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Certified Cardiometabolic Health Professional (CCHP)

Treating Obesity to the Standard of Care

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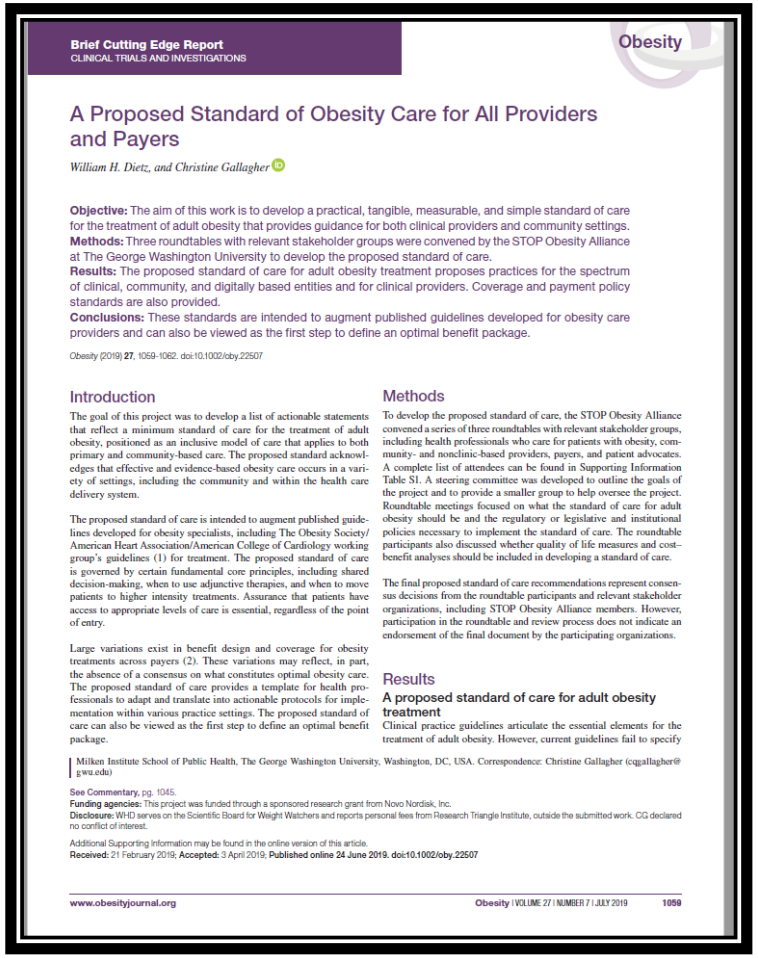
Disclosures

- Advisor or Consultant: Novo Nordisk, Pfizer, Real Appeal, Epitomee, Gila Therapeutics, Xeno Bioscience, Calibrate, Naturally Slim Wondr Health, Lilly Advisory, YSOPIA, Altimmune, IFA Celtic, Ro, Scientific Intake, Amgen, Zealand
- Speakers Bureau: Novo Nordisk
- Ownership Interest: Gila Therapeutics, Xeno Bioscience, Epitomee, Calibrate, Roman and Scientific Intake
- Research: SELECT Steering Committee (Novo Nordisk)

Important Resources



Brief Cutting Edge Report
CLINICAL TRIALS AND INVESTIGATIONS

Obesity

A Proposed Standard of Obesity Care for All Providers and Payers

William H. Dietz, and Christine Gallagher

Objective: The aim of this work is to develop a practical, tangible, measurable, and simple standard of care for the treatment of adult obesity that provides guidance for both clinical providers and community settings.
Methods: Three roundtables with relevant stakeholder groups were convened by the STOP Obesity Alliance at The George Washington University to develop the proposed standard of care.
Results: The proposed standard of care for adult obesity treatment proposes practices for the spectrum of clinical, community, and digitally based entities and for clinical providers. Coverage and payment policy standards are also provided.
Conclusions: These standards are intended to augment published guidelines developed for obesity care providers and can also be viewed as the first step to define an optimal benefit package.

Obesity (2019) **27**, 1059-1062. doi:10.1002/oby.22507

Introduction

The goal of this project was to develop a list of actionable statements that reflect a minimum standard of care for the treatment of adult obesity, positioned as an inclusive model of care that applies to both primary and community-based care. The proposed standard acknowledges that effective and evidence-based obesity care occurs in a variety of settings, including the community and within the health care delivery system.

The proposed standard of care is intended to augment published guidelines developed for obesity specialists, including The Obesity Society/American Heart Association/American College of Cardiology working group's guidelines (1) for treatment. The proposed standard of care is governed by certain fundamental core principles, including shared decision-making, when to use adjunctive therapies, and when to move patients to higher intensity treatments. Assurance that patients have access to appropriate levels of care is essential, regardless of the point of entry.

Large variations exist in benefit design and coverage for obesity treatments across payers (2). These variations may reflect, in part, the absence of a consensus on what constitutes optimal obesity care. The proposed standard of care provides a template for health professionals to adapt and translate into actionable protocols for implementation within various practice settings. The proposed standard of care can also be viewed as the first step to define an optimal benefit package.

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See Commentary, pg. 1045.
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Methods

To develop the proposed standard of care, the STOP Obesity Alliance convened a series of three roundtables with relevant stakeholder groups, including health professionals who care for patients with obesity, community- and nonclinic-based providers, payers, and patient advocates. A complete list of attendees can be found in Supporting Information Table S1. A steering committee was developed to outline the goals of the project and to provide a smaller group to help oversee the project. Roundtable meetings focused on what the standard of care for adult obesity should be and the regulatory or legislative and institutional policies necessary to implement the standard of care. The roundtable participants also discussed whether quality of life measures and cost–benefit analyses should be included in developing a standard of care.

The final proposed standard of care recommendations represent consensus decisions from the roundtable participants and relevant stakeholder organizations, including STOP Obesity Alliance members. However, participation in the roundtable and review process does not indicate an endorsement of the final document by the participating organizations.

Results

A proposed standard of care for adult obesity treatment

Clinical practice guidelines articulate the essential elements for the treatment of adult obesity. However, current guidelines fail to specify

Dietz WH, et al. *Obesity.* 2019;27:1059-1062.

Brief Cutting Edge Report
CLINICAL TRIALS AND INVESTIGATIONS

Obesity

Development of Obesity Competencies for Medical Education: A Report from the Obesity Medicine Education Collaborative

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Objective: Obesity Medicine Education Collaborative (OMEC) was formed to develop obesity-focused competencies and benchmarks that can be used by undergraduate and graduate medical education program directors. This article describes the developmental process used to create the competencies.
Methods: Fifteen professional organizations with an interest in obesity collaborated to form OMEC. Using the six Core Competencies of the Accreditation Council for Graduate Medical Education as domains and as a guiding framework, a total of 36 group members collaborated by in-person meetings, email exchange, and conference calls. An iterative process was used by each working subgroup to develop the competencies and assessment benchmarks. The initial work was subsequently externally reviewed by 19 professional organizations.
Results: Thirty-two competencies were developed across the six domains. Each competency contains five descriptive measurement benchmarks for evaluator rating.
Conclusions: This set of OMEC obesity-focused competencies is the first evaluation tool developed to be used within undergraduate and graduate medical training programs for both formative and summative assessments. Routine and more robust assessment is expected to increase the competence of health care providers to assess, prevent, and treat obesity. In addition to dissemination, the competencies and benchmarks will need to undergo evaluation for further validity and practicality.

Obesity (2019) **27**, 1063-1067. doi:10.1002/oby.22471

Introduction

A major challenge facing medical educators today is to adequately train current and future health care providers in the prevention and treatment of noncommunicable diseases, the leading cause for increased disability-adjusted life years in the United States (1) and around the world (2). Underlining this risk is, in part, the alarming increase in the number of adults and children with obesity. The rationale for including obesity in undergraduate (UGME) and graduate (GME) medical education is based on its population prevalence, disease burden, and availability of treatment options. In 2007, the Association of American Medical Colleges published "Report VIII–Contemporary Issues in Medicine: The Prevention and Treatment of Overweight and Obesity" (3).

The report concluded by stating, "Medical education must assure that future physicians will be better prepared to provide respectful, effective care of overweight and obese patients and to appropriately participate in overweight/obesity prevention efforts. Education on assessing, preventing and treating overweight and obesity should be included in basic sciences, clinical experiences, and population health sciences" (3). A recent comprehensive review of the United States Medical Licensing Examination found that there was insufficient coverage of obesity on the Step 1 and 2 examinations, and recommendations for inclusion were provided (4). Others have voiced similar recommendations for residency and fellowship training (5,6). In short, there is a need for comprehensive obesity education that spans UGME and GME for both physicians and advanced practitioners.

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Kushner RF, et al. *Obesity.* 2019;27:1063-1067.

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Obesity & Social Determinants of Health

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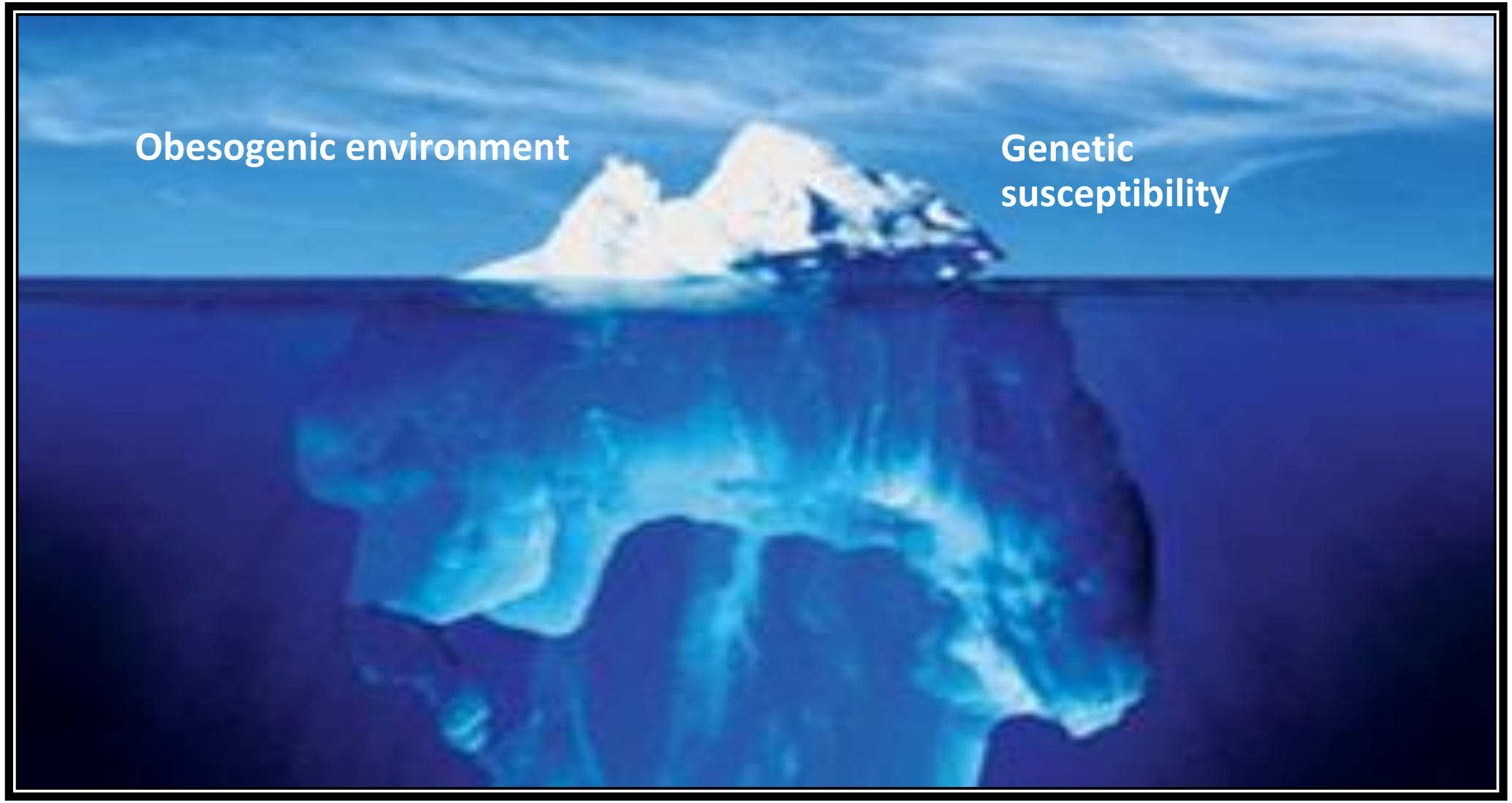
Standard of Care for Clinical Providers

Clinical providers should

1. be competent to address the role of social determinants of obesity and its outcomes.

