

*The evolving landscape of
diabetes and obesity care in the
GLP-1 era:
Where do dietitians fit?*

Patricia Davidson DCN, RDN, LDN, CDCES, FAND, FADCES

West Chester University-PA

Objectives

Identify	the coexisting mechanisms between diabetes and obesity
Describe	the 4-prong role of the RDN
Explain	the role of diet and pharmacotherapy in diabetes and weight management
Develop	realistic goals and expectations using intuitive and mindful eating principles.

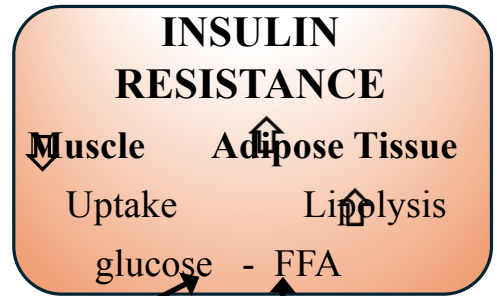
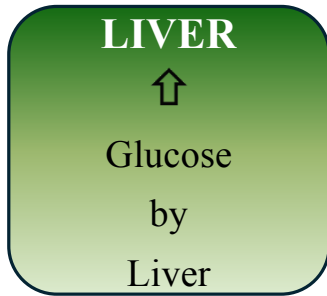
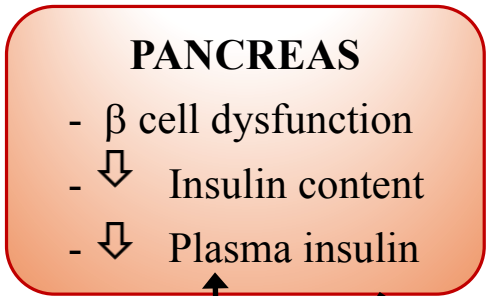


Coexisting mechanisms
between diabetes and obesity



Diabetes –Obesity Connection

- Similarities in metabolic defects common to both obesity and diabetes:
- Sleep disturbances- shift work/deprivation
- Androgen dysfunction
- Altered Vitamin D levels
- Gastrointestinal stress- microbiome dysbiosis
- Environment- obesogens
- Impaired tissue perfusion

