

Is it Really a Disease?

History

Although obesity was present in ancient times, to better understand today's obesity, let's look at it in the context of human evolution and social progress.

Our ability to store fat allowed humans to survive longer periods without food. In other words, during times when starvation and disease were normal across the globe, having a “better” ability to store fat really determined a human’s fate, and the fine line between life and death. Scientists who study genes think that individuals who developed improved fat storage survived and we became their descendants. So we are really inclined genetically to store energy that we’re not using, which is deposited into our bodies in the form of fat tissue.

When human society changed from hunting and gathering for survival to an agricultural, farm-animal-raising society nearly 10,000 years ago, humans gained the ability to grow more food. This being said, most of the time, only the privileged had access to it. Despite having the ability to grow crops, starvation was common for many centuries that followed. Then the “second agricultural revolution” of the 18th century happened. Since then, thanks to the advance of technology, food became more and more available for everyone.





As health and medicine progressed as well, especially in the 20th century, humans were able to increase their life span as well as body size. In a society of available food, with less “energy” required to access food as compared to hunters-gatherers of the past, the balance between energy taken in and energy used was starting to tip toward more storage.

Clearly, the processes of obesity are much more complex than how much food we eat and how much energy we spend, but it’s still a factor that needs to be understood because it explains some of our tendency to experience weight gain. Nowadays, both the availability of high calorie foods and decreased physical activity are important contributors to the obesity epidemic.

History of Obesity in the Medical Literature

The health consequences of obesity in early medical literature were not often described as negative. Usually, excess weight was considered desirable. In the 19th century, medical opinion held that carrying an extra 20 to 50 pounds was healthy and a sign of vitality, while being thin was not. This attitude may be explained by the health status of the population at the time. In times when highly-infectious diseases wiped out entire populations, and the likelihood of catching such a disease was the main medical concern, emphasis on weight gain was normal.

It wasn’t until the 1920’s that perceptions of obesity dramatically changed. The Metropolitan Life Insurance Company decided to analyze their policy-holder population and arrange their medical risk into a hierarchical system. They used a formula that was initially invented in the early 1800’s by Alphonse Quetelet, a Belgian scientist. He tried to define the “average man” by analyzing height and weight information of the French and Scottish armies of the time.

The formula he established was expressed as the person’s weight in kilograms divided by the square of a person’s height in meters. This formula is better known today as the body mass index, or BMI for short, and this is also when BMI charts were created. They were based on height and weight, and would classify individuals as having less weight than normal, normal weight, excess weight or obesity.

Subsequently, in the 1930’s, the approach of the medical profession toward obesity started to change dramatically, and it began to be accepted as a health problem. Nevertheless, it was very poorly understood and it was generally thought that the solution was to eat less and burn more calories, and that the inability to achieve desired results was related to laziness and undisciplined behavior.

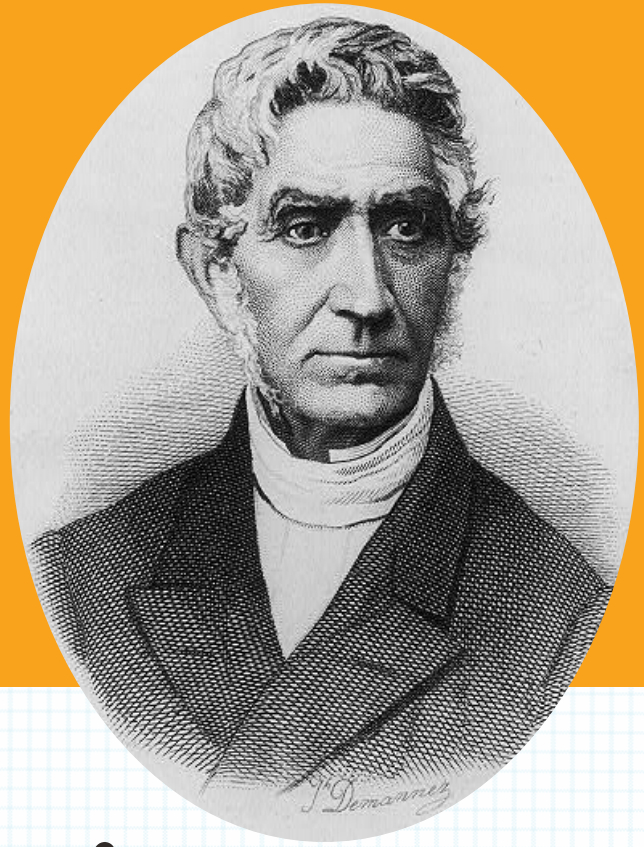
DISEASE DEFINITION:

To further analyze the legitimacy of naming obesity a disease, let’s take a look at the definition of disease itself. As proposed by the American Medical Association, these are the characteristics of a disease:

- 1. “An impairment of the functioning of some aspect of the body”**
- 2. “Demonstrates characteristic signs and symptoms”**
- 3. “Causes harm and morbidity”**

Later on, advances in psychiatry and the Freudian approach shifted the focus once more, and classified obesity as a psychiatric conflict of an individual's subconscious. It's not until the 1950's that the study of obesity really began, and obesity became more widely accepted as a disorder combining both pathology (the typical behavior of a disease) and physiology (the normal function of the body). After that time, obesity was perceived as a "problem" but the debate was heated regarding whether or not it was a condition that was also a disease.

This question was addressed in 2008 by a panel from The Obesity Society, discussing why obesity should be considered a disease. In the following years, this discussion resulted in the American Medical Association issuing a statement in 2013 classifying obesity as a disease.



Defining the "average man"

Alphonse Quetelet, a Belgian scientist, tried to define the "average man" by analyzing height and weight information of the French and Scottish armies of the time.



Pictured: A photo from a 1921 encyclopedia shows a tractor ploughing an alfalfa field

1700

1800

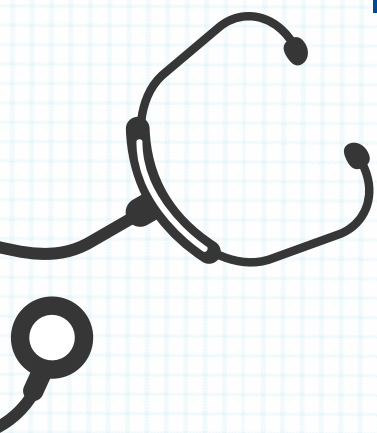
"Second Agricultural Revolution"

When human society changed from hunting and gathering for survival to an agricultural, farm-animal-raising society nearly 10,000 years ago, humans gained the ability to grow more food.



The Official Statement

In June 2013, The American Medical Association declared obesity as a disease in its “Resolution 420,” stating the “American Medical Association recognizes obesity as a disease state with multiple pathophysiological aspects requiring a range of interventions to advance obesity treatment and prevention.”



1900

“Thin” is not considered healthy

In the 19th century, medical opinion held that carrying an extra 20 to 50 pounds was healthy and a sign of vitality, while being thin was not healthy.



How Does Obesity Fit the Definition of a Disease?

“An impairment of the functioning of some aspect of the body:”

Our body is equipped with systems that regulate the intake of energy in the form of food, as well as energy used in the form of physical activity.

The intake of food is regulated by specific regions of the brain. Signals sent and received by cells located in the brain, as well as signals from the body, including the gut, the pancreas and fat tissue, are involved in this system. A very delicate balance of these processes leads to homeostasis, which helps govern the feeling of hunger, and allows for body weight regulation. This system ensures that food is consumed to allow for appropriate energy intake as well as long-term energy storage. The key regulator of this mechanism is located in a region of the brain called the hypothalamus, which is considered to be the center of appetite and energy.

