In diabetic patients: low blood sugar (hypoglycemia), headache, back pain, cough, and fatigue.

PI for lorcaserin tablets. Drugs@FDA Website. http://www.accessdata.fda.gov/drugsatfda_docs/label/2012/022529lbl.pdf. 2012.

Combination: Phentermine and Topiramate

- Adults with obesity or overweight and at least one weight-related condition (hypertension, type 2 diabetes, dyslipidemia)
- Recommended daily dose:
  - → 7.5 mg phentermine + 46 mg topiramate extended-release.
  - → 15 mg phentermine + 92 mg topiramate extended-release for select patients
- Side effects: paresthesia, hypertension, tachycardia, dizziness, altered taste sensation, insomnia, constipation, dry mouth, and birth defects

PI for phentermine hydrochloride; topiramate extended release capsules. Drugs@FDA http://www.accessdata.fda.gov/drugsatfda_docs/label/2013/022580s004lbl.pdf. 2012

Combination: Phentermine and Topiramate

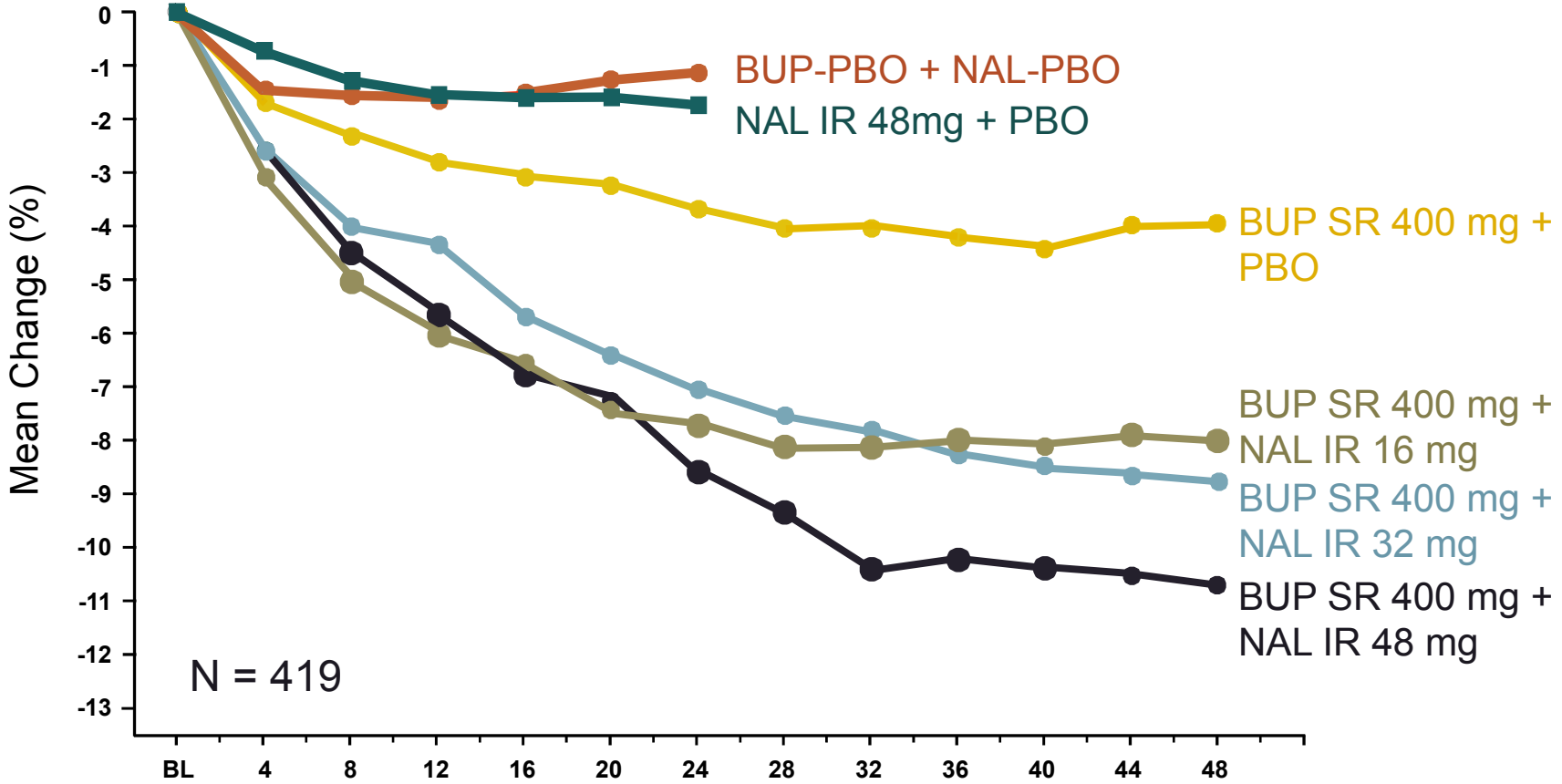
Precautions

- Must not be used during pregnancy (cause harm to a fetus)
- Must not be used in patients with glaucoma or hyperthyroidism
- Not recommended in patients with recent (within the last 6 months) or unstable heart disease or stroke
- Recommend regular monitoring of heart rate

PI for phentermine hydrochloride; topiramate extended release capsules. Drugs@FDA http://www.accessdata.fda.gov/drugsatfda_docs/label/2013/022580s004lbl.pdf. 2012

Bupropion + Naltrexone* Phase IIb Mean Weight Loss Over 48 Weeks

48 Week Data with Bupropion (BUP) and Naltrexone (NAL)
Completers Population



*This agent is not currently approved by the FDA for weight loss

Greenway FL, et al. *J Clin Endocrinol Metab*. 2009;94(12):4898-4906. PMID: 19846734.