Dietz WH, et al. Obesity. 2019;27:1059-1062.

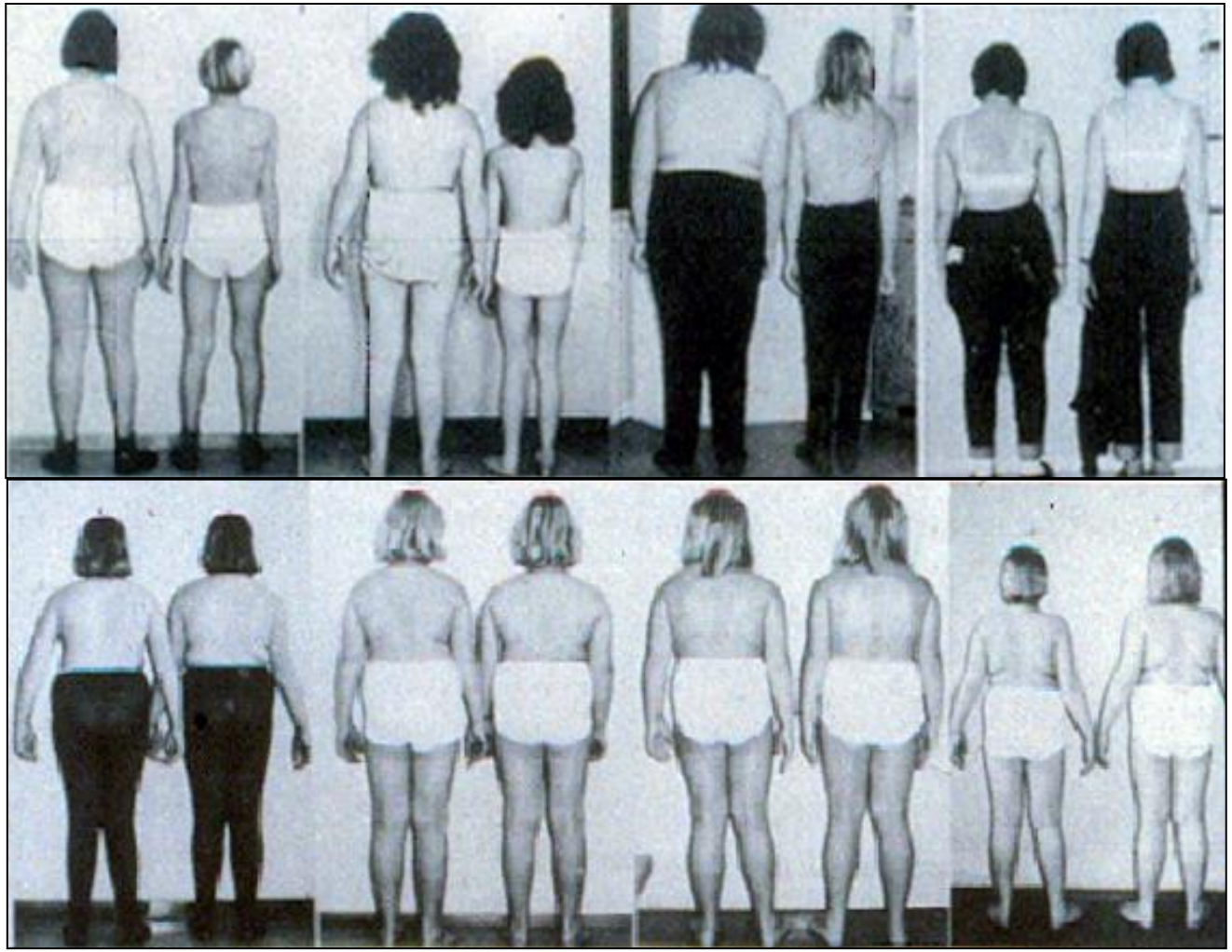
What Causes Obesity?



Genetic Contribution to Body Habitus

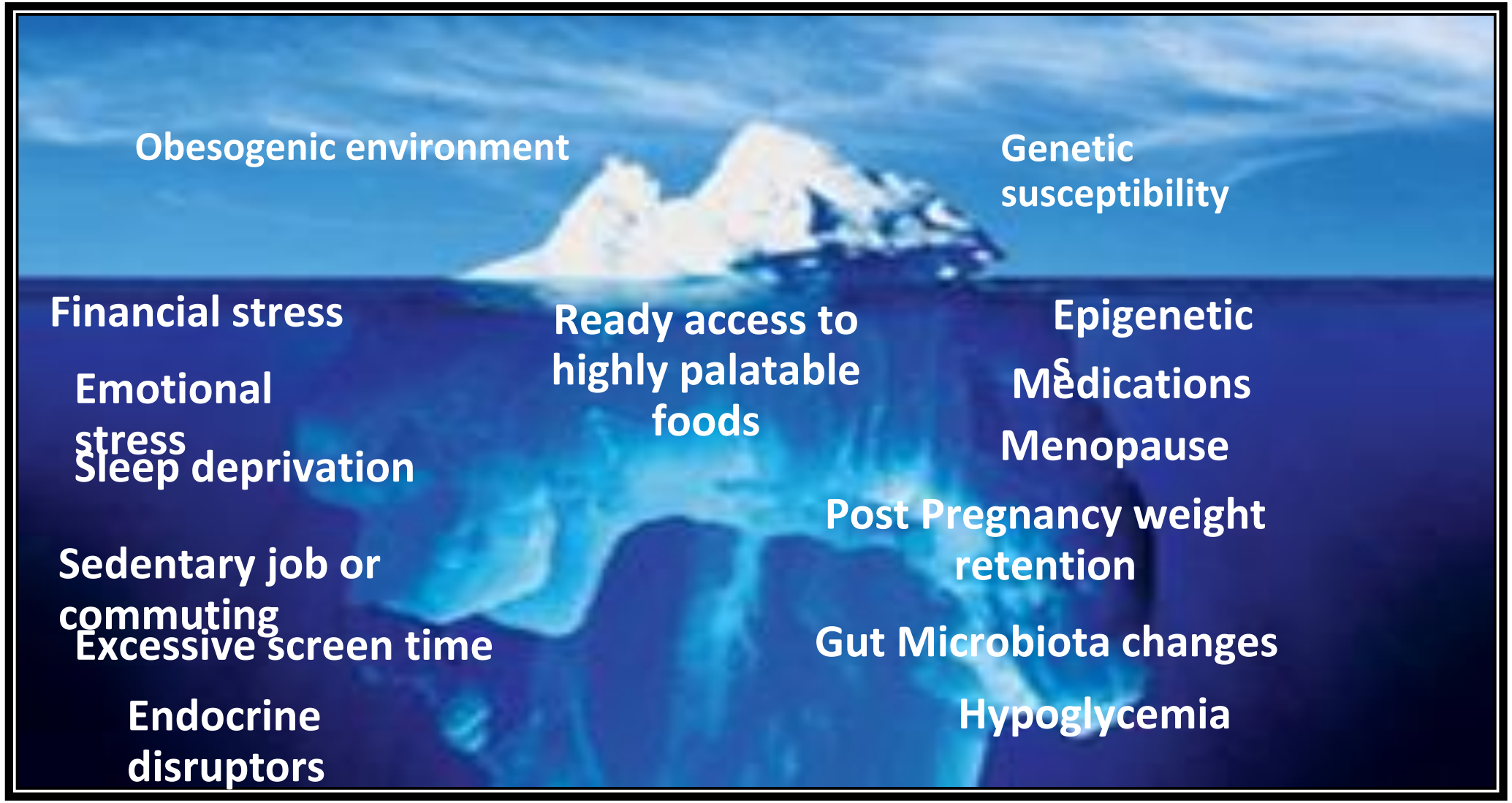
Dizygotic (fraternal) twins demonstrate more discordance in body habitus among each member of the twin pair.

Monozygotic (identical) twins demonstrate more concordance in body habitus among each member of the twin pair.

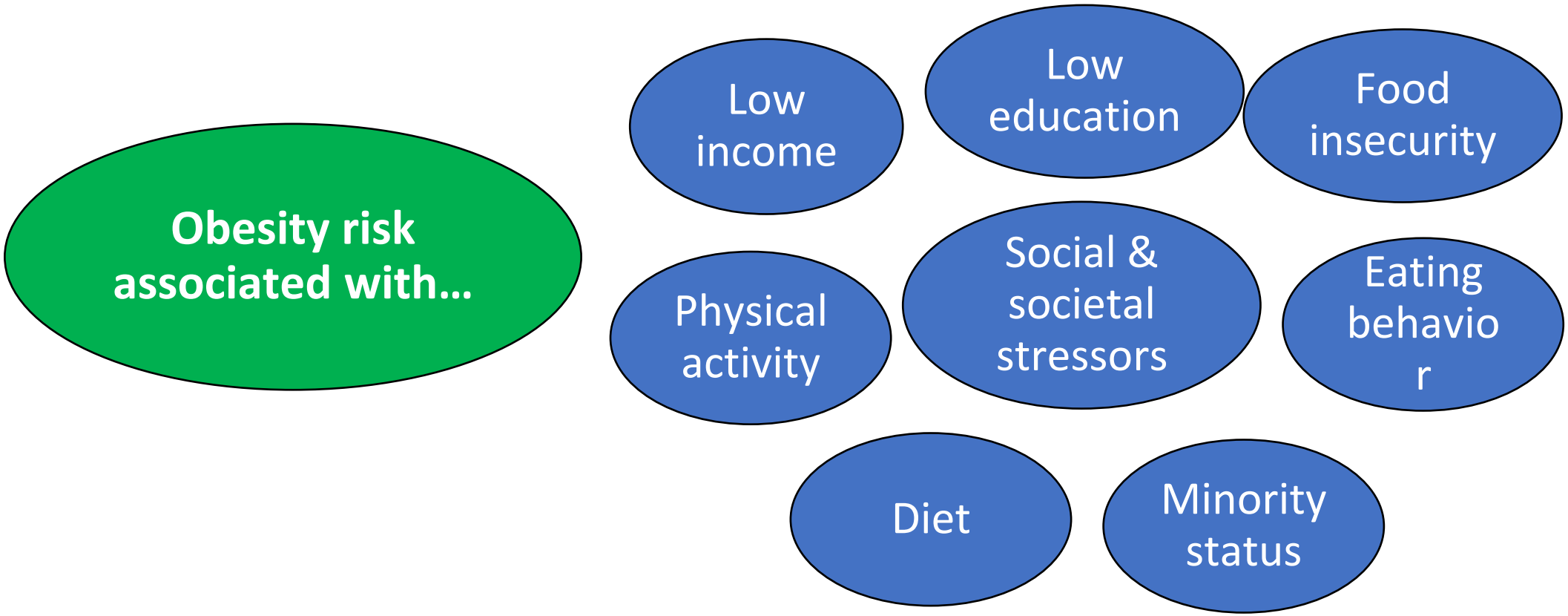


Borjeson M. Acta Paediatr Scand. 1976;65(3):279-287.

What Causes Obesity?

