

Dear Doctor +



Answer Provided by
Sagar V. Mehta, MD

Is it True that there is a Hormone that Can Make it Difficult to Lose Weight?

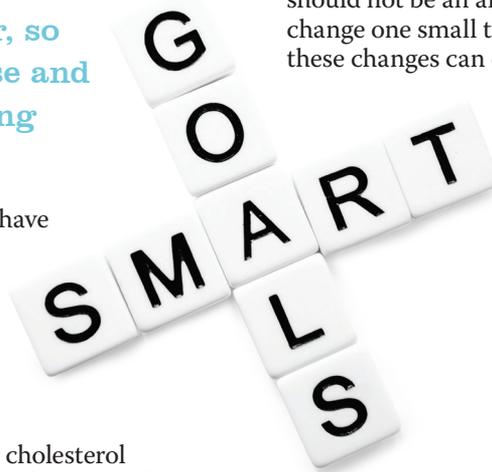
With more than two-thirds of the U.S. population who struggle with excess weight, chances are that you have battled issues with weight at some point in your life. Maybe at the beginning of this year you made some New Year's resolutions to get healthier, so you increased your exercise and changed some of your eating habits.

As we approach summer, many of you have probably had some success by now. Whether it is 10 pounds or over 100 pounds that you want to lose, several studies have shown that just a modest 5-10 percent of total body weight-loss has been associated with improved health. Diseases such as diabetes, high blood pressure and high cholesterol can all improve, which may lead to overall decreased cardiovascular risk. I congratulate all of you on your lifestyle changes and wish you continued success on your path to a healthier life.

However, some of you might not have had as much success. Maybe you tried a "diet" that a friend told you about, or one you found on the internet that promised quick results. As you got into your second week of the diet, you realized this was not something you could stick to. Perhaps life got busy

with work and/or family obligations, so you weren't able to keep a consistent routine with healthy eating and activity habits. If you happen to fall into this category, don't worry – you are not alone!

Unfortunately, weight-loss does not come easy – but don't discount the attempts made at a lifestyle change. It's not about being perfect; mistakes are bound to happen. It should not be an all-or-none approach because when you change one small thing here and another small thing there, these changes can collectively lead to big results.



Some studies suggest it takes a minimum of 21 days to form a habit, and much longer for most. Getting a buddy to join you may help you stay committed, or joining a commercial/physician supervised weight-loss program could be what you need for that extra support and accountability. Setting SMART goals has also been shown to be effective:

- S** – Specific
- M** – Measurable
- A** – Achievable
- R** – Relevant
- T** – Time-based

So... if at first you don't succeed, try again!

Lastly, there may be a group of you who have been following most of the “rules,” but you’re not losing weight at the expected rate. These rules include:

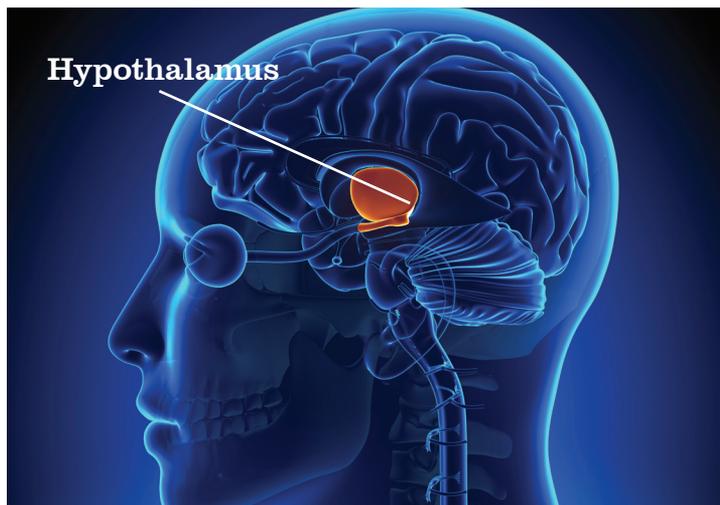
Rules for Weight-loss

- Eating a low-calorie diet
- Keeping a daily food log
- Weighing yourself regularly
- Staying adequately hydrated while not drinking any sugary beverages
- Working at meeting the minimum requirements for physical activity set by the American College of Sports Medicine – 150 minutes per week of moderate-intensity activity (or 75 minutes of vigorous activity) PLUS two days per week of full body resistance training