Gastric Bypass Surgery

- 2007 study, almost 10,000 gastric bypass patients showed 40% decrease in all-cause mortality vs. controls
- Significant decreases in death related to diabetes, heart disease, and cancer
- Mortality rate for controls and surgery patients was the same; around 0.5% during the first year after surgery

Adams TD, et al. *N Engl J Med*. 2007;357(8):753-761. PMID: 17715409.

Healthy Kitchens – Teaching Kitchens

- Healthy Cooking
  - → Do you cook?
  - → Basic cooking skills
- Buying healthy food: Do you?
  - → Healthy vs. less healthy food
  - → Shopping for the right foods
- Preparing a range of healthy and tasty menus
  - → Tailoring menus to cultural tastes
- Making cooking convenient, efficient, and affordable
- Skills to incorporate exercise and mindfulness
- Need sustainable healthy eating habits
- Educating people on healthy cooking and buying healthy food is a needed step
- Need to have fun with food too!

Conclusion

- Food addiction is one cause and an opportunity to make a difference
- Discuss lifestyle modification options with patients and their families and provide resources
- Psychosocial treatment is cornerstone
- New pharmacological treatments are available
- Refer for bariatric surgery if appropriate

#CHAIR2014

Questions & Answers

#CHAIR2014

Reference Slides

Overeaters Anonymous (OA)

- 1st meeting in 1960 in Los Angeles
- 6,500 meetings, over 75 countries—about 54,000 members.
- OA program offers physical, emotional and spiritual recovery for those who suffer from compulsive eating
- Meetings everyday

within 20 mile radius

- www.oa.org/

9 Tools of OA Recovery

- A Plan of Eating (and exercise)
- Sponsorship
- Meetings
- Telephone
- Writing
- Literature
- Action Plan
- Anonymity
- Service

What is “abstinence”?

- Identify specific foods & patterns of eating that trigger overeating
- Develop and Follow your Food Plan
  - → Stop problematic foods & eating habits
- Target your healthy weight range
- Need for detoxification?
  - → acute / protracted withdrawal

What is “recovery”?

- a long-term journey
- a lifelong process of readjusting attitudes, feelings, perceptions, & beliefs about self, others, and life in general
- time of emotional & personal growth
- a process of self-discovery, self-renewal, and transformation

VA Program: Move!

- The MOVE!® Program tailors to meet the individual needs of each veteran.
- MOVE!® provides guidance on nutrition and physical activity
- Personalized goal setting and a stepped level approach.
- Healthcare team at local VA medical centers
- www.move.va.gov/

Antidepressants & Mood Stabilizers

- Tricyclic Antidepressants general gains of 0.4–4.12 kg/month
  - → Minority of patients gain 15–20 kg in 2–6 months
- Selected Serotonin Reuptake Inhibitors (SSRIs) initial weight loss followed by gain within 6 months in some patients
- Lithium gains in 11% to 65% of treated patients; up to 10 kg or more in 6–10 years

Church TJ, et al. *US Pharm*. 2010;35(11):41-48. Website: http://www.uspharmacist.com/content/d/feature/c/23859/. No PMID.

Atypical Antipsychotic Risks: Obesity, Dyslipidemia, Diabetes, HTN

Table 1. Relative Effect of SGAs on Metabolic Disturbances

Generic (Trade Name)	Weight Gain	Dyslipidemia	T2DM
Olanzapine (Zyprexa)	High	High	High
Clozapine (Clozaril)	High	High	High
Risperidone (Risperdal)	Moderate	Low to moderate	Low
Ziprasidone (Geodon)	Low	Low	Low
Quetiapine (Seroquel)	Moderate	Moderate	Low to moderate
Aripiprazole (Abilify)	Low	Low	Low
Paliperidone (Invega)[a]	Low	Low	Low
Asenapine (Saphris)[a]	Low to moderate	Low	Unknown
Iloperidone (Fanapt)[a]	Low to moderate	Low	Unknown

[a] Due to the limited trial data for these agents, their metabolic-effect profiles are based on the package insert.
SGA: second-generation antipsychotic; T2DM: type 2 diabetes mellitus.
Source: References 1, 6.

Church TJ, et al. *US Pharm*. 2010;35(11):41-48. Website: http://www.uspharmacist.com/content/d/feature/c/23859/. No PMID.

Recommended Medication Monitoring Program: American Diabetes Assoc & American Psychiatric Association

Table 2. Recommended Monitoring Parameters for Patients Taking Atypical Antipsychotics[a]

Parameter	Baseline	4 Wk	8 Wk	12 Wk	Quarterly	Annually	Every 5 Years
Personal history	X					X	
Family history	X					X	
Weight (BMI)	X	X	X	X	X		
Waist circumference						X	
Blood pressure	X			X		X	
FPG	X			X		X	
Fasting lipid profile	X			X			X

[a] Additional or more frequent screening may be necessary based on a patient's individual risk and personal or family history.
BMI: body mass index; FPG: fasting plasma glucose.
Source: Reference 19.

Church TJ, et al. *US Pharm*. 2010;35(11):41-48. Website: http://www.uspharmacist.com/content/d/feature/c/23859/. No PMID.