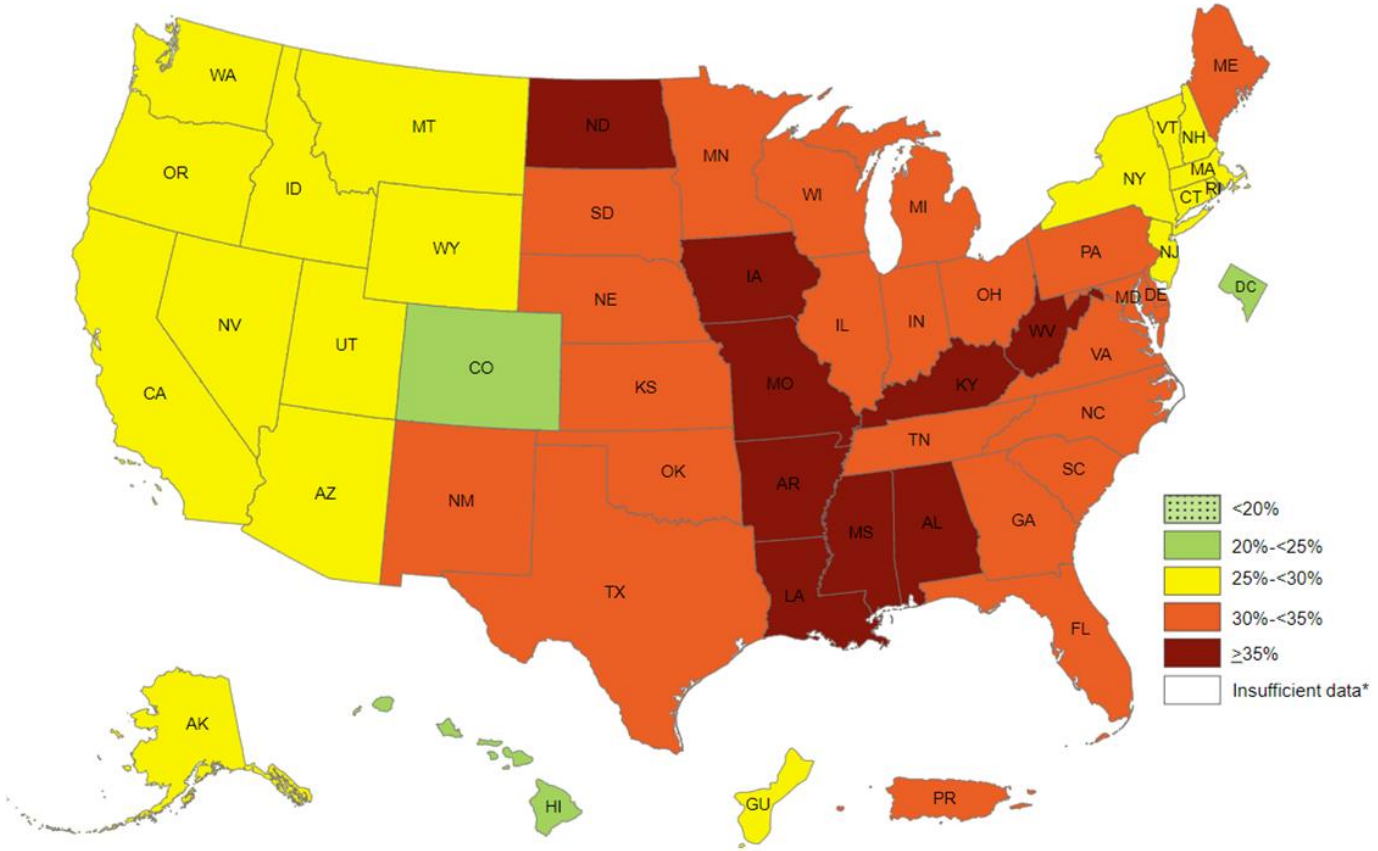


Obesity and Social Determinants of Health



US Centers for Disease Control and Prevention. www.cdc.gov/obesity/index.html

Health Disparities and Obesity: Self-reported Obesity Prevalence



US Centers for Disease Control and Prevention. Accessed September 17,2020. https://www.cdc.gov/obesity/data/prevalence-maps.html#overall

What Is the Difference Between Colorado and Louisiana?

	Colorado	Louisiana
Mean elevation	6800 feet	100 feet
Precipitation (inches)	17	57.3
Average temperature (F)	45.1°	66.4°
Median household income, 2018	$68,811	$47,942
Poverty rate, 2020	9.6%	18.6%
Proportion adults with college degree, 2018	40.1%	23.7%
Incarceration rates 2020 per 100,000 adults	353	695
Ranking by US News for Health	8/50	44/50
Working long hours and shift work[a]	?	?
Unemployment rate, July 2019	2.7%	4.7%
African-American	4.6%	32.8%

[a]3.2% of US workforce works the third shift. 19% work 48+ hours and 7% 60+ hours/week.
F = fahrenheit.

US Census Bureau. Accessed September 17, 2020. https://www.census.gov/quickfacts/fact/table/LA,CO/PST045219

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Obesity: Genetics and Background

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Standard of Care for Clinical Providers

Clinical providers should

2. consider an individual's genetic background and ethnicity when considering the risk associated with BMI and/or waist circumference.

Dietz WH, et al. Obesity. 2019;27:1059-1062.

How Do You Define Obesity?

- *BMI*: On population basis, correlates with body fat and correlates with a host of comorbidities

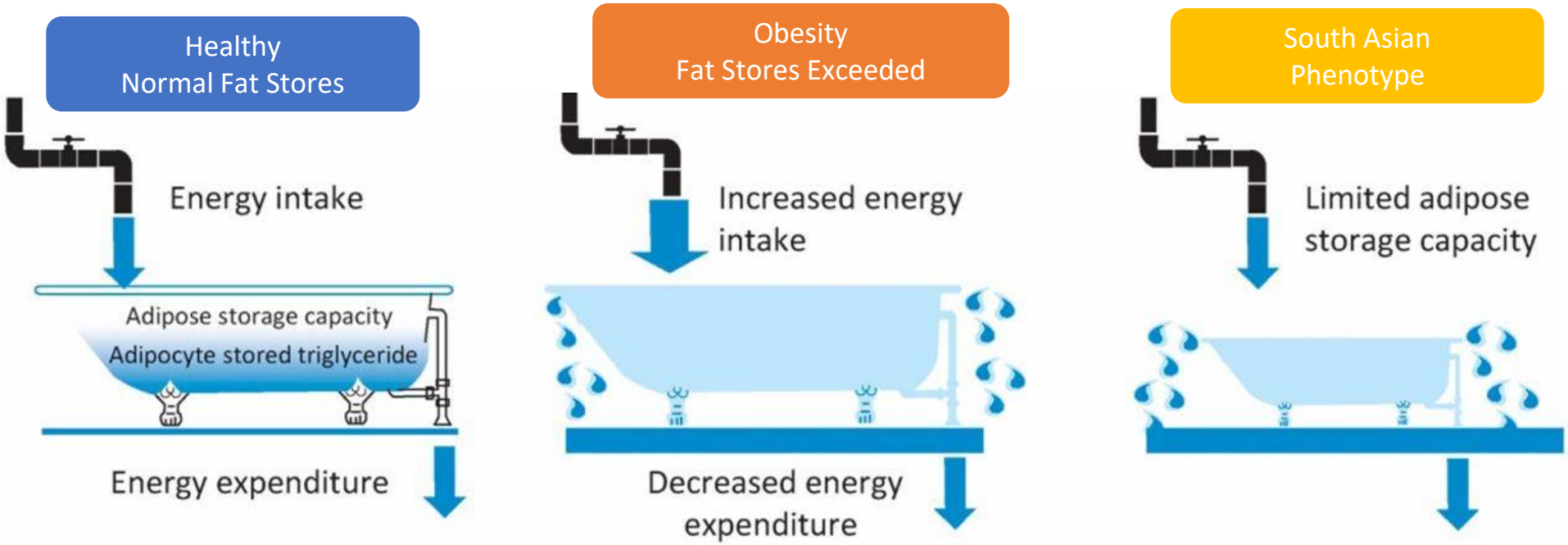
For Europids:
Overweight BMI >25 kg/m^2
Obese BMI >30 kg/m^2
Waist circumference 35 in for women and 40 in for men

Jensen MD, et al. Guidelines (2013) *Obesity.* 2014;22(S2):S1-S410.

For Asians:
Overweight BMI >23 kg/m^2
Obese BMI >25 kg/m^2
Waist circumference 31.5 in for women
and 35 in for men

WHO/IASO/IOTF, 2000.
(http://www.idi.org.au/obesity_report.htm)

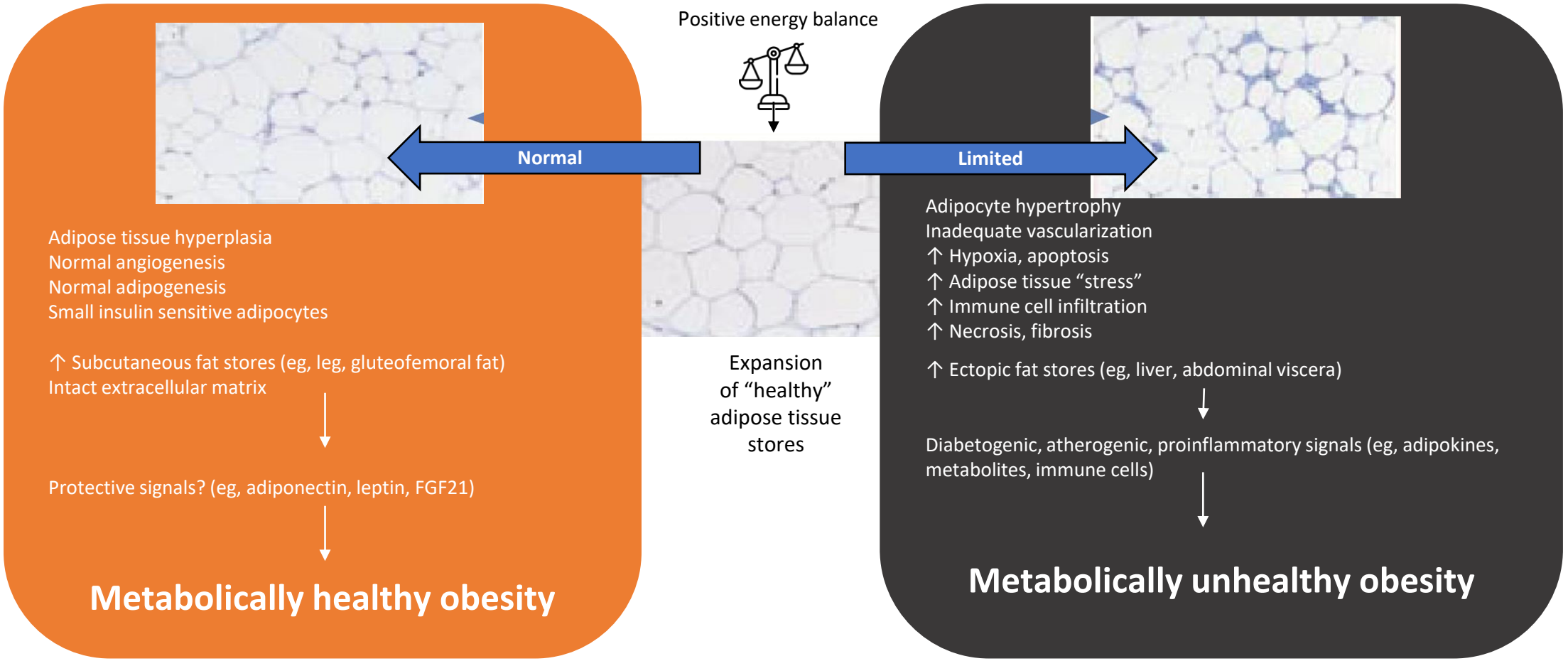
The Soggy Bathroom Carpet Model of Over-Nutrition–Related Metabolic Disease



- When the ability to store healthy fat is exceeded by a continuous positive energy balance, ectopic and abnormal fat stores give rise to metabolic disease
- The ability to store fat in healthy depots is determined by genetics, hormones, and other factors
- Some individuals, such as those of South Asian descent, have little capacity to store excess fat in healthy depots and develop ectopic and abnormal fat stores at lower BMI levels

O'Rahilly S. Diabetes. 2021;70:29-38.

When the body exceeds healthy adipose tissue stores, excess abnormal body fat occurs



Blüher M. Endocr Rev. 2020;41:405-420.

How Do You Define Obesity?

Clinical Medicine

- *WHO*: “Condition where excess of abnormal body fat impairs health”
- Cut points are used as screening, and
- Diagnosis = cut-points + health risk assessment

Clinicians treat BMI as a screening tool, and the diagnosis of obesity is always a clinical diagnosis, based on excess abnormal body fat that impairs health.

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Assessment of Obesity-Associated Comorbidities

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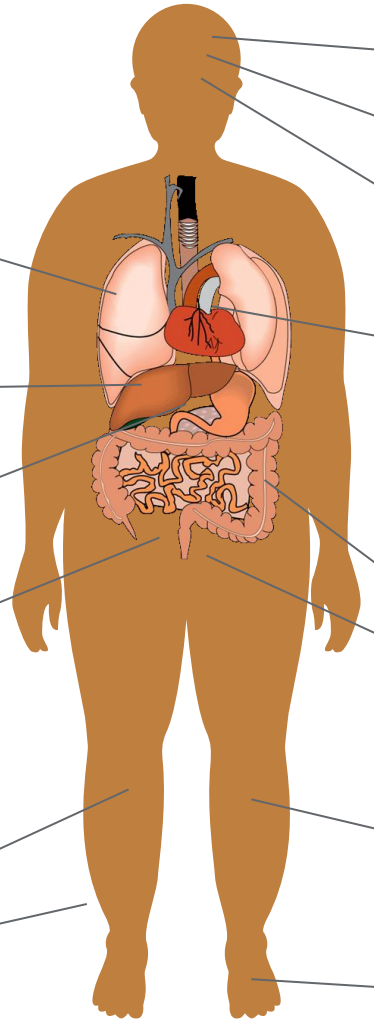
Standard of Care for Clinical Providers

Clinical providers should

3. assess patients for obesity-associated comorbidities.