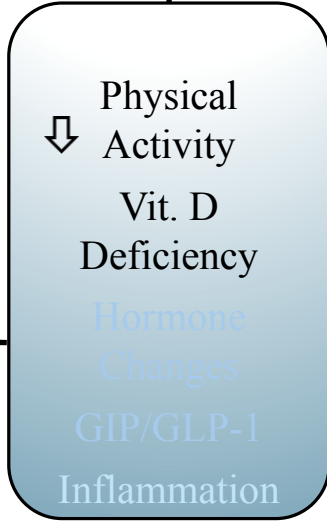


Hyperglycemia

\downarrow β Cell Function

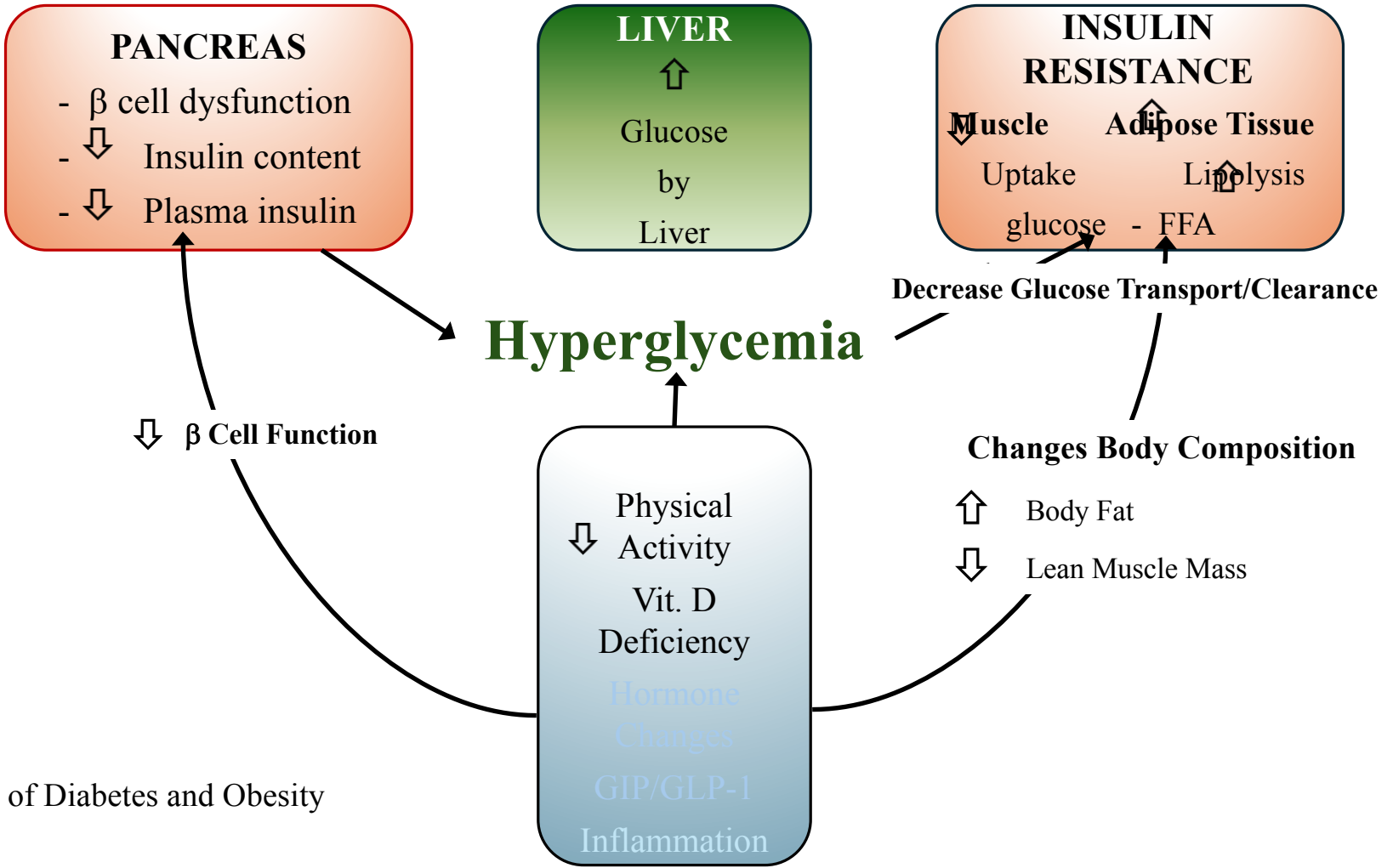
Decrease Glucose Transport/Clearance

Changes Body Composition



\uparrow Body Fat
 \downarrow Lean Muscle Mass

Pathogenesis of Diabetes and Obesity Connection



Hormone Connection

GLP-1 & GIP

- Released after eating - insulin release

Normal Role of GLP-1

- B-cells: enhances glucose-dependent insulin secretion
- Brain: promotes satiety, ↓ appetite
- α-cells: ↓ glucagon secretion after eating
- Liver: ↓ hepatic glucose output (via less glucagon)

High FBG

- Excess glucagon correlates with higher rates of liver glucose production

High PPBG

- Insulin fails to suppress glucagon after eating

Gut Health: Microbial Dysbiosis

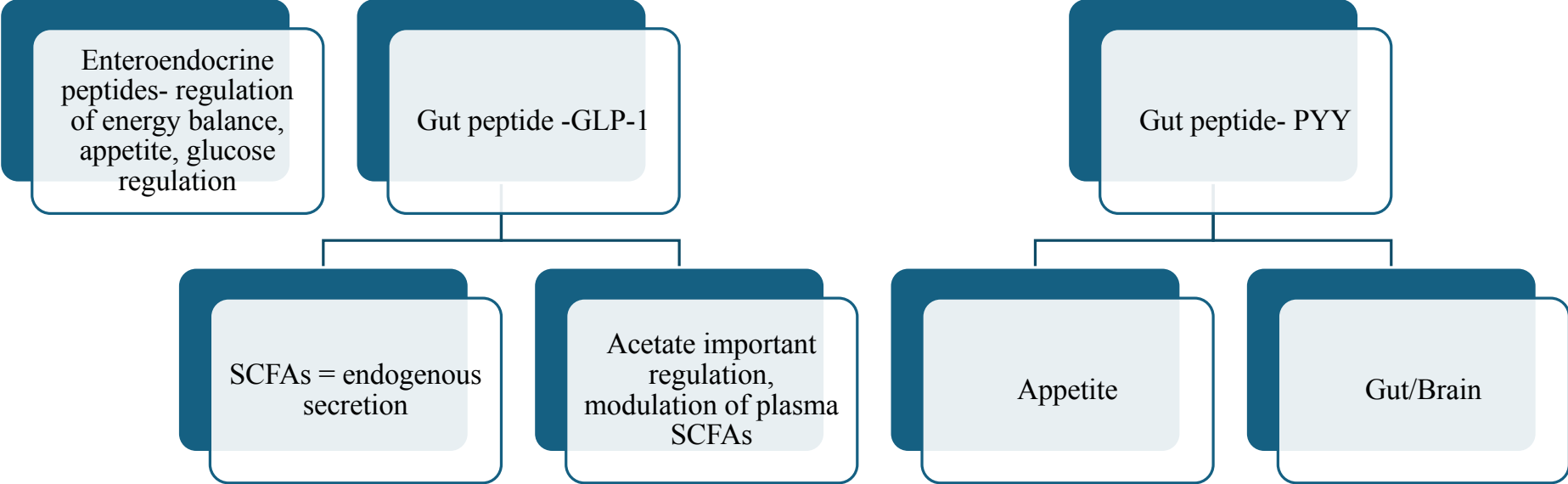
- Characterized by decreased diversity
- Dominate types of microbes affect insulin resistance appetite hormones inflammation
- Influenced by medications and diet
- Negatively influenced by "Western-style diet"



