

Obesity Medicine:

A Practical Approach to Navigating Age and Socioeconomic Barriers while Managing Obesity

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Employment:

- Practice Internal Medicine and Obesity Medicine at Gonzaba Medical Group
 - 2015: Started our Weight Management Program

Specialized Certifications:

- 2018: Certificate in Obesity Management in Primary Care through the AAPA
- 2020: Certificate in Advanced Education in Obesity Medicine through the OMA

Pertinent Memberships:

- Obesity Medicine Association
- Obesity Action Coalition
- PAs in Obesity Medicine
 - Currently Secretary/Board Member

Disclosures:

- I have NO financial relationships or conflicts of interest in relation to the presented material in this presentation.

Learning Objectives:

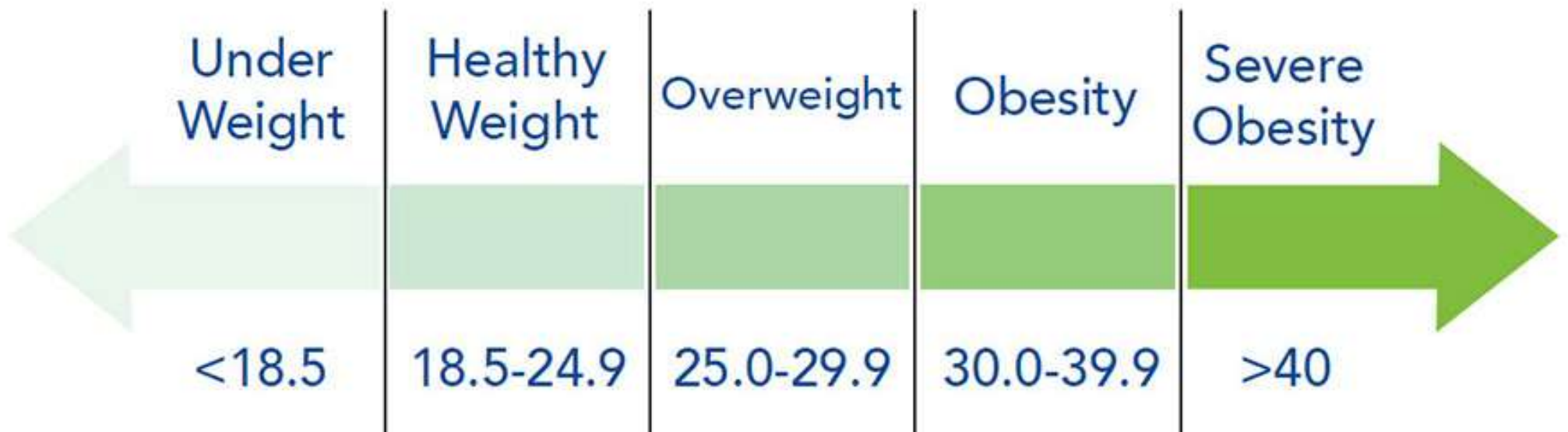
- Identify common contributors in treating obesity.
- Discuss concerns when treating obesity in the geriatric population.
- Address challenges in managing obesity in the low-income population.
- Recommend realistic treatment options for a culturally diverse population.

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Understanding Obesity

*In order to stop a problem,
we must first recognize it.*

Weight Categories Based on BMI



WHY BMI DOESN'T ALWAYS SHOW HOW FAT YOU ARE

Dwayne Johnson



Height	1.96m
Weight	118kg
BMI	31 (Obese)

Vin Diesel



Height	1.83m
Weight	102kg
BMI	30 (Obese)

Arnold Schwarzenegger



Height	1.88m
Weight	118kg
BMI	33 (Obese)

The Experts Agree:

"Obesity is a complex, multifactorial condition characterized by excess body fat. It must be viewed as a chronic disorder that essentially requires perpetual care, support, and follow-up. Obesity causes many other diseases, and it warrants recognition by health-care providers and payers."¹⁰



American Association of Clinical Endocrinologists
American College of Endocrinology Obesity Task Force

POTENTIAL CONTRIBUTORS TO OBESITY

2015

Inside the Person

Outside the Person

Disordered Eating
(night eating syndrome, binge eating, "food addiction")