Dietz WH, et al. Obesity. 2019;27:1059-1062.

Comorbidities Associated with Obesity



Pulmonary disease
Abnormal function
Obstructive sleep apnea
Hypoventilation syndrome

Nonalcoholic fatty liver disease
Steatosis
Steatohepatitis
Cirrhosis

Gall bladder disease

Gynecologic abnormalities
Abnormal menses
Infertility
Polycystic ovarian syndrome
Urinary incontinence

Osteoarthritis

Skin

Idiopathic intracranial hypertension

Stroke

Cataracts

Coronary heart disease

Diabetes

Dyslipidemia

Hypertension

Cancer
Breast, uterus, cervix, colon, esophagus, pancreas, kidney, prostate

Phlebitis
Venous stasis

Gout

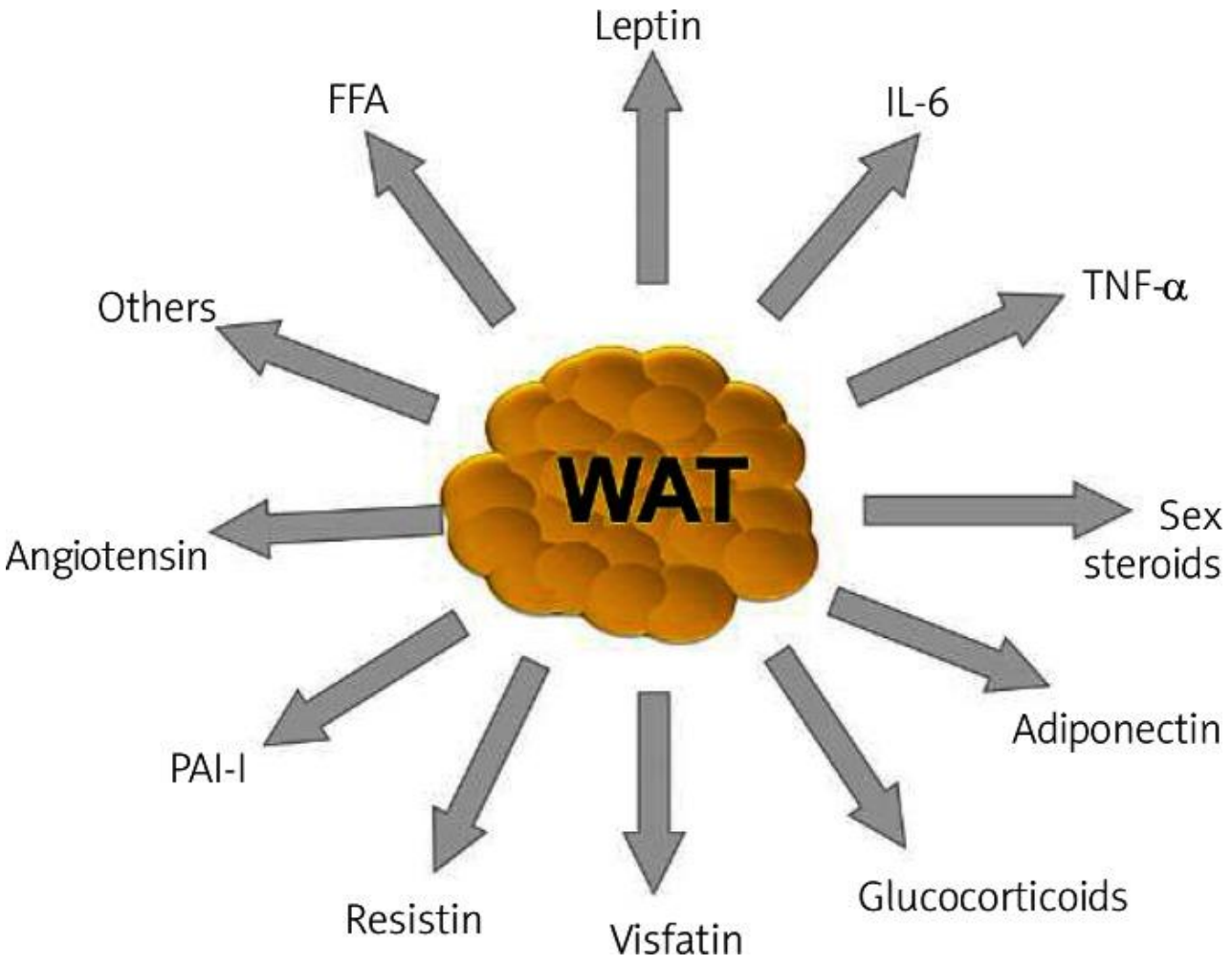
Adapted from European Practical and Patient-Centred Guidelines for Adult Obesity Management in Primary Care. January 2019.Obesity Facts 12(1):40-66

How does obesity drive these diseases?

- Burden of excess fat – biomechanical effects
  - Knee arthritis
  - Obstructive sleep apnea
  - GERD
  - Urinary incontinence
  - Others
- Products of excess abnormal fat
  - Prothrombotic effects
  - Proinflammatory effects
  - Immune function effects
  - Promote blood pressure elevation
  - Promote insulin resistance
  - Promote angiogenesis
  - Others

Coelho M, Oliveira T, Fernandes R. Biochemistry of adipose tissue: an endocrine organ. Arch Med Sci. 2013;9(2):191-200.

How does obesity drive these diseases?



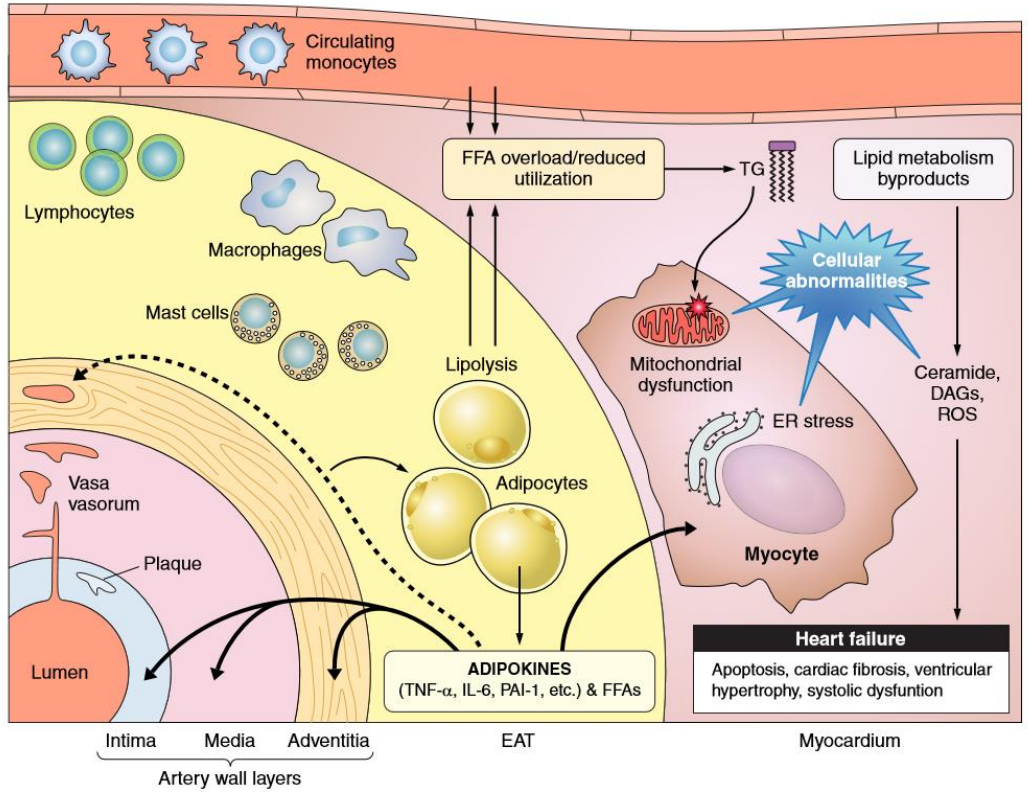
- Products of excess abnormal fat
  - Prothrombotic effects
  - Proinflammatory effects
  - Immune function effects
  - Promote blood pressure elevation
  - Promote insulin resistance
  - Promote angiogenesis
  - Others

Coelho M, Oliveira T, Fernandes R. Biochemistry of adipose tissue: an endocrine organ. Arch Med Sci. 2013;9(2):191-200.

Location, Location, Location

- Visceral and ectopic (muscle, liver, pancreas, epicardial) adipose tissue produces more pro-inflammatory and pro-thrombotic cytokines.
- Visceral and ectopic fat are mobilized first with weight loss.

Role of epicardial adipose tissue in cardiovascular risk



Cherian S et al. Am J Physiol Endocrinol Metab. 2012;303:E937-E949.

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Obesity & Patient Education

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Standard of Care for Clinical Providers

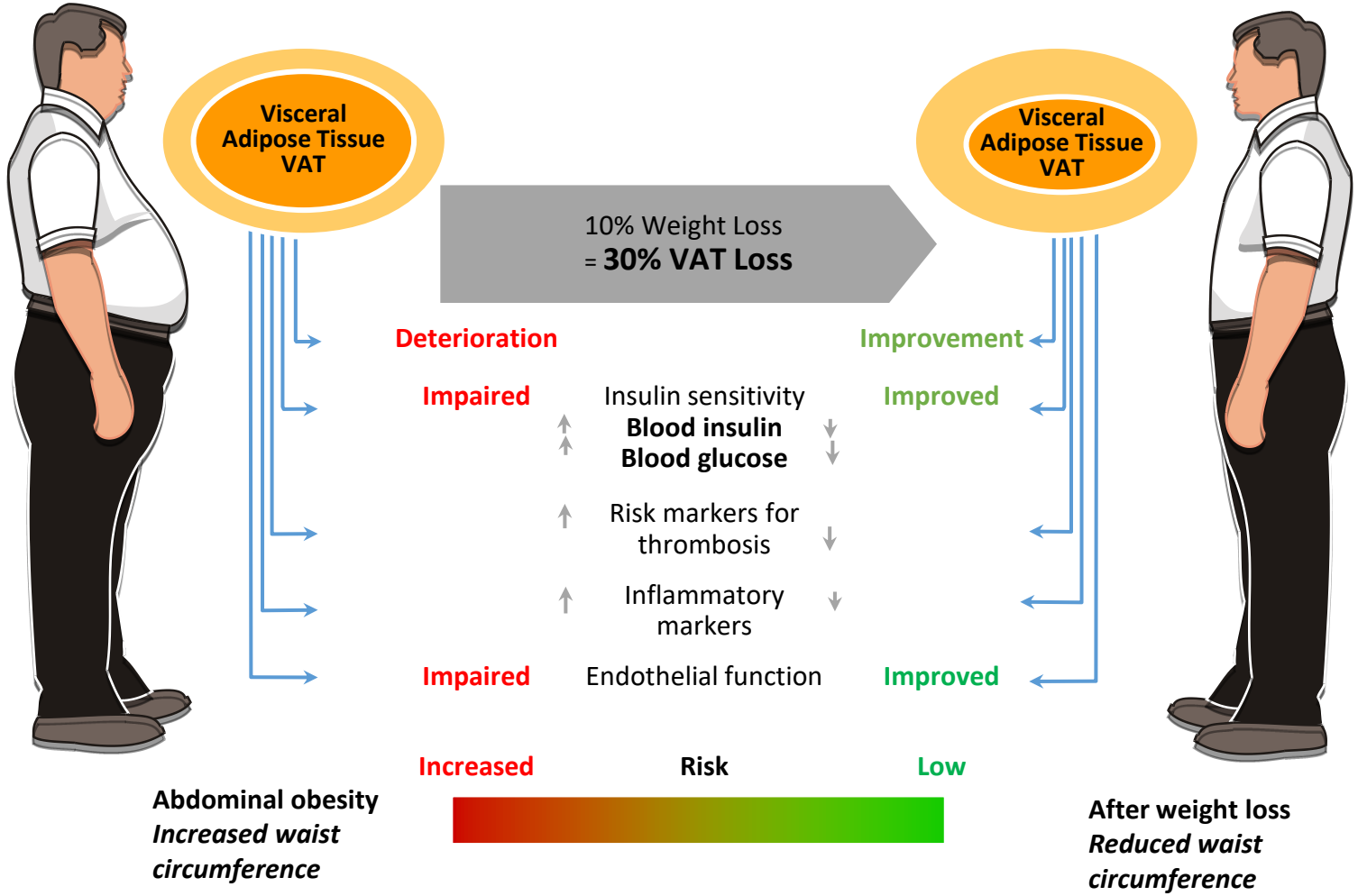
Clinical providers should

4. educate patients or clients about the relationship between excess body fat and health risks.

