

The Process Of Food Intake And Its Effects

Posted on January 30, 2020

Abstract

Though food intake is a complex process, it is considered a robust natural reward. Exercise has a positive effect on human health, so do good eating habits. The basic biological needs are met through healthy eating habits, but those with poor health conditions are also subjected to a less nutritious diet. The process of eating is directly connected to the brain. The thought of eating provokes a wish like the desire to eat, eating due to hunger, eating due to a preference for food, or eating out of depression or anxiety. (U.S. Department of Agriculture & U.S. Department of Health and Human Services, 2020)

Thus, the behavior of over-eating despite of caring about the desire or intake of food due to need can make an individual obese. On the other hand, a person taking too much care about the quantity of food can turn into an anorexic individual. Thus, the intake of food is motivated by psychological drive. It is the condition of the brain that causes the body to turn physically stout or obese.

Weight control and good nutritional practices, though, are two different issues in health psychology, but two of them are related. Positive psychological behaviors help in eating healthy food and keep the body safe from gaining extra pounds, however, psychological disorders lead towards eating access or very less which either makes an individual obese or underweight, in both conditions the ultimate health of the person suffers. The loss of weight through starvation leads to a lean body, but this activity is undesirable for health and leads to excessive loss of malnutrition, which makes the body weaker.

Eating Healthy Leads To A Longer And More Active Life

The behavior of eating is similar behavior as like other choices like smoking, cycling, playing, and even drinking alcohol. When these behaviors affect the health and wellness of the person then how come eating habits have little effect on the human mind and body? Rather, it is observed that around 70% of body behavior is controlled through eating habits. When a person intakes a favorite food product, a hormone is released in the blood, dopamine, which generates the feeling of reward for the body. This lets the person heal from any anxiety or depression. Therefore, the trend of obesity is drafted from here. People often like to eat chocolate and other products, having caffeine just to bring down their anxiety level and to boost their personal performance.

It is a general perception that the eating process is according to biological needs, but it is more than just biology. Rather, it is psychological needs that a person eats, and then the food produces positive and negative energies in the brain, which further motivates them about their daily life matters. It is claimed by psychologists and nutritionists that the reason behind the increasing obesity problem is due to the pressure built on people's minds. As obese people are unable to understand the level of their stress and cannot compare their current mental conditions with the past, they are unable to measure their eating habits and are gaining weight at a faster pace.

On the other hand, the problem of the anorectic develops due to similar conditions. However, the only difference is how the brain responds to the problem. Few people develop the urge to eat, whereas others reject the desire to eat. Thus, the science of understanding healthy eating requires first undergoing the psychological changes in the human mind, which are actually leading to an unhealthy lifestyle. Applying psychological theories to behavior changes helps in improving the health of people facing problems like hunger and weight gain.

Hunger And Obesity

Health professionals and psychologists are concerned about the factors that are raising the issues of obesity or anorexic conditions among common people. Though eating is always promoted, the problem of obesity has occurred as an epidemic in many societies. While studying the data on obesity in the USA, it is reported by the World Health Organization that the rate of obesity is increasingly observed among women, children, and people belonging to the lower income group. The science of obesity is simple it is the result of eating more than the requirement. Such as, the individual doesn't have the desire to eat, but the inside is not fulfilled, and he still feels the capacity to eat more. Such desires lead to an obese body.

However, the point to focus on here is why psychological desires differ from the digestive system; the reason behind this is anxiety, depression and pressure, which does not let the individual's mind connect with the digestive system. Both the systems are working differently and due to this, the consumer intakes more amount of food. It doesn't stop here, and it is not the type of activity that will happen once. Rather, it will occur regularly until the body and the mind are connected and both together are regulating the eating habits.

According to measured data from the U.S. Centers for Disease Control and Prevention and the National Center for Health Statistics for August 2021 through August 2023, 40.3% of adults aged 20 years and older had obesity. During the same period, 21.1% of children and adolescents aged 2-19 years had obesity. Adult and youth estimates should be reported separately because they represent different age groups and statistical measures.

These updated figures show that obesity remains a major public-health concern in the United States. Obesity is not only de-shaping individuals but is also the reason for causing cardiac arrests, strokes,

diabetes mellitus, and cancer problems at a younger age. Diabetes leads to blindness, kidney failure, or permanent loss of limbs if not controlled on time. Thus, obesity is not about dealing with increased weight issues, but the corresponding health issues make it worse for the individual to revert back to a healthy lifestyle.