Emotional Coping

Hyper-reactivity to Environmental Food Cues

Heightened Hunger Response

Delayed Satiety

Environmental/Chemical Toxins

Increased Availability of Energy Dense, Nutrient Poor Foods & Beverages

Larger Portion Sizes

Eating as Recreation, Snacking, Special Occasions

Lack of Nutritional Education

Skipping Meals

Food Insecurity

Diet Patterns

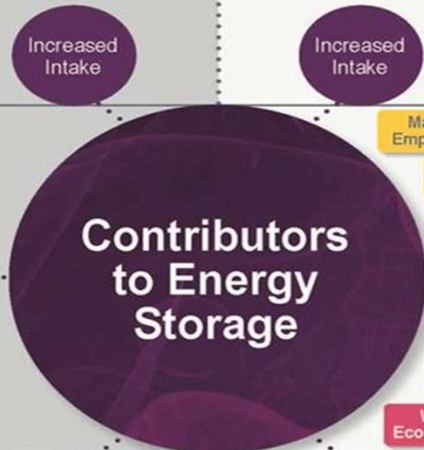
Eating Away From Home

Lack of Family Meals

Market Economy

Food Surplus

Pervasive Food Advertising



Age Related Changes
(i.e. menopause, mobility decline, hormones)

Pathological Sources of Endocrine Dysregulation
(i.e. thyroid dysfunction, PCOS, Cushing's Syndrome)

Central & Peripheral Regulators of Appetite & Adipose Tissue

Self-regulatory & Coping Deficits

Trauma History

Chronic Inflammation
(i.e. altered insulin signaling and glucose homeostasis)

Genetic & Epigenetic Factors

Gestational Diabetes

Mood Disturbance
(i.e. depression, anxiety, bipolar etc.)

Mental Disabilities

Maternal Employment

Birth Order
(first-born in family)

Having Children
(for women)

Birth by C-section

Family Conflict

Social Networks

Entering Into a Romantic Relationship

Maternal Stress

Breast Feeding and/or Related Factors

Non-parental Childcare

Infection
(i.e. human adenovirus 36)

Weight Gain Inducing Drugs

Smoking Cessation

Sleep Deficits

Maternal Smoking

Maternal Obesity

Maternal Over-nutrition During Pregnancy

Weight Bias & Stigma
(i.e. avoidance of medical care, self esteem, teasing history)

Lack of Health Care Provider Support/Knowledge & Inadequate Access to Care

Stress

Child Maltreatment

Westernization & Economic Development

Low SES & Nutrition Support

Living in Crime-prone Areas

Weight Cycling
(yo-yo dieting)

Thermogenesis

Gut Microbiota

Pain Sensitivity

Physical Disabilities
(i.e. functional impairments and regulatory dysfunction)

Social Anxiety
(i.e. exercise avoidance)

Consistent Temperature
(i.e. air conditioning/heating, thermoregulation)

Increased Sedentary Time
(i.e. inactive leisure "screen" time, inactive job requirements)

Built Environment
(i.e. stairwell design/access, building design, absence of or poor sidewalks)

Decreased Opportunity for Non-exercised Based Physical Activity
(i.e. driving vs. walking to work and school, sedentary jobs)