Dietz WH, et al. Obesity. 2019;27:1059-1062.

Visceral Adipose Tissue: Associated with Cardiometabolic Risk

With 10% Weight Loss, Visceral Adipose Tissue Decreases by 30%

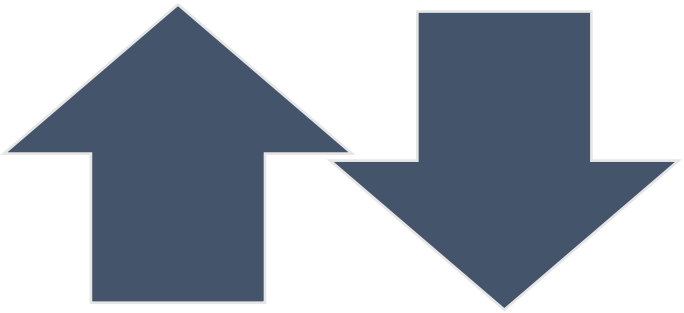


Adapted from: Després J, et al. BMJ. 2001;322:716-720.

Counseling patients about weight loss

- Relate weight management to health improvement
  - Ask the patient to define the single most important outcome of the weight loss effort.
- Set an achievable goal 5%, 10%, 15% or more
  - Depending on the targeted health improvement
- Describe the body's regulation of body weight.
  - Obesity is a chronic disease
  - weight loss is resisted, and weight regain promoted by the body's physiology

Biologic and Physiologic Adaptations to the Weight Reduced State



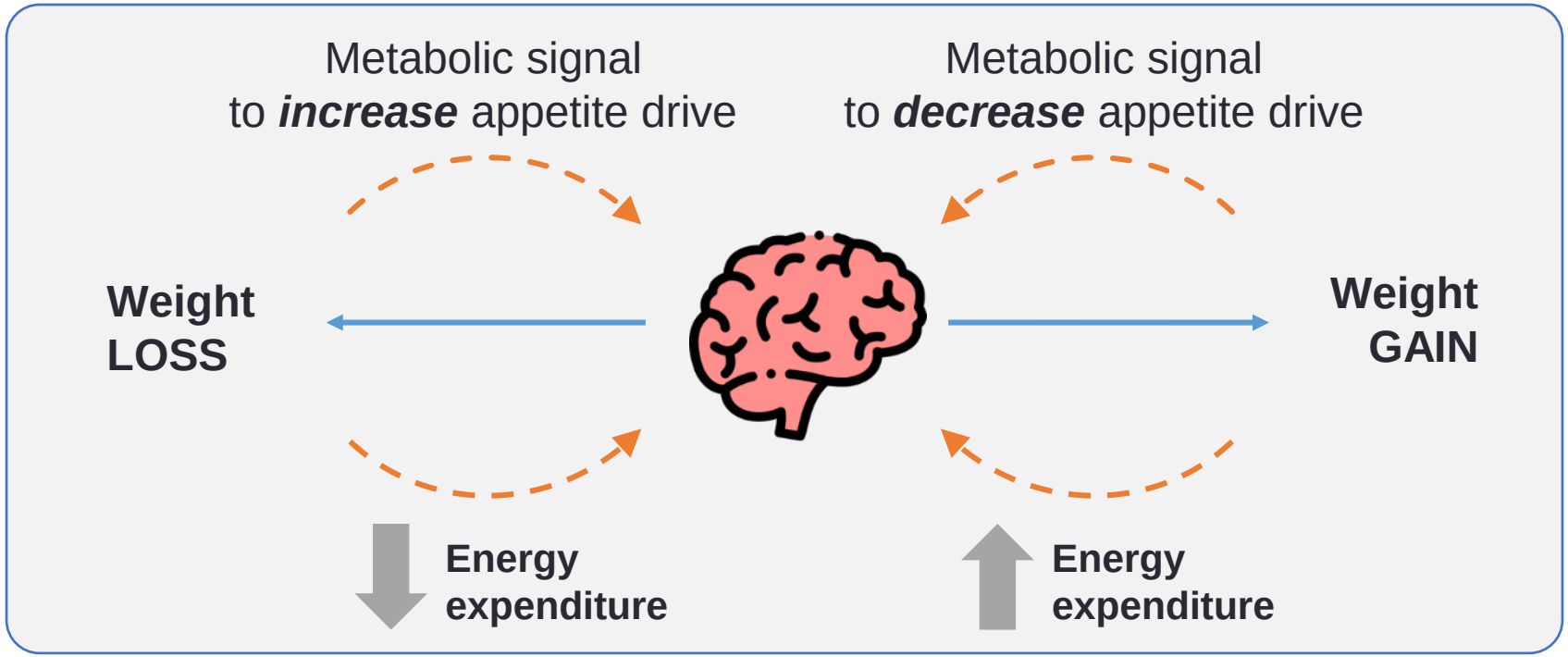
- Alterations is appetite regulation[1]
  - ↑ Ghrelin (hunger hormone) and ↓ GLP-1, GIP, CCK, PYY, insulin, and amylin (satiety hormones)

- Alterations is energy expenditure[2,3]
  - ↓ Resting energy expenditure
  - ↑ Muscle efficiency
  - Related to ↓ leptin levels

1. Sumithran P et al. N Engl J Med. 2011;365:1597-1604. 2. Johannsen DL et al. J Clin Endocrinol Metab. 2012;97:2489-2496.
3. Ravussin E et al. Obesity. 2016;24:1607-1608.

Homeostatic Regulation of Set-Point Body Weight1

A homeostatic weight regulatory system prevents deviation from a body-weight set point



Deviation from this set point elicits a ***physiologic*** compensatory mechanism controlling ***food intake*** and ***energy expenditure***

1. Yu YH et al. Obes Rev. 2015;16:234-247.

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Facilitating Behavioral Change for Long-Term Obesity Management

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Standard of Care for Clinical Providers

Clinical providers should

5. employ evidence-based counseling techniques (e.g., cognitive behavioral therapy, motivational interviewing, the five As [ask, assess, advise, agree, and assist]) to facilitate behavioral change.

Dietz WH, et al. Obesity. 2019;27:1059-1062.

Weight Stigma Is Common in Health Care

Source of Bias	Ever Experienced	More than Once & Multiple Times
Family Members	72	62
Doctors	69	52
Classmates	64	56
Sales clerk	60	47
Friends	60	42
Co-workers	54	38
Mother	53	44
Spouse	47	32
Servers at restaurants	47	35
Nurses	46	34
Members of the community	46	35
Father	44	34
Employer/supervisor	43	26
Sister	37	28
Dietitians/nutritionists	37	26
Brother	36	28
Teachers/professors	32	21
Authority figure (eg, police)	23	15
Mental health professionals	21	13

Puhl RM, et al. Obesity (Silver Spring). 2006;14(10):1802-15.

Many Providers View Patients with Obesity as:[1-3]

- Non-compliant
- Lazy
- Lacking in self-control
- Awkward
- Weak-willed
- Sloppy
- Unsuccessful
- Unintelligent
- Dishonest

1. Ferrante J et al. Obesity. 2009:17;1710–1716.; 2. Fogelman Y et al. Int J Obes. 2002;26:1393–1397. ;3. Foster G et al. Obesity Res. 2003;11:1168-1177.

Self-Reflection: Personal Attitudes

Ask yourself:

- What assumptions do I have about persons who are affected by obesity?
- Do I have stereotypes about a person's character, personality, lifestyle, or health based on their body weight? If so, what are these stereotypes?
- How do I feel when I interact with people who are affected by obesity?
- Am I sensitive to the needs and struggles of patients affected by obesity?

Create a Supportive Environment to Make a First Impression

- Considerations
  - Weighing
  - Seating
  - Reading materials
  - Ramps and hand rails
  - Scales
  - Bathrooms

Obesity Stigma and Bias: Impact on Care

Patients with obesity are less likely to obtain…

- Preventive health services & exams
- Cancer screens, pelvic exams, mammograms

and are more likely to…

- Cancel appointments
- Delay appointments and preventive care services

Aldrich T, et al. J Midwifery Womens Health. 2010;55:344-356.

Choose Your Words: Perceptions of Language Used by Physicians

Least Stigmatizing/Blaming
- weight
- unhealthy weight

Most Motivating
- unhealthy weight
- overweight

Most Stigmatizing/Blaming
- fat
- morbidly obese

Least Motivating
- fat
- morbidly obese
- chubby

Puhl R et al. Int J Obes. 2013;37:612-619.

Choose Your Words: Respecting your patient's feelings

Is today a good time to talk about your weight and how it is affecting your health?

Not today? The single best thing you could do to improve your health is to make some changes around diet and activity. I'd like to bring this up at the next visit.

Causal Attributions of Obesity[1,2]

- People are less likely to express weight bias if they perceive the cause of obesity to be *external factors*…
- And more likely to express bias if they perceive obesity to be caused by *factors within personal control*.

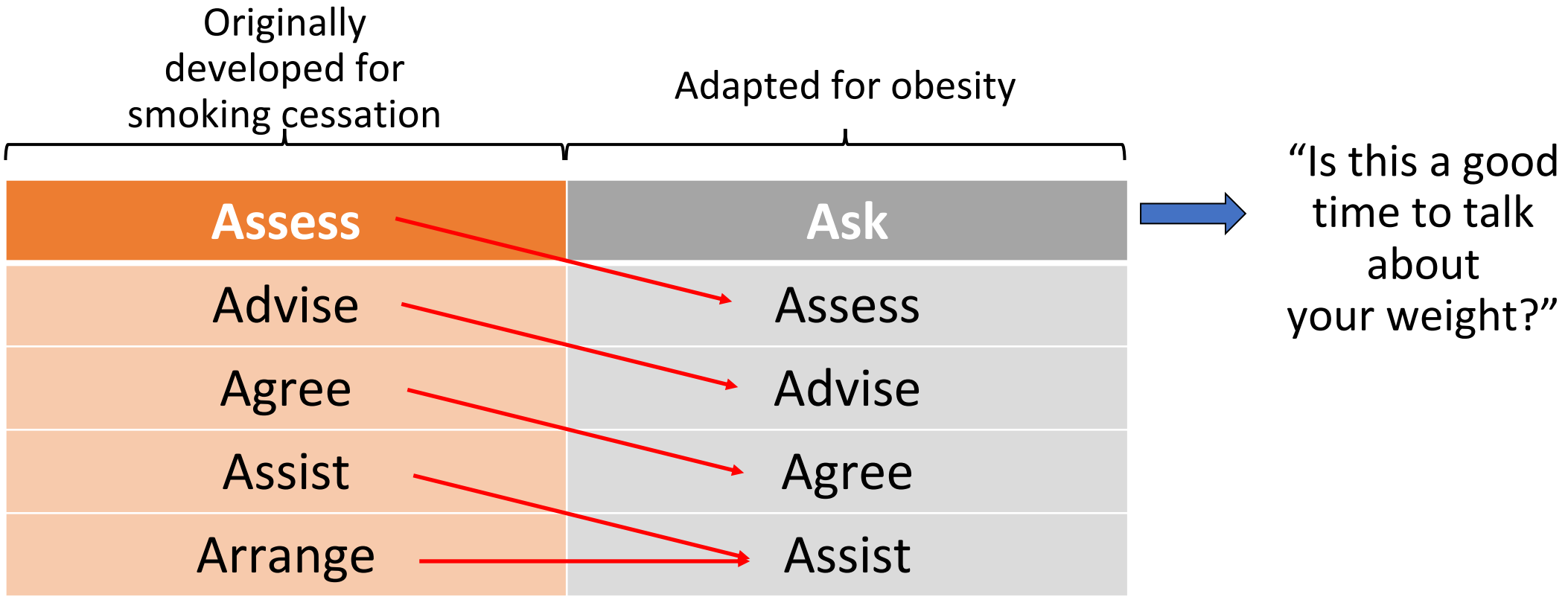
1. DeJong W. Psychol Rep. 1993;73(3 Pt 1):963-970.; 2. Puhl RM et al. Health Psychol. 2005;24:517-525.

The first step: how we view our patients and their weight struggles…

- Her lifestyle is a personal choice.
- She just needs to eat less and exercise more.
- I'll just tell her to lose weight.
- If she struggles its her fault.
- She doesn't need meds, she can do it on her own.

- She carries genes to resist loss and promote gain.
- Stress, mood, medications, life events promote gain.
- Losing weight requires
- skills, and its my job to coach skill-building
- Weight regain is an expected reaction to metabolic adaptation. Special approaches are needed.

The 5 “A”s Counseling Framework



Vallis M, et al. Can Fam Physician. 2013;59(4):27-31.
Plourde G. Can Fam Physician. 2013;59(4):353.
Sherson EA, et al. Fam Pract. 2014;31(4):389-398.