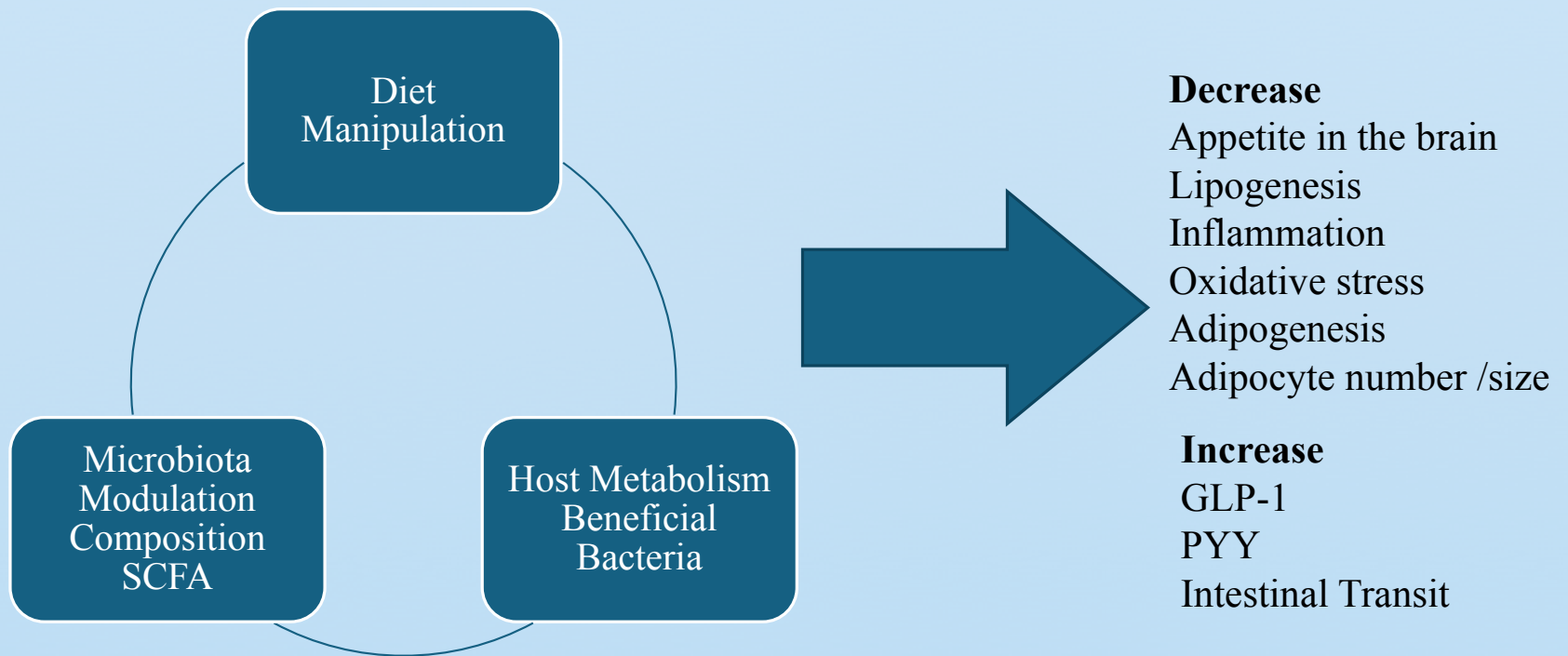
Hormone Regulation



Appetite Regulation: Link between microbial activity and gut peptide secretion and appetite



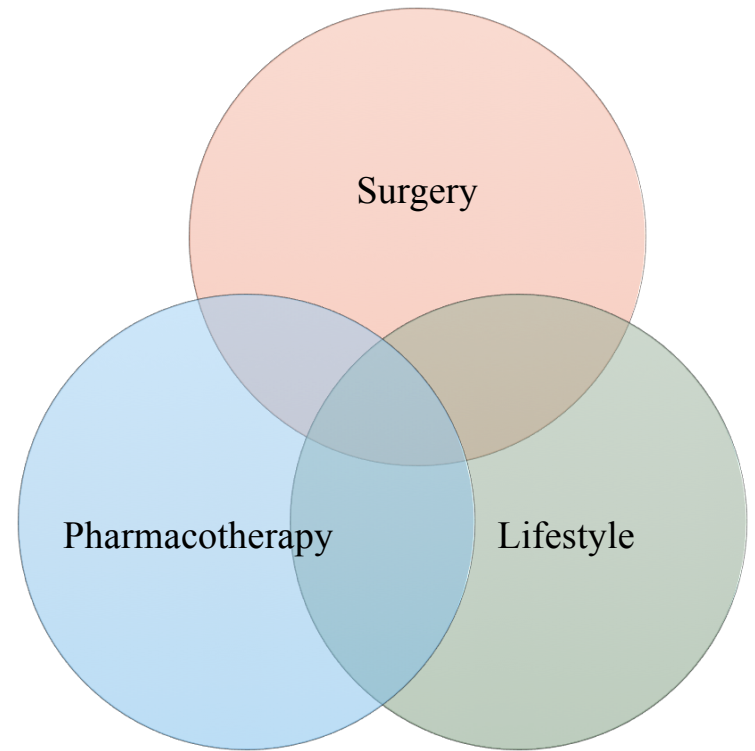
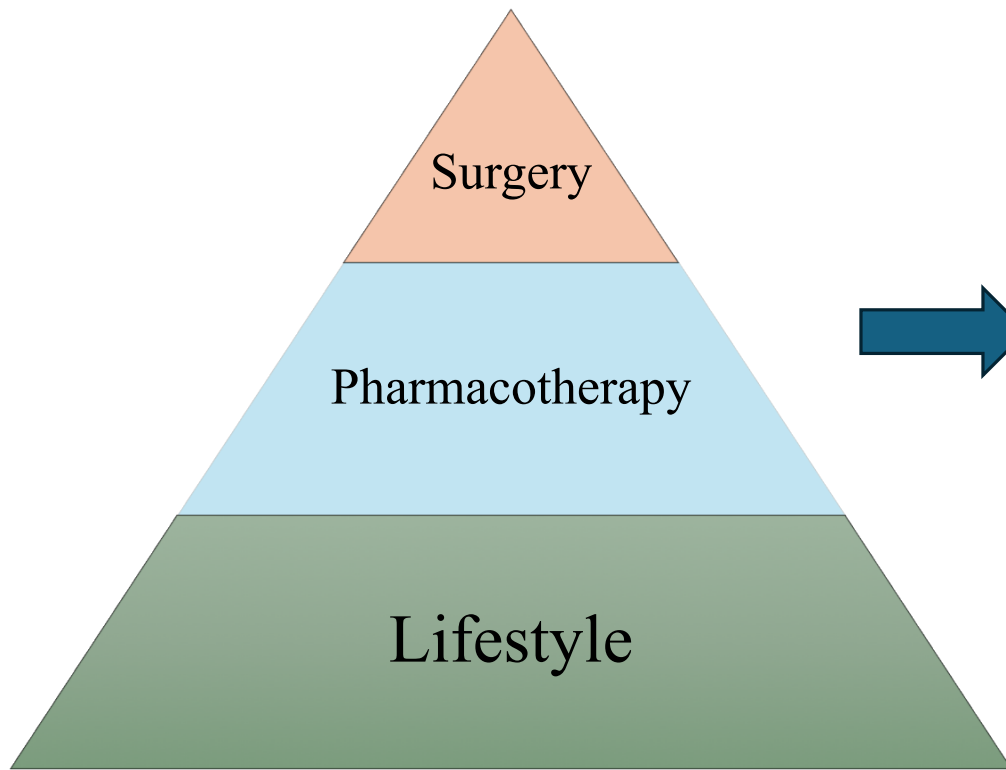
Interaction of Diet Gut Microbiota