Maybe you’ve lost weight and hit a plateau, or you’re slowly starting to regain. You might even struggle with a constant sense of hunger, or never feel satisfied after a meal. Most people would agree that achieving some weight-loss is not usually the challenging part, but maintaining that weight-loss is. Hormones within your body might just be part of the reason why we struggle.

Weight-loss regulation is complex and is mainly regulated by a part of your brain called the hypothalamus. There are many hormones and pathways that have been identified which contribute to this. Some of these hormones and/or pathways are orexigenic (hunger promoting) and some are anorexigenic (hunger reducing). Too much of one or not enough of another may be the reason why so many individuals struggle with their weight-loss and weight maintenance efforts.



Platinum

Novo Nordisk

Gold

American Society for Metabolic & Bariatric Surgery
Bariatric Advantage
Orexigen Therapeutics, Inc.
Potomac Currents

Silver

Eisai Inc.
Ethicon
New Life Center for Bariatric Surgery

Bronze

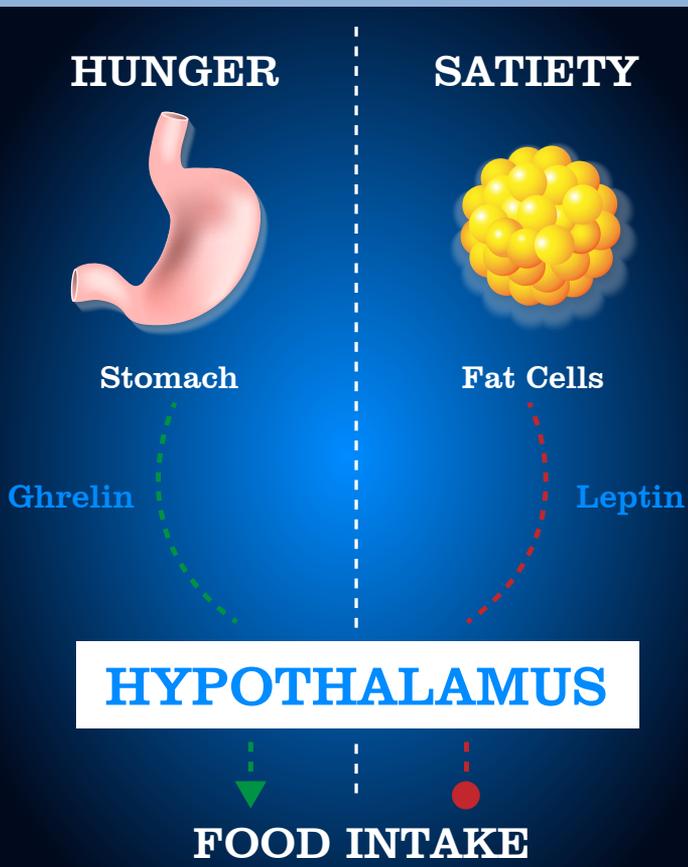
Celebrate Vitamins
Geisinger Healthcare System
KVK-Tech, Inc.
Medi-Weightloss®
Nestle Health Sciences/OPTIFAST
Rocky Mountain Associated Physicians