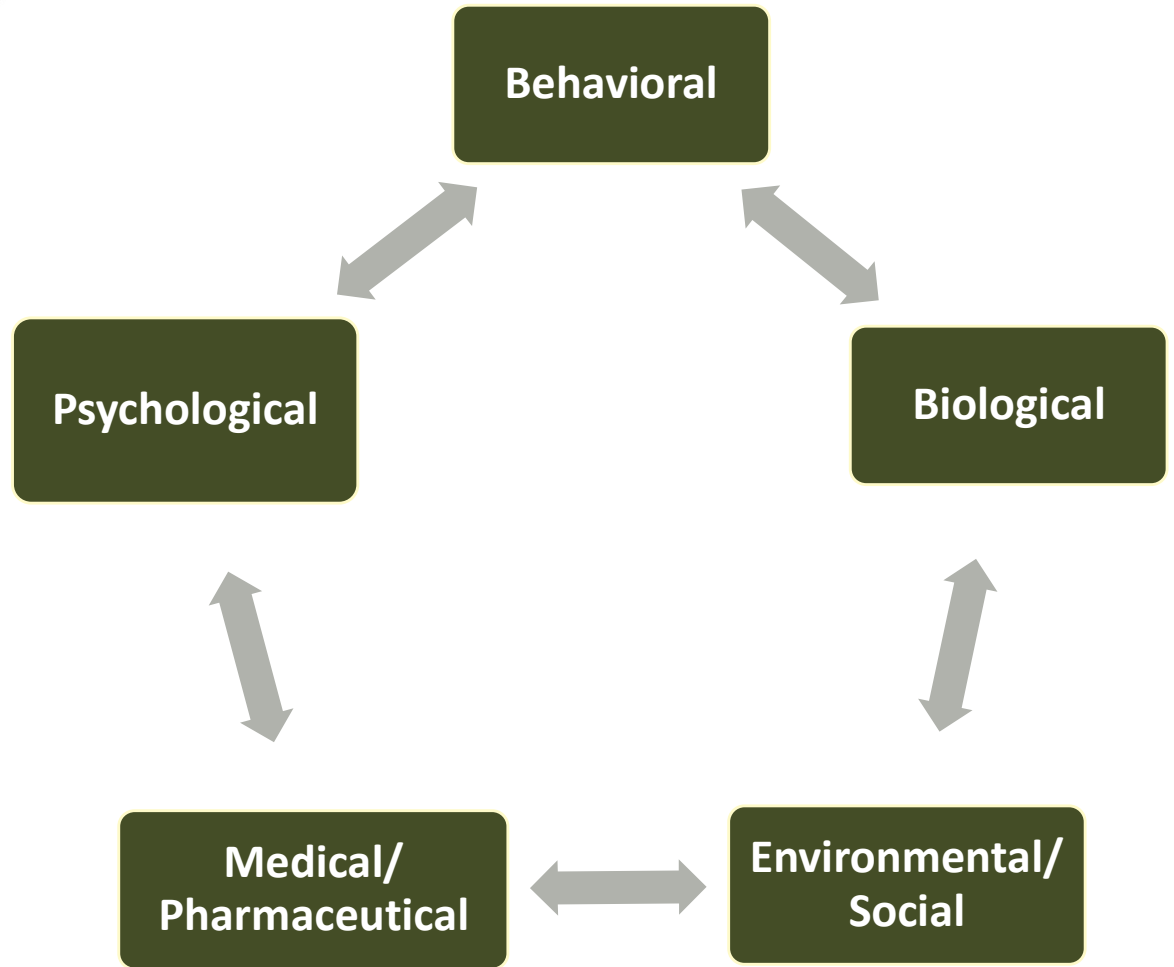
Labor Saving Devices

Pre-natal Air Pollution



* Potential contributors indicate anything that has been put forth in the research literature as a question of investigation and is not intended to be a verification of whether or not, or the extent to which, each may or may not contribute.

Contributors to Obesity:



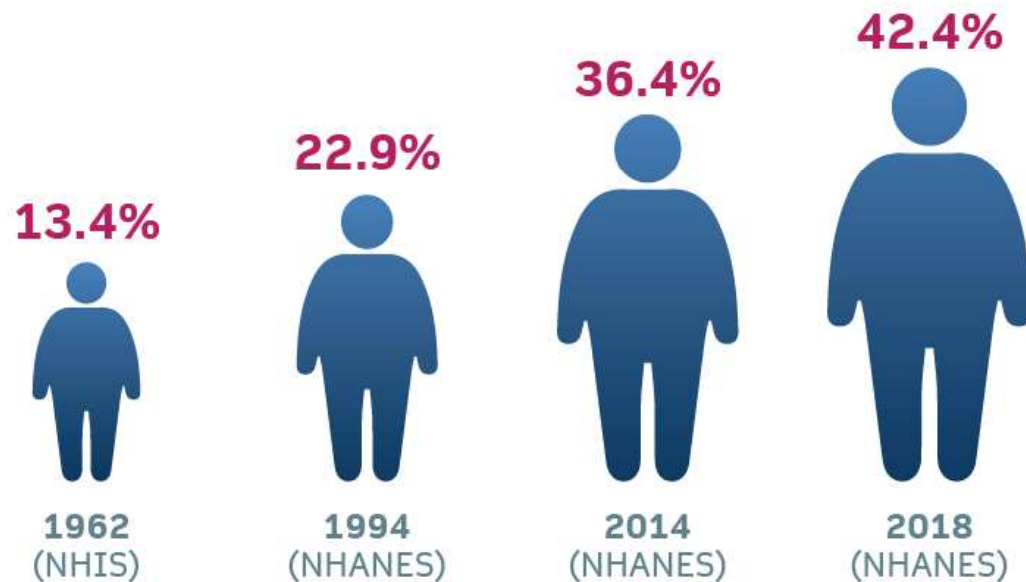


Addressing the Contributors

Why treat this growing problem?

Majority of Americans are Overweight or Have Obesity

Percentage of American Adults with BMI>30
(Percentage of Americans Who Have Obesity)¹



Percentage of Americans Over Age 20
Who Are Overweight or Have Obesity²



References: 1. https://www.cdc.gov/nchs/about/factsheets/factsheet_nhanes.htm. 2. <https://www.cdc.gov/nchs/fastats/obesity-overweight.htm>

Obesity Related Medical Conditions:



Heart Disease:

- Increased weight can cause elevated blood pressure, high cholesterol and stress on heart.

Diabetes:

- Obesity leads to insulin resistance which can cause sugar levels to remain chronically elevated.