Essential Role of the RDN

Changing Obesity-Diabetes Treatment Paradigm



4 Prong Role of RDN

1

Use the NCP
Assess
Nutrition Diagnosis
Intervention
Monitoring

2

Inquire/listen to
patient/shared
decision making

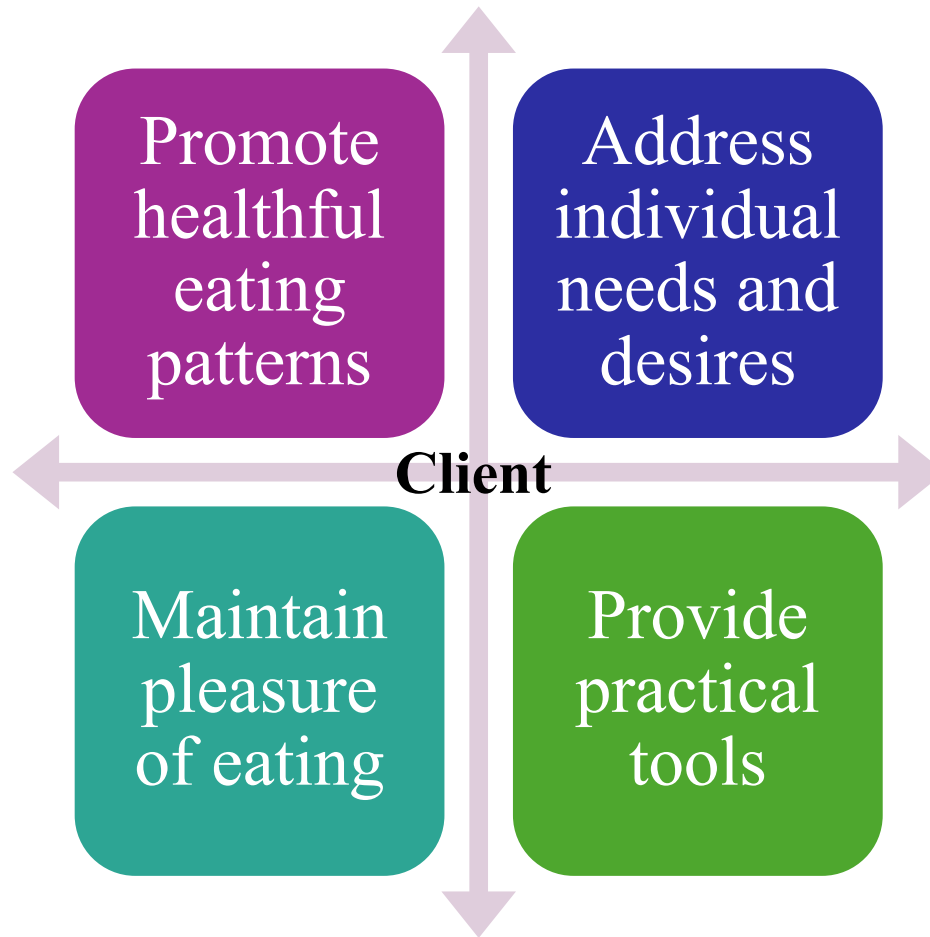
3

Advocate
For the client to the
HCP for your
scope/role

4

Follow-up with
client providing on-
going MNT

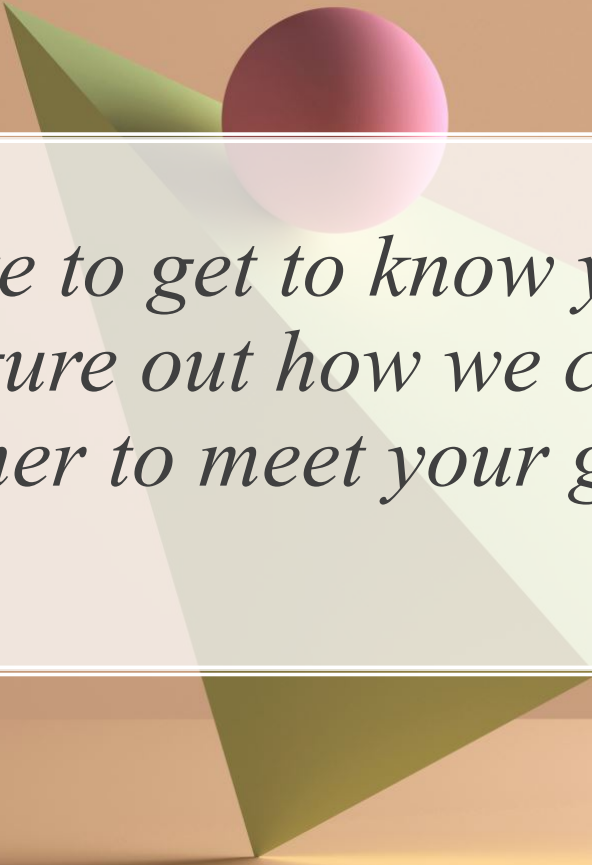
MNT Goals



Assessment

- Anthropometrics – not just weight
 - Body Composition, Strength
- Biochemical
- Clinical
 - Behavioral, NFPE, Medications, QOL
- Dietary Intake
 - Appetite, Hunger, Pattern



A 3D graphic featuring a pink sphere and a green cone on a brown background. The sphere is positioned above the cone, and both are rendered with soft shadows and highlights, giving them a three-dimensional appearance. The background is a solid, warm brown color.