Obesity Management is Patient-Centric

1. Engage in dialogue; ask “Is this a good time for me to help you with your weight?”
2. Assess diet, activity, barriers, and prior success and failure
3. Goal setting—come to a joint decision
4. Joint decision on lifestyle strategy
5. Joint decision on anti-obesity medication (drug accessibility and patient preferences)
6. Follow-up visits
7. Long-term management

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Utilizing the Full Spectrum of Comprehensive Management Options for Obesity

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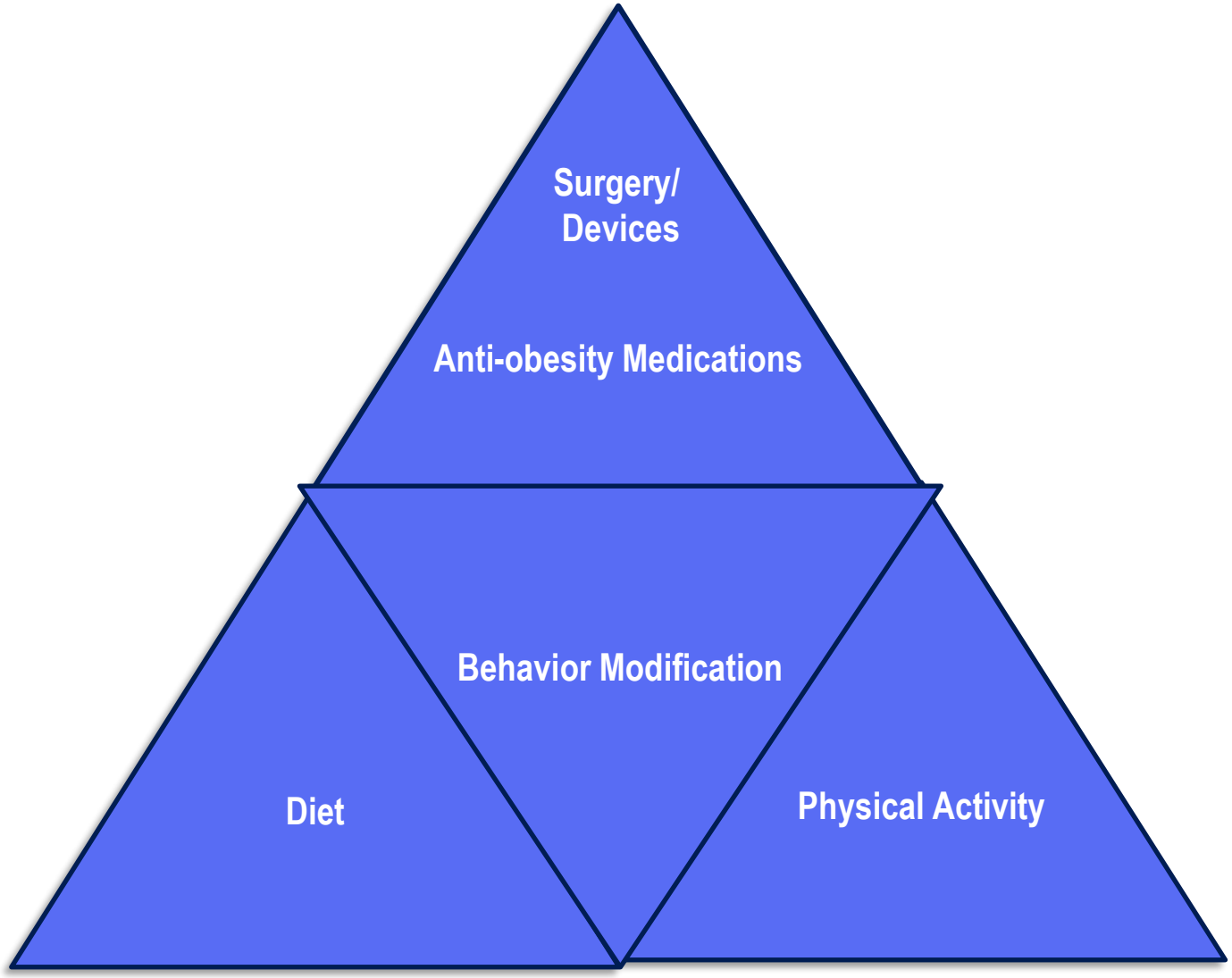
Standard of Care for Clinical Providers

Clinical providers should

- 6. jointly decide with patients or clients on obesity care options
  - counseling on diet, physical activity, behavior modification,
  - pharmacotherapy, and/or
  - bariatric surgery.
- For patients who have not achieved sufficient weight loss or health benefits with self-help approaches, referral to
  - evidence-based intensive behavioral counseling or delivery of a structured program of comprehensive lifestyle intervention (12-14 visits in the first 6 months and continued therapy for at least 1 year)
  - provide services and/or resources to meet the psychosocial needs of patients who may have weight management challenges

Dietz WH, et al. Obesity. 2019;27:1059-1062.

Components of an Effective Obesity Management Program



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Evidence-based Dietary Interventions for Obesity

Donna Ryan, MD

Professor Emerita

Pennington Biomedical Research Center

Standard of Care for Clinical Providers

Clinical providers should

7.refer patients or clients to an evidence-based program or recommend an evidence-based dietary strategy, considering individual preference and the potential health benefit of diet composition.

Dietz WH, et al. Obesity. 2019;27:1059-1062.

Key Guiding Principles for Dietary Counseling

✓ The diet must be calorie reduced in order to create an energy deficit

- 1200-1500 kcal/d for women and 1500-1800 kcal/d for men, or
- 500 kcal/d or 750 kcal/d energy deficit from baseline diet

✓ Prescription diets for weight loss should be based on the patient's preferences and health status – there is no 'one diet' for all patients

Jensen MD, et al. Circulation. 2014;129(25 Suppl 2):S102-S138.

Adherence – Not Diet – Predicts Success

- Consistent finding in four 2012 meta-analyses, each summarizing 13 to 24 trials: adherence was most strongly associated with weight loss[1-4]
- Meta-analysis 2014: 48 trials, n = 7,286; conclusion: any diet a patient will adhere to lose weight is best[5]

5 Meta-analyses:
ADHERENCE
is key to weight loss

Ajala O, et al. Am J Clin Nutr. 2013;97(3):505-516.
Wycherley TP, et al. Am J Clin Nutr. 2012;96(6):1281-1298.
Hu T, et al. Am J Epidemiol. 2012;176 Suppl 7:S44-54.
Bueno NB, et al. Br J Nutr. 2013;110(7):1178-1187.
Johnston BC, et al. JAMA. 2014;312(9):923-933.

What every health care provider can do for counseling about diets for patients with obesity…

- Don’t believe there is a magic diet for weight loss.
- Do believe that there are many pathways to dietary success.
- Be permissive if patients want to try low carb, low glycemic index, intermittent fasting or other diets… it might work for them.
- Try to get patients to good lifestyle counseling – an RD, a commercial program.
- Always try to get patients to a healthier diet (more plants, more fiber, extra-virgin olive oil, fish and less red meat, animal fats and processed foods.

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Physical Activity for Obesity Management

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Standard of Care for Clinical Providers

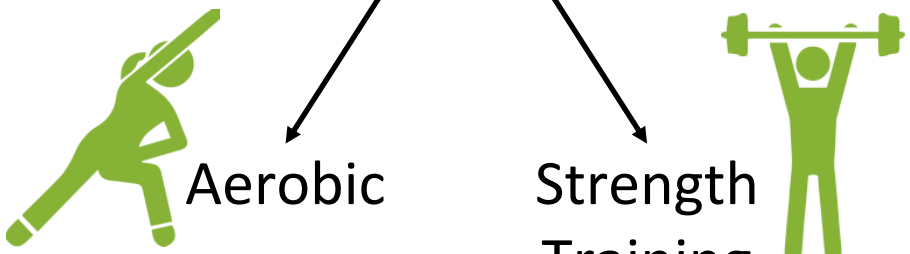
Clinical providers should

8. recommend appropriate levels of physical activity and/or refer patients or clients to programs that include physical activity counseling as part of an obesity care effort.

Dietz WH, et al. Obesity. 2019;27:1059-1062.

Physical Activity: A ‘Movement Portfolio’

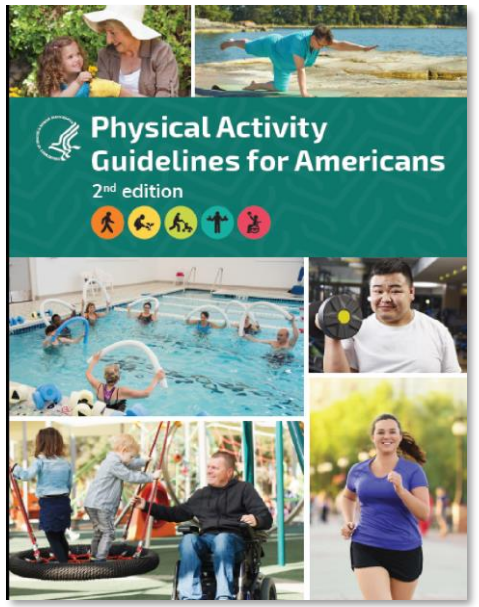
Exercise
(recreation)



agility, balance, coordination, speed power, reaction time, flexibility

Activities of Daily Living
(work, transportation school, household)

Sedentary Behavior
(inactivity/sedentariness)



https://health.gov/our-work/physical-activity/current-guidelines

Aerobic Physical Activity and Expected Weight Loss

Expected initial weight loss and possibility of clinically significant weight loss from different types of exercise training programs[1]

Exercise type	Range of expected weight loss	Chance of clinically significant weight loss
Aerobic exercise training only	0-3%	Possibly but only with high exercise volumes
Resistance training only	0-1%	Very unlikely
Aerobic and resistance training	0-3%	Possibly but only with high volumes of aerobic exercise training
Caloric restriction combined with aerobic exercise training	5-15%	Possible
Aerobic physical activity amount	**Weight loss amount**[2]	
<150 min per week	No weight loss or minimal weight loss	
150-225 min per week	Weight loss of 2-3 kg	
225-420 min per week	Weight loss of 5-7.5 kg	
200-300 min per week	Weight maintenance after weight loss	

1. Swift DL, et al. *Prog Cardiovasc Dis*. 2018;61(2):206-213.
2. Donnelly JE, et al. *Med Sci Sports Exerc.* 2009;41(2):459-471.

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Addressing Weight Effects of Common Medications

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Standard of Care for Clinical Providers

Clinical providers should

9. minimize the use of medications that may cause weight gain and preferentially consider those that are weight neutral or associated with weight los in patients with overweight and obesity.

1. Dietz WH, et al. Obesity. 2019;27:1059-1062.

Weight Effects of Common Medications

discussed in module, “Medicating the Patient with Obesity”

Medication	Weight Gain Associated with Use	Alternatives (weight reducing)
Diabetes medications	Insulin, sulfonylureas, TZDs, mitiglinide, sitagliptin?	(Metformin, acarbose, miglitol, pramlintide, GLP-1 RAs, SGLT2 inhibitors)
Hypertension medications	α-Blocker?, β-blocker	ACE inhibitors?, calcium channel blockers?, angiotensin-2 RAs
Antidepressants and mood stabilizers	Amytriptyline, doxepin, imipramine, nortriptyline, trimipramine, mirtazapine, fluoxetine?, sertraline?, paroxetine, fluvoxamine	(Bupropion), nefazodone, fluoxetine (short-term, sertraline <1 year)
Oral contraceptives	Depot progesterone	Barrier methods, IUDs

? represents uncertain/under investigation. ACE = angiotensin-converting enzyme; GLP-1 = glucagon-like peptide-1; IUDs = intrauterine devices; RAs = receptors antagonists; SGLT2 = sodium-glucose cotransporter-2; TZDs = thiazolidinediones.

Apovian CM, et al. *J Clin Endocrinol Metab*. 2015;100(2):342-62.