Signals coming from other parts of the brain, as well as signals coming from multiple areas of the body like the gut or fat tissue, arrive in the hypothalamus. These signals generally inform the brain about either a hunger feeling, through the hormone ghrelin, or the feeling you get when you're full, through a variety of other hormones.

Besides brain cell and hormonal signaling, environmental factors can also influence food intake. The sight and taste of food, food availability, the price of food, the incentive to eat in ways such as “super-sizing” meals, etc. can all impact what and how much we eat.

Knowing that the brain has such a sophisticated regulation system for food intake and energy release that has allowed us to survive as human beings, how can the brain be influenced by these environmental factors, and increase our food consumption in an unnecessary way?

This is explained by the presence of another system in the brain that scientists call the “hedonic pathway” or the “reward system.” Positive experiences that an individual is exposed to trigger this system. One of the brain chemicals that is involved in this pathway is called dopamine, and is the same brain chemical released by substances such as cocaine. Abnormal activity of this reward system has been observed by scientists, and seems to be involved in some of the loss in control that can be seen in obesity.

Individuals perceive certain foods as rewarding, especially when they contain high amounts of fat and sugar, and seek the consumption of these foods beyond what's necessary for daily energy balance. Through the years, the food industry has developed foods that are pleasant tasting, with amounts of fat and sugar that make them highly attractive to the brain. This is thought to have contributed to the obesity epidemic. The reward system can also override the brain's regulatory system for food intake and energy balance. This is sometimes described as a hyperactive reward system.

Obesity and the Brain

If the brain is so good at regulating weight, why is everyone's weight drifting up? Increasingly, it's becoming apparent that our food is acting in some ways like a hormone that serves to reset the body's target weight. It's not so much the calories in the food, but the composition of the food that can affect signals to the brain that regulate body weight.

Likewise, our physical environment is taking a toll. When we drive more than we walk, signals from our muscles to our brain get distorted and push weight a bit higher. Increasingly stressful lives also affect some of the signals that are essential for the brain regulating our weight.

Finally, any number of drugs used to treat other conditions can cause weight gain by interfering with the biological regulation of weight. Physicians who are knowledgeable about obesity can avoid this problem, but others may not.

— Ted Kyle, RPh, MBA, Immediate-Past OAC Chairman

What about Genetics?

Some forms of obesity result from a genetic defect in the brain. A few of these defects are rare, generally start early in childhood and have very clear symptoms, while other genetic defects can influence the amounts of energy you use.

This said, epigenetics, a field of science that has emerged in the last few years, unwrapped very significant findings and demonstrated that the environment could affect the activity of our genes. In addition, these changes to our



1920

BMI charts created

The Metropolitan Life Insurance Company decided to analyze their policy-holder population and arrange their medical risk into a hierarchical system.

1930

Obesity accepted as a health problem.

It was very poorly understood and it was generally thought that the solution was to eat less and burn more calories, and that the inability to achieve desired results was related to laziness and undisciplined behavior.

1940





genes are inherited and passed on in families. Factors that were found to influence genes include the environment (high calorie foods and lack of physical activity), toxins and certain medications.

Another change in the function of the body that has been noted in individuals with obesity is a change in the bacteria found in their digestive system. Different types of bacteria have been found in the gut of lean individuals as opposed to individuals with excess weight, but more research is still needed concerning this bacteria.

We all know that it's hard to lose weight, but it seems to be even harder to keep it off. There are built-in systems that counteract efforts to lose or maintain weight. During or after weight-loss, your hunger may increase while your energy used decreases. Impairment in body functions is also seen in response to weight-loss.

It is important for patients and health professionals alike to understand that a weight-loss journey does not end when the desired weight is achieved. Some processes that will try to revert the weight-loss may persist for a year, and others — especially behavioral mechanisms — will continue for at least two years, and some others may be present continuously. With this perspective, obesity is not only a disease, it's a chronic disease, and should be treated as such.