*“I’d like to get to know you better
and figure out how we can work
together to meet your goals.”*

Discussing Diabetes Related Medications and Weight Loss

Weight Loss

- Metformin
- SGLT2 inhibitors
- GLP1 RA
- GLP1/GIP RA
- Amylin mimetics
- Alpha-glucosidase inhibitors

Weight Neutral

- DPP4

Weight Gain

- Insulin
- TZDs
- Sulfonylureas

Factors Influencing Behavior Change and Food Choices



EMOTIONS



BELIEFS



THOUGHTS

Behavioral: Unhealthy food- relationship thoughts

All or nothing thinking

Last chance thinking

Good food/bad food thinking

"Should" statements

Talking About



Hunger vs
Appetite

Satiety vs
Satiation

Mindfulness v Intuitive



MINDFUL EATING



INTUITIVE EATING

Eating Mindfully v Intuitively



Being aware of and controlling your environment
Being present in the eating experience



More broad- is outside the eating experience
Being aware of and listening to your body, internal cues

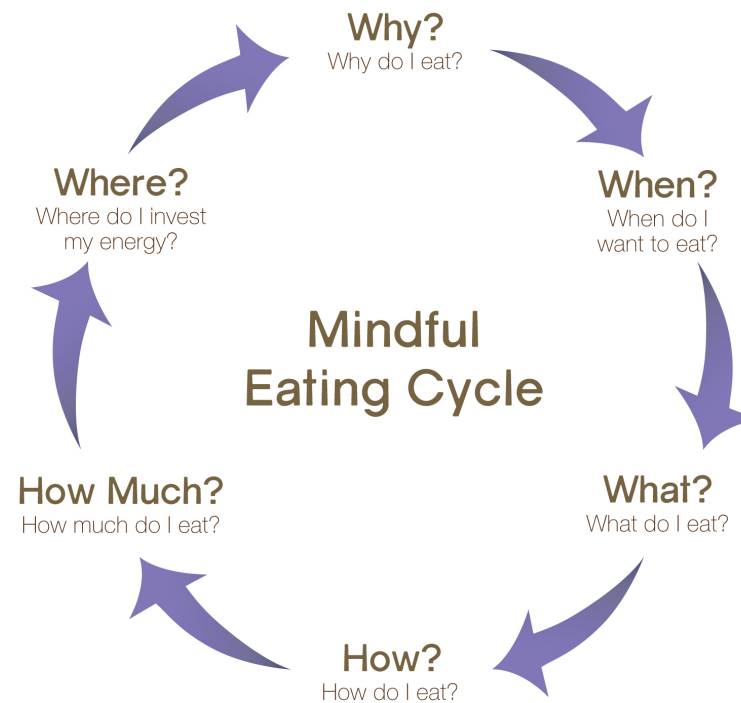
Fuentes Artiles R et al. *Obesity Reviews*, 20(11), 1619–1627.

Linardon, J, Tylka, TL,, Fuller-Tyszkiewicz M. 2021; *International Journal of Eating Disorders*, 54(7), 1073–1098

Braun TD et al. *Appetite*, 2022; , 169:105810. <https://doi.org/10.1016/j.appet.2021.10581>

Core Principles of Mindful Eating

- Being aware the process of food preparation and consumption
- Choosing enjoyable and nutritious foods
- Acknowledging food preferences non-judgmentally
- Recognizing and honoring physical hunger and satiety cues
- Using wisdom to guide eating decisions