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Obesity Pharmacotherapy as Adjunct to Lifestyle

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Standard of Care for Clinical Providers

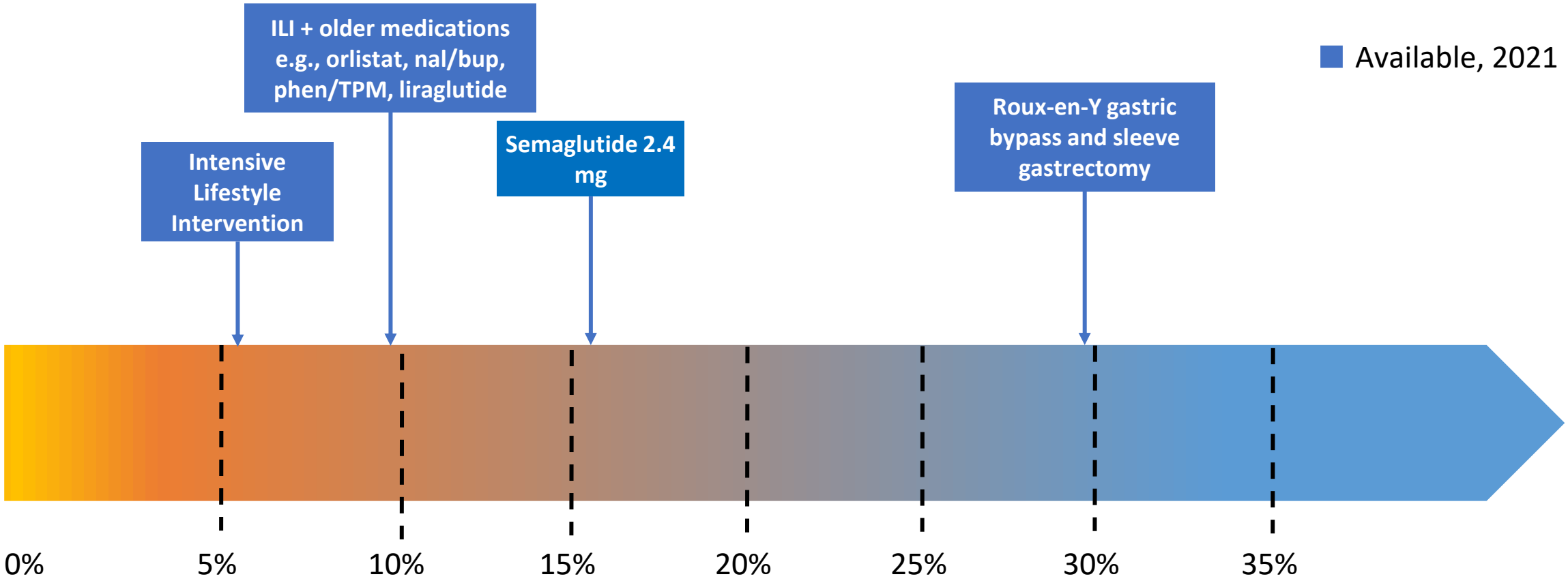
Clinical providers should

10. discuss and/or prescribe obesity medications, when appropriate. Medications approved by the US Food and Drug Administration for weight management should be included in health care system formularies and used according to product label indications. Medications should be prescribed in conjunction with the lifestyle intervention.

Dietz WH, et al. *Obesity.* 2019;27:1059-1062.

Available Treatments for Obesity

discussed in module, “Medicating the Patient with Obesity”



Not all agents are available in all regions; always consult local prescribing information. Direct comparisons between data cannot be made due to differences in trial designs.

*40-week study duration; **20-week study duration.

ILI, Intensive Lifestyle Intervention; nal/bup, naltrexone/bupropion; phen/TPM, phentermine/topiramate

Allison DB, et al. *Obesity*. 2012;20(2):330-342. [EQUIP]; Gadde KM , et al. *Lancet*. 2011;37:1341-1352. [CONQER]; Greenway FL, et al. *Lancet.* 2010;376:595-605. [COR-I]; Apovian CM, et al. *Obesity.* 2013;21:935-943 [COR-II]; Wadden TA, et al. *Obesity*. 2011;19(1):110-120. [COR-BMOD]; Pi-Sunyer X, et al. *N Engl J Med*. 2015;373(1):11-22. [SCALE]; Wadden TA, et al. *In J Obes*. 2013;37:1443-1451. [SCALE MAIN]; Enebo LB, et al. *Lancet*. 2021;397(10286):1736-1748. [Cag + Sema]; Wilding JPH, et al. *N Engl J Med*. 2021;384(11):989. [STEP 1]; Wadden TA, et al. *JAMA*. 2021;325(14):1403-1413. [STEP 3]; Rubino D, et al. *JAMA*. 2021;325(14):1414-1425. [STEP 4]; Ryan D. *Lancet Diabetes Endocrinol*. 2021;9(5):252-254. [STEP]; Sjöström L, et al. *N Engl J Med*. 2007;357:741-52. [Surgery]; Frias JP, et al. *Lancet.* 2021 [SURPASS-2].

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Considerations for Metabolic Surgery

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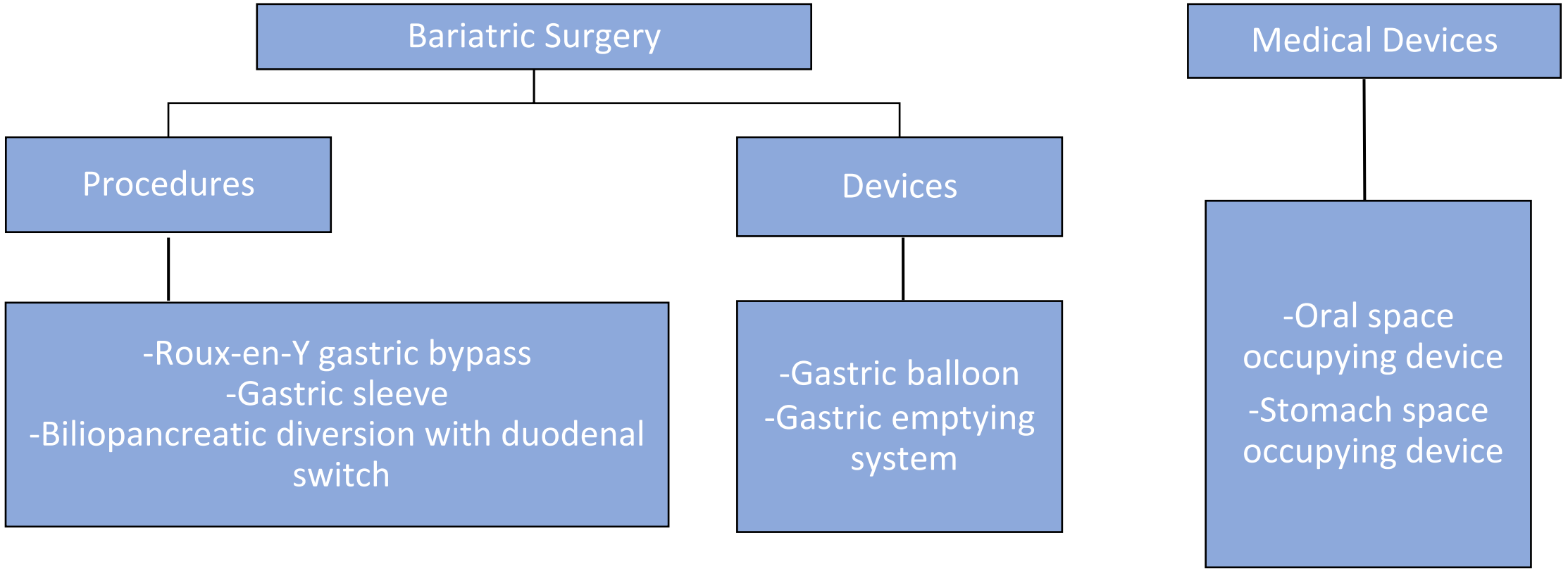
Standard of Care for Clinical Providers

Clinical providers should

11. discuss and/or refer to bariatric surgery patients or clients who meet surgical criteria, when appropriate.

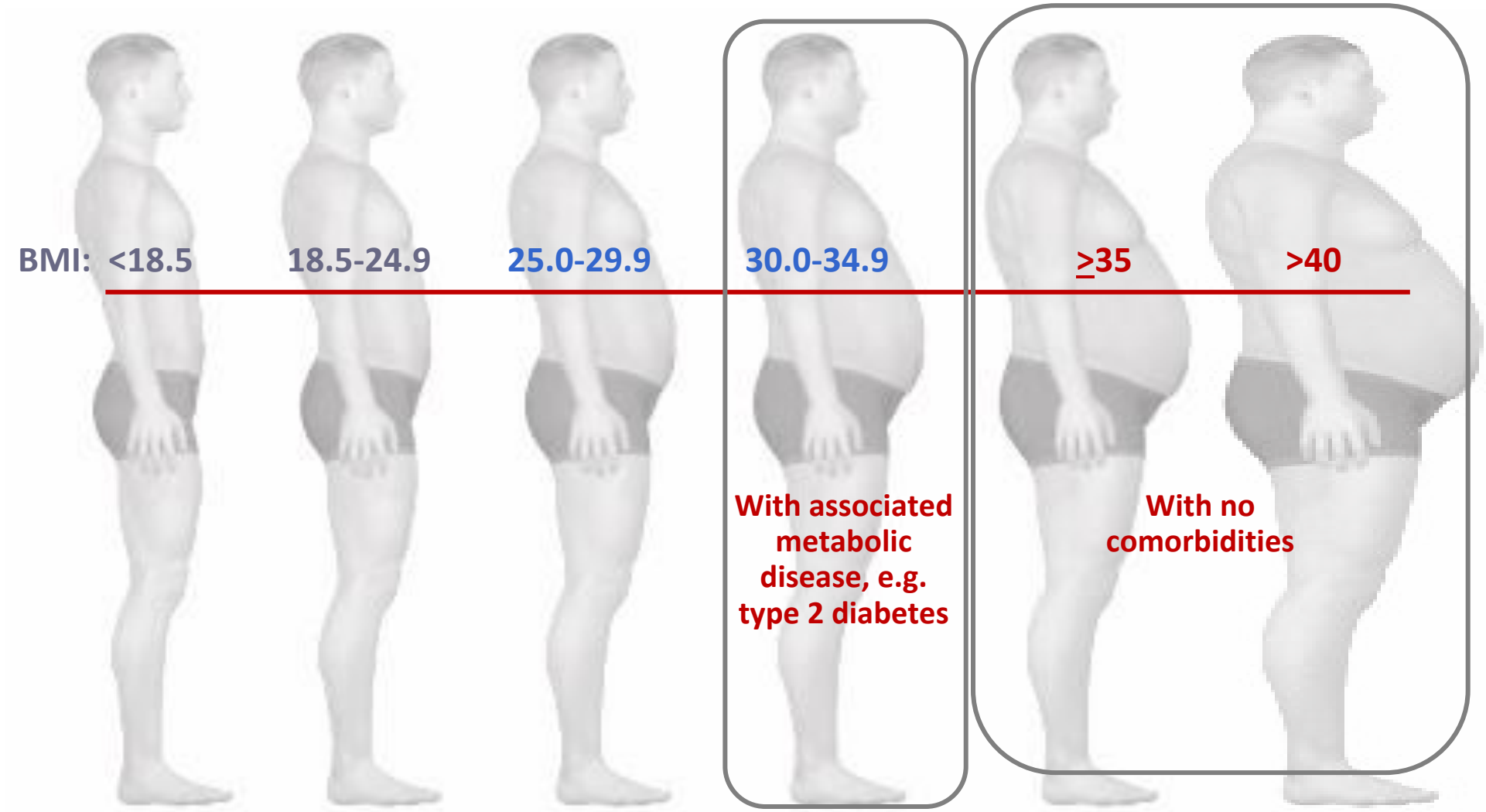
Dietz WH, et al. Obesity. 2019;27:1059-1062.

Surgery and Devices for Weight Loss and Management



US Food and Drug Administration. Medical Devices for Weight Loss and Weight Management: What to Know | FDA. Accessed January 26, 2021.