Cancer:

- 40% of cancers are linked to obesity, including breast, colon, and ovarian cancer. (*Healthcentral*)

Premature Death:

- 2.8 million people die yearly due to obesity. (*WHO*)



TREATS
UNDERLYING
COMORBIDITIES



REDUCES
MEDICATION
REGIMENS



HELPS QUALIFY
FOR
ORTHOPEDIC OR
ELECTIVE
SURGERIES



LOWERS HEALTH
RISKS



IMPROVES SELF
ESTEEM

Benefits of Treating Obesity

What Prevents Clinicians from Addressing Obesity?

Time Constraints

Lack of Knowledge or Education on the Field

Personal/Professional Bias

Uncomfortable Sensitive Topic

Complex Patients

AGE

- Geriatrics: 65+yo

- *41.5% of 60+ yo suffered with obesity in 2020.*

SOCIAL

- Minorities: Hispanic/Latin

- Cultural Differences

ECONOMIC

- Low-Income

- Limited Education



Behavioral Contributors

Are patients partially responsible?

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graph TD; A[Behavioral Factors] --> B[Sedentary Lifestyle]; A --> C[Unhealthy Diet]; A --> D[Poor Sleeping Habits];
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Behavioral Factors

Sedentary
Lifestyle

Unhealthy
Diet

Poor Sleeping
Habits

Traditional
Thought
Behind
Obesity:

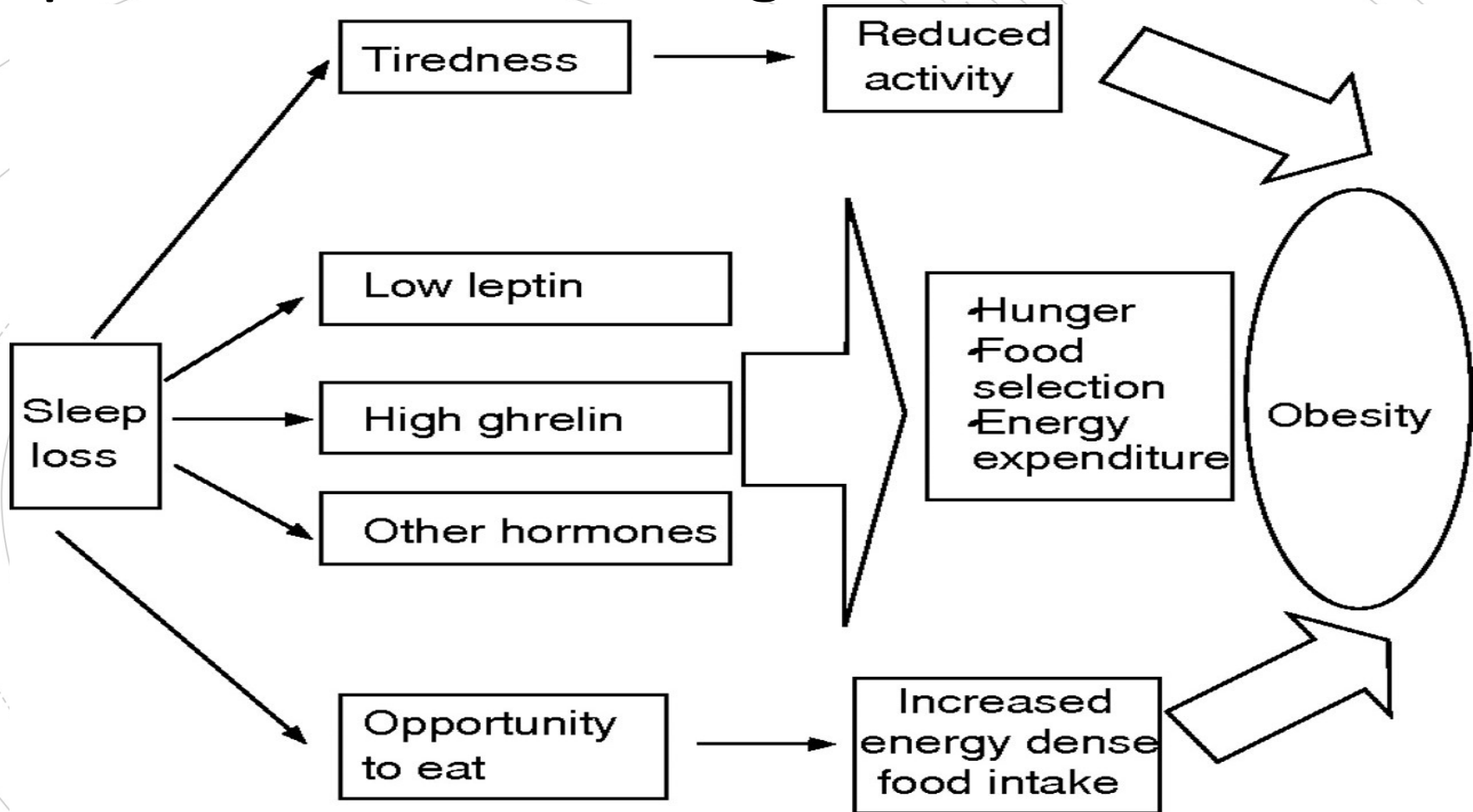
CALORIES IN



CALORIES OUT



Sleep and its Affect on Weight:



AGE

- Think urinary incontinence or nocturia.
- Test for OSA with STOP-Bang questionnaire.
- Do they suffer from dementia/anxiety or medically induced insomnia?