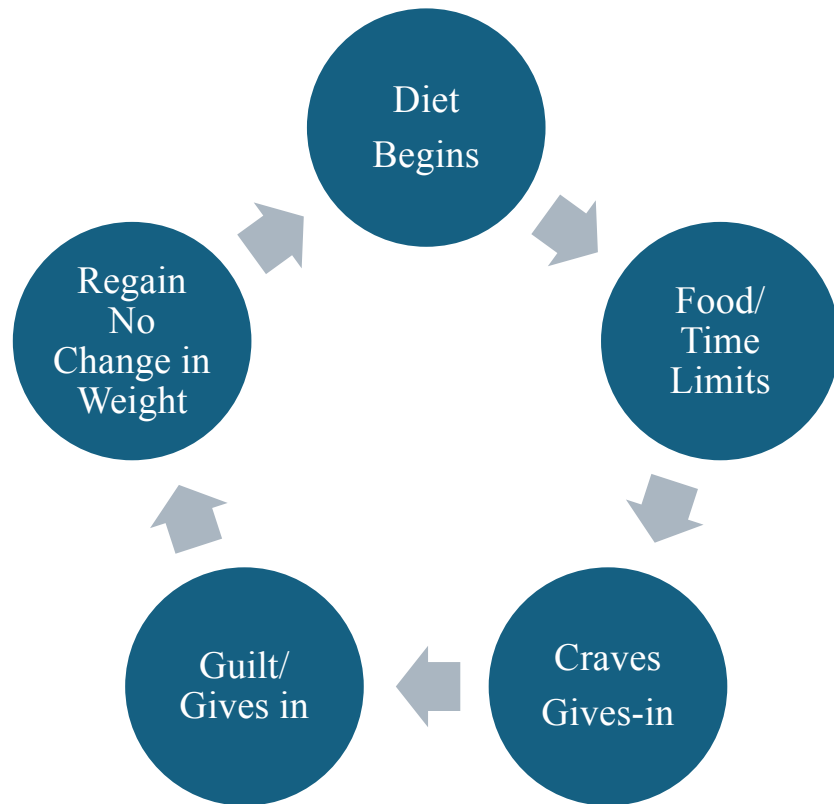


From Eat What You Love
Love What You Eat with Diabetes
©MMXVI, Michelle May MD, www.AmIHungry.com

Overcoming Dieting Dilemma: Moving to Intuitive Eating

1. Reject the diet mentality
2. Honor Hunger
3. Make peace with food
4. Challenge the idea of food police
5. Respect fullness
6. Discover the satisfactions factor
7. Honor feelings w/out using Food
8. Respect Your Body
9. PA/Exercise—Note the difference
10. Honor Health /Gentle Nutrition