“Characteristic signs and symptoms”

Obesity is characterized by excessive adipose (fat) tissue and can manifest as increased BMI, increased waist circumference and/or increased fat tissue percentage.

Determining the best tool for classifying excess weight and obesity is still debated. A newer model based on BMI, waist circumference and coexisting medical problems was added in 2013 to help health professionals classify obesity and treat it appropriately.

“Increased harm and morbidity”

Obesity can be associated with many medical conditions, such as increased inflammation, metabolic syndrome, diabetes and prediabetes, high blood pressure, high cholesterol, heart disease, stroke, obstructive sleep apnea, osteoarthritis, gallbladder disease, pancreatitis, fatty liver, polycystic ovarian syndrome, infertility, renal failure, cancer and depression. Many of these associated diseases improve when obesity is successfully treated.

Additionally, statistics show that excess weight decreases life expectancy by up to eight years and deprives individuals on average from 19 years of healthy living.

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The Obesity Society Panel

A panel from The Obesity Society, discussed why obesity should be considered a disease.

1950

The study of obesity begins

Obesity became more widely accepted as a disorder combining both pathology (the typical behavior of a disease) and physiology (the normal function of the body).

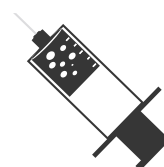
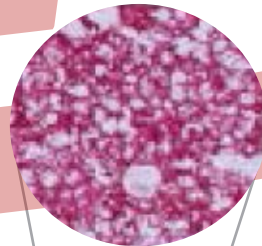
2000

2008

2013

“Obesity is a disease”

Discussion resulted in the American Medical Association issuing a statement in 2013 classifying obesity as a disease.





What Can You Do?

As some still debate whether obesity is indeed a disease, we need to focus our efforts on preventing and treating this medical condition:

1. Ask your political representatives to have obesity on their agenda.
2. Explore what your community has to offer and get involved in making changes.
3. Talk to a healthcare professional about this medical issue and ask him/her to help you treat this disease.

As of now, there are no real signs of slowing of the obesity epidemic, and we need to combine efforts to make changes to treat this disease, at the national, community and individual level.

About the Author:

Nadia B. Pietrzykowska, MD, FACP, is a board certified and fellowship trained obesity medicine and physician nutrition specialist. She is the founder and Medical Director of "Weight & Life MD," a Center dedicated to medical weight management, nutrition, fitness and lifestyle located in New Jersey. She strongly believes in a personalized as well as long-term approach to treating the chronic disease of obesity.

Image credit: "Plowing an Alfalfa field by tractor, US" by Ewing Galloway

JOIN OUR CAUSE!

The OAC's more than 50,000 members are making a difference for individuals affected by obesity. Add your voice to the cause today by joining online at **www.ObesityAction.org**!



ABOUT THE OBESITY ACTION COALITION (OAC)

The Obesity Action Coalition (OAC) is a National non-profit organization dedicated to giving a voice to individuals affected by obesity and helping them along their journey toward better health. Our core focuses are to elevate the conversation of weight and its impact on health, improve access to obesity care, provide science-based education on obesity and its treatments, and fight to eliminate weight bias and discrimination.



VIBRANT COMMUNITY



NATIONAL AWARENESS CAMPAIGNS



ANNUAL CONVENTION



ADVOCACY



PUBLIC EDUCATION

LEARN, CONNECT, ENGAGE

The OAC knows that the journey with weight can be challenging but we also know that great things happen when we learn, connect and engage. That is why the OAC Community exists. Our Community is designed to provide quality education, ongoing support programs, an opportunity to connect, and a place to take action on important issues.

Through the OAC Community, you can get access to:

- Weight & Health Education • Community Blogs
 - Community Discussion Forum
 - Ongoing Support • Meaningful Connections
- AND MUCH MORE**



JOIN TODAY: GO TO [OBESITYACTION.ORG/JOIN](https://obesityaction.org/join)

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