SOCIAL

- Are they parents of young children or elderly?
- Consider multiple generations living at home and their schedules at night.

ECONOMIC

- Is home security/safety an issue?
- Are they staying up studying or working at night?



Environmental Contributors

What influences patients' behavioral choices?

Environmental Contributors:

Family

- Family Meals and Celebrations
- Household Influences: Who Plans/Buys/Cooks/Serves?

Relationships

- Marital Status and Children
- Work Environment

Heritage

- Celebrations
- Traditions

Religion

- Kosher Foods, Prohibited Foods
- Fasting and Religious Restrictions

Geography

- Access to Foods/Food Deserts and Seasonal Foods
- Rural v. Urban, Climate/Weather, Crime, Transportation

Environmental Contributors:

Education

- Literacy
- Language Barriers

Socioeconomic

- SNAP, WIC, Food Banks
- Meals on Wheels, Assisted Living

Health

- Comorbidities: DMII, Hyperlipidemia, Anemia
- Medications

Stages of Life

- Nutritional Needs
- Independent vs. Dependent on Others

Personal Beliefs

- Exercise Avoidance
- Food Preferences

AGE

- Consider if they are dependent of others for care.
- Are there co-morbidities in their health?
- Do they have limitations in diet/exercise?

SOCIAL

- Do they value Family time > Me time?
- Are they eating traditional cooking by mom/wife or at local traditional restaurants?
- Do they live in a multiple generational home? (diff. schedules)

ECONOMIC

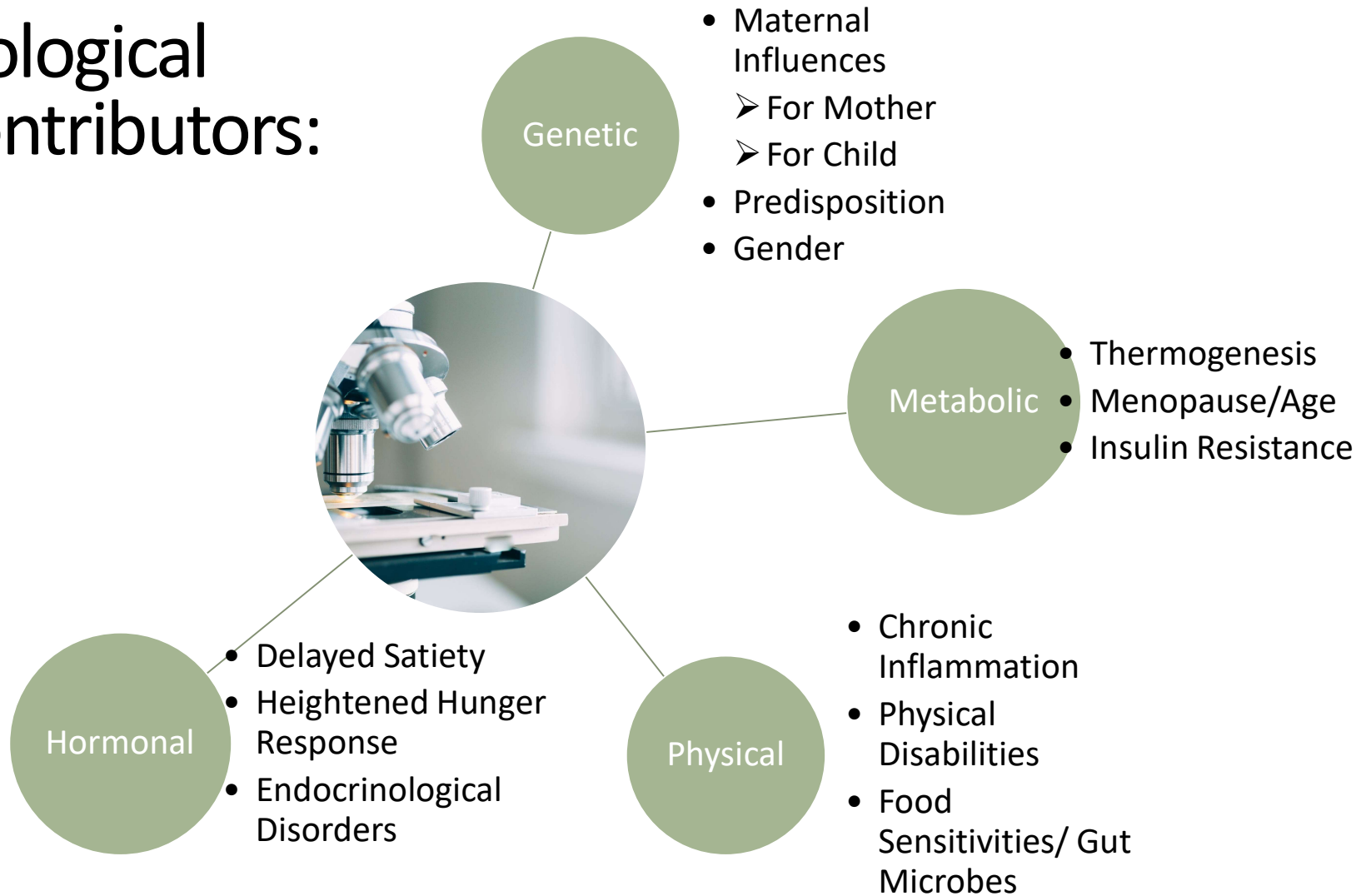
- Many live in food deserts:
 - Areas in low-income communities that cannot financially support large scale grocery stores and restaurants.