Bariatric Surgery Criteria Updated in 2022



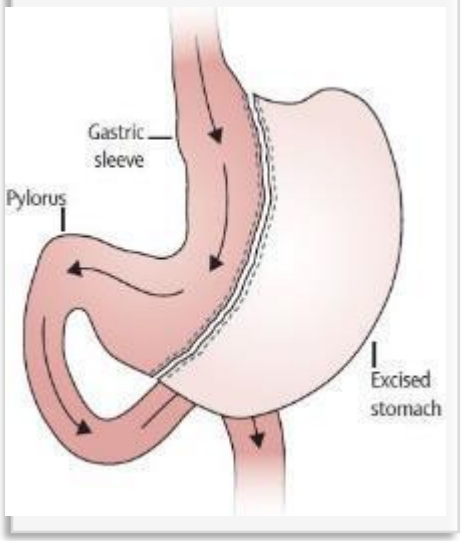
Consider bariatric surgery: (BMI ≥30)

2022 American Society for Metabolic and Bariatric Surgery (ASMBS) and International Federation for the Surgery of Obesity and Metabolic Disorders (IFSO): Indications for Metabolic and Bariatric Surgery

Dan Eisenberg et al. / Surgery for Obesity and Related Diseases 18 (2022) 1345–1356

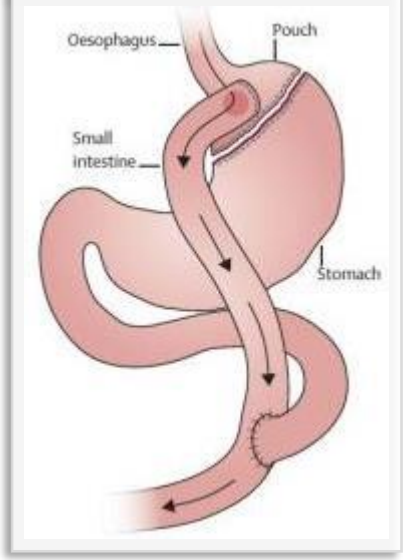
Most Common Bariatric Procedures

Sleeve Gastrectomy



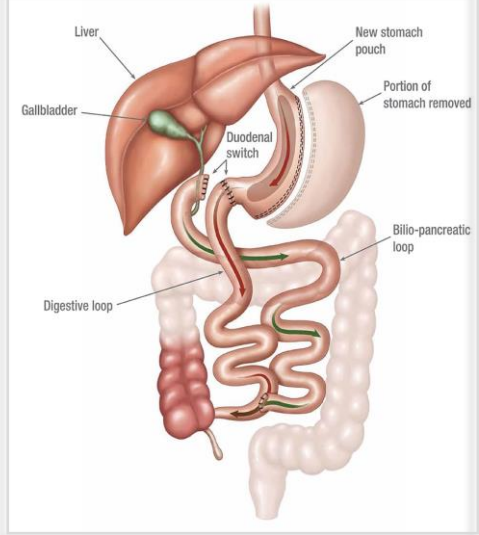
59.4% of procedures

Roux-en-Y Gastric Bypass



17.8% of procedures

Duodenal Switch



0.9% of procedures

96% performed laparoscopically
Average length of stay – 1.2 days

16.7% of procedures are revisions

Madsbad S, et al. *Lancet Diabetes Endocrinol*. 2014;2(2):152-64.https://asmbs.org/resources/estimate-of-bariatric-surgery-numbers accessed 10/30/2021

Considerations for Surgical Treatment

- May be an option for patients with:
  - BMI 30-34.9 kg/m2 and ≥1 obesity-related metabolic complication (type 2 diabetes)
  - BMI ≥35 kg/m2
  - Unresponsive to lifestyle management and pharmacotherapy
- Long-term reduction in:
  - Body weight
  - Cardiovascular biomarkers, events
  - Other weight-related complications
- Need for ongoing support and intervention

Consider bariatric surgery: (BMI ≥30)

2022 American Society for Metabolic and Bariatric Surgery (ASMBS) and International Federation for the Surgery of Obesity and Metabolic Disorders (IFSO): Indications for Metabolic and Bariatric Surgery

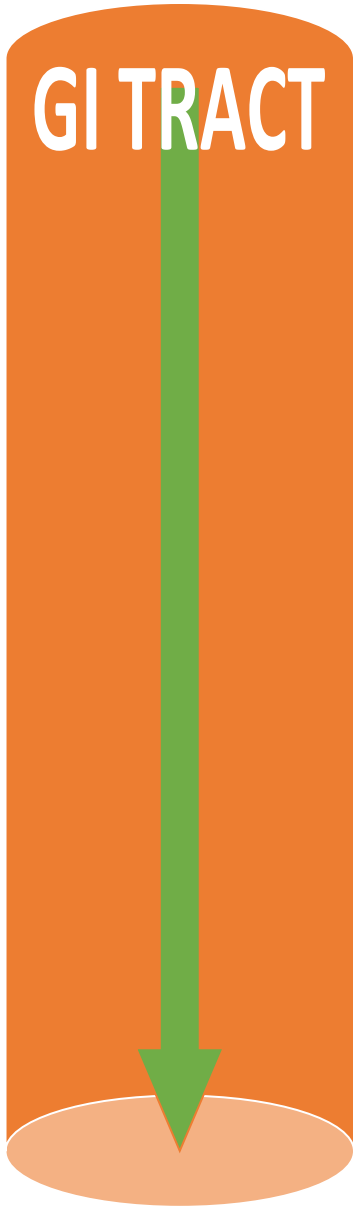
Dan Eisenberg et al. / Surgery for Obesity and Related Diseases 18 (2022) 1345–1356

Standard of Care for Clinical Providers

Clinical providers should

12. be knowledgeable about long-term nutritional and medical needs of patients or clients who have bariatric surgery and should provide care consistent with established guidelines.

Dietz WH, et al. Obesity. 2019;27:1059-1062.



MOUTH Amylase

ESOPHAGUS

STOMACH Pepsin, HCl, IF

DUODENUM Pancreatic bicarb enzymes, BILE

JEJUNUM

ILEUM BRUSH BORDER ENZYMES

COLON ADAPTATION

NUTRIENT ABSORPTION

Alcohol
Niacin (B_3)

Cl^-, SO_4^-
Iron, Calcium, Magnesium, Zinc

Glucose, Galactose, Fructose
Water Soluble Vitamins:
- Folic acid
- Thiamine (B_1)
- Riboflavin (B_2)
- Niacin (B_3)
- Pyridoxine (B_6)
- Ascorbic acid (C)

PROTEIN

Fat-soluble vitamins (A,D,E,K)
FA
Cholesterol
Bile salts
Vitamin B_{12}
Sodium/potassium
WATER

Kushner R, Still C. Nutrition and Bariatric Surgery. CRC Press; 2014.

Nutrient Screening Time Points

Nutrient	Pre-op	3 Month	6 Month	Annually
Vitamin B_1		Anytime with N/V----------	----------	----------?
Vitamin B_{12}	X	RYGB VSG BPD/DS	RYGB VSG BPD/DS	X
Folate	X	X	X	X
Vitamin A	X		BPD/DS	X
Vitamin D	X	X	X	X
Vitamin K / E	X			X
Iron	X	X	X	X
Zinc	X			RYGB VSG BPD/DS
Copper	X			RYGB VSG BPD/DS
PTH	X	X	X	X
Calcium	X	X	X	X
DEXA	X			q 2-5 yrs

Adapted from: Stein J, et al. Aliment Pharmacol Ther. 2014;40(6):582-609; Parrott J, et al. Surg Obes Relat Dis. 2017;13(5):727-741.

Nutritional and Metabolic Deficiencies After Bariatric Surgery

- Gastric restrictive procedures
  - Iron deficiency 32%
  - Thiamine deficiency
- Roux-en-Y gastric bypass
  - Calcium (50% to 60%) and vitamin D (20% to 60%)
  - Iron deficiency 15% to 50% (49% to 52% with BMI >50)
    - Decreased acidification and proximal small bowel absorption
  - B_{12} deficiency 10% to 70% 1 to 9 years after* (half-life 400 d)
    - Decreased liberation of B_{12} from protein foods
    - Decreased intrinsic factor production
    - Decreased ileal absorption
    - Requirement = 2 mcg/day; stores = 3000 to 5000 mcg
  - Thiamin deficiency
  - Folic acid deficiency 10% to 35% due to low intake and ↓ gastric acid
  - Protein deficiency (<1% to 4.7%)[1]

* Earlier if B12 deficiency occurs preoperatively.

1. Faintuch J, et al. *Obes Surg*. 2004;14(2):175-81.

Thiamine Deficiency Can Result in Permanent Neurologic Damage

- Stores last 3 to 6 weeks
- Decreased gastric acid production
- Altered gastrointestinal anatomy
- Decreased food intake
- Frequent vomiting
- Dextrose infusion

- WHEN YOU THINK OF IT: GIVE IT

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Treating Obesity to the Standard of Care: Concluding Remarks

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Are we ready to treat obesity to the standard of care? Are we teaching appropriately?

Brief Cutting Edge Report
CLINICAL TRIALS AND INVESTIGATIONS

Obesity

Development of Obesity Competencies for Medical Education: A Report from the Obesity Medicine Education Collaborative

Robert F. Kushner[1], Deborah B. Horn[2], W. Scott Butsch[3], Joshua D. Brown[4], Katherine Duncan[5], Colony S. Fugate[6], Carol Gorney[7], Eduardo L. Grumwald[8], Leon I. Igel[9], Magdalena Pasarica[10], Nicholas Pennings[11], Taraneh Soleymani[12], and Amanda Velazquez[13]

Objective: Obesity Medicine Education Collaborative (OMEC) was formed to develop obesity-focused competencies and benchmarks that can be used by undergraduate and graduate medical education program directors. This article describes the developmental process used to create the competencies.
Methods: Fifteen professional organizations with an interest in obesity collaborated to form OMEC. Using the six Core Competencies of the Accreditation Council for Graduate Medical Education as domains and as a guiding framework, a total of 36 group members collaborated by in-person meetings, email exchange, and conference calls. An iterative process was used by each working subgroup to develop the competencies and assessment benchmarks. The initial work was subsequently externally reviewed by 19 professional organizations.
Results: Thirty-two competencies were developed across the six domains. Each competency contains five descriptive measurement benchmarks for evaluator rating.
Conclusions: This set of OMEC obesity-focused competencies is the first evaluation tool developed to be used within undergraduate and graduate medical training programs for both formative and summative assessments. Routine and more robust assessment is expected to increase the competence of health care providers to assess, prevent, and treat obesity. In addition to dissemination, the competencies and benchmarks will need to undergo evaluation for further validity and practicality.

Obesity (2019) 27, 1063–1067. doi:10.1002/oby.22471

Introduction

A major challenge facing medical educators today is to adequately train current and future health care providers in the prevention and treatment of noncommunicable diseases, the leading cause for increased disability-adjusted life years in the United States (1) and around the world (2). Underlining this risk is, in part, the alarming increase in the number of adults and children with obesity. The rationale for including obesity in undergraduate (UGME) and graduate (GME) medical education is based on its population prevalence, disease burden, and availability of treatment options. In 2007, the Association of American Medical Colleges published "Report VIII–Contemporary Issues in Medicine: The Prevention and Treatment of Overweight and Obesity" (3).

The report concluded by stating, "Medical education must assure that future physicians will be better prepared to provide respectful, effective care of overweight and obese patients and to appropriately participate in overweight/obesity prevention efforts. Education on assessing, preventing and treating overweight and obesity should be included in basic sciences, clinical experiences, and population health sciences" (3). A recent comprehensive review of the United States Medical Licensing Examination found that there was insufficient coverage of obesity on the Step 1 and 2 examinations, and recommendations for inclusion were provided (4). Others have voiced similar recommendations for residency and fellowship training (5,6). In short, there is a need for comprehensive obesity education that spans UGME and GME for both physicians and advanced practitioners.

[1] Department of Medicine, Northwestern University Feinberg School of Medicine, Chicago, Illinois, USA. Correspondence: Robert F. Kushner (rkushner@northwestern.edu) [2] Center for Obesity Medicine and Metabolic Performance, University of Texas McGovern Medical School, Houston, Texas, USA [3] Bariatric and Metabolic Institute, Cleveland Clinic, Cleveland, Ohio, USA [4] Weight Management Center, Wake Forest Baptist Health, Winston-Salem, North Carolina, USA [5] Abrazo Weight Management Center, Scottsdale, Arizona, USA [6] Department of Pediatrics, Oklahoma State University Center for Health Sciences, Tulsa, Oklahoma, USA [7] Department of Physician Assistant Studies and Services, University of Iowa Carver College of Medicine, Iowa City, Iowa, USA [8] Weight Management Program, University of California San Diego Bariatric and Metabolic Institute, San Diego, California, USA [9] Comprehensive Weight Control Center (West), Weill Cornell Medical College, New York, New York, USA [10] Department of Medical Education, College of Medicine, University of Central Florida, Orlando, Florida, USA [11] Family Medicine, Campbell University School of Osteopathic Medicine, Lillington, North Carolina, USA [12] University of Alabama at Birmingham, Birmingham, Alabama, USA [13] Southern California Kaiser Permanente, Los Angeles, California, USA.

See Commentary, pg. 1045.
Disclosure: The authors declared no conflict of interest.
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- Competencies have been outlined for undergraduate and graduate medical education.
- Endorsed by 15 professional societies.

Now we need to adopt them.

Are we ready to treat obesity to the standard of care? Are the barriers to care eliminated?

- H.R.1953 – Treat and Reduce Obesity Act of 2017 still not passed
- Obesity Action Coalition – >60,000 members
- World Obesity Federation working to have obesity included for universal health coverage by WHO

There is still work to be done.

Thank you!