Outcomes Of Psychological Disorders And Un-Healthy Eating Practices

The American Psychiatrist Association developed statical manuals for the diagnostics of mental disorders in 1994. The main focus of this diagnosis was that mental disorders actually lead to obesity and other health problems. Thus, mental disorder among humans is correlated with hypophagia, anhedonia, weight loss, and hypercortisolism. The most commonly occurring types of depression among patients have increased appetite, weight gain, reduced hypothalamic pituitary adrenal axis, and carbohydrate craving.

People facing problems like obesity of the abdominal area are actually suffering from hyperactive HPA axis, which is the result of an increased response from the stimulation of corticotrophin hormone released in the brain. The activities like food intake, HPA axis, and Altered cortical are also linked with depression. The neural pathways that maintain the path between the desire for food and the digestion process are affected by three factors: psychological disorders, food, and eating behaviors. (Betts et al., 2022)

The food intake happening in the neural circuitry has a link between stress and food intake behaviors. Thus, the dysfunctional HPA axis and elevated glucocorticoid are common grounds for obesity and depression. The Glucocorticoid hormone has the capacity to affect the behavioral functions, immune system, endocrine hormones, and metabolic rate of the body. The HPA axis is the major link between mood disorder and obesity. The neurological finding suggests that glucocorticoid hormone plays an important role in psychological disorders.

Mood-Related Issues And Obesity

The anxiety level and mood disorders are the actual factors behind the obesity problem. Thus, major depression among humans leads to over-eating problems. The problem of overeating is similar to the drug addiction issue. In this problem, the individual is so dependent psychologically and physically upon the intake of sugar that he cannot resist this desire and has to consume a certain amount else it drives the patient psychologically.

Psychologists support this fact as well that an appropriate amount of intake of preferred food causes a drop in anxiety and stress levels. No doubt, pleasure eating is the best medicine for depression than pathological medicines, but the increased amount of food intake leads to other health problems that

may disturb the working and processing of the entire system.

Psychobiological Link Of The Brain Leading To Linking Addiction, Hunger, Obesity, And Overeating

The mechanism of the brain, with the name reward circuitry, influences the brain to desire or try to take in food in as much quantity as it can. This neural activity is not linked to the digestive system. The neural pathway that presents the link between overeating to the psychological disorder is dopamine signaling, the pathway that provokes the feeling of pleasure and reward for eating the particular desired food.

Thus, the loss of control that leads to food addiction similar to drug addiction happens due to the impairments of the circuits involved in making decisions, thus, the neural pathways are unable to identify the need and correspond to the particular demand. Leptin and ghrelin are the two hormones that regulate procedures like hunger and promote satiety, homeostasis of energy, and energy released from food.

Both hormones deal with the cravings received from the mind and maintain the eating disorder or hunger in humans. However, if these hormones are not working in the right way then it can disrupt the entire eating procedure. Thus, while studying obesity or psychological disorders, the working of these two hormones shall be focused on. The eating process, which seems to be so simple, is actually complex in nature. The neurotransmitters that increase the hunger drive and promote the individual to eat are dopamine, opioids, GABA, and serotonin.

Among these neurotransmitters, serotonin and dopamine are closely linked to the eating behaviors of individuals. The dopamine elevates the desire toward biological wants, and the serotonin transmitter helps to eat or intake food. Dopamine is located in the center of the brain, receiving signals from the stem cells, which are responsible for the autonomous behavior of the body towards any biological drive. The neuroanatomical reward circuitry and the Neurochemistry disciplines explain the addiction of the human mind that is either toward drugs or food.

Food As A Reward, Obesity, And Addiction

Food, where it is necessary, is also considered a reward that has both the hedonic and homeostatic hormones. It depends upon the palatable food but has the capacity of engaging the pathways similar to that of the drugs. This action can also travel from casual eating to compulsive eating, which is also a type of psychological disorder leading to obesity and over-eating issues. The neurobiological changes in obese people are similar to the impairment observed in drug patients.

Psychological And Biological Factors Influencing The Behavioral Eating

The biological reasons for eating are for surviving, living, growing, staying healthy, and helping the body to regenerate. However, despite of biological responses, humans eat due to changing psychological needs. It happens either due to the hormonal changes occurring in the body which are disturbing the hormones and the pathways signaling the responses are facing the impairments.

References

Betts, J. G., Young, K. A., Wise, J. A., Johnson, E., Poe, B., Kruse, D. H., Korol, O., Johnson, J. E., Womble, M., & DeSaix, P. (2022). Anatomy and physiology 2e. OpenStax.
<https://openstax.org/details/books/anatomy-and-physiology-2e>

U.S. Department of Agriculture, & U.S. Department of Health and Human Services. (2020). Dietary Guidelines for Americans, 2020–2025 (9th ed.).
<https://www.dietaryguidelines.gov/about-dietary-guidelines/previous-editions/2020-dietary-guidelines>