Biological Contributors

It's not all in the genes.

Biological Contributors:



AGE

- Look to see if weight gain started after menopause.
- Do they have inflammatory and degenerative disorders?
 - Are they on steroids or long-term pain meds?

SOCIAL

- Think DMII and insulin resistance in Hispanics.
- Check predisposition or family history of obesity.

ECONOMIC

- Do they have food sensitivities like gluten or milk?
- Confirm if they have had previous health care coverage/screenings.



Psychological Contributors

Is there more than “emotional eating?”

Psychological Contributors:

Eating Disorders

- Anorexia
- Bulimia
- Binge Eating Disorder
- Night Eating Disorder

Situational Stressors

- Conflicts in Relationships
- Life Events
- Acute vs. Chronic Stressors
- Weight Bias and Self-Esteem

Emotional Coping

- Depression and Bipolar Disorders
- Anxiety and Social Anxiety
- PTSD and Trauma
- Abuse

AGE

- Test for possible dementia: MMSE.
- Add PHQ-9 and GAD-7 screening tests.

SOCIAL

- Remember the stigma of anti-depressants and therapy.
 - Consider telehealth visits.
- In 2020, ~8 mil. Hispanics suffered from mental illness.
- Ask about situational and emotional stressors.

ECONOMIC

- Expensive psychotherapy sessions without insurance coverage are an issue.
 - Are there even any availabilities? Is there a wait list?
 - Consider www.psychologytoday.com, church or free local resources.



Pharmacological Contributors

Some medications prescribed could also affect weight.

Medical Specialty	Drug Class	Associated with Weight Gain	Alternatives Associated with Less Weight Gain, Weight Neutral, or Inducing Weight Loss
Psychiatry	Antidepressants	Nortriptyline, amitriptyline, paroxetine, citalopram, mirtazapine, fluoxetine (>1 year), sertraline (>1 year)	Fluoxetine (< 1 year), sertraline (< 1 year), bupropion (can induce weight loss)
Psychiatry	Antipsychotics	Clozapine, olanzapine, risperidone, quetiapine, lithium	Ziprasidone, aripiprazole
Neurology	Anti-epileptics	Gabapentin, pregabalin, valproate, carbamazepine	Topiramate, zonisamide, lamotrigine, levetiracetam, phenytoin
Endocrinology	Antidiabetic agents	Insulin, sulfonylureas, thiazolidinedione	Acarbose, metformin, GLP-1 receptor agonists, DPP-IV inhibitors, SGLT-2 inhibitors, pramlintide
Endocrinology	Steroids	Glucocorticoids, progestins	Use lowest dose of glucocorticoids needed to control underlying disease
Ob/Gyn	Contraceptives	Depo-medroxyprogesterone acetate, combination oral contraceptive pills (older generation)	Copper IUD, low-dose combination oral contraceptive pill
Cardiology	Antihypertensive	Prazosin, doxazosin, terazosin, metoprolol tartrate, propranolol	Carvedilol, Nebivolol
General	Antihistamines: OTC allergy remedies and sleep remedies used chronically	Diphenhydramine, other antihistamines	Use for as short of a duration as needed

Table 1 | Drugs That May Promote Weight Gain and Alternatives
 SOURCE: Adapted from Apovian et al., 2015.