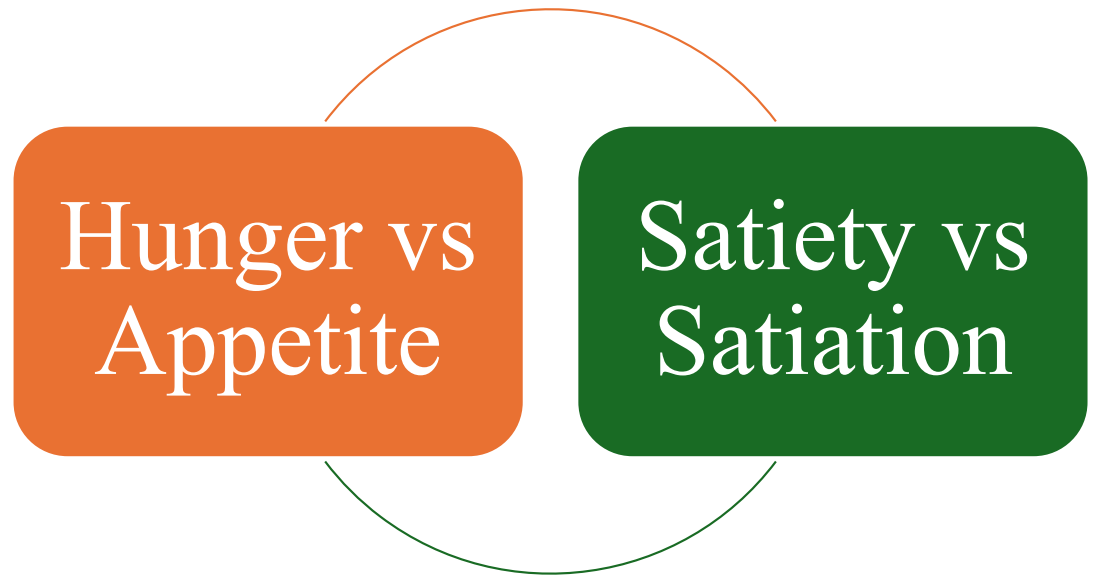
Dieting Mentality



Talking About

Hunger vs
Appetite

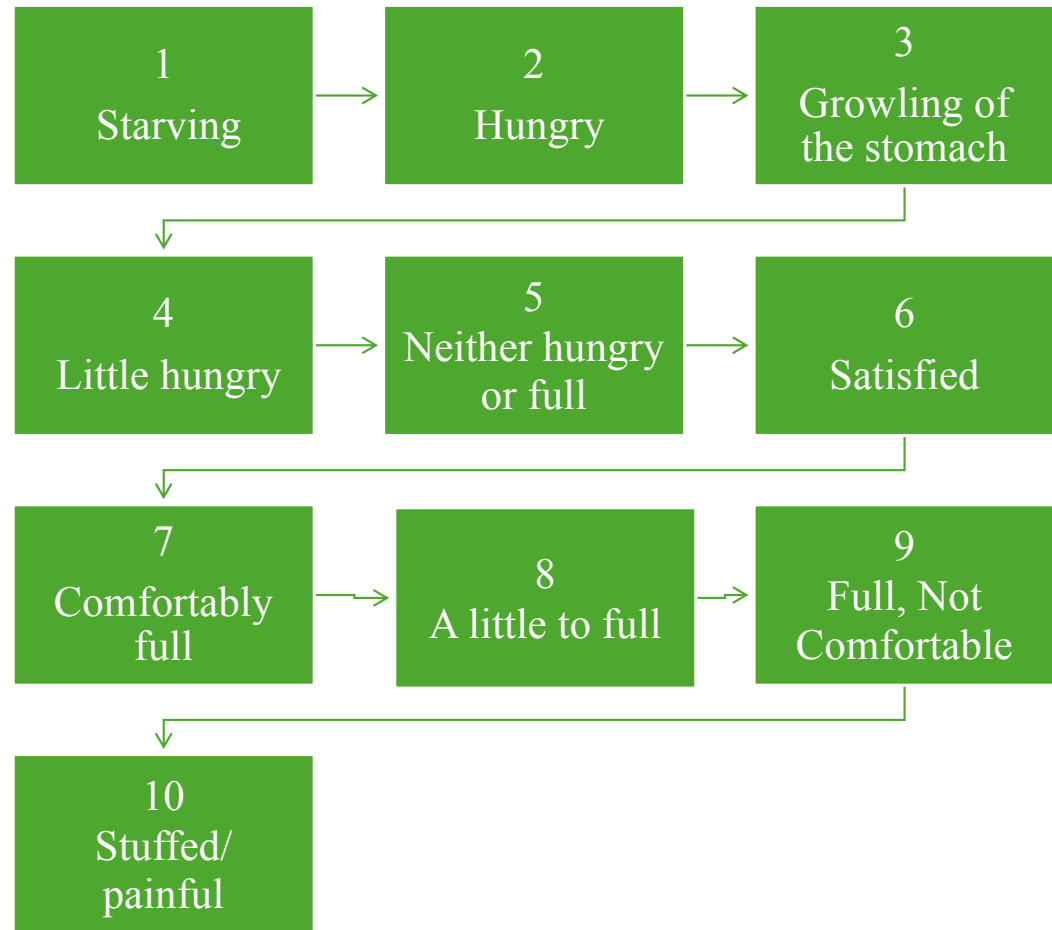
Satiety vs
Satiation



Using a hunger identification scale

- Ranks hunger on 10-point scale
 - 1= starving and 10= uncomfortably full
- Can use emojis and/or numbers
- Assesses fullness
- Encourages mindful eating practice

Using a Hunger Identification Scale



Physical Activity (PA) Diabetes/Obesity Cycle

Lack of PA

Medications

Insulin Resistance

Muscle

Motivation



Setting Realistic Goals

Eliciting DARN Change Talk

Desire: “What do you wish to achieve by doing _____?”

Ability: “What is possible? What can or could you do? What are you able to do?”

Reason: “State the rationale for making the change? What could be some specific benefits? What risks would you like to decrease?”

Need: “How important is this change? How much do you need to do it?”

Establish a SMART Goal



Intervention

Assessing client's
motivation, past
behavior, and current
patterns.



Setting collaborative,
customized SMART
goals based on
strengths and barriers.



Consider overall
health goals & quality
of life



Individualizing
interventions to the
client's lifestyle and
culture.

Intervention: Language

based on facts, actions, or physiology/biology

is free from stigma

is strengths based, respectful, inclusive, and imparts hope

fosters collaboration

is person centered

Talking to Clients About Weight: Mindset Change

Respectful language: preferred pronouns; non-judgemental;

Challenges vs bad habits

What gets in the way vs why

Less Healthy vs bad food

Adherence vs compliance

Focus on health vs blinded by weight loss

Beware of potential nutritional deficiencies



Thinking Beyond MNT: Expanding Your Role

- Identify “Roadblocks”
- Remember the weight management paradigm shift
 - Advocate for your role and for the client
- RDN is the perfect role to educate and instruct on weight loss beyond lifestyle including medication
- Monitor and Evaluate progress
- Provide further treatment related MNT for GI concerns, malnutrition, hypoglycemia and diabetes

**GLP-1/GIP
Anti-obesity
medications-
what RDs need to
know**

Beth A. Czerwony MS,RD,CSOWM,LD

Disclosure

I don't have any relevant financial disclosures to report.

Objectives

>Recognize symptoms related to initiation of GLP-1/GIP and how diet can help with management

>Identify nutrition needs when actively losing weight as it relates to protein, fluid, and fiber needs.

>Identify role of the RD as it relates to interdisciplinary team

Let's get perspective....

Anti obesity medications are necessary and helpful and have been shown to be an effective adjunct therapy to behavior and lifestyle changes.

When someone needs help losing weight



Common GLP-1/GIP medications

Dulaglutide (Trulicity®)

Exenatide (Byetta®)

Exenatide extended-release (Bydureon®)

Liraglutide (Victoza®/Saxenda®)

Semaglutide injection (Ozempic®/Wegovy®)

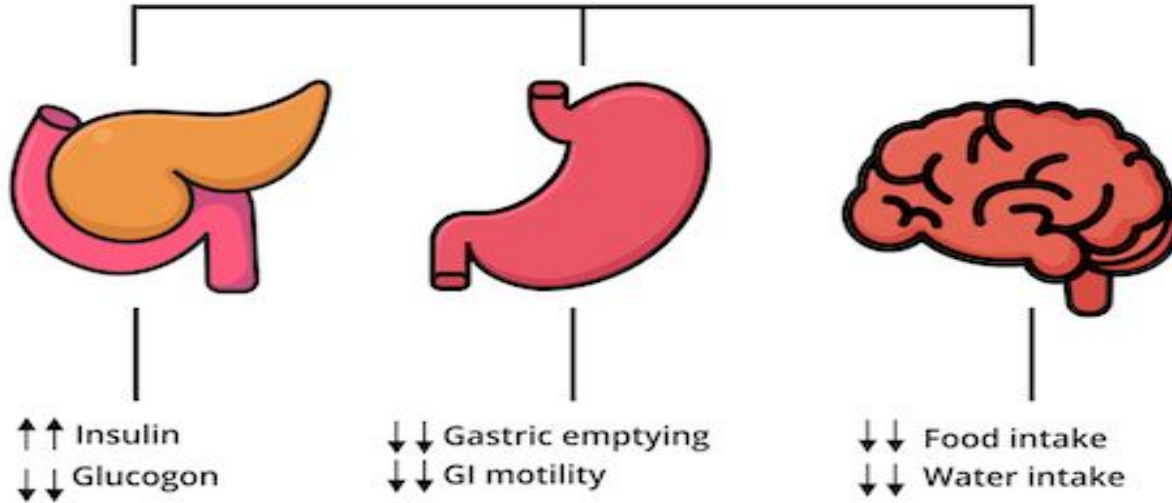
Semaglutide tablets (Rybelsus®)