Patron

Alaska Bariatric Center
Allurion Technologies
Aspire Bariatrics/Aspire Assist
Billings Clinic
BMI of Texas
Bronson Bariatric & Metabolic Specialists
Chattanooga Bariatrics
ConscienHealth
Erlanger Surgery Center
Jaime Fivecoat
Fortris Corporation
GI Dynamics®
IU Health Bariatric & Medical Weight Loss
Livliga/Elegant Portion Control
Marquette General Weight Loss Center
Tracy Martinez, RN
Murfreesboro Surgical Specialists
NYU Langone Weight Management Program
Naturally Slim®
Pack Health
Lloyd Stegemann, MD
Christopher D. Still, DO
Southern Surgical Hospital
The Obesity Society

Platinum: \$100,000 and up Bronze: \$5,000 - \$9,999
Gold: \$50,000 - \$99,999 Patron: \$1,000 - \$4,999
Silver: \$10,000 - \$49,999

List as of 7/6/17



Ghrelin

For example, ghrelin and leptin are two of the most-discussed hormones involved in energy homeostasis. Ghrelin was discovered in 1999, and has typically been referred to as the “hunger” hormone since it promotes appetite (orexigenic). Throughout the course of a day, ghrelin levels naturally change dramatically – rising sharply before a meal and then falling after eating. It is primarily produced in your stomach and is secreted into circulation. Then, it stimulates food intake, decreases energy expenditure and increases fat storage.

In patients affected by obesity, ghrelin levels are in fact lower compared to individuals with a healthier weight, which may suggest that people impacted by obesity are more sensitive to ghrelin. Weight-loss actually triggers ghrelin levels to increase and attempt to fight against lost fat stores. This makes weight-loss even more challenging.

Leptin

On the other hand, Leptin is the “anti-hunger” hormone discovered in 1994. Its actions are thought to be opposite of ghrelin because it is primarily produced by fat cells which inhibit appetite (anorexigenic). Leptin functions as a feedback mechanism that signals to key regulatory centers in the brain to inhibit food intake and increase energy expenditure to regulate body weight. Leptin levels are directly correlated with fat stores, and are typically higher in patients with higher BMIs and body fat percentages.

This information suggests that resistance to leptin, rather than leptin deficiency, is the problem for individuals with obesity. Resistance is thought to be the result of a dysfunction in receptors due to overfeeding. Research on leptin has primarily focused on its relationship to obesity, but it may play a more important role in reduced energy – such as with fasting or weight-loss. Leptin levels will actually decrease following weight-loss, which causes the decrease of the “anti-hunger” effects that encourages more energy from food.

Therapeutic interventions to overcome these hormonal imbalances have been attempted, but not with as much success as hoped. For instance, leptin is available to treat patients with a true deficiency – an extremely rare disease. Treatment doesn’t benefit individuals without this condition because leptin levels are actually elevated in patients with obesity.

On the other hand, ghrelin-blocking agents such as rimonabant have successfully reduced appetite, food intake and weight. Unfortunately, it also affected pleasure centers in the brain and led to severe psychiatric conditions and increased suicide rates – so it was never approved in the U.S. Bariatric surgery has been shown to have a positive influence over some of these important hormones, but the long-term influence of these actions still remains unknown.

Conclusion

It appears as though the brain is more focused on preserving energy stores rather than preventing the development of obesity. The difficulty of weight regulation is apparent in the different mechanisms, pathways and causes of obesity. While there have certainly been many advances that allow us to better understand obesity as a disease and to treat it more effectively, there is still much that remains unknown. Because of this intricate system, it is unlikely that one individual target for obesity treatment will be the answer. For now, current treatment options should continue to focus on lifestyle changes in diet, behavior and exercise – and for some, they may include FDA-approved anti-obesity prescription medications and bariatric surgery.

About the Author:

Dr. Sagar V. Mehta is the Director of Bariatric Medicine at St. Luke’s Weight Management Center in Allentown, PA. He founded and developed the non-surgical arm of a hospital-based comprehensive weight management center offering surgical and non-surgical interventions for weight-loss. Dr. Mehta is a fellowship trained Obesity Medicine Specialist and holds board certifications by the American Board of Obesity Medicine, National Board of Physician Nutrition Specialists and the American Board of Internal Medicine.