AGE

- Adjust current medications first, if possible.
 - Inform specialists.
- Are there interactions with current meds or disorders?
- Assess polypharmacy costs.

SOCIAL

- Address stigma behind certain medications like Metformin.
- Keep in mind use for birth control with some anti-obesity meds vs. traditional Catholic views.

ECONOMIC

- Confirm if medication is available in generics.
- Consider 30 days vs. 90 days scripts.
- Consider GoodRX, SingleCare, and assistance programs.



Finding a Treatment

Where do we start?

Common Treatments In Obesity:

**Lifestyle
Changes**

**Prescribed
Nutrition**

Pharmacotherapy

Surgery

**Detailed Medical
History and
Weight Flowsheet**

**Detailed
Physical Exam**

Perform EKG

**Routine Labs
(CMP, lipid, TSH,
HgbA1c, Hormones,
Vit. D)**

**Additional labs
(Insulin, Cortisol,
Serotonin, Food
Allergens, etc.)**

**Adjust
Medications**

**My Fitness Pal
or Food Log Book**

**Encourage
Physical Activity**

**Referrals
*(If Necessary)***

**Anti-Obesity
Medications
*(If Necessary)***

The Initial Visit



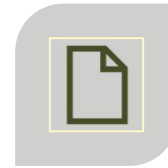
**SPECIFIC
NEEDS AND
CHALLENGES**



**DETAILED
HISTORY AND
LAB RESULTS**



**DISCUSS
DIETARY
LOG-BOOK**



**DISCUSS
MONTHLY
HANDOUT**



**DOCUMENT
PROGRESS IN
FOLDER**



**ADJUST
MEDICATIONS**

Routine visits

SMALL CHANGES

- More realistic
- Easier to maintain long term
- US Surgeon General encourages **“American families to take small, manageable steps within their current lifestyle (versus drastic changes) to ensure long-term health.”**
- Endorsed by:
 - American Diabetes Assn.
 - American Heart Association
 - American Cancer Society

Smaller Portions

Removing one Favorite Item per day/week

Adding one New Item per day/week

Replacing Food/Drink w/ Similar Option

Increasing Sleep by 30 minutes

10 minutes+ Physical Activity

Adding 200-500 steps per day

Setting Alarms as Reminders

Rearranging Schedules

Adjusting Medications and Dosages

Small Changes in the Real World

AGE

- Use paper food journals instead of phone apps.
- Consider how to change lifelong habits.
- Set goals by moving down obesity stages instead of ideal weight due to malnutrition and muscle loss/atrophy.

SOCIAL

- Remember: Family/friend recommendations are valued.
- Evaluate traditional roles in families and its Affects on tx.
- Are they bilingual or Spanish speaking only?
 - Limited resources available. (Microsoft translator)

ECONOMIC

- Consider lack of formal education.
 - Illiterate or grade level reading/understanding pose challenge.
- Take photos of foods for journal.

Dietary Changes:



The best diet



Clean eating 
IIFYM  
Banting 
Paleo 
Atkins  
Raw 
Gluten free 



One you can 
stick to that fits
your lifestyle
and health 
without 
compromising
preferences and
happiness 

AGE

- Consider dental restrictions such as dentures.
- Remember dietary restrictions:
 - Malnourishment in low calorie diets
 - Grapefruit or green vegetables vs. meds and warfarin

SOCIAL

- Remember belief that food is an expression of love.
- Adjust traditional foods.
- Educate on different ways to cook favorite foods.

ECONOMIC

- Remember food deserts.
- Help research frozen foods and canned foods.
 - Explain nutrition labels.
- Explore WIC, Food banks, and processed foods

Benefits of exercise



NUTRITION
80%

20%
WORKOUT

- Exercise provides multiple health benefits, besides just weight loss.
- Physical activity builds lean muscle mass, often lost during weight loss.

AGE

- Fall precautions are vital!
- Try YouTube videos & Sit, Be Fit for those with limited mobility.
- Find local senior centers to help with social interaction.
- Sarcopenia is a loss of skeletal mass/function due to weight loss. Do the SARC-F questionnaire.

SOCIAL

- Focus on group-oriented culture: involve the family/ children.
- Consider incorporating in daily lifestyle:
 - using staircase at work or exercising during commercials.
- Is there a lack of childcare, lack of transportation or lack of time to go to the gym?

ECONOMIC

- Encourage free videos/downloads or free FitOn app.
- Try walking at Wal-Mart, Costco, Mall, etc. before shopping.
- Use the outdoors, but keep in mind safety and weather.
- Purchase cheap weights at 5 Below or pedometer at Walmart.
- Fill water bottles with rice/beans or try alternatives to gyms.

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When the Small Changes Aren't Enough

Add Medications and Surgical Options.