Similar, but different: dual GLP-1/GIP receptor agonist called

Tirzepatide (Mounjaro®/Zepbound®)

Brief overview

GLP-1



Objective 1- Recognize symptoms related to initiation of GLP-1/GIP and how diet can help with management

— — —

Nausea/vomiting/burping

- Caused by delayed gastric emptying



Diet Management

- Have biggest meal before injection and follow low fat day thereafter for day #1
- Small, frequent meals with low fat guidelines
- Allow for adequate fluid intake- 64 ounces caffeinated beverages, carbonated beverages may exacerbate symptoms
- Rotate injections sites as needed

Objective 1- Recognize symptoms related to initiation of GLP-1/GIP and how diet can help with management

Constipation/Diarrhea

- Caused by delayed gastric emptying

Diet management

- Small, frequent meals
- Variety of fruits, vegetables, whole grains
- Maintain + hydration status
- Participate in routine physical activity to help with bowel motility
- Low residue diet for diarrhea

Objective 1- Recognize symptoms related to initiation of GLP-1/GIP and how diet can help with management

Accelerated Muscle Loss/Wasting

- Direct relationship to decreased PO intake from decreased appetite

Diet management

Literature suggests protein distribution should take place throughout the day due to refractory period of muscle synthesis versus majority of protein consumed at one meal (most often dinner)

Appropriate use of protein shakes/bars/powders versus solid protein

Objective 2- Identify nutrition needs when actively losing weight as it relates to protein, fluid, and fiber needs

Protein needs:

- RDA (0.8 grams/kg current weight)
- Literature 1.25-1.5 x RDA for sedentary persons and >1.5 x for those who exercise; some studies suggest adding protein to a diet that already contains RDA or protein has no beneficial effect on total body fat-free and muscle mass during weight maintenance

Fluids needs:

Literature- unclear for GLP-1- hydration may prevent nausea and/or constipation symptoms

Fiber needs:

RDA 25-38 grams/day (women versus men) or 14 grams for every 1000 calories consumed

Is Vitamin/Mineral supplementation needed?

Blood

- Iron
- Folate
- B12
- Zinc
- Copper

Bone

- Vitamin D
- Calcium
- iPTH
- DEXA

Neuro

- B1
- B vitamin panel

Muscle

- Protein

Treatment options to correct vitamin and mineral levels with potential long-term negative health issues

Treatment options:

- Labs per individual needs
- Repletion, if needed
- Supplementation—would daily mvi and calcium suffice?

Repletion:

- Most common deficiencies associated with rapid weight loss & lowered PO intake:
 - Protein
 - Iron
 - Calcium
 - Vitamin B12
 - Vitamin D

Physical Activity recommendations

AACE/American Heart Association/AND >150 minutes week moderate intensity exercise

Literature (aerobic versus resistance training) >300 minutes of moderate intensity decreased thigh muscle; brisk walking for ~1 hour 6/week



Objective 3- Identify role of the RD as it relates to interdisciplinary team



It really does take a village....

Establish/maintain relationship with prescribing provider- communicate symptoms/side effects often, request labs?

Psychological concerns- developing eating disorders/body dysmorphia/fear of weight regain and compensatory behaviors- need to refer out?

Food insecurity issues- needs help with groceries, other medications?



obesity is your fault



obesity is a disease

How else can we support our patients?

Establish realistic expectations early on to explain anticipated rate of weight loss at time points.

Discuss stalls/plateaus/set point

Identify non scale victories

- ★ Increased mobility
- ★ Improved lab work (HbA1c, lipid panel, ALT/AST, blood pressure, etc)
- ★ Improved sleep/energy/endurance?

Maintenance phase—need to bridge to different generation drug if patient loses coverage, cost is an issue, or can no longer manage symptoms?

Research possibility of coupon programs, hospital pharmacy assistance programs

Encourage patients to research if pharmacy prices change in person versus mail order

Take home message

- Take food history early and often to modify diet as needed to meet nutrition goals and provide symptom management if/when they surface.
- Be creative when making changes in diet to manage symptoms- room temperature of cold foods versus warm (aroma), appropriate use of protein shakes/powders to provide adequate calories/protein versus volume.
- Encourage routine physical activity including both aerobic and strength training to maintain lean body mass.
- Assess if need to perform Nutrition Focused Physical Exam is needed, timing of routine labs to assess nutritional status and need for supplementation/repletion
- **YOU ARE THE NUTRITION EXPERT-** utilize the team to help serve your patient the best way possible and refer to interdisciplinary team if needed to provide additional services if outside of your scope of practice.

References

1. Chakhtoura M, Haber R, Ghezzawi M, Rhayem C, Tcheroyan R, Mantzoros CS. Pharmacotherapy of obesity: an update on the available medications and drugs under investigation. *EclinicalMedicine*. 2023 Mar 20;58:101882. doi: 10.1016/j.eclinm.2023.101882. PMID: 36992862; PMCID: PMC10041469.
2. Hammond KA. The nutritional dimension of physical assessment. *Nutrition*.1999;15:411- 419
3. Cava et al. “Preserving Healthy Muscle During Weight loss” *Adv Nutr* 2017; 8:511-9
4. 2016 Update: Micronutrients. *Surgery for Obesity and Related Diseases*, <http://dx.doi.org/10.1016/j.soard.2016.12.018>
5. Cummings S, Isom, K. *WM DPG AND Pocket Guide to Bariatric Surgery Edition 2: Appendix D & E*
6. Strasser et al. Evidence for Resistance Training as a Treatment in Obesity” *Journal of Obesity* volume 201, Article ID 482564, 9 pages

Thank you!

Bethcz42900@gmail.com