FDA Approved Medications:

CHRONIC USE

- Orlistat
- Phentermine/Topiramate ER
- Naltrexone ER/Bupropion ER
- Liraglutide
- Semaglutide
- Tirzepatide (hopefully soon...)
- *Belviq was discontinued in 2020.*

ACUTE USE

- Phentermine/Lomaira
- Phendimetrazine
- Diethylpropion



Table. FDA-Approved Medications for Chronic Weight Management

	FDA Approval Year	Pharmacologic Class	Usual Maintenance Dose	Frequency	Route	Mean Reduction in Body Weight*	Monthly Cost (AWP) [†]
Semaglutide (Wegovy)	2021	GLP-1 agonist	2.4 mg	Weekly	SQ	9.6 to 16% [‡]	\$1,619
Liraglutide (Saxenda)	2014	GLP-1 agonist	3 mg	Daily	SQ	4.9 to 7.4% [‡]	\$1,619
Naltrexone ER/ Bupropion ER (Contrave)	2014	Opioid antagonist/ antidepressant	16 mg/180 mg (equivalent to 2 tablets)	Twice daily	PO	3.7 to 8.1% [‡]	\$364
Phentermine/ Topiramate ER (Qsymia)	2012	Sympathomimetic/ anticonvulsant	15 mg/92 mg	Daily	PO	9.8 to 10.9% [§]	\$239
Orlistat (Alli, OTC; Xenical, Rx)	2007, Alli; 1999, Xenical	Lipase inhibitor	60 mg, Alli; 120 mg, Xenical	Three times daily	PO	4.6 to 10.2% [¶]	\$41, Alli; \$823, Xenical

*As reported in clinical trials when used at doses provided in the table along with lifestyle modifications

[†]Average Wholesale Price (AWP) according to Red Book (accessed via IBM Micromedex on June 22, 2021)

[‡]Results from 3 studies involving each of the medications

[§]Results from 2 studies involving this medication

[¶]According to the 2016 American Association of Clinical Endocrinologists and the American College of Endocrinology guideline

A Closer Look into the Medications:

Orlistat

- PROS: Prohibits 33% Fat Absorption
- CONS: Anal leakage

Phentermine

- PROS: Increased Energy and Decreased Appetite
- CONS: Elevated BP and Heart Rate

Phentermine/Topiramate ER

- PROS: Increased Energy and Faster Satiety
- CONS: Can cause Drowsiness/Brain Fog/Tingling

Naltraxone/Bupropion ER

- PROS: Stop Cravings
- CONS: Possible psychosis/suicidal ideation

Liraglutide

- PROS: Can use Victoza instead, ~5-8% weight loss
- CONS: Insurance coverage, gallstones, kidney stones, gastroparesis

Semaglutide

- PROS: once a week, 12yo+, up to 15% weight loss
- CONS: Insurance coverage, Ozempic approved for DMII only, gallstones, kidney stones

AGE

- Do the medications interfere with other medications?
- Check for co-morbidities and interactions.
- Consider age restrictions with medications like Phentermine.
- Start low dosages due to side effects.

SOCIAL

- Prefer natural remedies, holistic approach, and botanicas.
- Are there medication availabilities at local pharmacies?
- Consider embarrassment of using anti-obesity aids.

ECONOMIC

- Remember brand names costs are high, so offer generic combinations.
 - Good RX, Patient Assistance Programs
 - Provide samples.
- Consider other diagnoses for prior authorizations/coverages.

TYPES OF BARIATRIC SURGERY



Sleeve
gastrectomy



Gastric
bypass



Gastric
banding



Biliopancreatic
diversion

Surgeries are non-reversible, except for gastric banding (lap-band) and the new gastric balloon.

A person must have a BMI over 34 for most insurances to cover.

The gastric sleeve is currently the most common option.

REMEMBER: This is not the “easy way out.” This option is a serious long-term commitment.

Unfortunately, only about 50% keep their ideal weight after 5 years.

AGE

- Consider high risk co-morbidities/medications.
- Remember age restrictions:
 - Not recommended over 70 yo.

SOCIAL

- Consider the stigma “easy way out”:
 - Family disapproval
- Many perceive it as cosmetic & not medically necessary.
- Many fear risks and medical complications

ECONOMIC

- Lap band costs: \$14,500 average
- Sleeve gastrectomy costs: \$14,900 average
- Bypass costs: \$23,000 average

Patient-Centered Obesity Treatment

Understanding
Underlying Factors

Environmental
Behavioral
Biological
Psychological
Pharmaceutical

Small Changes

Lifestyle
Modifications

Dietary Adjustments

Pharmaceutical
Intervention

Adjust Current
Medications

Start Anti-Obesity
Medications

Surgical Procedures

Monitor for Weight
Gain

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